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LEVEL AND SOURCES OF ANXIETY AFFECTING GIFTED  
STUDENTS WHO ATTEND SCIENCE AND ART CENTERS

A MASTER'S THESIS

BY

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THE PROGRAM OF CURRICULUM AND INSTRUCTION  
İHSAN DOĞRAMACI BILKENT UNIVERSITY  
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2019



*To my family...*

**Level and Sources of Anxiety Affecting Gifted Students Who Attend Science and  
Art Centers**

The Graduate School of Education

of

**İhsan Doğramacı Bilkent University**

by

**Elifnur Yazıcı**

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İHSAN DOĞRAMACI BILKENT UNIVERSITY  
GRADUATE SCHOOL OF EDUCATION

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October 2019

I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Arts in Curriculum and Instruction.

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## ABSTRACT

### Level and Sources of Anxiety Affecting Gifted Students Who Attend Science and Art Centers

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In recent years, gifted education started to gain importance in Turkey as in the rest of the world. Within this scope, 135 Science and Art Centers (SACs) were established in 81 cities in Turkey by 2018. This study investigated the state and trait anxiety level of gifted students within SAC which is located in Ankara. Furthermore, sources of the anxiety were explored. Forty-four high school students in SAC were chosen through a convenience sampling method in order to complete the Turkish version of the State – Trait Anxiety Inventory (STAI) and six students, six parents and four teachers were interviewed. In the study, since quantitative data supplemented with qualitative data, the results were analyzed by using both quantitative and qualitative data analysis method. According to the results, high school gifted students in SACs have average state and trait anxiety level and there is no significant difference in both kinds of anxiety level in respect to ages. Although, the state anxiety levels of female students and male students are not different, the trait anxiety level of female students is significantly higher than male students. According to the interviews, expectations and pressure are the most affecting factors to the anxiety. Social interaction; exams; unexpected situations; fear of being unhappy, being alone and making mistakes; perfectionism; wishing to have a good future and to prove oneself are the following factors. In addition, teachers and students agreed that SACs help students to decrease their anxiety level.

Key words: state anxiety, trait anxiety, sources of anxiety, Science and Art Center (SAC).

## ÖZET

### Bilim ve Sanat Merkezlerine Devam Eden Üstün Zekalı Öğrencilerin Kaygı Seviyeleri ve Kaynakları

Elifnur Yazıcı

Yüksek Lisans, Eğitim Programları ve Öğretim

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Son zamanlarda dünyanın geri kalanında olduğu gibi Türkiye'de de üstün zekalı öğrenci eğitimi önem kazanmaya başladı. Bu kapsamda 2018 itibariyle Türkiye'de 81 şehirde 135 Bilim ve Sanat Merkezi (BİLSEM) bulunmaktadır. Bu çalışma Ankara'da bulunan bir BİLSEM'deki öğrencilerin durumlu ve sürekli kaygı seviyelerini incelemiştir. Buna ek olarak kaygı seviyesinin kaynakları araştırılmıştır. Durumlu ve Sürekli Anksiyete Envanteri'nin Türkçe versyonunu tamamlamaları için BİLSEM'e devam eden 44 lise öğrencisi kolayda örneklem yöntemi ile seçilmiştir. Altı öğrenci, altı veli ve dört öğretmenle de yüz yüze görüşme yapılmıştır. Bu araştırmada, nicel veriler nitel veriler ile desteklendiği için hem nicel hem de nitel veri analiz yöntemi kullanılarak sonuçlar analiz edilmiştir. Elde edilen sonuçlara göre, BİLSEM'e devam eden lise öğrencileri ortalama durumlu ve sürekli kaygı seviyelerine sahiptir ve her iki tür kaygı düzeyinde yaşlara göre anlamlı bir farklılık yoktur. Kız öğrenciler ile erkek öğrencilerin durumlu kaygı düzeyleri farklı olmasına da kız öğrencilerin sürekli kaygı düzeyleri erkek öğrencilere göre anlamlı derecede yüksektir. Görüşmelere göre bekleneler ve baskı kaygıyı en çok etkileyen faktörlerdir. Sosyal etkileşim; sınavlar; beklenmedik durumlar; mutsuz olma, yalnız olma ve hata yapma korkusu; mükemmelliyetçilik; iyi bir geleceğe sahip olma ve kendini kanıtlama isteği takip eden faktörlerdir. Ayrıca, öğretmenler ve öğrenciler BİLSEM'in öğrencilerin kaygı düzeylerini azaltmalarına yardımcı olduğu konusunda hemfikirlerdir.

Anahtar kelimeler: durumlu kaygı, sürekli kaygı, kaygı nedenleri, Bilim ve Sanat Merkezi (BİLSEM).

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## TABLE OF CONTENTS

ABSTRACT .....	iii
ÖZET .....	iv
ACKNOWLEDGEMENTS .....	v
TABLE OF CONTENTS.....	vi
LIST OF TABLES.....	ix
CHAPTER 1: INTRODUCTION.....	1
Introduction.....	1
Background.....	1
Problem.....	4
Purpose .....	4
Research questions .....	4
Significance .....	5
Definition of key terms.....	5
CHAPTER 2: REVIEW OF RELATED LITERATURE.....	6
Introduction.....	6
The history of gifted education in Turkey .....	6
Characteristics of gifted students .....	10
Anxiety .....	12
Different studies in Turkey and abroad .....	13
Summary.....	15

CHAPTER 3: METHOD .....	17
Introduction.....	17
Research Design.....	17
Context .....	18
Participants .....	19
Instrumentation .....	21
Questionnaire .....	21
Interview .....	22
Method of data collection.....	22
Reliability and validity .....	24
Method of data analysis.....	24
Quantitative data analysis .....	24
Qualitative data analysis .....	25
CHAPTER 4: RESULTS .....	26
Introduction.....	26
The quantitative phase.....	26
The qualitative phase.....	33
Summary.....	45
CHAPTER 5: DISCUSSION .....	47
Introduction.....	48
Overview of the study .....	48
The major findings .....	49

Implications for practice .....	56
Implications for further research.....	57
Limitations .....	58
REFERENCES .....	59
APPENDICES.....	67
Appendix A: State Anxiety Inventory in Turkish .....	67
Appendix B: State Anxiety Inventory in English .....	69
Appendix C: Trait Anxiety Inventory .....	71
Appendix D: Trait Anxiety Inventory.....	73
Appendix E: Student Interview Questions .....	75
Appendix F: Student Interview Questions .....	76
Appendix G: Parent Interview Questions (Turkish) .....	77
Appendix H: Parent Interview Questions (English) .....	78
Appendix J: Teacher Interview Questions (Turkish).....	79
Appendix I: Teacher Interview Questions (English) .....	80
Appendix K: Permission Letter .....	81

## LIST OF TABLES

Table		Page
1	Age and gender distribution of the participants.....	20
2	State anxiety level of students.....	27
3	Independent samples <i>t</i> -test analysis of the relationship between gender and state anxiety level.....	28
4	Descriptive statistics of the state anxiety level of the students in respect to ages.....	29
5	ANOVA according to age for state anxiety level.....	29
6	Trait anxiety level of students.....	30
7	Independent samples <i>t</i> -test analysis of the relationship between gender and trait anxiety level.....	31
8	Descriptive statistics of the trait anxiety level of the students in respect to ages.....	31
9	ANOVA according to age for trait anxiety level.....	32
10	Anxiety level of the students.....	34
11	Sources of anxiety of the students.....	36
12	The effect of SAC on the anxiety level of the students and the reasons.....	37
13	Anxiety level of students according to views of the parents.....	39
14	The sources of anxiety of the students according the views of their parents.....	39
15	The parents' views on the effects of SAC on the anxiety level of the students.....	40
16	Whether the family reflect their anxiety to their children or not	41

17	Anxiety level of students according to views of their teachers..	42
18	The sources of anxiety of the students according the views of the teachers.....	43
19	Anxiety level of students.....	45
20	The sources of anxiety of the students.....	46
21	The effects of SAC on the anxiety level of the students.....	47

## **CHAPTER 1: INTRODUCTION**

### **Introduction**

Gifted students are a great asset for any country if they trained well. As there is a high competition among the nations to lead the world according to their will, they do have/plan special programs to train their gifted citizens. Turkey, as other nations, has given prime importance especially in last three decades to train gifted students better and get benefit from their contribution in order to create a capacity in the competition to lead new innovations in the world. Therefore, Science and Art Centers (SACs) are established in Turkey at the beginning of 1990s. However, this attempt alone may not help as expected, as there is other side of the coin. That means, there is a need to undertake more research studies to better prepare gifted students not only from the perspective of academic side but also from an affective/emotional side. Thus, this study will concentrate on this issue and investigate anxiety level of gifted students who are attending Science and Art Centers.

### **Background**

In the community of education, there is no absolute definition of giftedness and talent. Even if there is no certain cutting point between the definitions of gifted and talented students, the definitions which are given by Gagne (2004) for The Differentiated Model of Giftedness and Talent (DMGT) are accepted for the current study.

***Giftedness*** designates the possession and use of untrained and spontaneously expressed natural abilities (called outstanding aptitudes or gifts), in at least one ability domain, to a degree that places an individual at least among the top 10 per cent of age peers.

**Talent** designates the outstanding mastery of systematically developed abilities (or skills) and knowledge in at least one field of human activity to a degree that places an individual at least among the top 10 per cent of age peers who are or have been active in that field or fields. (p.120)

There are two common points between these two terms: both are about ability and being above average (Gagne, 2004). Therefore, regardless of the definition, gifted and talented students are special, and they have special needs. This research was carried out without any differentiation between gifted and talented.

The percentage criteria for gifted students differ from country to country. While it varies 1% to 10%, in Turkey, the top two out of 100 people are accepted as gifted. Educating these individuals during their school years and helping them to reach their potential are so important for the development of the society. Gifted people can lead the society with their motivation, will power, leadership ability and creative problem-solving ability. They also speed up development and alteration of their country (Ministry of National Education [MoNE], 2013).

Being above the average has become synonymous with having different characteristics. The most common characteristics for gifted students are having excellent memory, being highly sensitive, having large vocabulary knowledge, desiring to organize people, having deep, intense feelings and reactions as reported by National Association for Gifted Children (NAGC, n.d.). These characteristics can be seen as both luck and unluckiness because they can cause both positive and negative situations in the lives of gifted students. For instance, through having excellent memory, gifted students may be bored and impatient in class or by the reason of using advanced vocabulary, they may become alienated from their peers

(Heylighen, n.d.). Apart from all these characteristics, gifted children may have some social-emotional difficulties such as anxiety, perfectionism, stress, or issues with peer relationships (NAGC, 2016). One of these difficulties, anxiety, may be defined as two different kinds: debilitating anxiety which prevents the success of students and facilitating anxiety which helps students to be successful. While debilitating anxiety effects negatively and makes students feel upset, facilitating one encourages students to be active in their learning process (Baştürk, 2007). In this case, determining the anxiety level of gifted students is important to understand whether their anxiety is beneficial or harmful for them.

In the related literature, there has been very little research and their findings indicates different results about anxiety of gifted students. The results of one study shows there is no significant differences between perfectionism, depression and anxiety level of gifted and non-gifted students (Kanlı, 2011). On the other side, Tong and Yewchuk (1996) found that gifted adolescents have higher level of anxiety than their peers in their study. Besides, surprising results can be found when researching the sources of anxiety. For instance, the results of the study conducted by Peterson, Duncan and Canady (2009) showed that academic and transition issues and college applications and decisions are the stressed out events for gifted students. However, negative life events such as death are not seen as stressful as academic issues. In the literature, there are different views and contradictory studies such as these studies and there is not yet enough study for providing sufficient evidences on the effect of anxiety level of gifted students at SACs, in Turkey.

## **Problem**

Gifted students tend to be more anxious than regular students (Lamont, 2012). For this reason, there is the common belief that many students accepted by SACs may have high anxiety levels. Even if SACs try to provide special support for gifted students for the benefit of themselves and the country, because of their possible high level of anxiety, these efforts may become useless. To overcome this problem, to investigate the level and possible sources of anxiety among gifted students is important. In Turkey, to date, there has been very little research about anxiety level of gifted students and there have been no formal investigations about the level and possible sources of anxiety of gifted students at SACs.

## **Purpose**

The first purpose of this study is to investigate the anxiety level of gifted students within SACs with the Turkish version of the State – Trait Anxiety Inventory constructed by Spielberger, Gorsuch and Lushene in 1970 and translated by Öner and LeCompte (1985). The second aim is to find out the possible sources of anxiety of these students by interviewing them, their parents and teachers.

## **Research questions**

There are two research questions of the present study. They are:

1.     What is the level of state and trait anxiety of students studying at SACs?
  - a)     Are there any significant differences in state and trait anxiety levels of female and male gifted students at SACs?

- b) Are there any significant differences among state and trait anxiety levels of the students at SACs in respect to ages?
2. What are the possible sources of students' anxiety at SACs?

### **Significance**

This study focuses to level and sources of anxiety effecting gifted students. The studies have found conflicting results and there has been very limited research about this issue in Turkey. The results of this study may inform teachers, SACs' administrators and parents about the anxiety level of gifted students. In addition, this study may also help to find solutions to decrease the high level of anxiety by determining the sources of anxiety. Than more research may be planned and conducted on how to overcome or diminish the anxiety level of students in order to secure their development.

### **Definition of key terms**

**Anxiety** is “an uncomfortable feeling of nervousness or worry about something that is happening or might happen in the future” (Anxiety, n.d.a).

**State anxiety** is an anxiety which arises because of a specific situation or event (Öner & LeCompte, 1985).

**Trait anxiety** is an anxiety which depends on the tendency of being anxious (Öner & LeCompte, 1985).

**Science and Art Centers (SACs)** are the special education centers where elementary, middle and high school gifted students go after their school or in weekends. Their aim is to support students in three different areas: painting, music and general cognitive skills (MoNE, 2016).

## **CHAPTER 2: REVIEW OF RELATED LITERATURE**

### **Introduction**

As discussed in chapter one, educating gifted students is very important not only for them but also for their society since they can lead the society by using their special abilities. The factors which affect them mentally affect their success, thus their societies. Anxiety is assumed to be one of these factors. The study aims to investigate anxiety level of gifted students and its possible sources. This chapter reviews the literature related to anxiety and gifted students. First, the history of gifted education in Turkey is mentioned. Then, general characteristics of gifted students are discussed. Later, anxiety and its main types are explained. Lastly, variety of studies conducted about anxiety of gifted students both in Turkey and abroad are mentioned.

### **The history of gifted education in Turkey**

In Turkey's history, Enderun School, which was established in the Ottoman Empire in fifteenth century by II. Murad, can be seen as the first school for gifted education. The school located in Topkapı Palace in İstanbul and it developed by the best scientists brought by Mehmet the conqueror. In the Ottoman Empire, children of foreigner families were chosen within certain rules and they were trained to be used as labor force and to spread Turkish culture. After the first period of education, 7 - 8 years, the most successful of them were chosen for the Enderun School. The success of children in the academic sense was not enough to be chosen in the Enderun. At the same time, they had learned both Turkish culture and Islam religion. In addition, their moral development and physical characteristics were also taken into account (Akkutay, 1984). The students who were selected by meeting these selection criteria

were divided into four different groups according to their abilities. At the end of 8-10 years training process, these groups and the success of children designated their future occupations (Akarsu, 2004). The school was unique in two different aspects. The first one is that it was the first educational institution which was established to educate executives for civil and military service of the state. The second one is its program which included not only Islamic law and some earth science but also implementation and handcraft (Enç, 2004). Despite Enderun School was so important in all of these aspects, it was affected by the decline of the Ottoman Empire and closed in 1909 (Akkutay, 1984).

After the proclamation of the Turkish Republic, as of 1925, students who showed great success were supported to go abroad to get better education with the request of Atatürk, who is the founder of Turkish Republic. In 1929, this support was formalized with the law number 1416 which is called “Law on the students to be sent to foreign countries” (MoNE, 1929). This law contains to promote the superior students who graduated from secondary or higher education and passed the interview or exam which is prepared by the Ministry of Education (Bulut & Taylı, 2006). With this law, the important names like Osman Zeki Üngör, Ahmet Adnan Saygun improved themselves in abroad and contributed to the development of Turkey (Kahramankaptan, 1998). This law is still in force (MoNE, 1929).

In 1940, the law number 3803 which is called “Law on Village Institutes” was enacted to educate students who live in villages. The students were chosen for the institutes and they were educated both academic and vocational training at least five years (MoNE, 1940). The main aim of the institutes was to educate the students to

become a teacher or other professional staff who can work in the village like health officer, technician. After 14 years, the institutes were closed in 1954 (Kartal, 2008). The law number 1416 and 3803 were followed by the law number 5245 which is called “Law of Wonder Child” in 1948 (MoNE, 1948). The law was for the students who are artistically gifted, and it provided a scholarship for their educational development in abroad. Owing to this law, İdil Biret and Suna Kan who were gifted of that time as musicians were selected and sent to France for Paris Conservatory (Tunçdemir, 2004). In 1956, this law was changed to law number 6660 and renamed “Support of the Children Who Have Special Ability in Art” (Çetinkaya & Döner, 2012). Hereby, the law was made more accessible for larger mass of gifted students in fine arts (MoNE, 1956). Famous names such as Gülsin Onay (pianist), Tunç Ünver (violinist) and Bedri Baykam (painter) benefited from this law (İlyas, 2017). In 1993, five Science and Art Centers (SACs) were established by the National Ministry of Education to support gifted students (Çepni, Gökdere, & Küçük, 2003). These centers are in Ankara, İstanbul, İzmir, Bayburt and Denizli where gifted students are selected by a special examination (Baykoç Dönmez, n.d.). SACs are the special education centers which aim to support education of primary, secondary and high school gifted students in painting, music and general cognitive skills (science and math) without interrupting their formal education. In Turkey, by 2018, there are 135 SACs in 81 cities which provide to differentiated education to make gifted students to understand and improve their potentials and to contribute their societies (MoNE, 2018).

At Eskişehir Anadolu University, there is a university-based program for gifted students called the Education Programs for Talented Students (EPTS) (Sak, 2011).

EPTS was established in 2007 with the support of Anadolu University and the Scientific and Technological Research Council of Turkey (TÜBİTAK) and converted into a research and application center in 2014. The center's main aims are to carry out studies about superior-high intelligence and creativity, to identify gifted students and to offer differentiating education and counselling for gifted students (ÜYEP, 2015). This is the first and only program which is based in a university and has the above purposes in Turkey. The six main headings of EPTS studies to achieve their goals are:

- To develop their own diagnostic model to discover the talented students.
- To create their curriculum which includes analytical skill, creative skill, practical skill and knowledge at the same time.
- To develop a program which allows the implementation of this curriculum.
- To put into practice the program, academicians and teachers work together by using attracted materials and teaching activities.
- To educate teachers in order to be able to appeal to gifted students.
- To keep the program open for improvements, they give importance to evaluation of students and their achievements (Sak, 2011).

The program is implemented with fifth, sixth, seventh and eighth grade students at weekends or in summers. To be included in the program, five grade students should be successful in the EPTS' own qualifying examination. Only 28 students with the highest scores can participate the courses because of the limited quota. The courses are diversified to address both academic success and interests of the students such as

advanced mathematics, industrial design, algorithmic applications in computer and creative writing (ÜYEP, 2015).

As well as these centers and programs, there are some associations, foundations and special schools for gifted children in Turkey. Association of All Gifted (TÜZDER), Institute of Gifted (ÜZE) and Turkey Education Foundation of Gifted and Genius Children (TÜZDEV) are the main organizations. These organizations arrange trainings and seminars for gifted students, parents and teachers. In addition, some of them provide diagnostic services. Apart from these organizations, there are some special schools for gifted such as Turkish Education Foundation İnanç Türkeş Private High School (TEVİTÖL), Turkey Gifted and Talented Education, Culture and Health Foundation (TÜZYEKSAV) School of Leaders and Turkey Yüksel Gifted Education and Development Foundation (TÜZYEV) Mosaic Schools. All of these schools were established for only gifted children, thus, only the children who are diagnosed as gifted can register in them. In addition, these schools are associated with foundations and are private.

### **Characteristics of gifted students**

If children have an ability which is significantly above the average for their age, then they are accepted as gifted (NAGC, n.d.). In the gifted individuals strategy plan of MoNE, giftedness is defined as showing a higher performance in intelligence, creativity, art, sport, capacity of leadership or academic areas than peers (2013). These definitions of gifted and giftedness are derived from the report of U. S. Commissioner of Education (1972), which is known as Marland Report. According to the report, gifted children can show a high performance in any of the following

areas: general intellectual ability, specific academic aptitude, creative or productive thinking, leadership ability, visual and performing arts, psychomotor ability.

Having some significantly above abilities, being gifted, brings some characteristics together such as learning rapidly, reading intensively, knowing advanced vocabulary, being curious, wishing to work independently, having high academic achievement.

These characteristics can be both strength and weakness in gifted people (Ohio Association for Gifted Children [OAGC], 2018). Since the gifted children are so diverse, these characteristics and their effects can change from child to child (NAGC, no date).

Distin (2006), compared gifted children with their peers in seven main titles: (a) intellectual characteristics, (b) intellectual quirks, (c) language development, (d) intellectual inconsistencies, (e) surprises, (f) emotional skills and (g) being different. When these tittles are examined, following characterics are discerned. Gifted children have the ability to understand new things easily and irrepressible energy to learn and do things better. Their minds work differently, therefore, they react unexpectedly. Further, their sense of humour and the ability of express emotions can surprisingly improve. The language skills of gifted children can develop early. Some of the gifted children may show exceptionally higher ability in some areas while they are unsuccessful in other areas. Although the emotional skills of the gifted children are developed very early, they can struggle with understanding their and the others' feelings. As a consequence of all these discrepancies, gifted children may feel different from others in most of the time and situations.

## **Anxiety**

In the literature and dictionaries, there are various definitions of anxiety. The dictionary of Cambridge defines anxiety as “an uncomfortable feeling of nervousness or worry about something that is happening or might happen in the future” and “something that causes a feeling of fear and worry”. According to the dictionary of Merriam – Webster, anxiety is “apprehensive uneasiness or nervousness usually over an impending or anticipated ill: a state of being anxious, “mentally distressing concern or interest” and “a strong desire sometimes mixed with doubt, fear, or uneasiness”. The main point of the definitions is that anxiety is an unpleasant feeling which affects people mentally.

In the first days of mankind, anxiety was observed as giving some reactions in dangerous situations, such as encountering large predators. These reactions were seen in ways such as increased sweating, heart rate and sensitivity to the environment, and all of these responses were intended to protect humans from danger. Nowadays, even if there is no danger of encountering big predators in daily lives, people may need these reactions in some situations in order to continue their lives safely. Herewith, while anxiety is to protect humankind, the extreme concern of people has made the anxiety harmful (Felman, 2018).

When people feel excessive fear or anxiety which is different from the normal feelings of anxiousness, the situation is called anxiety disorder. Anxiety disorders have a lot of varieties. The most common ones are generalized anxiety disorder, panic disorder, phobias, agoraphobia, social anxiety disorder, separation anxiety disorder (“What are anxiety disorders”, n.d.).

Alongside of the kinds of anxiety disorders, Spielberger (1966) provides two categories of anxiety: state and trait. State anxiety is an emotional reaction which comes into existence because of a situation. On the other hand, trait anxiety implies an ongoing characteristic of an individual. Trait anxiety affects people negatively because of its persistence continuity. Gifted students may be affected by trait anxiety, meaning that they often feel anxious during their school years. This situation effects their social and academic lives. For this reason, it is important to find out the level and sources of anxiety of gifted students in order to understand the effect of anxiety to their lives.

### **Different studies in Turkey and abroad**

Even if there is very few research about both gifted students and anxiety in Turkey, there are some studies in abroad. However, the results of these studies contradict with each other.

In Malaysia, Bakar and Ishak (2014) investigated the levels of depression, anxiety, stress and psychological, social, emotional adjustments of 112 gifted students aged 16 of which 77 female and 35 male. The researchers used the Depression, Anxiety and Stress Scales (DASS) and the Social Well-Being Questionnaire (SWBQ) to collect data through a cross-sectional survey design. The findings of the study, shows that gifted students experience depression, anxiety and stress. In addition, depression is highly correlated with stress and anxiety level.

Beside of this kind of studies which compare the anxiety level of gifted and non-gifted, there are other studies which investigated the anxiety level differences

between gifted students in respect to age or education. Aljughaiman and Tan (2008) compared the anxiety levels of sixth and seventh graders. The participants of the study were 66 female gifted sixth and seventh graders who were attending public school enrichment programs in Jeddah Province. They used the Scale of Anxiety for Children and Adolescents which was prepared by Alleili in 2005. They discovered that seventh graders have a lower degree of anxiety than sixth graders. Thus, they concluded that the level of anxiety may change when students become more mature or it may decrease with the help of the enrichment program for the gifted in the schools of general education in their country. The important point is that even if seventh graders have a lower degree of anxiety than sixth graders, their anxiety level is still higher than the average.

Some studies, however, have found that gifted students do not have higher level of anxiety than their peers. Kanlı (2011) studied 55 gifted and 74 non-gifted students from grades 5, 6, and 7 in Beyazit Ford Otosan School, a mixed ability school in İstanbul. Kanlı used the Frost Multidimensional Perfectionism Scale (FMPS) along with, the Children's Depression Inventory (CDI) which was developed by Kovacs in 2004 and the State-Trait Anxiety Inventory for Children (STAII) which was constructed by Spielberger in 1973 in order to investigate the relationship between the perfectionism, depression and anxiety levels of gifted and non-gifted students. Kanlı's results showed no statistically significant differences between the anxiety level of gifted students and non-gifted students, contrary to expectations. In addition, Kanlı found that the anxiety level of students are not differ according to their age and this finding is contrary to Aljughaiman and Tan's study.

To sum up, anxiety level of gifted students is still under debate. There are different views, a few studies about these views and contradictory studies. In addition, there is no research about the sources of anxiety with gifted students who attend Science and Art Centers in Turkey.

### **Summary**

Previous studies show that gifted students are different than their peers on many subjects such as their perspectives, perceptions, learning speeds and emotional development. This situation causes the need of special approach in every areas of their lives. Therefore, gifted students have been involved in special education for many years.

This literature review provided the Turkish history of gifted education in the period from fifteen century to the present. Throughout the period, the system has been continuously updated with the changing needs of the students and the opportunities of the country. The Science and Art Centers, which can be considered as the last and nationwide of these innovations and regulations, are one of the most important centers where the educational needs of gifted students are met. For this reason, understanding the needs of the students who are attending in SACs' is important. According to researches, one of the most important needs of the gifted students is to complete their emotional development in a healthy way. For this reason, determining the factors and the characteristics that affect them negatively is important for their development. In some studies, depression, anxiety and stress which are seen as the factors that can affect the emotional development negatively has been found to be general features in gifted students. On the other hand, the other studies show that

there is no significant difference between gifted students and their peers in terms of these characteristics.

Since there is little research about this important issue, anxiety level of gifted students, this study investigates the level and possible sources of gifted students.

## **CHAPTER 3: METHOD**

### **Introduction**

The main purpose of this study is to investigate the level of anxiety of gifted students within Science and Art Centers (SACs). The study also aims to explore the views of students, parents and teachers about sources of anxiety of students. This chapter discusses the research design, context of the study, participants and instruments that were used in data collection and data analysis.

### **Research design**

For the current study, there are two research questions:

1.     What is the level of state and trait anxiety of students studying at SACs?
  - a) Is there a statistically significant difference in state and trait anxiety levels of female and male gifted students at SACs?
  - b) Is there a statistically significant difference among state and trait anxiety levels of the students at SACs in respect to ages?
2.     What are the possible sources of students' anxiety at SACs?

In accordance with these questions, firstly, the quantitative data was collected and supplemented with qualitative data. The main aim of the qualitative data is to get further information about the findings of the quantitative data.

To answer the research questions properly, researchers should seek out a good research design for their studies. Choosing a single design is easy for researchers to

conduct and manage their studies (Creswell & Clark, 2007). On the other hand, some researchers should tend to use mixed - methods research design which involves both qualitative and quantitative methods of data collection and analysis within a single study. By this way, a study seeks to understand and to explain complex phenomena (Creswell, 1999). The mixed - methods research design has three major types as explanatory, exploratory and triangulation. The main purpose of the explanatory design is to flesh out the quantitative results supplemented with qualitative results. In this design, firstly, quantitative data is collected and qualitative data follows. Both types of data are analyzed separately (Gardner, 2009).

In this study, a mixed method explanatory design was carried out to answer the research questions. In the first phase, a survey was conducted to collect quantitative data about anxiety levels of gifted students. In the second phase, qualitative data supplemented survey results by gaining insights from students, parents and teachers about possible sources of anxiety levels of the students. By combining these two phases, more in-depth results were provided to understand and to explain the research problems.

## **Context**

This study was conducted in a Science and Art Center in Ankara. In Turkey, there are 135 centers in 81 cities by 2018. The main aim of the Science and Art Centers is to help primary and secondary school gifted students to realize and to improve their individual abilities. First, second and third grade students are nominated by their teachers in their schools and they are selected after many different consideration processes in SACs (MoNE, 2018).

In SACs, there are three different subject areas which students can choose: general cognitive skills, painting and music. The students can choose maximum two different areas from these three (MoNE, 2016).

The Science and Art Center where the study conducted is one of the oldest SAC in Ankara in Turkey. It was opened in 1994 and as of 2019, there are 809 registered students. It has relatively more students than the other SACs and it is easy to reach since it is in the center of the city. It is a private educational institution that is affiliated with the Ministry of National Education, General Directorate of Special Education and Guidance and Counseling Services (MoNE, 2013).

## **Participants**

For the quantitative part of this study, 44 students from the age 14 to 17 in the Science and Art Center were chosen through a convenience sampling method. For the qualitative phase, six parents who have children from different ages, four teachers from different disciplines and six students from different ages and genders were interviewed. The students and the parents who were in the sample were not related.

### **Participants in the quantitative phase**

Since the high school students from SACs are studying as project - based, the limited number of students could participate. There were 44 participants and each of them answered 2 sub-questionnaires; one for state anxiety and the other for trait anxiety. The description of participants is presented below (Table 1).

**Table 1**

**Age and gender distribution of the participants**

Age	Female	Male	Total
14	10	7	17
15	8	11	19
16	3	3	6
17	0	2	2
Total	21	23	44

As seen in the Table 1, 21 females and 23 males (47.7% female; 52.3% male) participated in the study. Of the participants, 17 were 14 years old (38.6%), 19 were 15 years old (43.2%), 6 were 16 years old (13.6%) and 2 were 17 years old (4.5%).

### **Participants in the qualitative phase**

Six parents, four teachers and six students were sampled through a convenience sampling selection technique to participate in a semi-structured face-to-face interview. The parents who have children from different ages answered set of questions to go behind the quantitative data. Thus, the questions were about the general opinion of the parents about themselves and the level and sources of anxiety of their children. The students who are from different grades answered the questions to shed light on their situation. The students and the parents who were in sample were not related. Finally, the teachers from different subjects answered the questions by using their experiences with their gifted students.

## **Instrumentation**

The data collection instruments are;

- Questionnaire
- Interview

### **Questionnaire**

The Turkish version of the State - Trait Anxiety Inventory (STAI) which was constructed by Spielberger with the help of Gorsuch and Lushene (1977) and translated by Öner with the help of LeCompte (1985) were used for the quantitative phase of the study. The Inventory has two sub-categories to find out the two different types of anxiety level as the State Anxiety Sub-Questionnaire and the Trait Anxiety Sub-Questionnaire and each has 20 items. Both sub-questionnaires comprise of four-point Likert-scales. The Likert-scale of the State Anxiety Sub-Questionnaire includes the options: “not at all,” “somewhat,” “moderately so” and “very much so” and they assess intensity of current feelings. The options for the Trait Anxiety Sub-Questionnaire are “almost never,” “sometimes,” “often,” and “almost always” and they assess frequency of feelings. The scores for both sub-questionnaires can be between 20 - 80 points. Higher scores indicate a higher level of anxiety and lower ones indicate a lower level.

At the end of the quantitative phase, trait and state anxiety levels of gifted students were found out. The Turkish versions of sub-questionnaires are enclosed as Appendix A and C, the English versions are as Appendix B and D.

## **Interview**

There are three types of interviews, unstructured, semi-structured and structured. If a researcher has limited knowledge about the topic, unstructured interviews are more favorable. Reversely, when a researcher has a lot of knowledge and wants very specific answers to specific questions, structured interviews are more preferable. The last alternative, semi-structure interviews are for researchers who wants to provide detail, depth and an insider's perspective about the research (Leech, 2002). For this reason, semi-structured interviews were used in this study. To carry out the interviews, face to face interviews were preferred because of their two main advantages. The first one is, there is no significant time delay between question and answer, and the second one is that the interviewer can catch social cues from their participants during the interview (Opdenakker, 2006).

For this study, three different semi-structured interview question sets were prepared. All questions in all sets are open-ended. The first set includes seven questions for the gifted students. The second set is formed with five questions for parents. The third set consists of four questions prepared to be asked to teachers. In this way, the sources of gifted students' anxiety were examined in three different aspects. The interviews were in Turkish and the interview question sets are in the Appendix E, G, and I, in Turkish. The English version of the question sets are in the Appendix F, H and J.

## **Method of data collection**

The data collection process followed four main steps. Firstly, the permission was taken from Necla Öner to use the Turkish version of the State – Trait Anxiety Inventory in October 2017. The permission is enclosed as Appendix K.

Concurrently, the other instrument, the interview questions were prepared at the end of the detailed literature review. After the preparation, they were arranged by taking expert opinions. The final version of the questionnaire was completed at the end of October 2017.

Secondly, the proposal was submitted to the Provincial Directorate for National Education of Ankara to get permission to collect data from the Science and Art Center. After the written permission was granted, the meeting with the principal and vice principals of SAC was set. In the meeting, general information about the study and instrumentations were given and the timetable was arranged.

Thirdly, the quantitative data were collected in November 2017. Before the quantitative data was started to collect from students, the teachers for each class were informed and the permission was also taken from them to collect data from their classes. In the beginning of lessons, the students were informed about the general structure of the questionnaire but the content was not mentioned in order to not affect students' choices. After getting verbal permission from each student the quantitative data were acquired. The questionnaire was anonymous and it required approximately 10 minutes to complete.

Lastly, after finishing to collect quantitative data, qualitative data were started to be collected in March 2018. Firstly, face-to-face interviews were done with parents who were waiting for their children in the entrance of the SAC. Secondly, the teachers were interviewed and lastly, the students answered the interview questions. In the beginning of each interview, verbal permission was received from each participant

and they were informed about the content of the questions and their privacy. Some of the parents allowed the interview to be recorded, while others wanted not to be recorded, but allowed to be taken notes. The interviews with the teachers and students were only noted. Interviews (with teachers, parents and students) took approximately 10 minutes each.

### **Reliability and validity**

The score reliabilities for the Turkish and English versions of the State - Trait Anxiety Inventory (STAI) were estimated by using the Kuder-Richardson 20 (K-R 20). For the Turkish version of the inventory, the K-R 20 were between .94 and .96 for the state anxiety items and between .83 and .87 for the trait anxiety items. For the English version, the values were between .83 and .92 for the state anxiety items and between .86 and .92 for trait anxiety items.

In the current study, the Cronbach's alpha was .71 for the whole state anxiety items and .73 for the whole trait anxiety items.

### **Method of data analysis**

Since the mixed - methods explanatory design was conducted, both quantitative and qualitative data analysis were used.

### **Quantitative data analysis**

The quantitative data were obtained from the questionnaire. The data analysis was carried out by using descriptive statistics, independent samples *t*-test and one-way ANOVA with the Statistical Package for Social Sciences (IBM SPSS Statistics 24).

Additionally, a post-hoc power analysis was conducted with G\*Power 3.1.9.4 since a statistically significance was not observed in one-way ANOVA.

In the questionnaire, there are 40 items: 20 from the State Anxiety Scale and 20 from the Trait Anxiety Scale. All items are rated by using four point Likert scale. In the State Anxiety Scale, there are ten items which are negatively worded and in the Trait Anxiety Scale, there are seven negatively worded items. They were all reversed.

### **Qualitative data analysis**

The qualitative data were obtained from the interviews.

According to Burnard, Gill, Treasure and Chadwick (2008), there are two main approaching techniques to analyze qualitative data; the deductive and the inductive approaches. In the deductive approach, a researcher uses a structure to analyze the interview transcripts. In the inductive approach, a researcher analyzes the data without any predetermined theory or structure. In this research, inductive approach was used. Firstly, the data were collected and transcribed. Thereafter, in vivo coding was used to code the data. According to Miles, Huberman and Saldana (1994), in vivo coding approach is one of the main coding approaches in 25 different ones. By in Vivo coding, participant's own words and phrases are used as codes and this approach is especially good for the beginner qualitative researchers.

## **CHAPTER 4: RESULTS**

### **Introduction**

The purpose of the study is to investigate the level of anxiety of gifted students within Science and Art Centers (SACs) and to explore the views of parents, students and teachers about the level and sources of anxiety of the students.

In this chapter, results from data analysis of both the quantitative and qualitative phases of the study are reported. The findings of the quantitative phase are presented using descriptive statistics, independent samples *t*-test and one-way ANOVA. For the qualitative phase, the content analysis of the face-to-face semi-structured interviews with students, teachers and parents is described. Lastly, summary is given to link all qualitative data which were collected from students, parents and teachers.

### **The quantitative phase**

The results from the quantitative data analysis obtained from STAI address the following research question:

What is the level of anxiety of students studying at Science and Art Centers?

To investigate the anxiety level of the students, descriptive statistics were conducted. Independent samples *t*-test was used to see whether there is a significant difference between gender and anxiety level. Lastly, one-way ANOVA was run to determine the relationship between grade levels and anxiety level.

## **Descriptive statistics**

To investigate the level of anxiety of gifted students within Science and Art Centers (SACs), 44 high school students who are attending Science and Art Center in Ankara answered the questionnaire. Twenty-one of them were female and 23 of them were male. Seventeen of them 14 years old, 19 of them 15 years old 6 of them 16 years old and 2 of them 17 years old.

## **The state anxiety**

The scores were calculated as following

1. Summing up the scores for all direct statements
2. Summing up the scores for all reverse statements
3. Subtracting the sum of reverse statements from the sum of direct statements
4. Adding the fixed value 50

The results from state anxiety section of the questionnaire are depicted in Table 2.

**Table 2**  
**State anxiety level of students**

Scores	Anxiety level	N
20 - 35	Low	23
36 - 41	Average	7
42 - 80	High	14

The scores can change theoretically between 20 - 80. The scores given in Table 2 indicates that scores between 36 and 41 shows average state anxiety level. The score of the gifted students in the current study is ranged from 21 to 56 and the mean score

is 35.82. The results show that the students have average state anxiety level. However, 14 out of 44 students have higher state anxiety level than maximum average criteria which is 41. Besides, 23 of the students have lower state anxiety level than minimum average criteria which is 36.

### **Independent samples t-test**

Independent samples *t*-test was carried out to find out whether there is a significant difference in the state anxiety level of the students in respect to gender. The test was conducted with  $\alpha = .05$ . Homogeneity of variance was checked with Levene's test.

The Table 3 shows that there is no statistically significant difference in state anxiety level of female and male gifted students.

Table 3

Independent samples *t*-test analysis of the relationship between gender and state anxiety level

Gender	N	Mean	SD	<i>t</i>	p
Female	21	35.24	9.12	-0.38	.706
Male	23	36.35	10.15		

### **One-way ANOVA**

To learn whether there was any significant difference in the state anxiety level of the students in respect to their ages, a one-way ANOVA was used. Since only two seventeen years old students participated, sixteen and seventeen years old students were taken in the same group.

According to Table 4, the students who are 15 years old have higher level of state anxiety, and the students who are 14 years old have lower level of state anxiety. Since there is no huge difference between different age groups, the results of one-way ANOVA should be analyzed to find whether there is a significant difference or not.

**Table 4**  
**Descriptive statistics of the state anxiety level of the students in respect to ages**

Age	N	M	SD	Minimum	Maximum
14	17	34.00	9.50	21.00	56.00
15	19	37.47	10.23	23.00	55.00
16-17	8	35.75	8.48	26.00	47.00
Total	44	35.82	9.57	21.00	56.00

According to the Table 5, there is no statistically significant difference among the state anxiety level of the students in respect to their ages.

**Table 5**  
**ANOVA according to age for state anxiety level**

	Sum of Squares	df	Mean Square	F	Sig.
Between groups	108.309	2	54.154	0.579	.565
Within groups	3832.237	41	93.469		

### **The trait anxiety**

The scores were calculated as following

1. Summing up the scores for all direct statements
2. Summing up the scores for all reverse statements

3. Subtracting the sum of reverse statements from the sum of direct statements
4. Adding the fixed value 35

The results from trait anxiety section of the questionnaire are depicted in Table 6.

**Table 6**  
**Trait anxiety level of students**

Scores	Anxiety level	N
20 – 35	Low	15
36 – 41	Average	15
42 – 80	High	14

The scores can be theoretically between 20 - 80. The scores in Table 6 indicates that scores between 36 and 41 shows an average trait anxiety level. The score of the gifted students in the current study is ranged from 23 to 65 and the mean score is 39.09. The results show that the students have average trait anxiety level. On the other hand, according to the results, 14 students out of 44 have high trait anxiety level while 15 of them have low trait anxiety level.

### **Independent samples *t*-test**

To find out whether there is a significant difference between gender and trait anxiety level, an independent samples *t*-test was conducted. The test was conducted with  $\alpha = .05$ . Homogeneity of variance was checked with Levene's test.

The table 7 demonstrates that the trait anxiety level of female gifted students was statistically significantly higher than male gifted students.

**Table 7**

Independent samples *t*-test analysis of the relationship between gender and trait anxiety level

Gender	N	Mean	SD	<i>t</i>	p
Female	21	42.48	11.81	2.26	.031*
Male	23	35.91	6.49		

\*p<.05

### **One-way ANOVA**

A one-way ANOVA was conducted to determine whether there was any significant difference in trait anxiety level of students according to their ages. Table 8 shows the results of ANOVA. Sixteen and seventeen years old students were evaluated in the same group since there are only two seventeen years old participants.

**Table 8**

Descriptive statistics of the trait anxiety level for one-way ANOVA of the students in respect to their ages

Age	N	M	SD	Minimum	Maximum
14	17	40.00	10.78	23.00	58.00
15	19	39.53	10.46	26.00	65.00
16-17	8	35.88	6.08	24.00	43.00
Total	44	39.05	9.87	23.00	65.00

According to Table 8, the students who are 14 years old have higher level of trait anxiety and the students who are 16 and 17 years old have lower level trait anxiety. So, it seems that the trait anxiety levels decrease as the students mature. Since there is no big difference between different age groups, the results of one-way ANOVA should be analyzed to find whether there is a significant difference or not. Table 9 depicts the results.

There is no statistically significant difference in trait anxiety level of the students according to their ages (see Table 9).

**Table 9**  
ANOVA according to age for trait anxiety level

	Sum of Squares	Df	Mean Square	F	Sig.
Between groups	100.297	2	50.149	0.503	.608
Within groups	4087.612	41	99.698		

### **Post-hoc power**

The results of a one-way ANOVA for both state and trait anxiety show that there is no statistically significant difference in respect to ages of the students. For this reason, post-hoc power was conducted. The results of the post-hoc power analysis indicates that a larger sample size would be needed for statistical significance since the level of power ( $1-\beta$ ) was .30.

### **The qualitative phase**

The qualitative data was collected to further analyze the quantitative data and it is formed with the content analysis of the data collected from the interviews with students, parents and teachers. The interviews were face-to-face, semi-structured and conducted in Turkish. Illustrative quotes were translated into English to exemplify key terms and findings. The interview question was addressed the following research question:

What are the possible sources of students' anxiety at Science and Art Centers?

Findings were organized according to whom the interview was conducted: a) the interviews with students, b) the interviews with parents and c) the interviews with teachers. In the tables, the students were named S1, S2, S3, etc., the teachers were named T1, T2, etc. and the parents were named P1, P2, etc. according to the order in which they were interviewed.

### **The interviews with the students**

Six high school students were interviewed. The aim was to learn their thoughts about their anxiety level, the sources of their anxiety and the effect of SAC to their anxiety. The interview questions can be found in Appendix E and F.

First two questions were related to the anxiety level of the students and the situations which make them anxious at most. The Table 10 shows the thoughts of the students about their own anxiety levels.

Table 10

Anxiety level of the students

Anxiety Level	Students
Low	S2, S5
High	S1, S4, S6
High and using medicine	S3

As seen in Table 10, two out of six students expressed that they are not anxious. On the other hand, they remarked some situations which make them worry. These are the situations which the students do not expect and the thought of being unhappy. Four out of six students indicated that they are anxious (see Table 10). Furthermore, one of them is taking medicine for her/his anxiety. When they remarked the situations which worries them at most, social communication, exams and wishing to have a good future were mentioned most.

Student 1 states that:

I am anxious, especially, social interactions concern me. Therefore, I worry when there are so many people around me. In addition, I am nervous about whether I will be able to receive the education I want in the future. I believe that I can get into any university I want. This is not a source of anxiety for me but I worry about the education given there.

Student 4 states that:

People and lessons afflict me. For this reason, I do not prefer talk to people. I avoid social interaction.

Student 6 states that:

In the future, I want to have a good job and be successful. So, I plan on it, but the possibility that the plans will not be materialized as I hope, makes me anxious.

Student 3 states that:

I am very nervous. Although I am taking medicine, I cry when I think about university exams. This year, my elder sister will enter the university exam and she is not anxious about it. However, I am worried for her.

The other question was about the anxiety level of the relatives and friends of the students and their effects in the anxiety level of the students. Four students said that there are people around them who are anxious and this affects them negatively. The people who affect the students are usually their families and close friends. Especially, parents are afraid that their children will not have a good future. For this reason, they put lots of pressure on the children and this situation increases their anxiety level.

The other two students indicated that they are more anxious than their relatives and friends. So, they are not affected by the people around them.

Student 2 states that:

Since I am already very anxious, my family tries to make me calm down. My family do not have any expectation on me. They always support me. For example, they always say “Do not be worry. If you cannot get into one of the good universities in Turkey, we will send you abroad.” The most important thing for them is my happiness.

Student 4 states that:

I am anxious but my family and my friends are not nervous and they do not affect my anxiety.

Another question was related to external factors which increases the anxiety level of the students (see Table 11)

**Table 11**  
**Sources of anxiety of the students**

Sources of anxiety	Students
Expectation	S2, S4, S5, S6
Pressure	S1, S5
Social interaction	S1, S4
Exams	S3, S4
Unexpected situation	S2
Being unhappy	S5

As seen from the Table 11, expectation is the most common factor which increases the anxiety level of the students. The students mentioned the expectations of families, relatives, friends, subject teachers and counsellors. So, most of the people around gifted students have an expectation from them. Mostly, these expectations are about their academic successes. However, two students said that people expect them to be successful in every area. Meeting some expectations like being successful in every area is very difficult for the students. On the other hand, one student said that sometimes expectations may motivate her/him.

Student 6 states that:

My teachers usually have a great expectation on me. Sometimes, this expectation motivates me to be successful and I study more. However, it sometimes affects me negatively. I feel more nervous and I am afraid to be unsuccessful.

Therefore, all expectations do not affect students negatively but high and unrealistic expectations make the students more stressful.

Pressure, social interaction and exams are the following most effective factors (see Table 11). The students said that their families always want the best for them. For this reason, even if they try not to force the students, the students feel their pressure on them. This makes them more nervous.

As distinct from five students, Student 3 did not mention expectation or pressure.

Student 3 said that attitudes of teachers affect most.

Student 3 states that:

Teachers and exams affect my anxiety level the most. For example, one of my teachers got angry with me in front of the whole class. I could not get over it for two days.

The last question to the students was related the effect of SAC to their anxiety level (see Table 12). If a student claimed that SAC reduced his/her anxiety, reasons were asked to him/her.

**Table 12**

**The effect of SAC on the anxiety level of the students and the reasons**

The effect of SAC	Reasons	Students
	Friendships	S3, S5
decreases anxiety	Teachers	S3
	lessons & projects	S1, S3
	Joy	S6
does not affect anxiety		S2, S4

As seen in the Table 12, while two out of six students revealed that SAC has no effect on their anxiety level, the other four students remarked that SAC decreases their anxieties. The most common reasons are friendships and academic studies in SAC. The students thought that the teachers and students in SAC can understand them. Since SACs are special centers for only gifted students, the teachers know the characteristics of the students better. In addition, the students have a lot of common traits. For these reasons, the students communicate with each other and the teachers easily.

In SACs, students can study on some projects which is about their interests. These projects may help them to learn the subject more deeply, thus, they make choices about their future more consciously. For this reason, the students claimed that they enjoy and learn something they want, in this way, their anxiety levels decrease.

Student 1 states that:

SAC decreases my anxiety. This is because, in there, I feel that I have succeed and this increases my self-confidence.

Student 3 states that:

My teachers and my friends in SAC make me calm. They affect me positively because they understand me. In addition, my project in SAC is about medicine and I want to study medicine in university. For this reason, I like my project and making an effort for it decreases my anxiety.

### **The interviews with the parents**

Six parents whose children were attending a high school and SAC were interviewed. The aim was to learn their thoughts about the anxiety level of their children, its sources and the effect of SAC to their anxiety. The interview questions can be found in Appendix E and F.

The first question was about the anxiety level of their children and the sources of their anxiety (see Table 13 & 14).

**Table 13**  
**Anxiety level of students according to views of the parents**

Anxiety Level of Students	Parents
Low	P1, P2, P5
High	P3, P4, P6

As seen from the Table 13, while half of the parents indicated that their children are anxious, the other half indicated that they are not.

**Table 14**  
**The sources of anxiety of the students according to the views of their parents**

Sources of anxiety	Parents
Social interaction	P1, P2, P6
Fear of being alone	P4
Exams	P6
Fear of making mistakes	P1
Perfectionism	P3

As it is seen in the Table 14, the common source of anxiety which was thought by parents is social interaction. Even if the student is not anxious, s/he becomes nervous in some situations which require social interaction. Exams, fear of being alone and making mistakes are the reasons that follow social interaction. In addition, some students do not want to show their feelings or, they cannot show, even if they want. In these situations, they feel more anxious.

Parent 2 states that:

My child is worried, but s/he tries not to reflect it to us. S/he is shy and does not talk about her/his emotions. Sometimes, s/he wants to talk and shows her/his feelings but s/he cannot.

The next question was about the effects of SAC on the anxiety level of the students according to their parents (see Table 15).

Table 15

The parents' views on the effects of SAC on the anxiety level of the students

The effect of SAC	Parents
decreases	P4
does not change	P2, P3
no comment	P1, P5, P6

As seen in the Table 15, three parents out of six did not comment about the effect of SAC on the anxiety level of the students, one of them revealed that it decreased and two of them said that it did not change.

The other questions were related to the anxiety level of the family members, their concerns about their children and whether they reflect their concerns to their children or not (see Table 16).

Table 16

Whether the family reflect their anxiety to their children or not

Anxiety of Parents	Reflection Status	Parents
	reflected to child	P3, P4, P5
anxious	not reflected to child	P1, P2
not anxious		P6

As seen in the Table 16, one parent does not think that they are anxious as a whole family. In five out of six families, there is at least one family member who is anxious. In addition, three of these five anxious families remarked that they reflect their anxiety to their children. The parents are usually nervous about their children's future. For this reason, the education and the choices of their children are very important for them. Two of them believe that they should warn their children to be careful about their lessons and choices for their own sake. On the other hand, one of them said that they try not to reflect their worries to their child but s/he feels them despite their efforts.

Parent 1 states that:

I am very nervous about my child's future; his/her education. In addition, I am afraid that I will not be able to provide the money that is needed for his/her education. I do not reflect my worries to him/her but I warn him/her to be careful about his/her lessons.

Parent 3 states that:

We do not want to force our child but we force compulsorily for his/her development. S/he shows a great effort for his/her lessons and we are worried if s/he gets no return on his/her efforts. We try to not show our concerns but certainly, s/he feels.

Sometimes, parents reflect their own worries which are about their own personal lives. This situation causes that the children also have these worries which are not related to them.

Parent 4 states that:

My child is worried about being alone. I think this is my fault. I have always been trying to be together as a whole family. For example, I do not want anyone to travel alone. This situation must have affected my child.

### **The interviews with the teachers**

The last source of data is from teachers. The interviews with the teachers aimed to learn their thoughts about the anxiety level of their students and its sources. In addition, the teachers' opinions about the effects of SAC to the anxiety level of the students and the effect of having higher anxiety for the students themselves were asked. The interview questions are in Appendix G and H. In the Table 17, there is anxiety level of students according to views of their teachers.

Table 17

Anxiety level of students according to views of their teachers

Anxiety Level of Students	Teachers
Low	T2, T3
High	T1, T4

As seen in the Table 17, two out of four teachers reported that the students have high anxiety level. Teacher 1 also added that especially students who are going to take the high school and university exams are very anxious. On the other hand, the other two teachers stated low anxieties.

In the next question, the teachers were asked the situations that worry the students at most (see Table 18).

Table 18

The sources of anxiety of the students according the views of the teachers

Sources of anxiety	Teachers
Expectation	T1, T3, T4
Pressure	T1, T2, T3
Exams	T1, T3
Social interaction	T4
Wishing to have a good future	T1
Wishing to prove him/herself	T1

As given in the Table 18, the most common answers were pressure and expectations.

When these sources were analyzed in depth, it was claimed that the most important factor is parents. Firstly, the teachers claimed that many parents want their children to be successful in every area. There are very few parents just want them to be happy. On the contrary, they put pressure on their children to be successful. So, the students want to prove themselves and all of these situations increase the anxiety level of students. Secondly, the teachers mentioned that teachers from the students' high schools are so demanding like their parents. They think the students are perfect and that they know everything just because they were chosen for SAC. For this reason, the teachers in their schools expect very high performance and the parents expect high scores from them. These expectations make the parents repressive and the students anxious. Lastly, the teachers believed that if the parents are anxious, they pressure their children. Consequently, this pressure affects the students. If the parents are calm and free, the students may be more relax.

According to the Table 18, exams, being shy, wishing to have a good future and to prove themselves are the following sources.

Teacher 1 states that:

The country's problems, like unemployment, make them worried because they want to be able to enter a good university and to have a good future. Their grades in their schools and the constantly changing exam system also affect them. There are some students who come SAC for social purposes and to just improve themselves. They are calmer than the others and they can express themselves better.

Teacher 4 states that:

If the students are shy, they become anxious. If they feel themselves inadequate or if they do not show their abilities before, they worry.

When the effect of SAC on the anxiety level of the students was asked to the teachers, three out of four teachers reported that SAC decreases anxiety of the students. They believed that there are several reasons for this change. Firstly, the students have different opportunities in different areas in SAC. For example, they can attend TÜBİTAK (The Scientific and Technological Research Council of Turkey) project competitions. In this way, they learn how they can express themselves. Thus, their concerns which is caused by their schools, exams and scores reduce in SAC. Secondly, the students attend SAC to overcome their deficiencies because they also have some needs. Moreover, there are some students with dyslexia or hyperactivity. There is SAC for these students to socialize and improve themselves. SAC provides the opportunity for these students to be together and decreases their anxiety levels. Thirdly, the teachers in SAC know gifted students and their needs. For this reason, they help students who become anxious because of their parents or teachers in their schools.

Last question was related to the differences between anxious students and unconcerned ones. While one teacher claimed that anxious students are more withdrawn and successful, the other one asserted that they are more selfish. In addition, one of the teachers indicated that anxiety is something which is learnable.

Teacher 2 states that:

I think that anxious students are more withdrawn. They usually have targets and they study by focusing on it. For this reason, they are more successful.

Teacher 4 states that:

The students who are not anxious are usually calm in their every action. For this reason, they unwittingly influence the anxious ones in a positive way. In the same way, sometimes anxious students can affect the others negatively. Thus, we can say that the students can learn to be anxious from each other.

### **Summary**

In this section, all quantitative and qualitative data which were collected from students, parents and teachers are analyzed together in order to overview the anxiety level of students, the sources of the anxiety and the effect of SAC. The anxiety levels of the students according to the interviews are in the Table 19.

**Table 19**  
**Anxiety level of students**

Anxiety Level of Students	Participants
Low	S2, S5, P1, P2, P5, T2, T3
High	S1, S3, S4, S6, P3, P4, P6, T1, T4

As seen in the Table 19, most of the students and half of the parents and teachers claimed that the students in SAC have a high anxiety level. However, according to quantitative data, there are few students have high state and trait anxiety levels (see

Table 2 & 6). In addition, there is no significant difference in state and trait anxiety levels of the students according to their ages (see Table 5 & 9). Also, state anxiety level of female and male gifted students are not different but the trait anxiety level of female gifted students was significantly higher than male gifted students (see Table 3 & 7).

According to all participants, expectation, social interaction, pressure and exams are the most influential sources of anxiety (see Table 20). Unexpected situations, perfectionism, fear of making mistakes, fear of being alone, fear of being unhappy, wishing to have a good future and wishing to prove him/herself are also the reasons which increase the anxiety level of the students.

**Table 20**  
**The sources of anxiety of the students**

Sources of Anxiety	Participants
Expectation	S2, S4, S5, S6, T1, T3, T4
Pressure	S1, S5, T1, T2, T3
Social interaction	S1, S4, P1, P2, P6, T4
Exams	S3, S4, P6, T1, T3
Unexpected situation	S2
Perfectionism	P3
Fear of making mistakes	P1
Fear of being alone	P4
Fear of being unhappy	S5
Wishing to prove him/herself	T1
Wishing to prove him/herself	T1

As given in the Table 21, 8 out of 16 participants indicated that SAC help students to decrease anxiety level, 5 of them stated that there is no change.

Table 21

The effects of SAC on the anxiety level of the students

The effect of SAC	Participants
decreases	S1, S3, S5, S6, P4, T1, T3, T4
does not change	S2, S4, P2, P3, T2
no comment	P1, P5, P6

## **CHAPTER 5: DISCUSSION**

### **Introduction**

In this chapter, general findings of the research are discussed in detail. Firstly, overview of the study which contains general explanations of the results are given. Secondly, the major findings of the research are presented under the sub-sections “anxiety level of the students” and “possible sources of anxiety”. Lastly, implications for further research and limitations of the current study are discussed.

### **Overview of the study**

One of the main aim of the current study was to find out the anxiety level of the gifted students who are attending Science and Art Centers. The participants completed questionnaire including items related to state and trait anxiety level and also their demographic data. This is because, while finding out the anxiety level of the students, their gender differences and ages were also considered. The collected data were analyzed by using quantitative methods. The second purpose was to investigate the sources of these students’ anxiety. For this purpose, face-to-face semi-structured interviews were conducted with the students, teachers and parents. The data collected this part of the study analyzed with qualitative means. Findings from both quantitative and qualitative data analyses were presented in detail in Chapter 4.

## **The major findings**

### **Anxiety level of the high school gifted students who are attending Science and Art Centers (SACs)**

- High school gifted students in SACs have average state and trait anxiety levels (p.27 & p.30).
- For state anxiety level, there were 14 out of 44 students with high level anxiety and 23 students with low level anxiety (Table 2, p.27). For trait anxiety level, there were 14 out of 44 students with high level anxiety and 15 students with low level anxiety (Table 6, p.30).
- Most of the students and half of the parents and teachers claimed that the students have higher anxiety levels according to interviews (Table 19, p.45).
- While there was no significant difference between the state anxiety levels of female students and male students (Table 3, p.28), the trait anxiety level of female students was found higher than male students (Table 7, p.31).
- There was no difference in the state and trait anxiety levels of the students in respect to their ages (Table 5, p.29 & Table 9, p.32). However, since the limited sample size may be the reason, another study with larger sample size may be conducted to investigate the effects of the ages.

The results of the quantitative data analysis show that most of the high school gifted students who are attending SACs are not more or less anxious than their peers since their trait anxiety level was in average interval. In addition, the quantitative data were collected in the first ten minutes of lessons in SAC. For this reason, the state anxiety level of the students shows their attitudes about anxiety towards SAC. Since the level of state anxiety was low, it can be said that the students feel secure in SAC.

In the literature, there are studies which found similar results with the current study (Beer, 1991; Kanlı, 2011; Nail & Evans, 1997). In addition, Baker (1996) conducted a research that is aimed to find the stress level differences between gifted and non-gifted adolescents. The stress level of gifted students was neither higher nor lower than non-gifted students.

On the other hand, there are also studies that found contrary results (Tong & Yewchuk, 1996; Bakar & Ishak, 2014). The findings of these studies showed that the gifted students have a higher anxiety level than their peers.

As a third case in the literature, there are some studies which found that gifted students have low levels of anxiety (Scholwinski & Reynold, 1985; Shechtman & Silektor, 2012). There is another study of Erdem and Baloğlu (2018). That is interesting as their sample was driven among high school students who are attending Science and Art Centers in another city of Turkey. In their study, when the results of the participants were compared with the average value, a significant difference was found between the participants and normal adolescents in respect to the levels of anxiety and depression. This significant difference shows that the high school gifted students who are attending SAC have lower levels of anxiety and depression than their peers.

In addition to these, in the qualitative phase of the study, most of the students and half of the parents and teachers claimed that students have high level anxiety. Moreover, when the quantitative findings are analyzed participant to participant, it is seen that 14 students out of 44 have high level trait anxiety (See Table 6, p.30).

When all the dimensions of the current study are considered together and the differences in the literature are taken into account, it can be said that gifted students differ in terms of their anxiety levels like non-gifted students.

According to another finding of this research, the trait anxiety level of female students is more than the anxiety level of male students although their state anxiety levels are similar (see Table 3, p.28 & Table 7, p.31). This shows that although their attitudes towards SAC are parallel, their attitudes towards life are different.

There are several studies in the literature showing that female participants have higher anxiety levels than males (Tong & Yewchuk, 1996). These studies vary according to the type of anxiety they examined. Lewinsohn P., Gotlib, Lewinsohn M., Seeley and Allen (1998) carried out a research about general anxiety disorders and anxiety symptoms in adolescents. The research ended with the finding that female adolescents are more anxious than males as the current study. In another research conducted by Udo, Ramsey and Mallow (2004), the finding is that female students have higher science anxiety than male students. When the findings of the current study and these studies are considered together, having higher general anxiety or trait anxiety may increase female students' anxiety levels of specific subjects such as science anxiety.

But, contrary to the findings of all these researches and the current study, there are also some researches which found no differences between female and male anxiety levels (Erdem & Baloglu, 2018). In the study which was conducted by Hankin (1997), the female students reported more depressive symptoms than male.

Although, levels of depression and anxiety were highly correlated, there was no differences in the anxiety levels with respect to gender.

According to another finding of the current study, the anxiety levels of the students did not change with respect to age. Similar results were found in another research in the literature (Erdem & Baloglu, 2018). However, in the literature, there are contrary findings (Aljughaiman & Tan, 2008; Kanlı, 2011). Differently from the current study, the participants of these two researches were in middle-school. So, it can be said that the anxiety level of students differs according to age while they are children. However, in the adolescence period, they have similar anxiety levels.

### **Possible sources of anxiety of high school gifted students who are attending SACs**

- While according to the students and the teachers, expectations and pressure are the most affecting factors to the anxiety, none of the parents mentioned about that (Table 20, p.46).
- Both social interaction and exams (especially national exams such as university entrance exam) are important factors for anxiety that are accepted by students, teachers and parents (Table 20, p.46).
- Unexpected situations and fear of being unhappy are the factors that are given by the students; perfectionism, fear of making mistakes and fear of being alone are the factors given by parents; wishing to have a good future and wishing to prove him/herself are the factors given by teachers (Table 20, p.46)
- Anxious people affect the people around them negatively and anxious parents increase their children's anxieties.

- According to most of the students and the teachers, SAC helps students in order to decrease anxiety level. The reasons are friendships, academic studies and teachers in SAC (Table 21, p.47). However, parents preferred not to comment about this issue.

According to the qualitative part of this study, the most important sources of anxiety were expectation and pressure (See Table 21, p.47). The students complained about their friends and teachers from their schools, their relatives and especially their parents. The reason for this is, most of them remarked that these expectations and pressure make them more anxious. All of the teachers also stated that the parents and the teachers in students' schools affect the anxiety level of the students negatively because of their great expectations and pressure. While the students and the teachers stated the expectation and pressure are the common sources of anxiety, parents did not mention them. The first reason may be that the parents do not realize their effect on the students. The other reason may be that they may be supposing that their expectations or pressure are ordinary since all parents around them have the same attitude. Since they want their child to be successful, they may be think that this is the only way in order to motivate their child. Regardless of the reasons, the students stated that they are affected by expectations and pressure so much and negatively.

In the literature, there are other studies which found that expectation and pressure cause unpleasant feelings. Huberty (2009) claimed that high parental expectations may affect the children's both state and trait anxieties. Hoge and Renzulli (1993) argued that unrealistic expectations from parents and others may affect the self-concepts of the gifted students. In Ford's (1989) research, it is mentioned that there are different expectations on gifted students. For example, expectation of being

perfect in every area, expectation of getting always high grades, expectation of being behaviorally perfect. These expectations originated from parents, teachers, siblings or other relatives cause stress to rise. The findings of the current study are similar with these expectations and their sources. In the interviews, the students greatly mentioned the expectation of getting always high grades and being perfect in every area from their parents, teachers, counsellors and relatives and these expectations' negative effects on them. Contradistinctively, there was a student who claimed that all these expectations increase his/her motivation. According to her/him, s/he wants to be successful and studies more, when s/he feels the expectations of her/his teachers. However, for the current study, this student is an exception.

In the literature, there is another study which gave surprising results which support the current study. This study conducted by Karnes and Oehler-Stinnett (1986) aimed to find life events which make gifted adolescents stressed. According to the findings, the participants stated that pressure from parents to perform academically is more stressful than breaking up with a boy/girlfriend or being hospitalized. In addition, it was found that pressure from parents makes them more stressful than pressure from teachers or problems with peers.

On the other hand, there is also a research which shows that the expectations may not increase anxiety. In the study of Clinkenbeard (1991), the students complained about the great expectations on them. However, according to the findings of the research, these expectations from their teachers and siblings did not affect their anxiety level. Apart from the expectations and pressure, there is another source which increase anxiety and is about the people around gifted students. In the interviews, the students

mentioned that anxious people around them increase their anxiety levels. Especially, if their parents are anxious, they make the students more anxious (p.35). According to the students, the reason is that when their families are anxious, they put more pressure on their children. Since pressure is one the most affecting factors to anxiety for the students, it increases their anxieties. In respect to this, some of the parents think that they reflect their worries to their children willingly or unwillingly (See Table 16, p.41). So, having anxious parents is also one of the factors which increase the anxiety levels. In addition, one of the teachers claimed that anxiety is learnable and the students can spread their worries or their calmness (p.45). Regarding this, some students believe that anxious people around themselves also increases their anxieties (p.35). When these two thoughts are combined, it can be said that anxious people affect people around them negatively.

This finding of the current study is consistent with the results in the literature. Alisinanoğlu and Ulutaş (2003) found that there is a positively significant correlation between children and their mother's trait anxiety levels in their research. Additionally, the research of Kozacıoğlu (1984) shows that there is a positively significant correlation between children and the attitude of their mother. In this research, one of the important factors, that is supposed in the attitude of the mother and that affects the anxiety of children, is pressure just like in this research. The findings of this research show that exams also have a great effect on the students. Especially, national exams, such as university entrance exam, make the students anxious according to the students, teachers and parents. In the literature, there are many research about exam anxiety. Beer (1991) found that the Test Anxiety Scale scores and the General Anxiety Scale scores are significantly correlated.

According to the other findings of the current study, social interaction is one of the most effective factors on anxiety. The importance of it was remarked by the students, teachers and parents. In the literature, this situation is referred as shyness or social anxiety. It is difficult to discriminate that this source of anxiety is just shyness or social anxiety but both are very common not only for gifted but also for everyone. The social anxiety which is the fear of being judged and evaluated negatively by others is the third largest psychological disorder in the United States (Richards, n.d.). Most of the students and the teachers indicated that SAC decreases the anxiety levels of the students. The students claimed that their friends and their teachers in SAC affect them positively. This is because, they believe that their friends and teachers understand them. In addition, thanks to their project-based works and their lessons, they feel that they have succeed. Thus, having people who understand their feelings around them and feeling of being able to succeed decrease the anxiety levels of the students. However, only one parent mentioned its positive effects. Half of them preferred not to comment about issue and the others claimed that it has no effect.

### **Implications for practice**

The results of the study showed that parents are not aware of their effects on their children. The expectations and pressure of the parents make the gifted students more anxious. For this reason, they should be aware of their effect and they may try to set realizable expectations with their children. So, they should be open to get help from counsellors and teachers in SACs. In addition, listening to their children and knowing their goals about their futures can be helpful for parents in this issue.

In order to reduce negative effects of exam and social interaction anxiety, students may consult with their teachers and counsellors. In addition, according to the findings of the current research SACs help students to decrease their anxiety level. Thus, if gifted students attend SACs and participate their lessons or their projects regularly, they may decrease their anxiety level.

Another finding of the study is that anxious people increase the anxiety level of people around them. Thus, anxious people around gifted students should be conscious that they may increase the anxiety level of the students. Especially, parents and teachers should be careful and if they think that they are anxious, they should get in contact with counselors to not reflect their anxiety to students.

Additionally, since female students have higher trait anxiety than male students, teachers and parents should care and guide them to decrease their anxiety level. Finally, SACs may organize some seminars to raise awareness about anxiety for the students, teachers and also parents.

### **Implications for further research**

Since the participants of the current study was limited by high school gifted students who are attending SAC in Ankara, other studies can be carried out in other cities with different age groups.

In the qualitative part of current study, data were collected from students, teachers and parents. In order to get deeper information, siblings may be included in sample

as well. Thus, parents' different attitudes towards gifted child and normal child can be compared.

In this study, the interviews were short because of a limited time. Another qualitative research can be conducted to get comprehensive information about sources of anxiety with more questions and longer time.

### **Limitations**

The main limitation of the study is the number of participants. Since 44 participants for qualitative part and 16 participants for quantitative part, it is not possible to generalize results and interpretations for Turkey. In addition, the sample is limited with only one SAC in Ankara. Since there are 135 SACs in 81 cities of Turkey, the findings cannot generalize also for all SACs.

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## **APPENDICES**

### **Appendix A: State Anxiety Inventory in Turkish**

#### **Kendini değerlendirme formu**

C. D. Spilberger, R. L. Gorsuch ve R. Lushene tarafından İngilizce olarak geliştirilmiş ve N. Öner ile A. Lecompte tarafından Türkçeye adapte edilmiştir.

#### **STAI FORM TX – I**

Cinsiyet: .....

Yaş: .....

Tarih: ...../...../.....

**YÖNERGE:** Aşağıda kişilerin kendilerine ait duygularını anlatmada kullandıkları birtakım ifadeler verilmiştir. Her ifadeyi okuyun, sonra da o anda nasıl hissettiğinizi ifadelerin sağ tarafındaki parantezlerden uygun olanını işaretleyerek belirtiniz. Doğru ya da yanlış cevap yoktur. Herhangi bir ifadenin üzerinde fazla zaman harcamadan **anında** nasıl hissettiğinizi gösteren cevabı işaretleyin. İşminizi belirtmenize gerek yoktur, cevaplarınız gizli kalacaktır.

		<b>Hiç</b>	<b>Biraz</b>	<b>Çok</b>	<b>Tamamıyla</b>
1.	Şu anda sakinim	(1)	(2)	(3)	(4)
2.	Kendimi emniyette hissediyorum	(1)	(2)	(3)	(4)
3	Su anda sinirlerim gergin	(1)	(2)	(3)	(4)
4	Pişmanlık duygusu içindeyim	(1)	(2)	(3)	(4)
5.	Şu anda huzur içindeyim	(1)	(2)	(3)	(4)
6	Şu anda hiç keyfim yok	(1)	(2)	(3)	(4)
7	Başıma geleceklerden endişe ediyorum	(1)	(2)	(3)	(4)
8.	Kendimi dinlenmiş hissediyorum	(1)	(2)	(3)	(4)
9	Şu anda kaygılıyım	(1)	(2)	(3)	(4)
10.	Kendimi rahat hissediyorum	(1)	(2)	(3)	(4)
11.	Kendime güvenim var	(1)	(2)	(3)	(4)
12	Şu anda asabım bozuk	(1)	(2)	(3)	(4)
13	Çok sınırlıyorum	(1)	(2)	(3)	(4)
14	Sinirlerimin çok gergin olduğunu hissediyorum	(1)	(2)	(3)	(4)
15.	Kendimi rahatlampış hissediyorum	(1)	(2)	(3)	(4)
16.	Şu anda halimden memnunum	(1)	(2)	(3)	(4)
17	Şu anda endişeliyim	(1)	(2)	(3)	(4)
18	Heyecandan kendimi şaşkına dönmüş hissediyorum	(1)	(2)	(3)	(4)
19.	Şu anda sevinçliyim	(1)	(2)	(3)	(4)
20.	Şu anda keyfim yerinde.	(1)	(2)	(3)	(4)

## **Appendix B: State Anxiety Inventory in English**

### **Self-Evaluation Questionnaire**

Developed by Charles D. Spielberger in collaboration with R. L. Gorsuch, R. Lushene, P. R. Vagg and G. A. Jacobs.

#### **STAI FORM TX – I**

Gender: .....

Age: .....

Date: ...../...../.....

**DIRECTIONS:** A number of statements which people have used to describe themselves are given below. Read each statement and then blacken the appropriate circle to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best. There is no need to write your name, your answers will be hidden.

		Not at all	Somewhat	Moderately so	Very much so
1.	I feel calm	(1)	(2)	(3)	(4)
2.	I feel secure	(1)	(2)	(3)	(4)
3	I am tense	(1)	(2)	(3)	(4)
4	I feel strained	(1)	(2)	(3)	(4)
5.	I feel at ease	(1)	(2)	(3)	(4)
6	I feel upset	(1)	(2)	(3)	(4)
7	I am presently worrying over possible misfortunes	(1)	(2)	(3)	(4)
8.	I feel satisfied	(1)	(2)	(3)	(4)
9	I feel frightened	(1)	(2)	(3)	(4)
10.	I feel comfortable	(1)	(2)	(3)	(4)
11.	I feel self-confident	(1)	(2)	(3)	(4)
12	I feel nervous	(1)	(2)	(3)	(4)
13	I am jittery	(1)	(2)	(3)	(4)
14	I feel indecisive	(1)	(2)	(3)	(4)
15.	I am relaxed	(1)	(2)	(3)	(4)
16.	I feel content	(1)	(2)	(3)	(4)
17	I am worried	(1)	(2)	(3)	(4)
18	I feel confused	(1)	(2)	(3)	(4)
19.	I feel steady	(1)	(2)	(3)	(4)
20.	I feel pleasant	(1)	(2)	(3)	(4)

## **Appendix C: Trait Anxiety Inventory**

### **Kendini değerlendirme formu**

C. D. Spilberger, R. L. Gorsuch ve R. Lushene tarafından İngilizce olarak geliştirilmiş ve N. Öner ile A. Lecompte tarafından Türkçeye adapte edilmiştir.

#### **STAI FORM TX – 2**

Cinsiyet: .....

Yaş: .....

Tarih: ...../...../.....

**YÖNERGE:** Aşağıda kişilerin kendilerine ait duygularını anlatmada kullandıkları birtakım ifadeler verilmiştir. Her ifadeyi okuyun, sonra da o anda nasıl hissettiğinizi ifadelerin sağ tarafındaki parantezlerden uygun olanını işaretleyerek belirtiniz. Doğru ya da yanlış cevap yoktur. Herhangi bir ifadenin üzerinde fazla zaman harcamadan **anında** nasıl hissettiğinizi gösteren cevabı işaretleyin. İşminizi belirtmenize gerek yoktur, cevaplarınız gizli kalacaktır.

		Hemen hemen hiçbir zaman	Bazen	Cok zaman	Hemen hemen her zaman
21.	Genellikle keyfim yerindedir	(1)	(2)	(3)	(4)
22	Genellikle çabuk yorulurum	(1)	(2)	(3)	(4)
23	Genellikle kolay ağlarım	(1)	(2)	(3)	(4)
24	Başkaları kadar mutlu olmak isterim	(1)	(2)	(3)	(4)
25	Çabuk karar veremediğim için fırsatları kaçırırım	(1)	(2)	(3)	(4)
26.	Kendimi dinlenmiş hissediyorum	(1)	(2)	(3)	(4)
27.	Genellikle sakin, kendine hâkim ve soğukkanlıyım	(1)	(2)	(3)	(4)
28	Güçlüklerin yenemeyeceğim kadar biriktigini hissederim	(1)	(2)	(3)	(4)
29	Önemsiz şeyler hakkında endişelenirim	(1)	(2)	(3)	(4)
30.	Genellikle mutluyum	(1)	(2)	(3)	(4)
31	Her şeyi ciddiye alır ve endişelenirim	(1)	(2)	(3)	(4)
32	Genellikle kendime güvenim yoktur	(1)	(2)	(3)	(4)
33.	Genellikle kendimi emniyyette hissederim	(1)	(2)	(3)	(4)
34	Sıkıntılı ve güç durumlarla karşılaşmaktan kaçınırım	(1)	(2)	(3)	(4)
35	Genellikle kendimi üzünlü hissederim	(1)	(2)	(3)	(4)
36.	Genellikle hayatmdan memnunum	(1)	(2)	(3)	(4)
37	Olur, olmaz düşünceler beni rahatsız eder	(1)	(2)	(3)	(4)
38	Hayal kırıklıklarını öylesine ciddiye alırıım ki hiç unutamam	(1)	(2)	(3)	(4)
39.	Akılda başında ve kararlı bir insanım	(1)	(2)	(3)	(4)
40	Son zamanlarda kafama takılan konular beni tedirgin ediyor	(1)	(2)	(3)	(4)

## **Appendix D: Trait Anxiety Inventory**

### **Self-Evaluation Questionnaire**

Developed by Charles D. Spielberger in collaboration with R. L. Gorsuch, R. Lushene, P. R. Vagg and G. A. Jacobs.

#### **STAI FORM TX – 2**

Gender: .....

Age: .....

Date: ...../...../.....

**DIRECTIONS:** A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate you generally feel. There is no right or wrong answer. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel. There is no need to write your name, your answers will be hidden.

		Almost never	Sometimes	Often	Almost always
21.	I feel pleasant	(1)	(2)	(3)	(4)
22	I feel nervous and restless	(1)	(2)	(3)	(4)
23	I feel satisfied with myself	(1)	(2)	(3)	(4)
24	I wish I could be as happy as others seem to be	(1)	(2)	(3)	(4)
25	I feel like a failure	(1)	(2)	(3)	(4)
26.	I feel rested	(1)	(2)	(3)	(4)
27.	I am “calm, cool, and collected”	(1)	(2)	(3)	(4)
28	I feel that difficulties are piling up so that I cannot overcome them	(1)	(2)	(3)	(4)
29	I worry too much over something that really doesn’t matter	(1)	(2)	(3)	(4)
30.	I am happy	(1)	(2)	(3)	(4)
31	I have disturbing thoughts	(1)	(2)	(3)	(4)
32	I lack self-confidence	(1)	(2)	(3)	(4)
33.	I feel secure	(1)	(2)	(3)	(4)
34	I make decisions easily	(1)	(2)	(3)	(4)
35	I feel inadequate	(1)	(2)	(3)	(4)
36.	I am content	(1)	(2)	(3)	(4)
37	Some unimportant thought runs through my mind and bothers me	(1)	(2)	(3)	(4)
38	I take disappointments so keenly that I cannot put them out of my mind	(1)	(2)	(3)	(4)
39.	I am a steady person	(1)	(2)	(3)	(4)
40	I get in a state of tension or turmoil as I think over my recent concerns and interests	(1)	(2)	(3)	(4)

## **Appendix E: Student Interview Questions**

- 1.** Okul, aile ve arkadaş ortamlarında genel olarak kaygılı ya da endişeli misin?
- 2.** BİLSEM'e neden geliyorsun?
  - Geleceğe yönelik planların neler?
  - Gelecek açısından endişe ve bekłentilerin neler?
- 3.** BİLSEM'deki arkadaş çevren, arkadaşlık ilişkilerin nasıl?
- 4.** Hangi alanda eğitimime devam etmek istersin?
  - Hedefinle ya da hedefine ulaşmakla ilgili kaygıların var mı?
- 5.** BİLSEM' e ne zamandan beri devam ediyorsun ve merkeze gelmek kaygı seviyenin nasıl etkiledi?
  - Kaygı seviyende tanımladığın değişmenin kaynağı nedir? (Yaşıtlarının, branş öğretmenlerinin, rehber öğretmenlerinin ya da merkezdeki derslerin)
  - Neler veya hangi durumlar size kaygı verir?
- 6.** Ailenin, akrabalarının kaygı seviyen üzerinde bir etkisi var mı?
  - Varsa nasıl?
  - Çevrenin senden bekłentilerinin kaygı seviyene etkisi oluyor mu?
- 7.** Çevrendeki insanlardan (aile fertleri, akraba, arkadaş çevresi gibi ...) kaygı seviyesinin yüksek olduğunu düşündüğün biri var mı?

## **Appendix F: Student Interview Questions**

- 1.** Do you usually anxious in your school, or nearby your family and friends?
- 2.** Why do you come to SAC?
  - What are your plans for the future?
  - What are your concerns and expectations for the future?
- 3.** How are your friendships in SAC?
- 4.** In which field would you like to continue your education?
  - Do you have any concern about your goal or achieving your goal?
- 5.** How long have you been attending SAC and how has it affected your level of anxiety?
  - What is the source of this change? (Peers, teachers, counsellors, courses, projects)
  - Which situations make you anxious?
- 6.** Do your family or your relatives have any effect on your level of anxiety?
  - If yes, how?
- 7.** Do the expectations of your family, relatives and friends from you affect your anxiety level?
- 8.** Do you think someone you know has a high level anxiety (family members, relatives, friends, etc.)?

## **Appendix G: Parent Interview Questions (Turkish)**

- 1.** Çocuğunuzun BİLSEM'e başlamasından sonra kaygı seviyesinde / heyecanında / konsantrasyonunda bir değişiklik seziyor musunuz?
  - Ettiyseniz, nasıl bir değişim ve sizce neden?
- 2.** Çocuğunuzun kaygı seviyesiyle ilgili ne düşünüyorsunuz?
- 3.** Çocuğunuzun kaygı duyduğu şeyler nelerdir?
- 4.** Kendinizi ya da aile üyelerinizi kaygılı olarak nitelendirir misiniz?
- 5.** Siz veya eşiniz çocuğunuzun geleceğiyle (meslek ya da üniversite seçimi vb.), seçimleriyle (arkadaş, okul, ders vb.), yetiği ortamlarla ilgili kaygılarıyor musunuz?

## **Appendix H: Parent Interview Questions (English)**

- 1.** Do you notice any change in your child's anxiety level, excitement or concentration after s/he started SAC?
  - If yes, how and why?
- 2.** What do you think about your child's level of anxiety?
- 3.** What are your child's concerns?
- 4.** Do you consider yourself or your family members anxious?
- 5.** Do you or your partner have any worries about your child's future (choice of profession or university, etc.), her/his choices (friends, schools, courses, etc.) and the environment in s/he grows?

## **Appendix J: Teacher Interview Questions (Turkish)**

1. Merkezinize devam eden öğrencilerin kaygı düzeylerini nasıl değerlendirirsiniz?

Beklentilerinizden farklı bir durumla karşılaşıyor musunuz?

  - Farklıysa nasıl ve neden?
2. Öğrencilerinizin BİLSEM' e başlamasından itibaren kaygı seviyelerinde bir değişim gözlemliyor musunuz?

  - Gözlemliyorsanız nasıl ve neden?
  - Öğrencilerin kaygılarıyla baş etmesi için aldığınız önlemler var mı?
3. Kurumunuza devam eden öğrencilerin kaygı düzeylerindeki değişmeyi hangi etmenlere bağlıyorsunuz?
4. Yüksek kaygı seviyelerine sahip olduğunu düşündüğünüz öğrencileriniz düşük olduğunu düşündüklerinize göre hangi açılardan farklılık gösteriyor?

  - Akademik
  - Sosyal
  - Kendini ifade etme
  - Doğru seçim yapabilme
  - Planlı çalışma

## **Appendix I: Teacher Interview Questions (English)**

- 1.** How do you assess the anxiety level of the students who are attending your center?
  - Do you encounter a situation which is different from your expectations?
  - If yes, how and why?
- 2.** Do you observe any change in anxiety level of the students since they started SAC?
  - If yes, how and why?
  - Are there any precautions you have taken to help students to deal with their anxiety?
- 3.** What are the reasons of the change in the anxiety level of the students who are attending SAC?
- 4.** What do you think are the differences between the students who have high level anxiety and the students who have low anxiety levels?
  - Academic
  - Social
  - Expressing yourself
  - Making the right choice
  - Planned study

## Appendix K: Permission Letter

