



The Mediating Role of Academic Achievement in The Relationship Between Optimism (Life Orientation) and Life Satisfaction

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Abstract

This article investigates whether academic achievement plays a mediating role in the relationship between optimism and life satisfaction. The study was designed using the correlational survey method. Four hundred and thirty-five (215 females and 220 males) high school students were chosen as the participants of the study. The mean age of the students was 16.21. The Optimism (Life Orientation) Scale and the Life Satisfaction Scale were used in the study, and the academic achievement grades of the students were obtained from the report card notes from the previous year. To test the mediating effect of the applied model, the regression-based bootstrapping method and the Pearson moment-product correlation coefficient were used. Results showed there was a relationship between optimism, academic achievement, and life satisfaction. Furthermore, it was found that academic achievement played a partial mediating role in the relationship between optimism and life satisfaction. It was also observed that as students' optimistic thoughts increased, their academic achievement also increased, and consequently, they became more satisfied with life. The findings were discussed in general terms, and recommendations were made accordingly.

Keywords

Optimism
Academic Achievement
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Introduction

The development of positive psychology in recent years has led to an increase in studies on positive emotions one of which is optimism. Optimism is both a way of thinking and an ability to look at what is experienced in a positive way. It is generally defined as an ability to look at the future with hope despite threats, obstacles and other the negative events that one may experiences in life (Akçamete & Kargın, 1998; Goleman, 2005; Harris & Middleton, 1994). There are also researchers who regard optimism as an ability to look at the future in a flexible, positive, and confident way without taking negative life conditions into account (Gillham & Reivich, 2004; Scheier & Carver, 2003; Scheier et al., 1999; Türküm, 1999).

Daco (1989) expressed positive expectations for the future as "optimist tendency" and an individual's orientation to the best option for himself/herself in the current situation as "optimist situation." Weinstein (1989) evaluated the concept of optimism differently; he defined it as "an

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individual's seeing the higher possibility that positive events rather than negative events will occur on their own" and defined this situation as "unrealistic optimism."

Having a sense of optimism makes positive contributions to people. The optimistic thoughts and behavior keep an individual away from depression and unhappiness (McGinnis, 1998). Optimistic individuals may explain even a failure in a certain context. But they do not regard failures as a personal problem; their failures are a temporary condition since they focus directly on the problem (Isaacowitz, 2005).

Studies that examine optimism address a range of variables. The findings of some of these studies, for example, showed that students with a high level of optimism were mentally healthier, they perceived family and social relations more positively (Colligan, Morey, & Offord, 1994; Gençoğlu, 2006; Hart & Hittner, 1995; Puskar, Sereika, Lamb, Tusaie-Mumford, & McGuinness, 1999; Yalım, 2007), male students tended to be more positive than female students (Açıkgöz, 2006; Parmaksız, 2011; Puskar et al., 1999), and there was a positive relationship between optimism and life satisfaction and self-esteem (Eryılmaz, 2012; Eryılmaz & Atak, 2014; Sapmaz & Doğan, 2012; Yalçın, 2011). The findings of the research on the relationship between optimism and academic achievement yielded different results though. While Güler and Emeç (2006) did not find a relationship between optimism and academic achievement in their study, El-Anzi (2005) recorded a positive relationship between optimism and academic achievement.

Having an optimistic thought, in general, is expected to affect life perceptions in a positive way. Optimistic people are satisfied with their lives and consider themselves as a part of life. Life satisfaction is defined as a positive perception of life within the framework determined by the individual, being satisfied with his/her own life (Diener, Emmons, Larsen, & Griffin, 1985; Özdevecioğlu & Aktaş, 2007; Pavot & Diener, 2008; Ünal & Şahin, 2013; Telman & Ünsal, 2004). There are many variables that affect life satisfaction of individuals. Close relationships, having a child, being involved in entertaining activities, and active participation in the learning process are a few of them (Flanagan, 1978). Research studies on life satisfaction show a positive relationship between life satisfaction and academic achievement (Chow, 2005; Tuzgöl Dost, 2004; Gilman & Huebner, 2006). Furthermore, it is observed that self-esteem of individuals with high life satisfaction is high (Çeçen, 2008; Dilmaç & Ekşi, 2008; Gilman & Huebner, 2006; Huebner, 1991; Ullman & Tatar, 2001) and they feel better psychologically (Eryılmaz, 2012; Oktan, 2008; Turgut, 2016). Generally speaking it is expected that people satisfied with life will behave more optimistically for several reasons: They have a positive attitude toward life and try to get satisfaction from every moment of life, they are also good at establishing close relationships and socializing.

Such optimism can be a driving force for achievement, and individuals with inner peace can take more conscious steps to be successful and achieve their goals. According to Adler (2000), one of the main factors that determine the achievement is individual's belief and confidence about being successful. Achievement is defined as the desire to realize a goal, achieve objectives and conclude a task (Balci, 2005) and as the effort exerted to achieve goals (McClelland, 1985). Academic achievement is described as sum of gains attained by individuals throughout their educational life (Yavuzer, 1993), participation in educational activities and acquisition of desired knowledge and skills (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006), and knowledge and skills measured by exams that are held by teachers (Sarier, 2016).

There are many variables that affect students' academic achievement. In addition to their mental skills, the fact that students also feel psychologically well, takes a significant part in the improvement of their academic achievement. According to Yenidünya (2005), it is important for a student to be physically and mentally healthy for his/her own success. According to Astin (1999), students' academic and social adaptation are factors that determine their achievement. Magdol (1994) states that the academic achievement of children with behavior problems is adversely affected. Personal traits such as having a certain level of motivation, peer relations, approaches toward lessons, and social reasons are among the main factors affecting academic achievement (Zhang & Aasheim, 2011).

Research findings reveal a positive relationship between optimism and academic achievement (Feldman & Kubato, 2015; Hoy, Tarter, & Hoy, 2006; Rand, Martin, & Shea, 2011), and also a positive relationship between life satisfaction and academic achievement (Balkis, 2013; Crede, Wirthwein, McElvany, & Steinmayr, 2015; Diseth, Danielsen, & Samdal, 2012; Suldo, Riley, & Shaffer, 2006).

It is observed in the literature that motive of achievement and academic achievement reduce depression (Accordino, Accordino, & Slaney, 2000), academic achievement and burnout are negatively correlated (Caballero, Cecilia, Abello, & Palacio, 2007; Garden, 1991; Jacobs & Dodd, 2003), academically successful individuals have higher levels of life satisfaction (Chang, McBride-Chang, Stewart, & Au, 2003) attend courses more frequently (Gilman & Huebner 2006), and individuals who make less effort to be optimistic have less desire to be successful in their academic lives (Norvilitis, Reid, & Norvilitis, 2002).

Previous research findings generally indicate that individuals who have optimism and life satisfaction feel psychologically better, are more willing to deliver their responsibilities and achieve the goals they have set for themselves, and those with higher levels of optimism and life satisfaction are more successful academically. Based on these findings, one can argue that optimism will increase academic achievement, therefore contributing to the increase in life satisfaction. It is thought that exploring whether academic achievement is a mediator between optimism and life satisfaction will provide educators, psychological counselors and experts who work in the field with important data in improving students' psychological resilience and that the findings of this research will serve as a guide in investigating the relationships between such variables. Consequently, this research will explore whether academic achievement has a mediating role in the relationship between academic achievement and life satisfaction. Within the framework of this general aim, the following hypotheses are introduced:

1. There is a positive relationship between the Optimism Scale scores and the Life Satisfaction Scale scores.
2. There is a positive relationship between the Optimism Scale scores and academic achievement grades.
3. There is a positive relationship between the Life Satisfaction scale scores and academic achievement grades.
4. Academic achievement grades play a mediating role in the relationship between the Optimism Scale scores and the Life Satisfaction Scale scores.

Method

Research Design

Since it was aimed to reveal the relationship between three different variables, the study was designed using the correlational survey method. This model aims to determine the direction of change between two or more variables (Cohen, Manion, & Morrison, 2000).

Participants

In the study in the 2018-2019 academic year, 435 freshman, sophomore and junior students studying in a public high school in the Küçükçekmece district of Istanbul province were included. Of these students, 136 (31%) were freshmen, 195 (44%) were sophomores, and 104 (24%) were juniors. Of the participants 215 (49%) were female, and 220 (51%) were male. The mean age of the students was 16.21. To choose the study samples, the convenience sampling method, which is defined as the selection of individuals who can be easily reached, was used (Cohen, 2007).

Data Collection Tools

Optimism (Life Orientation) Scale. This scale was developed by Scheier and Carver (1985) to evaluate individuals' perceptions of life and it was adapted into Turkish by Aydın and Tezer in 1991 (Aydın & Tezer, 1991). The scale is a five-point Likert-type scale and consists of 12 items. The scale consists of two factors. The first factor measures a positive perspective on life (optimism), while the other factor measures a negative perspective (pessimism). High scores obtained from the scale indicate

that individuals have optimistic characteristics. The internal consistency coefficient of the scale was .72, and the reliability value obtained by the test-retest method was .77. According to the results of the confirmatory factor analysis conducted on the values obtained from high school students, 4 items with a factor load below .40 were removed from the scale, and it was observed that the fit indices of other items were at an acceptable level ($\chi^2 = 2.484$, $sd = 2$, $\chi^2 / sd = 1.24$, GFI = .99, AGFI = .99, RMSEA = .02, CFI = .99, SRMR = .01, TLI = .99). In this study, Cronbach's alpha value of the scale was recalculated, and the internal consistency coefficient was .81.

Life Satisfaction Scale. This scale was developed by Diener et al. (1985) and it was adapted into Turkish in 1991 by Köker (1991). The measure consisted of five questions, and it was arranged as a seven-point Likert-type scale. High scores obtained from the scale indicate that life satisfaction is also high. The reliability value of the scale obtained by the test-retest method was .85. The confirmatory factor analysis of the scale was performed by Bölükbaşı (2017), and the obtained fit values ($\chi^2 = 10.054$, $sd = 5$, $\chi^2 / sd = 2.011$, GFI = .99, AGFI = .98, RMSEA = .04, CFI = .99, SRMR = .02, TLI = .98) were observed to be at an acceptable level. In this study, Cronbach's alpha value of the scale was recalculated, and the internal consistency coefficient was .78.

Academic Achievement. The academic achievements grades of the students were obtained from the report card notes from the previous year. The scores obtained by the students from all academic courses were divided by the number of the courses and converted into the academic achievement grade averages. In the calculation of high school students' grades in Turkey, a 100-point system was applied.

Data Collection Process

Before starting the study, the necessary ethics and application permits were obtained from the relevant institutions, the students were informed about the aim of the study, and the measurement tools were applied to 440 students who volunteered to participate in the study. The research was carried out face to face in the classroom. In the scoring of the measurement tools, that the data related to five students who gave random answers to the measurement tools were excluded from the evaluation. The students responded to the measurement tools in approximately 30 minutes. At the dates during which the research was conducted, high school fourth-grade students were not present at the schools due to the university entrance exam in Turkey. Thus, high school fourth-grade students were not included in the research.

Data Analysis

Before the analysis of the data, the normality test of the scores obtained from the scale was performed. The kurtosis and skewness values, showed that the scores obtained from the scale were normally distributed (the skewness value of the Optimism Scale was -.65, the kurtosis value was .63, the skewness value of the Life Satisfaction Scale was -.102, the kurtosis value was .95, the skewness value of the academic achievement grades was -.32, the kurtosis value was .55). The Pearson moment-product correlation coefficient was used to determine the relationship between the scores obtained from the scale. In the study, the approach proposed by Hayes (2012) and called the "ordinary least-squares regression" was used to determine the mediating role of the tested model, and the bootstrap procedure was applied to control the significance. The bootstrap procedure is frequently used to minimize the TYPE 1 error rate and to ensure the possibility of controlling factors that may affect the relationship between the variables (Preacher & Hayes, 2008). Bootstrap analyses were performed using "Model 4" by means of PROCESS Macro. The statistical significance of the mediating role of the mediator variable was examined with the 5000-bootstrap method, which allows for resampling, and the confidence intervals were determined. Whether the indirect effect is significant or not is tested by the absence of a zero value between the lower and upper limits of the confidence interval (Hayes, 2013). The variables such as income, gender, and age, which could affect the results of the study were not included in the analysis of the control group. Analyses were performed using IBM SPSS 25.

Results

The descriptive statistics of the measurement tools used in the study and the relationships between the obtained scores were calculated. The obtained results are presented in Table 1.

Table 1. The Descriptive Statistics and The Pearson Moment-Product Correlation Coefficient Values of Optimism, Life Satisfaction, and Academic Achievement Grades

Variables	Descriptive statistics		Correlation coefficient		
	\bar{X}	Sd	1	2	3
Life Satisfaction	11.89	4.08	---		
Optimism	23.53	4.87	.65**	---	
Academic achievement grades	77.61	8.85	.36**	.22**	---

N=435, ** $p < .01$

As seen in Table 1, the descriptive statistics of the scores obtained from the Life Satisfaction Scale were found as $\bar{X} = 11.89$, $sd = 4.08$, of the Optimism Scale scores as $\bar{X} = 23.53$, $sd = 4.87$, and of the academic achievement grades as $\bar{X} = 77.61$, $Sd = 8.85$. The results of correlations analyses showed that there was a significant positive relationship between the Life Satisfaction Scale scores and the Optimism Scale scores ($r = 0.65$; $p < .001$) and the academic achievement grades ($r = 0.36$; $p < .001$). In addition to this, a low but significant relationship was found between the Optimism Scale scores and academic achievement grades ($r = 0.22$; $p < .001$). In the relationship between Optimism Scale scores and Life Satisfaction Scale scores and standardized beta values, academic achievement scores are mediated in Figure 1.

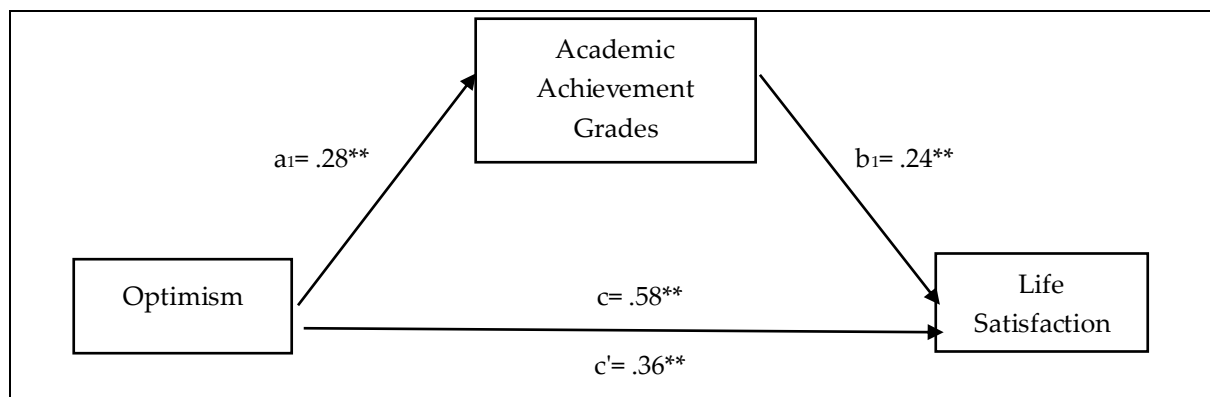


Figure 1. The mediation of academic achievement grades in the relationship between the Optimism Scale scores and the Life Satisfaction Scale scores and standardized beta values. ** $p < .01$.

As seen in Figure 1, academic achievement grades played a partial mediating role in the relationship between the Optimism Scale scores and the Life Satisfaction Scale scores. In other words, as students' optimism scores increased, it affected their academic achievement grades positively, and life satisfaction of students, who were more academically successful, was higher.

Path Coefficients and Effect Results in Optimism Life Satisfaction and Academic Success Model are also given in Table 2.

Table 2. Path Coefficients and Effect Results in The Model for Optimism, Life Satisfaction, and Academic Achievement

Path coefficients	Life	Academic	Coefficient	Bootstrap Indirect Effect	
				Satisfaction	Achievement
Model			(SH)	Lower Limit	Upper Limit
From the optimism scores	.58** (.06)	.28** (.04)			
From academic achievement	.24** (.04)				
OS→AA→LS			.18**(.05)	.1226	.5970

N=435 k=5000, Control variables, income, gender, and age. ** $p < .01$. OS=Optimism scale, AA= Academic achievement, LS=Life satisfaction, BCa= Bias-corrected and accelerated 5000 bootstrap sample

Table 2 shows bootstrap results with regard to the mediating effect of academic achievement grades on the relationship between optimism and life satisfaction. When the direct effects were examined, it was observed that the Optimism Scale scores predicted life satisfaction ($B_{sh} = 0.58(04)$) and academic achievement ($B_{sh} = 0.28(06)$), and academic achievement grades predicted life satisfaction ($B_{sh} = 0.24(04)$). Upon examining the indirect effect results, it was observed that academic achievement grades played a mediating role in the relationship between optimism and life satisfaction (bootstrap coefficient = .18, SH = .05; %95% GA =.1226-.5970). While the correlation coefficient between optimism and life satisfaction decreases with academic achievement grades' being a mediator, the obtained correlation value was observed to be significant ($c' = .36, p < .01$). Furthermore, it was observed that the whole model was significant ($F(5-322) = 25.33, p < .001$) and all variables explained 14% of the total variance in life satisfaction

Discussion, Conclusion and Suggestions

The research results revealed that academic achievement grades play a partial mediating role in the relationship between students' Optimism Scale scores and life satisfaction. Firstly, the relationships between the scores obtained from the scales were examined in the study. According to the obtained result, there was a relationship between the Optimism Scale scores and academic achievement grades. Optimism is, in general, the ability to look at the future with hope despite the obstacles in life. People, who are academically successful, are also individuals who are able to achieve the determined goals despite threats and obstacles. From this point of view, a relationship between the optimism thought and academic achievement is an expected situation since these two variables are similar in terms of aim. The obtained findings are also consistent with earlier research results. The previous studies demonstrated that there is a positive relationship between students' Optimism Scale scores and their academic achievement (Aydın & Tezer, 1991; El-Anzi, 2005; Nonis & Wright, 2003). In a study conducted on the faculty of law students, the Optimism Scale scores were observed to be a significant predictor of students' achievement (Rand et al., 2011). A positive relationship was also found between academic optimism defined as teachers' having confidence, feeling confident that they can cope with difficulties and the belief that positive change can be made in students' academic optimism (Hoy, Hoy, & Kurz, 2008; Smith & Hoy, 2007) and academic achievement (Chang, 2011; Erdođan, 2013; Hoy et al., 2006; Karaçam & Pular, 2016; McGuigan & Hoy, 2006; Smith & Hoy, 2007). Research findings also show that successful people are easy-going, are satisfied with life, and have healthy emotions and thoughts (Özkan, 2006). They are also psychologically strong (Zhang & Aasheim, 2011), and optimistic people that exhibit psychologically healthy and compatible behaviors (Chang, 1998). In the same vein the findings of the present also confirmed that there is a relationship between optimism and success.

Another result of the study is that there is a relationship between life satisfaction and academic achievement. The academic achievement of individuals is related not only to their high mental skills but also to their peaceful well-being and life satisfaction degree. Several earlier studies reveal that

psychological factors, such as concerns about the future, low motivation, and loneliness affect academic achievement adversely (Erbaş, 2005; Topcu & Uzundumlu, 2012), and students, who are easy-going, have emotionally and psychologically balanced characteristics, are academically more successful (Sıgri & Gürbüz, 2011). In a study conducted by Pourfeiz and Behjoo (2013), it was revealed that there was a relationship between students' emotions, life values, and academic achievement. Since life satisfaction is defined as the individual's appraisal of life, meaning attributed to life (Pavot & Diener, 1993; Schmitter, 2003), morale and happiness received from life, and the state of well-being (Vara, 1999), there are points at which the concepts of life satisfaction and academic achievement overlap. Numerous studies have found a positive relationship between life satisfaction and academic achievement, (Balkis, 2013; Diseth et al., 2012, Diseth & Samdal, 2014; Heffner & Antaramian, 2016). In a study carried out by Gilman and Huebner (2006), it was found out that students with high life satisfaction had both positive attitudes toward school and high academic achievement.

Another result of the study is that there was a positive relationship between optimism and life satisfaction. This result is parallel with the current research findings in the literature. In a study conducted on university students, a linear relationship was determined between students' life satisfaction and optimism levels (Güler & Emeç, 2006; Hayes & Weathington, 2007; Hırlak, Taşlıyan, & Sezer, 2017; Uğurlu, 2013; Yalçın, 2011). In another study Sapmaz and Doğan (2012), found that optimism explained 60% of the variance in life satisfaction. Life satisfaction is expressed as an individual's satisfaction with life (Telman & Ünsal, 2004), and the level of achieving goals by individuals (Bradley & Crownly, 2004). It is also an indicator of the individual's happiness and quality of life (Piccolo, Judge, Takahashi, Watanabe, & Locke, 2005). Since optimism is described as the belief that individuals will always face positive situations in their lives (Scheier & Carver 1985) life satisfaction and optimism are expected to intersect at many points. Those who are optimistic are expected to be more connected to life because they think that they will always face positive situations in life. They are also more satisfied with life because they desire to live every moment of life to the fullest. Similarly, individuals who live life to the full have positive perspectives on life (Karataş, 1988), and therefore, their life satisfaction is observed to be higher (Argyle, Martin, & Crossland, 1989). As a result, a positive perspective on life increases life satisfaction, and therefore, a relationship between optimism and life satisfaction is expected.

The main aim of the study is to reveal the mediating role of academic achievement in the relationship between optimism and life satisfaction. Although the previous studies revealed that there was a positive relationship between these three variables, the findings of present study did not find conclusive evidence to show academic achievement plays a mediating role in the prediction of life satisfaction by optimism. However, in a similar study Balkis (2013) found that rational beliefs play a mediating role in the relationship between life satisfaction and academic achievement. Bölükbaşı (2017) concluded in his study that optimism and hope play a fully mediating role in the relationship between career adaptation and life satisfaction. Optimistic individuals are successful because they have positive expectations in life and fulfill their responsibilities, and as a result, they are happier in their lives and are satisfied with life. Also, Tuzgöl Dost (2004) reported that students with high academic achievement and optimistic perspective on the future have high life satisfaction.

As the subject matter is the mediating role of academic achievement in the relationship between optimism and life satisfaction, it is necessary to organize educational trainings on positive thinking at schools to enhance students' optimistic thoughts, to properly put forth the factors that affect academic achievement, to identify the causes of failure and to conduct counseling studies that inform educators, parents and experts working in the field about orientating students to fields where they can succeed. Individual and group psychological counseling should be provided to identify the students who are

academically unsuccessful and for them to develop a successful self. It can be recommended that research be conducted to test effects of variables such as motivation, self-efficacy, confidence, self-esteem, school engagement on life satisfaction in parallel with academic achievement.

Strengths of this study are exploring the relationships among optimism, academic achievement, and life satisfaction and testing the effects of predictive and mediating variable. There are also limitations of the studies. The fact that research data were obtained from a single public high school, failure to establish a causation between the variables, and the assumptions that the participants provided correct answers to the measures and their academic achievement grades were calculated in line with regulations are limitations of this study. Hence, research limitations should be considered when generalizing the research results. Consequently, how students cope with their problems, become happy and have well-being is possible when they are satisfied with their lives. Thus, it is important that they handle their lives positively and are supported so that they can also become academically successful individuals.

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