

**EXAMINATION OF TEST ANXIETY LEVEL OF 10-13 YEAR OLD STUDENTS:  
THE CASE OF KAYSERİ**

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**ABSTRACT**

The aim of this research is to examine the anxiety levels of the students aged at 10-13 and determine whether anxiety levels vary depending on some variables. The current study employed the descriptive and generic research design. The sample of the research consists of 132 students in the 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> grades in the public schools in the central province of the city of Kayseri in the 2016-2017 school year. The data of the study were collected by using a demographic information form and the Children's Test anxiety Scale. Independent samples T-test, ANOVA and Pearson's correlation analysis were used in the analysis of the collected data in the frame of inferential statistics. According to the findings, it was determined that there is a significant correlation between age and test anxiety. It was also found that the autonomic reactions of the female students were more than the male students.

**Keywords:** Test anxiety, students, age, autonomic reaction.

**10-13 YAŞ ARALIĞINDAKİ ÖĞRENCİLERİN SINAV KAYGI DÜZEYİNİN İNCELENMESİ:  
KAYSERİ İL MERKEZİ ÖRNEĞİ**

**ÖZ**

Bu araştırmanın amacı 10-13 yaş aralığındaki öğrencilerin sınav kaygı düzeylerini incelemek ve çeşitli bilgilere göre farklılaşıp farklılaşmadığını saptamaktır. Araştırma betimleyici ve genelleyici araştırma tasarımı çerçevesinde düzenlenmiştir. Araştırma örneklemini 2016-2017 eğitim döneminde Kayseri il merkezine bağlı devlet okullarında 4., 5., ve 6. Sınıflarda öğrenim gören 132 öğrenci oluşturmaktadır. Araştırmanın verileri Demografik Bilgi Formu ve Çocuklarda Sınav Kaygısı Ölçeği ile toplanmıştır. Elde edilen verilerin analizinde çıkarımsal istatistikler çerçevesinde Bağımsız Örneklem T-Testi, Bağımsız Gruplar T-Testi, ANOVA ve Pearson Korelasyon analizi kullanılmıştır. Elde edilen bulgulara göre yaş ile sınav kaygısı arasında anlamlı bir ilişki olduğu belirlenmiştir. Ayrıca kız öğrencilerin otonom tepki düzeylerinin erkek öğrencilere kıyasla daha yüksek olduğu görülmüştür.

**Anahtar Kelimeler:** Sınav kaygısı, öğrenciler, yaş, otonom tepki.

## INTRODUCTION

Learning can be defined as changes leaving relatively permanent traces in potential behaviors and occurring as a result of experiences, not as a result of temporary changes resulting from growth or physical changes (Senemoğlu, 2004). For the individual to struggle with the difficulties experienced in the learning processes to accomplish future goals, he/she needs to feel at least a bit anxious. One of the basic emotions, anxiety arises from not the incidence itself making the person disturbed but from the meaning of this incidence for the person (Alyaprak, 2006). Anxiety is defined as an emotional state making the person feels weak against a threat and as a disturbing emotional state. In general, there are three sources of anxiety; personality traits, conditions and special cases: While personality traits-induced anxiety is defined as the trait anxiety which is continuous, conditions-induced anxiety is defined as the state anxiety experienced in some certain states and temporarily. Finally, there is a type of anxiety induced by special cases, which is known as a sense of fear against special cases (Ellis, 1994). In the Turkish National Education System, how the education lives of many students will proceed is determined by central exams. Students are seen to encounter some undesirable situations during the exam preparation and these exams are important to shape their lives. Sometimes both students and parents can exaggerate the results of these exams and any failure can be seen as the end of the world. Thus, these exams can be an important source of anxiety.

When anxiety becomes debilitating, both academic achievement and exam performance are negatively affected. Research investigating the relationship between test anxiety and academic achievement or between anxiety and performance reported findings indicating that moderate level of anxiety can make positive contributions to students' academic achievement and performance. However, in cases where anxiety level is very high, students' academic achievement is negatively affected (Eksi, 1998; Kısa, 1996). Some research findings in this context (Öner, 1972; Culler and Holahan, 1980; Başarır, 1990; Erkan, 1991; Cüceloğlu, 1991; R.A.M., 1998; Cassady and Johnson, 2002; Yıldırım and Ergene, 2003; Cassady, 2004; Chapell, 2005; Bacanlı and Sürücü, 2006) have pointed to the necessity of examining students' test anxiety.

There are three main factors leading to emergence of test anxiety in students. These are; family expectations and pressures (Büyükkaragöz, 1990; Christenson et al., 1992; Yıldız, 2007), school's expectations and policies (Yapıcı and Yapıcı, 2005), students' personality traits (Woolfolk, 1993; Gülen, 1993; Çankaya, 1997; Ekşi, 1998; Lufi and Darliuk, 2005; Alyaprak, 2006). Test anxiety was first started to be scientifically investigated in 1960s by Richard Alpert. Alpert realized that the pressure he felt during the exams caused him to be unsuccessful, while the pressure felt by his colleague Ralph Haber during the exams helped him to have better results. Thus, as a result of the studies by Alpert and Haber, it was found that there are two types of anxious students. First type of students are those whose achievement falls due to anxiety and the second type of students are those motivated by the anxiety felt to be successful in the exam, thus becoming more successful (Cited in Keskin, 2001).

In the research focusing on the effect of test anxiety on academic performance, it has been observed that as the students with high levels of test anxiety view the exam as a difficult situation, do not focus their attention on the exam and display low performance during the exam, they fail in the exam. Moreover, as they cannot prepare for the exam adequately, they cannot make healthy use of their cognitive competence; therefore, they experience anxiety (Cassady, 2004).

Test anxiety; according to Spielberger (1972), is an unpleasant feeling that creates tension in the individual preventing him/her from exhibiting his/her actual performance in the face of a formal exam or evaluation. Liebert ve Morris (1970) found that test anxiety has two dimensions: apprehension and affectiveness. While apprehension is related to the cognitive aspect of performance, affectiveness is related to the physiological stimulations of the individual such as rapid heart rate, stomach contraction, etc. It was observed that there is a negative correlation between apprehension and academic achievement.

Zeidner (2007) defines test anxiety as unpleasant emotions and emotive arousals experienced by the student during an exam or any kind of assessment. Test anxiety has similar characteristics to general anxiety. According to Dykeman (1993), there are two views about the source of test anxiety. This first view is that students having lack of learning and study skills and feeling inadequate in the stage or organization of the exam preparation process exhibit high levels of test anxiety. In this regard, some students do not have organizational skills required to recall information thus they experience high levels of anxiety in case of exams. The problem of such students is not the exam itself, but the case of preparing for the exam. According to the second view, the main source of anxiety is unnecessary and negative feelings of students felt during the exam. If students have developed negative images about themselves as a result of past experiences, they may have learned helplessness (Yurdabakan, 2005).

Mandler and Sarason stated that exam conditions give rise to the sense of learned anxiety. According to them, this anxiety brings about helplessness aroused by feelings of incompetence, increasing expectation of punishment, decreasing self-esteem and complete avoidance of the event (Geen, 1985). Such factors are expected to negatively affect students' exam performance and perseverance in accomplishing their educational objectives. A great deal of research has revealed that test anxiety is directly associated with the individual's performance and negatively affects academic achievement (Dawson, 2001; Carrier et al., 1984; Mwamwenda, 1994). It has also been determined that test anxiety starts too long before the exam (Şahin et al., 2006), and the test anxiety of the students with attention and academic skill deficits increases and their performance decreases (Hunsley, 1985). Moreover, some research found a correlation between test anxiety and being evaluated (Cronbach and Snow, 1977: Machr and Midgley, 1991: Pintrich and Schraunben, 1992: Pintrich and Schunk, 1996: cited in Dawson, 2001; Rocklin and Thomson, 1985; Hunsley, 1985; Chapin, 1989). Test anxiety can deteriorate performance skill and personal development (Enright, Baldo and Wykes, 2000). Besides this research, there are some other studies aiming to explore how to alleviate test anxiety.

When the research conducted on test anxiety in Turkey is examined, it is seen while there are some studies reporting no significant correlation between test anxiety and gender (Yenilmez and Özbey, 2006; Yenilmez and Özabacı, 2003), there are some other studies showing that girls have significantly higher anxiety scores than boys (Bacanlı & Sürücü, 2006; Oksal, Durmaz & Akın, 2013). In terms of grade level variable, no significant difference was found between the test anxiety levels of the 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> graders (Oksal, Durmaz & Akın, 2013) and also between the test anxiety levels of high school students (Yenilmez and Özabacı, 2003), in another study, it was found that the 5<sup>th</sup> grade students' math anxiety level was found to be significantly higher than those of the 6<sup>th</sup> and 7<sup>th</sup> grade students (Yenilmez & Özbey, 2006).

Bahçeci (2009) investigated the effect of using portfolio assessment instead of traditional assessment on test anxiety and study behavior. Similarly, İzgi and Gücüm (2012) investigated the effects of portfolio assessment and traditional assessment on elementary school students' test anxiety.

The purpose of the current study is to determine whether test anxiety varies significantly depending on gender and grade level. Given that there are different findings reported by few studies in the literature on children's test anxiety, the current study is believed to make some contributions to further research to be conducted to prevent and reduce test anxiety in children.

## METHOD

### Research Model

The current study was designed as a descriptive and generic study to investigate the test anxiety levels of 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> grade students from the city of Kayseri and to test the research hypotheses. Generic research requires the testing of a hypothesis. Many of the sociological studies have been conducted in line with this design. In a study in which generic research method is employed, descriptive research design should also be employed. In such research, it is intended to reveal how frequent the characteristic of interest exists in a certain population (Aziz, 2017).

### Universe and Sampling

The universe of the current research is comprised of the 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> grade students attending the state schools in the city of Kayseri. The sampling of the study consists of a total of 132 students, of whom 35 (26.5%) are 4<sup>th</sup> grade students, 42 (31.8%) are 5<sup>th</sup> grade students and 55 (41.7%) are 6<sup>th</sup> grade students attending state schools in the city of Kayseri in 2016-2017 school year.

### Data Collection Process

In the data collection process, the scale and the demographic information form were administered in the first week of the second term of 2016-2017 school year. The application of these data collection tools lasted for 30

minutes. The research data were collected by using two different information forms. The questions in the first of these forms include a) Demographic information form, b) Children's Test anxiety Scale.

### Data Collection Tools

The data collection tools used in the current study are; the Children's Test Anxiety Scale (Wren & Benson, 2004) adapted to Turkish by Aydın and Bulgan (2017) and the personal information form developed by the researcher.

### Children's Test Anxiety Scale (CTAS)

In the current study, the CTAS-Children's Test Anxiety Scale developed by Wren and Benson (2004) and adapted to Turkish Aydın and Bulgan (2017) into Turkish was used. The original scale is in English and consists of three dimensions and 30 items. The scale items are organized in the form of 4-point Likert scale (1= Almost Never, 2= Sometimes, 3= Often, 4= Almost Always).

There are no reverse-coded items in the scale. The original scale is a self-report scale having 30 items and three sub-dimensions. The Turkish form was administered to the 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> grade students. The sub-dimensions of the scale are Thoughts, Off-Task Behaviors and Autonomic Reactions. In the pilot study, Cronbach alpha coefficient was calculated for each sub-dimension and it was found to be .89, .78 and .85 for the sub-dimensions of Thoughts, Off-task Behaviors and Autonomic Reactions, respectively. The Cronbach Alpha coefficient was found to be .92 for the whole scale. Confirmatory factor analysis conducted to confirm the three-factor structure of the scale revealed that model fit is better than other alternative models ( $\chi^2= 853$ ,  $\chi^2/df= 2.12$ , RMSEA= .07, TLI= .80). Correlation coefficients between the sub-dimensions were found to be as follows; Thoughts and Off-task Behaviors (.56), Thoughts and Autonomic Reactions (.81) and Off-task Behaviors Autonomic Reactions (.47). CTAS consists of three sub-dimensions, which are Thoughts, Off-task Behaviors and Autonomic Reactions. From the scale, in addition to calculating separate scores for the sub-dimensions, a total score can be calculated for the whole scale. The distribution of the items across the sub-dimensions are as follows: items 1, 5, 6, 11, 13, 15, 16, 19, 21, 24, 27 and 29 in the Thoughts sub-dimension; items 3, 7, 12, 14, 18, 22, 26, and 30 in the Off-task Behaviors sub-dimension and items 2, 4, 8, 10, 17, 20, 23, 25 and 28 in the Autonomic Reactions sub-dimension.

The lowest score to be taken from the scale is 30 and the highest score is 120. While low scores indicate that students do not feel anxious while taking a test and their anxiety levels are low, high scores mean that they feel nervous while taking a test and their anxiety levels are high.

### Examination of the Reliability of the Data Collection Tools and Normality Distribution

In this section, the reliability level of the 30-item Test Anxiety Scale was tested by calculating the Cronbach Alpha internal consistency score and the normality of the distribution was tested by using the Kolmogorov-Smirnov test and the results are presented in Table 1.

**Table 1.** Reliability of the Scales and Normality Test Results

	Cronbach's Alpha		Kolmogorov-Smirnov	
	$\alpha$	The Number of Items	Z	p
Test Anxiety	,875	30	,936	,345
Thoughts	,821	13	,901	,392
Off-task Behaviors	,662	8	1,345	,051
Autonomic Reactions	,721	9	1,327	,059

As can be seen in Table, the Test Anxiety Scale internal consistency score was found to be over the acceptable level  $\alpha=0.600$ 'ün (Kalaycı, 2010); thus, it is highly reliable. The internal consistency levels of the sub-dimensions were found to be over the acceptable level; the Thoughts sub-dimension having 13 items is highly reliable; the Off-task Behaviors sub-dimension having 8 items and the Autonomic Reactions having 9 items were found to be considerably reliable. In order to determine the fit of the scores taken from the scale and the sub-dimensions to normal distribution, Kolmogorov-Smirnov test was run and all the variables were found to be not differing from the normal distribution ( $p>0.05$ ).

### Data Analysis

Within the context of the preliminary analysis of the study, Cronbach Alpha internal consistency coefficient was used to test the reliability of the Likert-type scale. In the analysis of the demographic data obtained in the study, descriptive statistics were used and percentages and frequencies were calculated. The scores for the whole scale and the sub-dimensions were calculated by summing the scores taken from each item. The fit of the calculated scores to the normal distribution was tested by means of Kolmogorov-Smirnov test and the data were found to be converging to the normal distribution. One-way variance analysis was used to test whether the scores vary significantly depending on the age and grade level variables. Pearson correlation analysis was run to test whether test anxiety is correlated with the age variable and the frequency of thinking about other things.

### Research Hypotheses

H1: The test anxiety level varies significantly depending on gender.

H2: There is a significant correlation between the students' age and test anxiety.

## FINDINGS

In this section, it was investigated whether the scores taken from the test anxiety scale administered to the students vary significantly depending on the students' demographics and frequency distribution. First, frequencies and percentages of the demographics are given in Table 2.

**Table 2.** Distribution of the Students' Demographics

		Frequency	Percentage
Gender	Girl	65	49,2
	Boy	67	50,8
Age	10-11 Years Old	64	48,5
	12-13 Years Old	68	51,5
Grade Level	4 <sup>th</sup> Grade	35	26,5
	5 <sup>th</sup> Grade	42	31,8
	6 <sup>th</sup> Grade	55	41,7
<b>Total</b>		132	100

As can be seen in Table 2, of the participating 132 students, 49.2% (n=65) are girls and 50.8% (n=67) are boys. Of the students, 48.5% (n=64) are in the age group 10-11 and 51.5% (n=68) are in the age group 12-13. When their grade levels are examined, it is seen that 26.5% (n=35) are 4<sup>th</sup> grade students, 31.8% (n=42) are 5<sup>th</sup> grade students and 41.7% (n=55) are 6<sup>th</sup> grade students.

The students were asked the extent to which they agree with the statement "I think about other things" and the results are presented in Table 3.

**Table 3.** The Students Level of Agreement with the Statement "I think about other things"

		Frequency	Percentage
I think about other things	Almost Never	39	29,5
	Sometimes	68	51,5
	Often	19	14,4
	Almost Always	6	4,5
<b>Total</b>		132	100

As can be seen in Table 3, 29.5% (n=39) of the students stated that they think "almost never", 51.5% (n=68) sometimes, 14.4% (n=19) often and 4.5% (n=6) almost always.

Whether the students' anxiety level varies significantly depending on gender was tested by using the independent samples t-test and the results are presented in Table 4.

**Table 4.** Gender-dependent Investigation of the Students' Test Anxiety Levels

		n	Mean	SS	t	p
Test Anxiety	Girl	65	63,58	13,70	,455	,650
	Boy	67	62,49	13,84		
Thoughts	Girl	65	30,86	7,62	,269	,788
	Boy	67	30,51	7,51		
Off-task Behaviors	Girl	65	13,69	4,04	-1,538	,127
	Boy	67	14,75	3,84		
Autonomic Reactions	Girl	65	19,03	4,81	2,116	,036
	Boy	67	17,24	4,92		
I think about other things	Girl	65	1,8	,7	-1,342	,182
	Boy	67	2,0	,8		

As can be seen in Table 4, the students' test anxiety scores do not vary significantly depending on gender ( $t=,455$ :  $p=,650>0.05$ ). In addition to this, the scores taken from the Thoughts sub-dimension do not vary significantly depending on gender ( $t=,269$ :  $p=,788>0.05$ ). The scores taken from the Off-task Behaviors sub-dimension do not vary significantly depending on gender ( $t=-1,538$ :  $p=,127>0.05$ ). The scores taken from the Autonomic Reactions sub-dimension vary significantly depending on gender ( $t=2,116$ :  $p=,036<0.05$ ). Moreover, the scores taken from the dimension of thinking about other things do not vary significantly depending on gender ( $t=-1,342$ :  $p=,182>0.05$ ).

One-way variance analysis was conducted to determine whether the students' anxiety level varies significantly depending on age and the results are presented in Table 5.

**Table 5.** Age-dependent Investigation of the Students' Anxiety Level

		n	Mean	SS	F	p
Anxiety Level	10-11 Years Old	64	64,17	14,70	3,948	,022
	12-13 Years Old	68	67,11	14,43		
Thoughts	10-11 Years Old	64	31,80	8,26	6,879	,001
	12-13 Years Old	68	33,07	7,43		
Off-task Behaviors	10-11 Years Old	64	14,25	3,95	1,050	,353
	12-13 Years Old	68	15,04	4,21		
Autonomic Reactions	10-11 Years Old	64	18,13	5,29	,760	,470
	12-13 Years Old	68	19,00	4,93		
I think about other things	10-11 Years Old	64	2,0	,7	,417	,660
	12-13 Years Old	68	1,8	,6		

As can be seen in Table 5, the students' test anxiety scores vary significantly depending on age ( $F=3,948$ :

$p=,022<0.05$ ). In addition to this, the scores taken from the Thoughts sub-dimension were found to be varying significantly depending on gender ( $F=6,879$ :  $p=,001<0.05$ ). Yet, the scores taken from the sub-dimension of Off-task Behaviors were found to be not varying significantly depending on age ( $F=1,050$ :  $p=,353>0.05$ ). Similarly, the scores taken from the sub-dimension of Autonomic Reactions do not vary significantly depending on age ( $F=,760$ :  $p=,470>0.05$ ). Moreover, the thinking about other things scores also do not vary significantly depending on gender ( $F=,417$ :  $p=,660>0.05$ ).

One-way variance analysis was conducted to test whether the students' test anxiety level varies significantly depending on grade level and the results are presented in Table 6.

**Table 6.** Grade Level-based Investigation of the Students' Anxiety Level

		n	Ort.	SS	F	p
Anxiety Level	4 <sup>th</sup> Grade	35	61,15	11,28	3,753	,013
	5 <sup>th</sup> Grade	42	65,94	16,07		
	6 <sup>th</sup> Grade	55	68,03	15,14		
Thoughts	4 <sup>th</sup> Grade	35	29,88	7,29	6,423	,000
	5 <sup>th</sup> Grade	42	33,15	8,43		
	6 <sup>th</sup> Grade	55	33,52	7,83		
Off-task Behaviors	4 <sup>th</sup> Grade	35	13,59	3,59	1,270	,288
	5 <sup>th</sup> Grade	42	14,48	4,00		
	6 <sup>th</sup> Grade	55	15,31	4,28		
Autonomous Reactions	4 <sup>th</sup> Grade	35	17,68	3,63	,763	,517
	5 <sup>th</sup> Grade	42	18,30	6,29		
	6 <sup>th</sup> Grade	55	19,21	5,09		
I think about other things	4 <sup>th</sup> Grade	35	1,9	,8	,195	,900
	5 <sup>th</sup> Grade	42	2,0	,5		
	6 <sup>th</sup> Grade	55	1,9	,6		

As can be seen in Table 6, the test anxiety scores vary significantly depending on grade level ( $F=3,753$ :  $p=,013<0.05$ ). In addition to this, the scores taken from the Thoughts sub-dimension also vary significantly depending on grade level ( $F=6,423$ :  $p=,000<0.05$ ). Yet, the scores taken from the Off-task Behaviors sub-dimension were found to be not varying significantly by grade level ( $F=1,270$ :  $p=,288>0.05$ ). Moreover, the scores taken from the sub-dimension of Autonomic Reactions were also found to be not varying significantly depending on grade level ( $F=,763$ :  $p=,517>0.05$ ). Moreover, the thinking about things scores were also found to be not varying depending on grade level ( $F=,195$ :  $p=,900>0.05$ ).

Pearson correlation analysis was used to determine whether the students' test anxiety level is correlated with age and the frequency of thinking about other things and the results are presented in Table 7.

**Table 7.** Investigation of the Correlation between the Students' Test Anxiety and Some Variables

	Age	Test Anxiety	Thoughts	Off-task Behaviors	Autonomic Reactions
I think about other things	r -,098	,200*	,176*	,283**	,061
	p ,263	,021	,043	,001	,489
Age	r 1	,251**	,296**	,132	,140
	p	,004	,001	,132	,110

\* $p < 0.05$ , \*\* $p < 0.001$

There is no statistically significant correlation between the frequency of thinking about other things and age ( $r = -.098$ ;  $p = .263 > 0.05$ ).

There is a positive and statistically significant correlation between the frequency of thinking about other things and test anxiety ( $r = .200^*$ ;  $p = .021 < 0.05$ ).

There is a positive and statistically significant correlation between the frequency of thinking about other things and Thoughts ( $r = .176^*$ ;  $p = .043 < 0.05$ ).

There is a positive and statistically significant correlation between the frequency of thinking about other things and Off-task Behaviors ( $r = .283^{**}$ ;  $p = .001 < 0.01$ ).

There is no statistically significant correlation between the frequency of thinking about other things and Autonomic Reactions ( $r = .061$ ;  $p = .489 > 0.05$ ).

There is a positive and statistically significant correlation between age and test anxiety ( $r = .251^{**}$ ;  $p = .004 < 0.01$ ).

There is a positive and statistically significant correlation between age and Thoughts ( $r = .296^{**}$ ;  $p = .001 < 0.01$ ).

There is no statistically significant correlation between age and Off-task Behaviors ( $r = .132$ ;  $p = .132 > 0.05$ ).

There is no statistically significant correlation between age and Autonomic Reactions ( $r = .140$ ;  $p = .110 > 0.05$ ).

## DISCUSSION AND RESULTS

### Results

The findings of the current research show that the female students exhibit higher levels of autonomic reactions, which are the somatic symptoms of test anxiety, than the male students. In this connection, more physiologic indicators such as head ache, blushing on the face are observed in female students.

The hypothesis that there is a significant correlation between test anxiety and age has been supported and it has been determined that with increasing age, students feel more anxious about exams. In addition to this, depending on age, the students' scores taken from the sub-dimension of Thoughts also increase. In this connection, with increasing age, students feel more concerned about bad grades and the reactions of their parents.

The findings have also revealed that the test anxiety and Thoughts mean scores of the 5<sup>th</sup> and 6<sup>th</sup> grade students are higher than those of the 4<sup>th</sup> grade students. This means that the 5<sup>th</sup> and 6<sup>th</sup> grade students feel more concerned about exams, receiving bad marks and their parents' reactions than the 4<sup>th</sup> grade students. The students were asked whether they think about other things during exams, if they do, then how frequent. As a result of the correlation analysis conducted, it was found that the students with high frequency of thinking about other things during exams have higher tendency to exhibit off-task behaviors. That is, the students with a high frequency of thinking about other things were found to demonstrate more behaviors indicating that they are absent-minded and inattentive such as playing with the pen or having difficulty in standing still.

### Discussion

It is known that the anxiety level of the students enrolled at state schools is higher than that of the school enrolled at private schools (Civil, 2008). The current study was conducted to determine the test anxiety level of the 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> grade students attending state schools. The findings of the current study have revealed that the female students exhibit higher levels of autonomic reactions, which are the somatic symptoms of test anxiety, than the male students. In this connection, more physiologic indicators such as head ache, blushing on the face are observed in female students. In a similar manner, in a study conducted by Civil (2008) to investigate the 8<sup>th</sup> grade students' test anxiety induced by the OKS exam in the city of İstanbul, it was found that the female students' test anxiety is higher. In another similar study by Duman (2008), it was found that the 8<sup>th</sup> grade female students experience more test anxiety than the female students. Genç et al. (1999) investigated the test anxiety level of the students who would take a student selection exam and found that the female students' test anxiety level is significantly higher than that of the male students. Kapıkıran (2002) investigated the correlation between the university students' test anxiety level and some psycho-social variables and found that the female students have a higher level of test anxiety. In the literature, some other studies looking into the correlation between test anxiety level and gender (Bacanlı and Sürücü, 2006; Brown, 2002; Cassidy and Johnson, 2002; Di Maria and Di Nuovo, 1990; Rasor and Rason, 1998; Zeidner and Scheleyer, 1999) have also reported that the female students' text anxiety level is higher than the male students' test anxiety level. However, there are some studies reporting different findings; for instance Küçük (2010) found that the test anxiety scores do not vary significantly depending on gender. Chen et al. (2009) stated that the male students have a higher level of test anxiety than the female students. As a result, the gender-related finding of the current study is supported by the literature to a great extent.

The hypothesis that there is a significant correlation between test anxiety and age was confirmed and with increasing age, the students' test anxiety was found to be increasing. In addition to this, the students' scores from the sub-dimension of Thoughts also increase depending on age. This means that with increasing age, the students feel more concerned about bad marks and their parents' reactions. According to Duman (2008), the text anxiety of children whose parents are authoritarian and protective is relatively higher. Gökçedağ (2001) reported that the children of authoritarian parents have low self-confidence and school achievement while

they have higher levels of general and test anxiety. This might be because of the expectations of such parents, students may feel under pressure. Thus, further research on psychological predictors of test anxiety should be conducted.

In the literature, it has been reported that 8<sup>th</sup> grade students' anxiety level does not vary significantly depending on the number of siblings, the state of whether having private tutoring or not, the state of whether attending a private course, the level of satisfaction with the school, the level of the satisfaction with the class and the state of whether having a private room at home to study (Duman, 2008; Tekbaş, 2009; Civil, 2009). However, variables such as gender, age and income level have been found to have significant effects on test anxiety (Duman, 2008; Civil, 2009). In the study conducted by Crişana and Copaci (2014) on the 11 years old elementary school students, it was found that gender leads to significant differences in test anxiety.

According to the findings of the current study, the test anxiety and Thoughts scores of the 5<sup>th</sup> and 6<sup>th</sup> grade students are higher than those of the 4<sup>th</sup> grade students. Thus, the 5<sup>th</sup> and 6<sup>th</sup> grade students feel more concerned about exams, bad marks and their parents' reactions. In a study conducted by Hanimoğlu (2010) to investigate the relationship between test anxiety, perfectionism and mother and father's attitudes of the middle school students to enter the level determination exam, it was found that the test anxiety levels of the 7<sup>th</sup> and 8<sup>th</sup> grade students is higher than that of the 6<sup>th</sup> grade students. In 2010, only 8<sup>th</sup> graders had to enter this exam; thus, it can be concluded that the close students get to an exam, the more anxious they feel.

### **Suggestions for Further Research**

One important finding reported in the literature is that when students are closer to an exam that will affect their future academic lives, they will become more anxious. As the changing exam system in Turkey has brought new regulations and responsibilities for students, further research may explore test anxiety by considering the important parameters of the new exam system.

One important finding of the current study is that with increasing age, the students' test anxiety increases. This might be because of the expectations of their parents, the students may feel under pressure. In this connection, more research should be conducted on the psychological predictors of test anxiety.

The female students were found to exhibit test anxiety-related autonomic reactions more than the male students. The significant effect of gender on test anxiety has also been revealed in the literature (Civil, 2008; Duman, 2008). Further research may look at the motives behind female students' autonomic reactions.

Further research may explore how students' test anxiety is affected from different time periods related to selection and placement exams; that is, before the exam, while the exam is approaching etc. by using the pretest and posttest research design.

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