Academic Procrastination Behavior, Test Anxiety and Self-Handicapping As Predictors of Academic Achievement[*]

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Abstract: In this study, it was aimed to analyze the relationship between university students' academic achievement, test anxiety, academic procrastination behaviors and self-handicapping tendencies. The sample of the study consisted of 502 university students studying in different faculties of Erciyes University. "Academic Procrastination Scale", "Self-Handicapping Scale", "Westside Test Anxiety Scale" and "Personal Information Form" were used in the study. Descriptive statistics, t test, ANOVA, Tukey test, correlation and regression analysis methods were used to analyze the data obtained. According to the analyses, students' academic procrastination behavior, test anxiety, self-handicapping and academic achievement levels are at modarete level. It was seen that male students resorted to academic procrastination more than female students, experienced more test anxiety and sabotaged themselves more, and it was concluded that academic achievement did not vary according to gender. It is seen that academic achievement, test anxiety, academic procrastination behavior and self-handicapping level of students do not differ according to age. It was concluded that academic achievement and academic procrastination differed according to grade level, while test anxiety and self-handicapping did not differ according to grade level. Apart from this, it is seen that academic achievement, test anxiety, academic procrastination behavior and self-handicapping variables differ significantly according to the faculties of study. According to the results of the correlation analysis, there was a negative relationship between academic achievement and test anxiety, academic procrastination behavior and self-handicapping. It was also observed that there was a positive correlation between self-handicapping, test anxiety and academic procrastination behavior and that these variables predicted academic achievement. These results were discussed by considering other studies in the literature and some suggestions were given.

Keywords: Academic Achievement, Test Anxiety, Academic Procrastination, Self-handicapping

Introduction

People strive to achieve their goals and want to be rewarded for their efforts. The reward for these efforts is achieving one's goals and being successful. In this context, success is achieving the desired goal and realizing that goal (Sarıer, 2016). Although the concept of success makes its presence felt in all areas of life, it is mostly used in business and education life. The part of success related to educational life is called academic achievement. Academic achievement is defined as the extent to which the desired goals can be achieved as a result of the education received by individuals and the average of the grades received by students as a result of the evaluation of the courses given for this education (Onuk, 2007).

Although being academically successful is something that most students want, achieving this success depends on the scores obtained as a result of the exams. Students desire to finalize these exams in the way they want and to be successful, while avoiding failure. Being successful or unsuccessful are situations that students may encounter due to the nature of exams. Individuals who are afraid of not being successful and the effects of this may experience test anxiety (Aydın, 2010). According to Spielberg and Vagg (1995), test anxiety is a state of emotion experienced during an official exam, which prevents the individual from revealing his/her true potential, creates stress in the individual, and disturbs the individual (as cited in Bacanlı & Sürücü, 2006). When the literature is examined, it is seen that many different studies have been realized about test anxiety. Aba (2018) stated that having a moderate level of test anxiety is a normal and necessary situation, and exceeding this level negatively affects the success of individuals and can prevent the desired performance, Başkal (2019) stated that students who study regularly experience less test anxiety and are more academically successful, while Aydın (2010) and Yurttaş (2018) stated that test anxiety significantly predicts academic achievement. Soğuksu (2020) stated that there is a positive relationship between irrational beliefs and test anxiety, and that the test anxiety levels of students in different faculties are different. Therefore, when the literature is analyzed, it is seen that there are many studies analyzed the relationship between test anxiety and different concepts. When the studies examining the relationship between test anxiety and academic achievement are examined (Bozkurt, 2012; Kapkıran, 2012), it is stated that there is a negative relationship between these two variables.

In addition to test anxiety, another concept that affects academic achievement is procrastination (Wadkins, 1999; as cited in Uzun Özer, 2009). Knaus (2002) states that almost everyone shows procrastination behavior even once in their lives (as cited in Demir, 2018). Procrastination behavior can manifest itself in different areas of life. Postponing a meeting with friends, postponing studying for midterm or final exams, postponing a project we need to prepare, or postponing school-related responsibilities are some of them. School-related procrastination is analyzed under the title of academic procrastination. Academic procrastination is defined as postponing academic tasks for different reasons (Akbay & Gizir, 2010). Individuals who resort to academic procrastination can sometimes make this problem chronic and are involved in a process called the procrastination cycle (Çakıcı, 2003). This situation negatively affects the success of the individual. Considering the research on this subject, it is seen that there is a negative relationship between academic achievement and academic procrastination behavior (Balkıs & Duru, 2010), there is a positive relationship between academic procrastination behavior and fear of failure and external locus of control (Nurlu, 2019), there is a positive relationship between cheating tendency and academic procrastination and a negative relationship with academic achievement (Duran, 2020), and there is a negative relationship between academic procrastination and academic motivation (Yun, 2019). In addition, it is stated that academic motivation and depressive symptoms predict

academic procrastination behavior (Karadeniz, 2020) and males procrastinate their academic tasks more (Balkıs, 2006; Duran 2020). Considering all these studies, it can be said that the concept of academic procrastination is related to different variables and with the increase in the frequency of academic procrastination behavior, a decrease in the level of academic achievement will occur.

Another concept related to academic achievement is self-handicapping. Self-handicapping is an individual's ambivalence about whether he/she can overcome a task even though he/she is capable of performing a task and his/her effort to protect his/her self by making excuses for being inadequate (Üzar, Özçetin & Hiçdurmaz, 2016). The individual can make excuses or put obstacles in front of him/her in cases where he/she will fail. Examples include taking drugs before an exam that the individual thinks he/she will not be successful or not studying for the exam by dealing with an unnecessary job. As a result, the individual fails, wants to leave his/her education in half or wants to move away from educational environments (Midgley & Urdan, 2001). Rather than working hard and not being successful, the student prefers to put obstacles in front of him/her and not being successful, thus securing his/her self (Anlı, 2011). When the studies on self-handicapping are examined, it is seen that there is a negative relationship between self-handicapping and positive perfectionism (Akar, Doğan & Üstüner, 2018), academic self-efficacy and optimism (Yılmazer, 2019) and narcissistic tendencies (Çelik, 2019), while there is a positive relationship between perfectionism and self-compassion and self-handicapping (Alaloğlu, 2020). In addition, it is stated that people who self-handicapping may become substance addicts in the future (Zuckerman & Tsai, 2005). Based on these studies, it can be said that the concept of self-handicapping is related to variables such as perfectionism, self-efficacy and narcissistic tendencies. In addition, there are studies indicating that there is a negative relationship between academic success and self-handicapping (Gündoğdu, 2013; Kalyon, Dadancı & Yazıcı, 2016; Karner, 2014). Therefore, it can be stated that the concept of self-handicapping is a concept associated with academic achievement and different variables.

Today, being academically successful is a goal that many students want to achieve. In addition, parents, educators and educational systems also expect students to be academically successful. If students are academically successful, they think that they have achieved their goals and feel happy, whereas if they are not successful, they may feel inadequate. Like all students, university students also desire to be academically successful and to complete their university education and reach their desired goals. Therefore, university students also focus intensely on academic achievement and want to reach the opportunities that this success will bring. In this respect, it is important to conduct studies on academic achievement, which is valued by students and education systems, and to determine the factors related to academic achievement in order to increase students' academic achievement. In this study, the prediction level of test anxiety, academic procrastination and self-handicapping variables on academic achievement was tried to be determined. It is expected that the results obtained and the suggestions based on these results will guide the relevant parties in increasing the academic achievement of university students.

In this study, the main problem was determined as "Is there a significant relationship between university students' academic achievement, test anxiety, academic procrastination behaviors and self-handicapping tendencies?". In this regard, the answers to the following sub-problems were investigated;

✓ At what level are university students' academic achievement, test anxiety, academic procrastination behaviors and self-handicapping tendencies?
✓ Do university students' academic achievement, test anxiety, academic procrastination behaviors and self-handicapping tendencies differ significantly according to gender, age, grade and faculty variables?

✓ Is there a significant relationship between university students' academic achievement, test anxiety, academic procrastination behaviors and self-handicapping tendencies?

✓ Do university students' test anxiety, academic procrastination behaviors and self-handicapping tendencies predict academic achievement?

Methodology

In this study, the correlational survey model was used because the relationship between academic achievement, test anxiety, academic procrastination behavior and self-handicapping tendencies of university students was examined. The relational survey model is a research model that helps to determine the change of more than one variable according to each other and the amount of change (Savaşan, 2019).

Population and Sample

The population of this study consists of 42000 students studying in different faculties of Erciyes University in the 2019-2020 academic year. In this study, convenience sampling method was used as the sampling method. In this sampling method, easy accessibility and economy are taken into consideration (Büyüköztürk et al., 2014). The sample of the study consisted of 511 university students who volunteered to participate in the study. Nine students who participated in the study were not included in the study because they left some of the questions in the scale blank. Therefore, the data obtained from 502 university students were analyzed. Demographic information about the students who participated in the study is shown in Table 1.

Table 1

Frequency analysis results regarding the distribution of demographic information of the participants

Variables		N	%
Age	18-20	89	17,7
	21-23	342	68,1
	23+	71	14,1
Gender	Male	246	49,0
	Female	256	51,0
Grade	1st grade	40	8,0
	2nd grade	144	28,7
	3rd grade	196	39,0
	4th grade	122	24,3
Faculty	Economics&Administrative Sciences	47	9,4
	Engineering	119	23,7
	Communication	44	8,8
	Literature	61	12,2
	Aeronautics&Astronautics	59	11,8
	Theology	65	12,9
	Sport sciences	68	13,5
	Health sciences	39	7,8

When the distribution of the students participating in the study is analyzed according to age groups, the rate of those in the 18-20 age group is 17,7%, the rate of those in the 21-23 age group is 68,1%, and the rate of those in the 23+ age group is 14,1%. When the distribution according to gender is analyzed, the rate of males is 49% and the rate of females is 51%. When the distribution according to grades is analyzed, the rate of those in the first grade is 8%, the rate of those in the second grade is 28,7%, the rate of those in the third grade is 39% and the rate of those in the fourth grade is 24,3%. When the distribution according to faculties is analyzed, the rate of Faculty of Economics and Administrative Sciences students is 9,4%, the rate of Faculty of Engineering students is 23,7%, and the rate of Faculty of Communication students is 8,8%. The rate of the Faculty of Literature students is 12,2%, the rate of the Faculty of Aeronautics

and Astronautics students is 11,8%, the rate of the Faculty of Theology students is 12,9%, the
rate of the Faculty of Sports Sciences students is 13,5%, and the rate of the Faculty of Health
Sciences students is 7,8%.

Data Collection Tools
Self-handicapping scale, westside test anxiety scale, academic procrastination behavior
scale and personal information form were used to collect the data.

Personal Information Form: In the personal information form, students were asked to write
their grade point average (GPA), age, gender, class and faculty of study.

Westside Test Anxiety Scale: Westside test anxiety scale was developed by Driscoll (2007). It
was adapted into Turkish by Totan and Yavuz (2009). The scale is a one dimensional scale
consisting of 11 items. The highest score that can be obtained from the scale is 55 and the
lowest score is 11. Totan and Yavuz (2009) reported the Cronbach's alpha internal consistency
coefficient of the scale as 0,89. In this study, the Cronbach's alpha value of the scale was
calculated as 0,82.

Academic Procrastination Scale: Academic procrastination scale was developed by Çakıcı
(2003). There are 19 items in the scale, 12 of these items consist of negative and 7 of them
consist of positive expressions. A high score obtained from the scale indicates a high level of
academic procrastination. Çakıcı (2003) states that the scale has two dimensions, but it can also
be used as a one-dimensional scale. The highest score that can be obtained from the scale is 95
and the lowest score is 19. Çakıcı (2003) found the Cronbach alpha value of the scale to be 0,92.
In this study, Cronbach alpha value was calculated as 0,79.

Self-handicapping Scale: The Self-handicapping scale developed by Jones and Rhodewalt
(1982) was used to measure the self-handicapping tendency. The scale was adapted into Turkish
by Akın (2012). The scale has 25 items in total. The highest score that can be obtained from the
scale is 150 and the lowest score is 25. Items 3, 5, 6, 10, 13, 20, 22 and 23 are reverse coded and
the scale has no sub-dimensions. The scale is a 6-point Likert type. A high score on the scale
indicates a high level of self-handicapping (Akın, 2012). In this study, Cronbach's alpha value
was calculated as 0,74.

Data Collection
In data collection, firstly, the scales used in the study were determined and permission
was obtained from the owners of these scales. Then, study permission was obtained from
Erciyes University. After the permissions were obtained, the permission documents were shown
to the faculties affiliated to Erciyes University and the scales were distributed to the students
who volunteered to participate in the study and the scales were applied. The scales were applied
between February 10 and March 14, 2020, and it took approximately 15 minutes for a student to
answer the scale.

Data Analysis
SPSS 23.0 was used to analyze the data. First, kurtosis and skewness values were
calculated to examine whether the data were normally distributed. The kurtosis and skewness
values of the scale data are (0,145; -0,654) for academic achievement, (0,298; -0,577) for test
anxiety, (-0,011; -0,990) for academic procrastination and (0,193; -0,340) for self-handicapping.
The fact that the skewness and kurtosis values are between -1/+1 indicates that the data conform
to the normal distribution (Tabachnick & Fidell, 1996). Therefore, while analyzing the data of
this study, it was taken into consideration that they conform to normal distribution. In addition,
the correlation values between the variables were examined to determine whether there was a
multicollinearity problem. Correlation values of 0,90 and above indicate that there is a

multicollinearity problem (Tabachnick & Fidell, 1996). When the correlation values between the variables in the current study are examined, it can be stated that there is no multicollinearity problem since there is no correlation value of 0,90 and above. Since the study showed normal distribution, parametric tests were applied. Whether academic achievement, test anxiety, academic procrastination behavior and self-handicapping tendency differed significantly according to gender variable was examined by t-test in independent groups; whether they differed significantly according to age, grade and faculty variables was examined by one-way analysis of variance (ANOVA). In case of a significant difference as a result of one-way analysis of variance (ANOVA), pairwise comparisons (Tukey test) were made to determine between which groups the difference was between. The relationships between self-handicapping, test anxiety, academic procrastination and academic achievement were analyzed by correlation analysis. In addition, regression analysis was conducted to determine the predictive effect of test anxiety, academic procrastination and self-handicapping variables on academic achievement. The significance level was taken as 0,05.

Findings

The highest and lowest scores, arithmetic mean and standard deviation values of university students' test anxiety, academic procrastination and self-handicapping scales and the highest and lowest scores, arithmetic mean and standard deviation values of students' weighted year-end grade point averages are as shown in Table 2.

Table 2
Descriptive results for academic achievement, test anxiety, academic procrastination behavior and self-handicapping variables

Variables	N	Min.	Max.	$\bar{x}$	Sd
Academic achievement	502	1,14	3,95	2,6	0,5
Test anxiety	502	11,0	55,0	29,7	10,0
Academic procrastination	502	19,0	93,0	53,7	17,8
Self-handicapping	502	34,0	134,0	78,7	21,7

According to Table 2, it is seen that the weighted year-end average ($\bar{x}$) of the students is 2,6. According to this finding, it can be said that the academic achievement level of the students participating in the study is at a moderate level. The mean points ($\bar{x}$) of the students on the test anxiety scale was 29,7. Considering that the highest point that can be obtained from the test anxiety scale is 55, it can be stated that the students have moderate test anxiety. In addition, the mean point ($\bar{x}$) of the students' academic procrastination scale was 53,7. Considering that the highest point that can be obtained from the academic procrastination scale is 95, it can be said that students' academic procrastination behaviors are at a moderate level. The mean point ($\bar{x}$) of the students' self-handicapping scale is 78,7. Considering that the highest point that can be obtained from the self-handicapping scale is 150, it can be stated that students' self-handicapping tendencies are at a moderate level.

The t-test results examining the change in the academic achievement, test anxiety, academic procrastination behavior and self-handicapping levels of university students according to male and female students are shown in Table 3.

Table 3
T-test results examining academic achievement, test anxiety, academic procrastination behavior and self-handicapping according to gender variable

Variables	Gender	N	$\bar{x}$	Sd	t	p
Academic achievement	Male	246	2,4	0,5	59,448	2,327
	Female	256	2,7	0,5		
Test anxiety	Male	246	31,1	9,8	10,251	0,000*
	Female	256	28,3	10,1		
Academic procrastination	Male	246	58,2	17,9	33,285	0,000*
	Female	256	49,3	16,5		
Self-handicapping	Male	246	83,4	23,1	23,403	0,000*
	Female	256	74,3	19,2		

*p<0,05

According to Table 3, self-handicapping (t= 23,403; p<0,05), test anxiety (t= 10,251; p<0,05) and academic procrastination (t= 33,285; p<0,05) of university students vary significantly according to gender. When the arithmetic averages are analyzed, it is noteworthy that the self-handicapping, test anxiety and academic procrastination levels of males are significantly higher than females. Therefore, it can be said that males experience more test anxiety, delay their academic responsibilities more, and exhibit self-handicapping behaviors more than females. It was observed that the level of academic achievement (t= 59,448; p>0,05) did not differ significantly according to gender. In another words, it can be said that the academic achievement levels of male and female students are similar to each other.

ANOVA results examining whether university students' academic achievement, test anxiety, academic procrastination behavior and self-handicapping levels vary according to age variable are as shown in Table 4.

Table 4
ANOVA results examining academic achievement, test anxiety, academic procrastination behavior and self-handicapping according to age variable

Variables	Age	N	$\bar{x}$	Sd	F	p
Academic achievement	18-20	89	2,5	0,5	0,244	0,784
	21-23	342	2,6	0,5		
	23+	71	2,6	0,5		
Test anxiety	18-20	89	31,0	10,2	1,356	0,259
	21-23	342	29,2	9,6		
	23+	71	30,3	11,6		
Academic procrastination	18-20	89	53,8	18,0	0,008	0,992
	21-23	342	53,7	17,4		
	23+	71	53,5	19,6		
Self-handicapping	18-20	89	79,9	22,3	0,760	0,468
	21-23	342	78,0	21,5		
	23+	71	81,1	22,2		

According to Table 4, academic achievement ($F_{(2-499)}$= 0,244; p>0,05), test anxiety ($F_{(2-499)}$= 1,356; p>0,05), academic procrastination behavior ($F_{(2-499)}$= 0,008; p>0,05) and self-handicapping ($F_{(2-499)}$= 0,760; p>0,05) levels of university students do not differ significantly according to age variable. In other words, it can be said that the self-handicapping, test anxiety, academic procrastination behaviors and academic achievement levels of university students in different age groups are similar to each other.

ANOVA results indicating whether the academic achievement, test anxiety, academic procrastination behavior and self-handicapping levels of university students vary according to the grade variable are as shown in Table 5.

Table 5
ANOVA results examining academic achievement, test anxiety, academic procrastination behavior and self-handicapping according to the grade variable

Variables	Grade	N	$\bar{x}$	Sd	F	p	Tukey Test
Academic achievement	1st grade	40	2,6	0,6			
	2nd grade	144	2,5	0,6	3,978	0,008*	3>2
	3rd grade	196	2,7	0,5			3>4
	4th grade	122	2,5	0,5			
Test anxiety	1st grade	40	31,1	10,7			
	2nd grade	144	30,0	10,0	2,325	0,074	-
	3rd grade	196	28,3	9,6			
	4th grade	122	31,0	10,4			
Academic procrastination	1st grade	40	50,4	18,2			
	2nd grade	144	54,0	18,1	4,242	0,006*	4>1
	3rd grade	196	51,3	17,0			4>3
	4th grade	122	58,1	17,7			
Self-handicapping	1st grade	40	79,2	21,9			
	2nd grade	144	79,5	22,7	2,470	0,061	-
	3rd grade	196	75,8	20,1			
	4th grade	122	82,4	22,4			

*p<0,05

According to Table 5, while self-handicapping ($F_{(3-498)=}$ 2,47; p>0,05) and test anxiety ($F_{(3-498)=}$ 2,325; p>0,05) levels of university students do not vary significantly according to the grade variable, academic procrastination ($F_{(3-498)=}$ 4,242; p<0,05) and academic achievement ($F_{(3-498)=}$ 3,978; p<0,05) levels vary significantly according to the grade variable. According to the pairwise comparisons made to determine between which groups the difference is within the scope of the academic procrastination variable; it was seen that the academic procrastination level of the 4th graders was significantly higher than the academic procrastination levels of the 3rd and 1st graders. Therefore, it can be said that senior students procrastinate their academic duties and responsibilities more. According to the results of the analysis conducted within the scope of academic achievement, it was concluded that the academic achievement average of the 3rd grade students was significantly higher than the academic achievement average of the 2nd and 4th grade students. According to this result, it can be stated that 3rd grade students are more successful than 2nd and 4th grade students.

ANOVA results examining whether university students' levels of self-handicapping, test anxiety, academic procrastination behavior and academic achievement vary according to faculties are as shown in Table 6.

Table 6
ANOVA results examining academic achievement, test anxiety, academic procrastination behavior and self-handicapping according to faculty variable

Variables	Faculty	N	$\bar{x}$	Sd	F	P	Tukey Test
Academic achievement	1. Economics & Adm.	47	2,5	0,5			
	2. Engineering	119	2,3	0,5			4-8>1-2-5
	3. Communication	44	2,7	0,5			3-7>2-5
	4. Literature	61	2,7	0,5	13,629	0,000*	1>2
	5. Aeronautics&Astronautics	59	2,4	0,6			6>1-2-4-5-7
	6. Theology	65	2,9	0,4			

	7. Sports Sciences	68	2,7	0,5			
	8. Health Sciences	39	2,8	0,4			
Test anxiety	1. Economics & Adm.	47	29,3	9,1			
	2. Engineering	119	31,9	9,3			
	3. Communication	44	27,7	10,6			
	4. Literature	61	31,6	12,0	5,445	0,000*	2-4-5>8
	5. Aeronautics&Astronautics	59	32,9	9,4			
	6. Theology	65	28,4	9,8			
	7. Sports Sciences	68	27,6	9,3			
	8. Health Sciences	39	23,2	7,7			
Academic procrastination	1. Economics & Adm.	47	52,9	16,7			
	2. Engineering	119	57,5	16,8			
	3. İletişim	44	47,4	19,6			
	4. Literature	61	53,7	17,2	5,228	0,000*	2-5>8-6
	5. Aeronautics&Astronautics	59	61,4	17,7			5>3
	6. Theology	65	47,7	16,4			
	7. Sports Sciences	68	54,0	19,4			
	8. Health Sciences	39	47,3	12,7			
Self-handicapping	1. Economics&Adm.	47	81,0	21,6			
	2. Engineering	119	84,2	20,4			
	3. Communication	44	78,0	25,5			1-2-3-4-5-6-7>8
	4. Literature	61	80,2	15,8	6,427	0,000*	
	5. Aeronautics&Astronautics	59	85,4	22,0			2-5>6
	6. Theology	65	70,8	17,1			
	7. Sports Sciences	68	77,1	26,4			
	8. Health Sciences	39	63,7	15,6			

*p<0,05

According to Table 6, academic achievement ($F_{(7-494)=}$ 13,629; p<0,05), test anxiety ($F_{(7-494)=}$ 5,445; p<0,05), academic procrastination ($F_{(7-494)=}$; 5,228 p<0,05), and self-handicapping ($F_{(7-494)=}$ 6,427; p<0,05) levels of university students differ significantly according to faculties. According to the pairwise comparisons made to determine from which group the difference originated, it was seen that the academic achievement levels of the Faculty of Literature and Health Sciences students were significantly higher than the academic achievement levels of the Faculty of Economics and Administrative Sciences, Engineering and Aeronautics and Astronautics students, while the academic achievement levels of the Faculty of Sports Sciences and Communication students were significantly higher than the academic achievement levels of the Faculty of Engineering, Aeronautics and Astronautics students. It was concluded that the academic achievement level of the Faculty of Economics and Administrative Sciences students was significantly higher than the Faculty of Engineering students, and the academic achievement level of the Faculty of Theology students was significantly higher than the academic achievement level of the Faculty of Economics and Administrative Sciences, Engineering, Literature, Aeronautics and Astronautics and Sports Sciences students. It was concluded that the level of exam anxiety experienced by the students of the Faculty of Literature, Engineering and Aerospace Sciences was significantly higher than the level of exam anxiety experienced by the students of the Faculty of Health Sciences. It was concluded that the academic procrastination levels of the Engineering and Aerospace Sciences and Aeronautics and Astronautics Faculty students were significantly higher than the academic procrastination levels of the Health Sciences and Theology Faculty students, in addition, the academic procrastination levels of the Aerospace Sciences and Aeronautics Faculty students were significantly higher than the academic procrastination levels of the Communication Faculty students. It was seen that the self-handicapping levels of the Faculty of Health Sciences students were significantly lower than the self-handicapping levels of the other faculties, while the self-handicapping levels of the Faculty of Engineering and the Faculty of Aeronautics and

Astronautics students were significantly higher than the self-handicapping levels of the Faculty of Theology students.

The results of the correlation analysis examining the relationship between self-handicapping, test anxiety, academic procrastination behavior and academic achievement of university students are shown in Table 7.

Table 7
Correlation analysis results for academic achievement, test anxiety, academic procrastination behavior and self-handicapping variables

Variables	1	2	3	4
1.Academic achievement	1			
2.Test anxiety	-0,591**	1		
3.Academic procrastination	-0,757**	0,698**	1	
4.Self-handicapping	-0,726**	0,709**	0,800**	1

**p<0,01

According to Table 7, a negative, moderate and significant relationship was found between university students' academic achievement and test anxiety (r=-0,591; p<0,01). According to these results, it can be said that there may be a decrease in academic achievement with an increase in test anxiety. In other words, an increase in test anxiety may lead to a decrease in academic achievement. A negative, high level and significant relationship was found between academic achievement and academic procrastination behavior (r=-0,757; p<0,01). According to these results, it can be said that a decrease in academic achievement may occur with an increase in students' academic procrastination behaviors. In other words, it can be stated that students' delaying their academic tasks may negatively affect their academic achievement. There was a negative, high level and significant relationship between academic achievement and self-handicapping tendency (r= -0,726; p<0,01). According to these results, it can be said that as students' self-handicapping levels increase, their academic achievement may decrease. Therefore, excessive use of self-handicapping behavior may negatively affect students' academic achievement. There was a positive, high level and significant relationship between test anxiety and academic procrastination behavior (r= 0,698; p<0,01). According to these results, it can be said that students' academic procrastination behavior increases with the increase in test anxiety or students' test anxiety levels may increase with the increase in academic procrastination behaviors. In other words, individuals with high test anxiety may postpone their academic tasks more or individuals who delay their academic tasks may experience higher levels of test anxiety. A positive, high and significant relationship was found between test anxiety and self-handicapping tendency (r= 0,709; p<0,01). According to these results, it can be said that as students' self-handicapping levels increase, their test anxiety may also increase or as their test anxiety increases, their tendency to self-handicapping may also increase. In other words, it can be said that the excessive level of anxiety that students experience about exams may cause them to sabotage themselves more, to put obstacles in front of themselves before the exam, or to constantly put obstacles in front of themselves, which may cause them to experience higher levels of test anxiety. A positive, high level and significant relationship was found between academic procrastination behavior and self-handicapping tendency (r= 0,800; p<0,01). According to these results, it can be said that as students' self-handicapping levels increase, their academic procrastination behaviors also increase or as students' academic procrastination behaviors increase, their self-handicapping levels may also increase. In other words, self-handicapping individuals may delay their academic duties and responsibilities more or students who do not fulfill their academic duties on time may sabotage themselves more.

The regression analysis conducted to examine whether exam anxiety, academic procrastination behavior and self-handicapping tendency of university students have an effect on academic achievement is as shown in Table 8.

Table 8
Regression results to determine the effect of test anxiety, academic procrastination behavior and self-handicapping on academic achievement

Model		B	S.E.	β	t	p
Academic achievement	Constant	4,024	0,057		70,783	0,000*
	Test anxiety	-0,001	0,002	-0,028	-0,674	0,501
	Academic procrastination	-0,015	0,001	-0,481	-9,861	0,000*
	Self-handicapping	-0,008	0,001	-0,321	-6,487	0,000*

R= 0,7835; R^2=0,614; F=264,096 ; p<0,05

According to Table 8, the model is significant (F= 264,096; p<0,05). The rate of independent variables explaining the dependent variable is 61%. When the significance level of the parameters in the model is examined, it is seen that self-handicapping and academic procrastination have a significant effect on academic achievement, while test anxiety does not have a significant effect on academic achievement. When the coefficients of the significantly affecting parameters are investigated, it is seen that academic procrastination and self-handicapping have a negative effect on academic achievement. When we examined which variable affected academic achievement more, it was concluded that academic procrastination behavior was more effective on academic achievement than self-handicapping.

Discussion, Conclusions and Suggestions

In this study, the relationship between academic achievement, academic procrastination behavior, test anxiety and self-handicapping tendency in university students was investigated. Moreover, it was investigated whether these variables differed according to gender, age, class and faculty variables.

It was concluded that university students have a moderate level of academic achievement. In other words, it can be said that the general achievement means of the students participating in the study are at an average level. It is thought that these results will be different in different study groups. It was concluded that university students experience moderate test anxiety. In Soğuksu's (2020) study, which examined exam anxiety and was conducted with the participation of 395 individuals, and in Ayrık's (2018) study, which was conducted with 181 students and examined students' exam anxiety, social anxiety and perfection behaviors, similar findings to the results of this study were found. According to this result obtained from the study, it can be said that university students have moderate anxiety in exams. Contrary to the findings of the study, Lakot (2019) concluded that the students' level of exam anxiety was below moderate. It was concluded that the academic procrastination levels of university students were at a moderate level. Therefore, it can be said that university students delay approximately half of their school-related responsibilities. When the studies of Seyfi (2019), Toy (2014), Ulukaya (2012), Uzun Özer (2009), Uzun Özer (2011) regarding academic procrastination are examined, it is seen that the results support the findings of this study. Therefore, it can be said that this result is consistent with other studies in the literature. It was concluded that university students sabotage themselves at a moderate level. Akar, Çelik, and Karataş (2019), Midgley et al. (1996) and Yıldırım (2015) also reached findings supporting this result in their studies.

Academic achievement of university students does not differ significantly according to gender. Based on this result, it can be said that the academic achievement levels of female and

male students are similar to each other or that the differentiation of gender does not create a change on academic achievement. Aba (2018), Güney et al. (2014), İkiz (2000) and Tatar and Kuru (2006) stated in their studies that academic achievement does not differ according to gender. Accordingly, it can be said that the results of this study are similar to the studies in the literature. Moreover, it was also observed that there are studies that concluded that female students are more successful (Akdemir, 2013; Bozkurt, 2012). It was concluded that the exam anxiety experienced by university students differed significantly according to gender and that males experienced more exam anxiety than females. When the literature is examined, it is seen that although there are studies indicating that exam anxiety does not differ significantly according to gender (Aba, 2018; Ayrık, 2018; Küçüker, 2018; Savaşan, 2019; Tekbaş, 2009), there are more studies indicating that females experience more exam anxiety (Çankaya, 1997; Erzen & Odacı, 2014; Onuk, 2017; Önem, 2011; Sazak & Ece, 2004). Therefore, it is seen that the result of the current study contradicts the literature. It is thought that the reason for this result is that males start to attach more importance to exams. In addition, considering that academic procrastination and self-handicapping are more common in males, the literature supports this result, and there is a positive correlation between self-handicapping, academic procrastination and test anxiety, it can be said that this result is normal. It was concluded that the academic procrastination levels of university students differed significantly according to gender and the academic procrastination levels of male students were higher than female students. According to this result, it can be said that male students delay and postpone their academic tasks more. In other words, it can be said that female students act more meticulously than male students in order to complete their academic tasks on time. When the literature is examined, it is seen that there are studies supporting this result (Arslan, 2013; Balkıs et al., 2006; Çakıcı, 2003; Jackson, 2002; Seyfi, 2019 and Tufan & Gök, 2009). In addition, in Yıldız's (2015) study, which investigated the procrastination levels of university students and conducted with 401 university students, it was concluded that male students showed more academic procrastination behavior. Yiğit and Dilmaç (1993) stated that there was no significant difference between males and females in terms of academic procrastination. Therefore, the results of this study are in parallel with many other studies. It is stated that the fact that females are busy with some work to be done at home since childhood and that there is more pressure on them, while males are left more flexible by their families and are not given less responsibility affects their future lives (Yıldırım, 1997), and accordingly, males delay their responsibilities more (Arslan, 2013). For this reason, it is an expected result that females who are raised in a disciplined manner fulfill their duties on time. It was concluded that the self-handicapping tendencies of university students differed significantly according to gender and that the self-handicapping levels of males were higher than females. Therefore, it can be said that male students can prevent themselves more by developing a strategy to protect their ego when faced with a task that they think they cannot do. When the literature is examined, it is seen that there are studies indicating that males sabotage themselves more than females. (Anlı et al., 2015; Anlı, 2011; Mccrea et al., 2008; Hirt et al., 2003; Sertel, 2019; Yu & McLellan, 2019). Berglas and Jones (1978), who conducted the first studies on the concept of self-handicapping, stated that males sabotage themselves more. It is also stated that males use behavioral self-handicapping more, while females use verbal self-handicapping (Üzbe, 2013). In Turkish culture, as in most cultures, the idea that men are strong and that it is unacceptable for them to be weak has been promoted to the individual from childhood. It is thought that boys who grow up with this way of thinking put more obstacles in front of themselves when they think that they will fail in the future.

Academic achievement does not vary significantly according to the age variable. In other words, it can be said that the achievement levels of university students in different age ranges are similar. In Aba's (2018) study, which examined exam anxiety and academic achievement and was conducted with 100 students, it was concluded that the academic achievement level did not differ according to gender. The exam anxiety of university students

does not differ significantly according to the age variable. In other words, the levels of test anxiety experienced by university students in different age ranges are similar. When the literature is analyzed, it is noteworthy that the studies conducted have results that are compatible with this study (Aba, 2018; Civil, 2008; Gençdoğan, 2006; Kilit, 2019; Soğuksu, 2020). Academic procrastination behavior does not vary significantly according to age variable. When the literature is examined, it is seen that similar results were obtained in Çakıcı's (2003) study examining procrastination behavior in high school and university students, Sarıoğlu's (2011) study examining academic procrastination and perfectionism levels of Faculty of Education students, and Yıldırım's (2015) study conducted with 380 students in 9th, 10th and 11th grades and examining the psychological symptoms of these students, their perception of social support and their postponement of academic tasks. In contrast to these results, Balkıs (2006) stated that the frequency of postponing academic tasks increased with advancing age. Therefore, when the studies are examined, it is seen that there are different results in the relationship between age variable and academic procrastination behavior. The self-handicapping tendency does not vary significantly according to age. In other words, it can be said that the self-handicapping levels of students in different age ranges are similar to each other. When the studies on this subject are examined, it is seen that similar results are obtained with the results of this study (Coşar, 2012; Civan, 2016, Çelik, 2019; Sertel, 2019).

The academic achievement of university students differs significantly according to their grades. According to this result, it is seen that students in the 3rd grade are significantly more successful than students in the 2nd and 4th grades, and more successful than students in the 1st grade, even if not at a significant level. It can be said that 3rd grade students are more successful than 1st and 2nd grade students because they adapt to the university environment better, have a better command of the lessons, and know the lecturers and their lecturing and exam methods better. The reason why 3rd graders are more successful than 4th graders is thought to be due to the increase in the time that senior students allocate to extracurricular activities and as a result, they do not study sufficiently. Apart from this, it can be said that studying for the public personnel selection exam and spending more time on internship practices due to being in the last grade negatively affect the lessons at school. It was concluded that the exam anxiety experienced by university students did not differ significantly according to the grade levels, but that the 1st and 4th grades experienced more exam anxiety than the 3rd and 2nd grades, even if not significantly. In other words, although the level of test anxiety experienced by 1st, 2nd, 3rd and 4th grade students is similar, 1st and 4th graders experience slightly more test anxiety. It is thought that such a result is encountered due to the fact that senior students are preparing for a series of exams, while 1st grade students have just passed the university entrance exam. When the studies on this subject are examined, it is seen that there is no consensus. According to the study conducted by Başduvar and Üredi (2017) with 302 pre-service teachers, it was concluded that the exam anxiety experienced by classroom teachers differed significantly according to the grade variable. Yenilmez and Özabacı (2003) and Bozkurt (2012) stated that there was no significant difference between grade level and test anxiety. Boyacıoğlu (2010) concluded that 3 sub-dimensions of test anxiety differed significantly according to the grade variable, while 1 dimension did not differ. It is seen that the academic procrastination levels of university students vary significantly according to the grades and that the students studying in the 4th grade show more academic procrastination behavior than the students studying in the 1st and 3rd grades, and more academic procrastination behavior than the students studying in the 2nd grade, even if it is not significant. These results are similar to the results of studies conducted by Akdoğan (2013), Çelik (2014), Çelik and Odacı (2015), Çetin (2016), Ekşi and Dilmaç (2010) and Yeşir and Şahan (2012). Therefore, it can be stated that 4th grade students delay their academic duties and responsibilities more than other grades. Students who break away from high school life and start university take care to study more disciplinedly in the first years of university because they do not know exactly what kind of education they will encounter at university, they are afraid of failing, they study intensively for the exam ahead of them and they

cannot get out of this tempo at once. As the time they spend at the university increases and the rate of adaptation increases, students can relax themselves a little more and neglect their academic duties more (Ferrari & Schaz, 2000; as cited in Çelik & Odacı, 2015). In addition, it is thought that senior students who will leave the school and their friends show more academic procrastination behavior compared to other grades because they spend their time on extracurricular activities. In addition, students in the 4th grade think that they are in their last year and that they should start their professional life. Students who are aware that it is now more difficult to find a job after graduation may become anxious, despair and change their perspective on life. It is thought that this pessimistic mood also affects the student's school life, and this situation causes a tendency to be reluctant to fulfill academic tasks or to delay these tasks. Balkıs (2006) concluded that academic procrastination behavior increases with increasing grade level. It was concluded that the self-handicapping tendencies of university students did not differ significantly according to the grade level. Based on these results, it can be said that the self-handicapping levels of students studying in different grades are close to each other. In other words, it can be said that although the grades of individuals studying at the university are different, their levels of self-handicapping are similar. When the studies on this subject are examined, it is seen that different results are reached. In the study conducted by Üzbe (2013), self-handicapping did not vary according to grade levels, while Çingöz (2015) concluded that the level of self-handicapping differed according to the grade variable and that 4th grade students sabotaged themselves less than 1st and 3rd grade students.

Academic achievement of university students differs significantly according to faculties. Accordingly, Faculty of Theology students have higher academic achievement than the students of Faculty of Sports Sciences, Faculty of Engineering, Faculty of Literature, Faculty of Aeronautics and Astronautics and Faculty of Economics and Administrative Sciences. In addition, it was concluded that students from the Faculty of Communication and Sports Sciences have higher academic achievement than students from the Faculty of Engineering and Aeronautics and Astronautics, students from the Faculty of Literature and Health Sciences have higher academic achievement than students from the Faculty of Economics and Administrative Sciences, Faculty of Aeronautics and Astronautics and Faculty of Engineering, and finally, students from the Faculty of Economics and Administrative Sciences have higher academic achievement than students from the Faculty of Engineering. It was concluded that the exam anxiety experienced by university students differed significantly according to the faculty. It was concluded that the students of the Faculty of Literature, Engineering and Aeronautics and Astronautics experienced more exam anxiety than the students of the Faculty of Health Sciences. Considering that the courses of the students of the Faculty of Engineering and the Faculty of Aeronautics and Astronautics are more intense compared to other faculties, it can be said that these students have difficulty in fulfilling their responsibilities and therefore apply to procrastination behavior more. It was seen that the academic procrastination levels of university students differed significantly according to the faculty. It was concluded that the academic procrastination levels of the students of the Faculty of Engineering and the Faculty of Aeronautics and Astronautics were higher than the students of the Faculty of Health Sciences and the Faculty of Theology, and that the students of the Faculty of Aeronautics and Astronautics delayed their academic tasks more than the students of the Faculty of Communication. Çeri, Çavuşoğlu, and Gürol (2015) also stated in their study that Engineering Faculty students delayed their school-related tasks more than other faculties. It is thought that the fact that the students of the Faculty of Engineering and the Faculty of Aeronautics and Astronautics have numerical courses and that these courses are more difficult than other faculties causes them to postpone academic tasks more. In the study conducted by Balkıs (2007) on this subject, it was concluded that students in the departments with numerical courses postpone their academic tasks more. It was concluded that self-handicapping tendencies of university students differed significantly according to faculties. Accordingly, it was observed that the self-handicapping tendency of the students of the Faculty of Health Sciences was

significantly lower than the self-handicapping tendency of the students of other faculties. In addition, it was concluded that the self-handicapping tendencies of the students of the Faculty of Engineering and the Faculty of Aeronautics and Astronautics were significantly higher than the self-handicapping tendencies of the students of the Faculty of Theology. Health is undoubtedly a very important branch of science and serious consequences can be encountered if mistakes are made. For this reason, students in the Faculty of Health Sciences need to study their lessons completely. Therefore, it is an expected result that these students are less likely to resort to self-handicapping behavior. Considering that the students of the Faculty of Engineering and the Faculty of Aeronautics and Astronautics are more likely to fail academically compared to other faculties, it is thought that they put more obstacles in front of themselves in order not to show themselves as an inadequate individual.

It was observed that there was a moderate, negative and significant relationship between academic achievement and test anxiety of university students. According to this result, it can be said that as the test anxiety level increases, there will be a decrease in academic achievement. When the studies examining the relationship between test anxiety and academic achievement are examined (Aydın, 2010; Bozkurt, 2012; Cassady & Johnson, 2002; Gündoğdu, 1994; Kapıkıran, 2002), similar results are obtained. Therefore, it can be said that intense test anxiety can negatively affect an individual's academic achievement, and with the decrease in this anxiety, the success level will increase. It can also be thought that students who are successful in exams may experience less test anxiety as their self-confidence increases. Alyaprak (2006) and Çakmak (2007) also stated in their studies that students' test anxiety decreased with the increase in their achievement. It has been observed that there is a high, negative and significant relationship between academic achievement and academic procrastination behaviors of university students. It is seen that similar results were obtained in the study of Çeri, Çavuşoğlu, and Gürol (2015) investigating academic procrastination in university students, in the study of Balkıs et al. (2006) examining university students' delaying their academic tasks, in the study of Balkıs and Duru (2010) investigating academic achievement, academic procrastination and self-esteem, and in the studies of Anthony and Owens (1997) and Fritzsche, Young, and Hickson (2003). Students' disrupting and delaying the tasks they are supposed to do causes them to submit these tasks incompletely or fail to submit them, and this situation causes them to be unsuccessful. In other words, it is an expected result that as the rate of postponement of academic tasks increases, academic achievement naturally decreases. It was observed that there was a high, negative and significant relationship between academic achievement and self-handicapping levels of university students. When the studies examining the relationship between academic achievement and self-handicapping are investigated, it is noticed that the results are similar to this study (Gündoğdu, 2013; Hirabayashi, 2005; Kalyon, Dadandı & Yazıcı, 2016; Karner, 2014). When students face a situation that they think they cannot overcome, they experience the fear of not being successful and protect themselves by blaming this failure on external factors. This strategy, which is used to protect themselves, disrupts the responsibilities they have to fulfill in school and thus causes them to be unsuccessful. In short, the increase in self-handicapping behaviors negatively affects students' school success. It was observed that there was a high, positive and significant relationship between university students' exam anxiety and academic procrastination behaviors. This result indicates that there is a relationship between exam anxiety and academic procrastination and that an increase in one variable will lead to an increase in the other variable. Aydoğan (2008) stated in his study that the level of anxiety increased with the increase in the level of delaying academic tasks. Kağan (2010) reached parallel results with the results of this study in his study on the use of Rational Emotive Behavioral Therapy to overcome academic procrastination. When it is considered that academic procrastination leads to not being well prepared for the courses and exams, it can be said that taking the exam unprepared increases the anxiety experienced during the exam. It was observed that there was a high, positive and significant relationship between university students' test anxiety and self-handicapping levels. When the literature is examined, it is seen that there

are studies similar to this result (Sahranç, 2011; Yıldırım, 2015). Students take dozens of exams throughout their lives and try to achieve the goals they want. However, an individual who takes an exam that he/she thinks he/she will not be successful may be more anxious than other students during the exam. As this level of anxiety and the possibility of failure increase, the student hinders himself/herself, shows those obstacles to his/her friends and blames the failure on those obstacles. In addition, students who have made a habit of putting obstacles in front of themselves may worry more because they think that they will not be successful in the exam because they cannot adequately prepare for the exam. There is a positive, high and significant relationship between academic procrastination behaviors and self-handicapping levels of university students. Individuals who do not fulfill their academic tasks on time may prevent themselves because they think that they will not be able to complete their tasks and be successful, and in order not to attribute this failure to themselves. When we look at the other dimension, it can be said that as the frequency of individuals who put obstacles in front of themselves increases, the probability of completing their tasks on time will decrease. Therefore, it can be said that these two variables decrease and increase depending on each other. When the literature is examined, it is noteworthy that there is a positive relationship between delaying academic tasks and self-handicapping in the studies of Gündoğdu (2013), Söyleyen (2018) and Yıldırım (2015).

It was seen that test anxiety, academic procrastination levels and self-handicapping tendencies of university students explained 61% of their academic achievement. It was also concluded that academic procrastination and self-handicapping negatively and significantly affected academic achievement, while test anxiety did not significantly affect academic achievement. In addition, academic procrastination was found to be more effective on academic achievement. According to these results, it can be said that there are two variables that prevent students from being academically successful, and the most effective of these is the delay of the tasks that need to be fulfilled on time, that is, procrastination behavior. When the study conducted by Ekinci (2011) on this subject is examined, it is seen that there are similar results to this study. Ekinci (2011) concluded that academic procrastination can explain 6% of academic achievement. Özer (2005) also stated that delaying academic tasks negatively affected achievement.

Based on the results of the research, the following suggestions are presented.

- ✓ It has been observed that there is a negative relationship between academic achievement and test anxiety. Therefore, as the exam anxiety experienced by the individual increases, there is a decrease in academic achievement. Therefore, a number of methods such as breathing exercises, muscle relaxation exercises, bibliotherapy, systematic desensitization can be applied by the guidance and psychological counseling units of universities in order to cope with exam anxiety to students who experience intense exam anxiety and as a result, their academic achievement decreases. Individuals who constantly delay their responsibilities can be helped in time management, preparing a study program and timetable. Individual or group counseling activities can be conducted to help students who have chronic self-inhibition to overcome this problem.
- ✓ If anxiety, procrastination or self-inhibition problems affect the quality of life and psychological well-being of the individual, psychological counseling sessions can be conducted with these individuals by the guidance and psychological counseling units of universities.
- ✓ It is stated that male students exhibit more procrastination behavior and this is due to the upbringing style. If parents want to reduce their children's procrastination behavior, they should be able to impose the same responsibilities on their sons as they do on their daughters, and they should indicate that both of them have duties and that they should fulfill them on time. In addition, men are said to use behavioral self-handicapping more

depending on the culture they live in. In order to reduce males' behavioral self-handicapping tendencies, it is suggested that parents should set rules that apply to both genders and follow these rules.

✓ Students who are new to university may fail academically in their first year because they do not know the course system, exam system and faculty members well enough. In order to overcome this problem, orientation activities can be conducted by academics for all new students.

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