Available online at http://www.bedujournal.com/

BASE FOR ELECTRONIC EDUCATIONAL SCIENCES

ISSN: 2718-0107

Base for Electronic Educational Sciences, 5(2), 40-56; 2024

The Mediating Role of Self-Regulation in the Relationship Between Parental Attitude and Locus of Control with Academic Motivation

Şeyma Mızrak[a] Ramin Aliyev[b]

[a] *Corresponding author, Dr., Ministry of Education, Türkiye.*
https://orcid.org/0000-0001-5277-9480, E-mail: symaa.akgull@gmail.com
[b] *Assoc. Prof. Dr., Hasan Kalyoncu University, Türkiye.*
https://orcid.org/0000-0003-1983-6505, E-mail: ramin.aliyev@hku.edu.tr

APA Citation:
Mızrak, Ş. & Aliyev, R. (2024). The mediating role of self-regulation in the relationship between parental attitude and locus of control with academic motivation. *Base for Electronic Educational Sciences, 5*(2), 40-56.
Submission Date: 06/04/2024
Acceptance Date: 09/07/2024

Abstract

The study explored the mediating role of self-regulation in the relationship between parental attitude, locus of control, and academic motivation. Employing the correlational research design, the study was conducted with 885 high school students determined by random sampling method. In the study, five different data collection tools, the Personal Information Form, the Academic Motivation Scale, the Parental Attitudes Scale, the Self-Regulation Skills Scale, and the Locus of Control Scale, were used for data collection. Structural equation modeling was utilized for analysis. Accordingly, the measurement model was tested with confirmatory factor analysis. The examination of the fit coefficient for the independent model (Chi-square=4615.59, p<001) showed that the variance-covariance matrix was suitable for testing and there were significant relationships between the variables. After testing the first model, the measurement model was tested for the second model, which theoretically proposed as locus of control as the independent variable, self-regulation skill as the mediating variable and academic motivate-on as the criterion variable. In the first model, while the fit indices indicated that there were relationships between the variables, no mediation relationship was found when indirect effects were examined. In the study, a mediation relationship was found in the second model. The study results revealed that locus of control was not a significant long-term predictor of academic motivation after the locus of control mediator variable was added to the model. This result indicates that self-regulation skills have a mediating role in the relationship between locus of control and academic motivation.

Keywords: Parental attitude, locus of control, self-regulation, academic motivation.

Introduction

The relationship between human beings and their environment begins before birth and continues after birth between them and others who make up the environment, especially the caregivers. Starting from infancy, relationships within the family serve as a model for individuals to initiate and maintain relationships with the people around them. Parents are considered as the main factor in personality development (Ömeroğlu & Kandır, 2007). Influenced by their parents in the development process, children reflect this in their social relationships (Şanlı & Öztürk, 2015). Life experiences in childhood have a significant impact on individuals to become healthy adults (Candangil, 2005). Adolescence can be expressed as a period of restructuring and change in the parent-child relationship. The parenting style of the parents helps adolescents to become healthy adults in later life, to accept themselves as they are and to be at peace with themselves and their environment (Kaya et al., 2022). This parenting style is made up of values, thoughts, beliefs and behaviors that parents show in principle towards their children.

The basis of the relationship between parents and children is formed by parental behaviors and attitudes (Pekdoğan & Kanak, 2015). These attitudes can be classified as democratic, oppressive, permissive, uninvolved, overprotective, inconsistent and rejecting (Baumrind, 1996; Yavuzer, 2008; Yörükoğlu, 2016). Among these attitudes, the democratic attitude, in which the child's feelings and thoughts are valued and the child is included in the family as an individual, is considered healthy (Arslan & Pekşen-Akça, 2012). Children raised in these families can develop healthy relationships with their parents and show more desirable behaviors with their environment and peers (Erwin, 2000). Permissive families give less responsibility to their children and do not prefer to be controlling when necessary. Protective families, on the other hand, are too controlling and exhibit excessive care. Inconsistent families are sometimes preventative, sometimes permissive, sometimes tolerant and sometimes oppressive. In perfectionist families, the goals expected from children may be above their capacity and the parents may exhibit a rigid attitude in achieving these goals. With authoritarian parents, children generally have to be submissive to the authority figure and continue to behave in this way after they become adults. This can be considered as a reason for children to become externally controlled individuals (Aydın, 2002; Alisinanoğlu, 2003; Gordon, 1999). Individuals form their locus of control with parental attitudes and the positive or negative reactions they receive from their close environment (Rotter, 1990; Chubb et al., 1997). Children who grow up with authoritarian parents may prefer to submit in order to cope with authority. The needs of children with an external locus of control may be ignored (Gordon, 1999). Attitudes such as "don't touch, don't do", which are not permissive when necessary, prevent individuals from exploring. Similarly, the consequences of being overprotective include being more open to external control (Dökmen, 1997; Yavuzer, 1992).

Locus of control is the way an individual controls his/her life. According to Rotter, the fact that the result of a behavior is important for us enables us to perform that behavior. The result to be gained from the behavior has a value for the individual. The positive and negative feedbacks we receive

from our environment in life constitute the child's locus of control (Rotter, 1990; Strickland, 1989). It is stated that whether the locus of control is considered as internal or external depends on the situation the individual is in. However, individuals may generally be closer to one of these extremes in every aspect and situation of their lives (Rotter, 1990). Individuals with internal locus of control look for the reasons for their failures in their own behaviors rather than external factors (Cüceloğlu, 2000). Individuals with external locus of control, on the other hand, care more about what the environment will think and do not want to perform a behavior that the environment will react negatively to. Individuals with internal locus of control own characteristics such as self-regulation, personal control and self-determination (Amadi, 2010). In addition to environmental factors, factors such as the environment's educational level, their perspective on fatalism and religious beliefs also affect individual's locus of control (Yağışan et al. 2007). Thus, the importance of parents helping their children to perform purposeful behaviors within the framework of certain rules increases. This also reveals the importance of individuals acquiring self-regulation skills (Suchodoletz et al., 2011).

Self-regulation is the ability of individuals to direct their emotions, thoughts and behaviors towards the goal they have set (Zimmerman, 2000). It is the ability to implement or change this goal when necessary (Brown et al., 1999; Shunk, 2001). Through self-regulation, individuals move from being passive recipients of information during the learning processes to taking an active role and having control over achieving their goals (Schunk, 2001). It is the ability to comply with demand, to initiate and terminate activities according to the situation, to adjust the intensity, frequency and duration of behaviors, to postpone a desired goal, and to behave in a socially acceptable manner when others are not present (Kopp, 1982; Hofmann et al., 2012). Self-regulation is also an active and constructive process in terms of metacognition, motivation and behaviors in which individuals set their own learning goals (Vauras et al., 2004).

The development of children's self-regulation skills also means supporting their social, emotional and academic skills. There are studies revealing parental support and acceptance having positive reflections on individuals' academic motivation (Alfaro & Taylor, 2015; Gogoi, 2014; Peker & Kağızmanlı, 2018). Children need cognitive, social and motivational skills to be successful in the future (Boyn et al., 2005). Performing and maintaining behavior for a certain goal is defined as motivation (Schunk et al., 2013). Motivation, which can be expressed as an intrinsic force directing individuals to a behavior, is of great importance during the process of performing that behavior that is, executing and maintaining the behavior or action. This force that directs individuals to continue or not continue the behavior is called intrinsic motivation when it comes from within, and extrinsic motivation when it comes from outside (Ormrod, 2013; Deci & Ryan, 2008). Intrinsic motivation explains that behavior occurs because of the internal satisfaction that constitutes it, apart from some differentiated outcomes. People are intrinsically motivated for some activities and not at all motivated for some tasks. Motivated behaviors are the first example of behaviors in which individuals can reveal their essence (Ryan & Deci, 2000). Extrinsic motivation is associated with individuals performing a certain behavior in order to achieve a reward. This is in contrast to intrinsic motivation, which refers to doing a simple behavior for its own sake rather than its reward value. It is a situation that

perpetuates behaviors that are external to individuals; a behavior that is performed in order to get high grades, to be accepted and appreciated by teachers, or to gain parental approval. Amotivation can be explained as not valuing a behavior, not feeling any pressure or expectation. High school is a period when individuals are expected to have high motivation for learning (Stenberg & Williams, 2009; Slavin, 2006). Studies put forth that motivation affects the students' attendance continuity (Vallerand & Bissonnette, 1992), their academic achievement and performance (Linnenbrink & Pintrich, 2002; Ratelle et al., 2007; Khalila, 2015), and their self-efficacy levels (Aydın, 2010). Academic motivation also affects individuals' achievement, efforts to fulfill responsibilities, and self-regulation skills (Sıcak & Başören, 2015).

Similar to intrinsic motivation mentioned in academic motivation, the power of individual control in self-regulation is emphasized and individuals' ability to control their own behaviors is important for both concepts (Eisenberg et al., 2000). Academically intrinsically motivated individuals can more easily control the events that occur in their lives (Pintrich, 2003). Without academic motivation, it may be more difficult for individuald to realize self-regulation skills (Zumbrunn et al., 2011). Accordingly, the present study aims to provide a model of how self-regulation mediates the relationship between individuals' parental attitudes and locus of control and academic motivation.

Method

Aiming to examine the mediating role of self-regulation in the relationship between parental attitudes and locus of control and academic motivation, the study employed the correlational research design. Correlational research is conducted to reveal the relationships between two or more variables without any intervention to the variables and to determine the level of these relationships (Büyüköztürk et al., 2016).

Population and Sample

The study population was made up of high school students studying in the city of Gaziantep, whereas the study sample was made up of 885 students (444 50.17% female, 441 49.83% male) attending four Anatolian high schools, three science high schools and three vocational high schools in the Şahinbey and Şehitkamil districts of Gaziantep. Simple random sampling method was used for the sample selection. In random sampling, when the units are similar in terms of relevant characteristics and there is a finite, stationary and accessible universe, the probability of each unit in the universe entering the sample is equal and independent of each other and the sampling is carried out with the help of either a bag or a table of random numbers after all units of the universe are listed and (Erkuş, 2013). While determining the study group, attention was paid to the proportional numbers of sex, grade level and school type. In this direction, all school types and grade levels where the data set would be applied were listed, students from each grade level and school type were included in the study group, and the application was carried out by considering the ratio of females and males.

Descriptive Statistical Results of the Study

The descriptive statistics regarding the variables of sex, school type, grade level, father's education level, mother's education level and engagement in arts and sports are presented in the study. In terms of the sex variable, 444 (50.17%) students were female and 441 (49.83%) were male. In terms of the school type variable, 240 (27.11%) of the participants were attending a science high school, 383 (43.27%) an Anatolian high school, and 262 (29.60%) a vocational high school. Also, in terms of the grade level variable, 250 (28.25%) of the students were 9th graders, 252 (28.47%) were 10th graders, 232 (26.21%) were 11th graders, and 151 (17.06%) were 12th graders. In terms of the students' fathers' education level, 273 (30.85%) students' fathers had graduated from elementary school, 263 (29.72%) from middle school, 181 (15.82%) from high school, 140 (15.82%) from university and above participants, and 28 (3.16%) students' fathers were illiterate. In terms of the students' mothers' education level, 393 (44.41%) participants' mothers had graduated from elementary school, 199 (22.48%) from middle school, 103 (11.64%) from high school, 81 (9.15%) from university and above, and 109 (12.32%) participants' mothers were illiterate. Finally, in terms of the variable of students' engagement in arts and sports, 378 (42.71%) students responded with Yes, and 507 (57.29%) students responded with No.

Data Collection Tools

In the study, five different data collection tools, the Personal Information Form, the Academic Motivation Scale, the Parental Attitudes Scale, the Self-Regulation Skills Scale, and the Locus of Control Scale, were used for data collection. Information about the data collection tools is given below.

(1) Personal Information Form: A Personal Information Form was developed by the researchers to collect certain information on the adolescents participating in the study. The form included questions on the participating adolescents' sex, grade level, school type, mother's education level, father's education level, and engagement in arts and sports.

(2) Academic Motivation Scale: Adapted to English from a scale named "Echelle de Motivation en Education" by Vallerand et al. (1992), the Academic Motivation Scale was adapted to Turkish by Çakır (2006). The Turkish adaptation study was conducted with 100 high school students. The 22 item-scale has three sub-dimensions (intrinsic motivation, extrinsic motivation and amotivation). The explained variance of the 7 point Likert scale was 65.62%. It was concluded that the explained variance of the scale was 65.62%. The internal consistency coefficient was found as .83 using the Cronbach's alpha method is .83 and the reliability coefficient was found as .89 using the test-retest method (Çakır, 2006).

(3) Parental Attitudes Scale: Developed by Kuzgun in 1972, the Parental Attitudes Scale was updated by Eldeleklioğlu in 1996. The scale aims to determine how parental attitudes are perceived by the child. The 5 point Likert scale has three sub-dimensions and 40 items. For the Democratic Attitude, the internal consistency of the scale was calculated as .89 and stability factor as .92, whereas for the Protective Attitude, the internal consistency of the scale was

calculated as .82 and stability factor as .75 and for the Authoritarian Attitude, the internal consistency of the scale was calculated as .78 and stability factor as .79.

(4) Locus of Control Scale: Developed by Nowicki and Strickland in 1973, The Locus of Control Scale for Children was adapted into Turkish by Öngen in 2003 as the Locus of Control Scale. The scale aims to determine the internal and external aspects of individuals' locus of control. The adapted 4 point Likert scale has five factors and 29 items. The internal consistency coefficients of the scale were .74 for the sub-dimension of locus of control for family relationships, .59 for locus of control for achievement, .61 for locus of control for peer relationships, .62 for locus of control for superstition and .47 for locus of control for fate. For the total scale, internal consistency coefficient was .74 (Öngen, 2003).

(5) Self-Regulation Skills Scale: Developed by Moilen (2005), the Self-Regulation Skills Scale was adapted to Turkish by Harma (2008). The scale measures the self-regulation skills of adolescents. The 4 point Likert scale has 32 items and two sub-dimensions (Successful Self-Regulation, Unsuccessful Self-Regulation). The internal consistency coefficient was calculated as 0.85 for the Successful Self-Regulation dimension and 0.80 for the Unsuccessful Self-Regulation dimension (Harma, 2008).

Data Collection and Analysis

Before starting the data analysis, frequency analysis was performed for the variables in the data set. Little's MCAR test was utilized to detect the missing data in the data set. The analysis showed that the missing values in the data set were randomly distributed (missing completely at random).

Instead of completing the missing data by any assignment method, 12 casescases with missing values in the data set were deleted. Before the analysis, the univariate normality of the data was examined using skewness and kurtosis coefficients. Skewness and kurtosis coefficients were close to 0 except for a few items in the data set. To examine the outliers in these items, z scores were calculated. For the univariate outliers in the data set, 14 cases with z values exceeding 3.00 were excluded from the data set. Mahalanobis distance test was performed to examine the multivariate outliers in the linear combinations of the data.

The first model had 81 degrees of freedom and the second model had 52 degrees of freedom. Therefore, it was decided to delete the multivariate outliers based on the degrees of freedom in the second model. Accordingly, 77 multivariate outliers exceeding $x^2_{52=\ 86.66}$ were removed from the data set. In this context, the analyses were conducted with a data set of 885 cases. In order to examine the sample size, the case ratio in the data set was examined using free parameter. It was calculated as 885/39= 22.66 for the first model and 885/39=34.03 for the second model. These ratios showed that the data set was sufficient for a reliable analysis. For the multivariate normality assumption of the two models, Mardia's multivariate kurtosis coefficient was calculated and the critical ratio did not exceed 1.96 in both models.

This showed that the data met the multivariate normal distribution. After it was concluded that the data set met the assumptions required for structural equation modeling, data analysis began. Data analysis was performed with the SPSS and AMOS programs. Parceling technique was used in data analysis and parcels were included in the analysis as indicator variables. Theoretically, the researchers decided that it was more accurate to test the two models. In both models, self-regulation skills were included in the model as a mediating variable. Academic motivation was accepted as the predictor variable in both models. In the first model, parental attitudes were accepted as the independent variable, and locus of control was accepted as the independent variable in the second model. The margin of error in the study was taken as .05. The bootstrap method was used to the calculate indirect effects. Independent samples t-test and one-way analysis of variance (ANOVA) were used to analyze the descriptive statistics (sex, grade level, school type, mother's education level, father's education level and engagement in arts and sports).

Findings and Interpretation

In the study, parental attitudes were accepted as the independent variable and academic motivation as the dependent variable. In this context, a model showing that locus of control and self-regulation skills variables could play a mediating role in the relationship between parental attitudes and academic motivation variables was designed based on the literature.

The measurement model of the model was tested, but the general fit coefficients of the model were found not sufficient. In this regard, the model was designed in two different ways and tested. In the first of the alternative models, the independent variable was determined as parental attitudes, the mediating variable as self-regulation skills and the dependent variable as academic motivation. Accordingly, the measurement model was tested with confirmatory factor analysis. The examination of the fit coefficient for the independent model (Chi-square=4615.59, $p<001$) showed that the variance-covariance matrix was suitable for testing and there were significant relationships between the variables.

After testing the first model, the measurement model was tested for the second model, which theoretically proposed as locus of control as the independent variable, self-regulation skill as the mediating variable and academic motivation as the criterion variable. In the first model, while the fit indices indicated that there were relationships between the variables, no mediation relationship was found when indirect effects were examined. In the study, a mediation relationship was found in the second model. Thus, the study results regarding the second model are presented.

The Mediating Role of Self-Regulation in the Relationship of Locus of Control and Academic Motivation

The study variables include the correlation values of academic motivation, self-regulation and locus of control variables.

Table 1. Table of Simple Correlations between Observed Variables in Model-2

	1	2	3	4	5	6	7	8	9	10	11	12
Int. M.	1											
Ext. M.	.46**	1										
Mot.-	.48**	.28**	1									
Selfr1	.23**	.04	.08*	1								
Selfr2	.12**	.06	.01	.24**	1							
Selfr3	.19**	.07*	.18**	.37**	.18**	1						
Selfr4	.27**	.11**	.20**	.28**	.16**	.41**	1					
FamR.	.07**	-.01	.14**	.09**	.01	.20**	.12**	1				
Ach.	.25**	.18**	.25**	.07*	.02	.13**	.26**	.04	1			
PeerR	.08**	-.01	.08*	.04	.02	.06*	.13**	.33**	.14**	1		
Super	-.01	-.02	-.02	-.00	-.07*	.01	.01	.09**	.11**	.09**	1	
Fate	.04	-.05	.08*	.12**	-.02	.07*	.07*	.39**	-.10**	.20**	.13**	1

**p<.0, *p<.05

As seen in Table 1, there was a low level positive relationship between intrinsic motivation and achievement sub-dimension of locus of control (r=.25, p<.01) and a low level positive relationship with peer relationships sub-dimension of locus of control (r=.08, p<.01). There was a positive and low level relationship between self-regulation and intrinsic motivation (r=.27, p<.01). Also, a positive and low level relationship between extrinsic motivation and achievement sub-dimension of locus of control (r=.18, p<.01) was found. There was a positive and low level relationship between self-regulation and extrinsic motivation (r=.11, p<.01). In addition, Between the dimension of amotivation and locus of control sub-dimensions, a low level positive relationship between amotivation and the family relationships sub-dimension of locus of control (r=.14, p<.01) and a low level positive relationship between amotivation and the achievement sub-dimension of locus of control (r=.25, p<.01) were determined. There was a positive and low level relationship between self-regulation and amotivation dimension (r=.20, p<.01). The measurement model of the second model tested for the mediation of self-regulation is given in Figure 1.

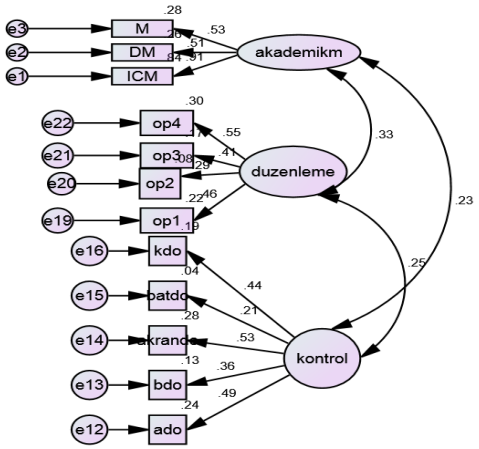

Figure 1. Measurement Model

Table 2. Fit Coefficients Table Regarding the Model

Model	χ^2	Sd	χ^2/sd	P	AGFI	CFI	SRMR	RMSEA %
Structural Model	380.98	81	4.70	.00	.92	.93	.07	.07(.06-.07)

The general fit coefficients of the model are presented in Table 2. Table 1 shows that the general fit coefficients of the model were within acceptable limits. The path diagram of the second model tested for the mediation of self-regulation is given in Figure 2. In Figure 2, the causal relationships between the variables were determined and causal effects were presented Figure 1 shows how the theoretical structures depended on the observed variables and how they were shown. The loadings and causal relationships related to academic motivation, self-regulation and sub-dimensions of locus of control variables were determined and causal effects were presented.

Model-2. The Mediating Role of Self-Regulation in the Relationship between Academic Motivation and Locus of Control

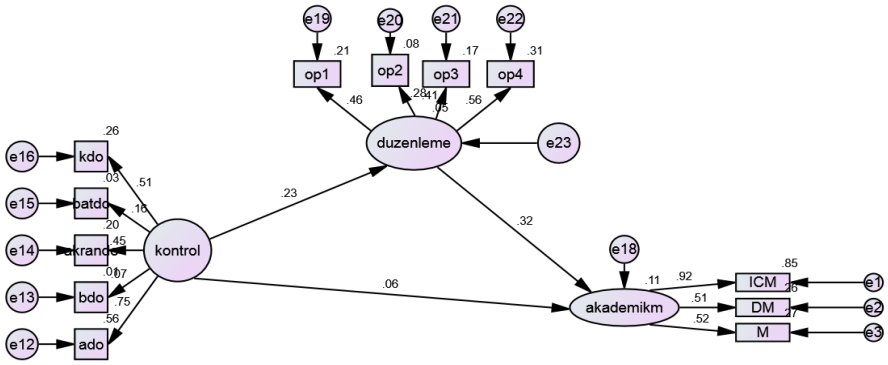

Figure 2. The Mediating Role of Self-Regulation in the Relationship between Academic Motivation and Locus of Control

The path diagram of the second model tested for the mediation of self-regulation is given in Figure 2. The indices of the model are presented in Table 2. Acceptable values of good fit indices used in CFA are as follows; x2 "p" Value= p>0.05, x2 /sd= <5, CFI=>0.90, AGFI=>0.90, RMSEA=<0.08, RMR=<0.08, SRMR=<0.08 (Wang & Wang, 2012).

Table 3. Fit Coefficients Table for Model-2

Model	χ^2	Sd	χ^2/sd	P	AGFI	CFI	SRMR	RMSEA %90 GA
Structural Model	190.57**	52	3.66	.00	.92	.90	.08	.06(.05-.07)

As seen in Table 3, the examination of the general fit coefficients of the model related to self-regulation skills in the relationship between locus of control and academic motivation revealed that the fit coefficients of the model were adequate. χ^2/sd value was significant due to the sample size. Since this value was significant, other fit coefficients were examined. Table 3 shows that these fit coefficients were within the limits recommended in the literature (Çokluk et al., 2016). The direct effects of the second model tested for the mediation of self-regulation are given in Table 4.

Table 4. Direct Effects Table

Effects		*B*	*SH B*	*β*	*Z*
Locus of Control	$\rightarrow$ Self-Regulation	.10	.03	.23	3.55*
Locus of Control	$\rightarrow$ Academic Motivation	.18	.15	.06	1.23
Self-Regulation	$\rightarrow$ Academic Motivation	2.19	.41	.32	5.36*

*p<.05

Table 4 shows that locus of control was a significant predictor of self-regulation skills. A one-unit increase in locus of control scores led to a .10-unit increase in self-regulation skills. Self-regulation skills significantly predicted academic motivation positively. In other words, a one-point increase in self-regulation skills was expected to lead to a 2.19 point increase in academic motivation skills. Also, locus of control was not found to be a statistically significant predictor of academic motivation. Twelve percent of the variance of academic motivation (R2=.12) was explained by the variables in the model. The locus of control independent variable explained 5% of the variance of self-regulation skills, which was the mediating variable. The indirect effects of the second model tested for the mediation of self-regulation are given in Table 5.

Table 5. Indirect Effects Table

Effect		*B*	*SH B*	*β*
Locus of Control	$\rightarrow$ Academic Motivation	.23	.10	.07*

*p<.05

As seen in Table 5, the indirect effect of locus of control on academic motivation was significant. This indirect effect was realized through self-regulation skills. The indirect effect of locus of control on academic motivation was calculated by multiplying the path from locus of control to

self-regulation skills (path a) with the path from self-regulation skills to academic motivation (path b) (.32*.23= .07). When the direct effects were analyzed, locus of control was found not a long-term significant predictor of academic motivation with the addition of the mediating variable to the model. This is evidence to the fact that self-regulation skills had a full mediating role in the relationship between locus of control and academic motivation.

Discussion and Result

The aim of this study was to examine the mediating role of self-regulation in the relationship between parental attitudes and locus of control and academic motivation. The analysis result revealed that the indirect effect of locus of control on academic motivation was significant. This indirect effect was realized through self-regulation skills. With the addition of the mediator variable of locus of control to the model, it was found not a significant long-term predictor of academic motivation. This proves that self-regulation skills have a mediating role in the relationship between locus of control and academic motivation. As a result, it can be stated that the relationship between locus of control and academic motivation cannot be realized without self-regulation skills. In this sense, self-regulation has a full mediating effect in the present study. Theoretically, individuals with locus of control are expected to own characteristics that are considered as self-regulation (directing their emotions, thoughts and behaviors to the goal they have set) while motivating themselves. Individuals' ability to direct the goal they have set with their own thoughts and behaviors, in other words, the fact that they believe their own characteristics or behaviors enable the realization of this goal may indicate that individuals use self-regulation and locus of control in a positive way.

Parental attitude and the environment in which individuals live are considered important in individuals having internal locus of control and developing self-regulation skills (Uykan & Akkaynak, 2019). There are studies revealing a relationship between parental attitudes and locus of control. Self-regulation skills increase with an increase in democratic parental attitudes. Children who grew up with parental care and love had higher internal locus of control scores. In Argun's (1995) study on the effect of parental attitudes on middle school students' locus of control, fathers' attitudes and their children's locus of control scores were compared and a significant relationship was found in the repression-discipline dimension. The study revealed that the children of fathers who put less pressure on their children and punish them less were with more internal locus of control. In addition, Alisinanoğlu (2003) examined the relationship between children's locus of control and their perceived parental attitudes and found that protective mother attitudes were associated with the decrease in children's' locus of control score. Based on the aforementioned studies, it can be stated that children's internal locus of control is positively affected in families where parents have democratic attitudes.

The present study concluded that locus of control and academic motivation are related and that this relationship is mediated by self-regulation skills. According to Cheng (2011), motivation is considered as a self-regulation skill. Individuals with high self-regulation skills learn through their own efforts and use certain strategies to achieve certain goals. This helps individuals with making life easier (Akkuş et al., 2011). There are studies in the literature putting forth that as self-regulation

skills increase, academic motivation increases positively (Kılıç & Beyazıt, 2019; Nacaroğlu et al., 2021; Al Dhamit & Kreishan, 2016). The examination of the relationship between locus of control and academic motivation showed that the academic motivation of individuals whose locus of control score decreased was also negatively affected (Peker & Kağızmanlı, 2018). Talbot (1981) determined that intrinsic motivation and locus of control had a positive relationship with each other. Similarly, Landine and Stewart (1998) found a significant positive relationship between locus of control and academic motivation. Botsari (1999) concluded that academic intrinsic motivation was negatively related to external locus of control. In addition, Küçükkaragöz (1998) examined the effect of classroom teachers' motivation styles on their students and revealed that the students of teachers with intrinsic motivation were more likely to be intrinsically motivated, while the students of teachers with extrinsic motivation tended to be extrinsically motivated.

In terms of the relationship between self-regulation and locus of control, Ören (1991) concluded that individuals with internal locus of control had higher self-regulation skills than individuals with external locus of control. In a parallel a study, Severino et al. (2011) examined the relationship between self-regulation and locus of control and determined that individuals with internal locus of control had higher self-regulation scores.

As a result, the present study revealed that self-regulation skills have a mediating role in the relationship between locus of control and academic motivation.

Limitations

There are certain limitations in the present study that explored the mediating role of self-regulation in the relationship between parental attitudes and locus of control and academic motivation. Recommendations were made in line with these limitations.

In the study, the relatively high number of scale questions caused the practitioner to have difficulty in finding individuals willing to fill the scales. Therefore, it was decided that it was necessary to give a detailed preliminary explanation about the study purpose in order to increase the motivation of the individuals included in the sample group to fill the scales. Also, it was observed that providing informative explanations to the sample group about concepts such as locus of control, self-regulation and motivation helped the individuals to answer the questions more comprehensibly.

Recommendations

The current study was conducted with individuals in high school. However, a similar study can also be conducted with individuals going to universities. Also, the study is a quantitative one. In the literature, there are no experimental studies that study these concepts together. In addition, there are a limited number of studies investigating the relationship between self-regulation and locus of control. that It can be recommended that future researchers can develop psychoeducation programs related to these concepts and conduct experimental studies. Furthermore, conducting qualitative studies in the future examining the mediating role of self-regulation in the relationship between locus of

control and academic motivation will make a significant contribution to high school students and the literature.

One of the most important study results was that self-regulation skills increased with the increase in democratic parental attitudes. It is known that the relationship between parental attitudes and self-regulation plays an important role in the emotional and social development of the individual. Parental attitudes can have an impact on a child's emotional development, self-esteem, relationship skills and self-regulation skills. A healthy relationship can help a child develop emotional intelligence, social skills and self-regulation abilities. Therefore, it would be useful to include these variables in future studies.

References

Alfaro, E. C., & Taylor, A. J. U. (2015). The longitudinal relation between academic support and Latino adolescents' academic motivation. *Hispanic Journal of Behavioral Sciences, 37*(3), 319-341. https://doi.org/10.1177/0739986315586565

Al Dhamit, Y., & Kreishan. L. (2016). Gifted students ıntrinsic and extrinsic motivations and parental influence on their motivation: from the selfdetermination theory perspective. *Journal of Research in Special Educational Needs, 16*(1), 13-23. https://doi.org/10.1111/1471-3802.12048

Alisinanoğlu, F. (2003). Çocukların denetim odağı ile algıladıkları anne tutumları arasındaki ilişkinin incelenmesi. *Türk Eğitim Bilimleri Dergisi, 1*(1), 97-107. Retrieved from: https://dergipark.org.tr/tr/pub/tebd/issue/26133/275262

Amadi, M. (2010). Affective determinants of ESL success. Department of Teacher Education. University of Ibadan.

Akkuş-İspir, O., Sonay-Ay, Z., & Saygı, E. (2011). Üstün başarılı öğrencilerin özdüzenleyici öğrenme stratejileri, matematiğe karşı motivasyonları ve düşünme stilleri. *Eğitim ve Bilim*, 235-246.

Argun, Y. (1995). Anne babaların çocuk yetiştirme tutumlarının ortaokul öğrencilerinin denetim odağı üzerine etkileri (Yayınlanmamış yüksek lisans tezi). Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü, İzmir.

Arslan, R., & Pekşen- Akça, R. (2012). Çocukların eğitiminde rol model oluşturacak olan eğitimci ve usta öğretici adaylarının beslenme alışkanlıkları. *Dicle Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 8*(1), 101-119.

Aydın, B. (2010). *Çocuk ve Ergen Psikolojisi* (2. Baskı). Ankara: Atlas Yayın Dağıtım.

Baumrind, D. (1996). The discipline controversy revisited. *Family Relations: An Interdisciplinary Journal of Applied Family Studies, 45*(4), 405–414. https://doi.org/10.2307/585170

Botsari, E. M. (1999). Academic ıntrinsic motivation: developmental differences and relations to perceived scholastic competence, locus

of control and achievement. *Evaluation & Research in Education, 13*(3), 157 – 171. https://doi.org/10.1080/09500799908666955

Brown, J. M., Miller, W. R., & Lawendowski, L. A. (1999). The Self-Regulation Questionnaire. L.Vande Creek and T. L. Jackson (Eds.), *Innovations in Clinical Practice: A Source Book* (pp. 281-289). Sarasota, FL: Professional Resource Press.

Boyd, J., Barnett, S. W., Bodrova, E., Leong, D. J., & Gomby, D. (2005). Promoting children's social and emotional development through preschool education. *National Institute for Early Education Research,* 1-21.

Büyüköztürk, Ş., Kılıç-Çakmak, E., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2016). *Bilimsel Araştırma Yöntemleri*. Ankara: Pegem A.

Can-Aran, Ö. (2015). Öz düzenleme ve çalışma becerileri arasındaki ilişki. *Pegem Eğitim ve Öğretim Dergisi, 5*(2), 207-220.

Candangil, S. (2005). Denetim odakları farklı lise öğrencilerinin bazı kişisel, sosyal ve ailesel özelliklerine göre karar vermede öz-saygı ve kaygı düzeylerinin incelenmesi (Yayımlanmamış yüksek lisans tezi). Anadolu Üniversitesi, Eğitim Bilimleri Enstitüsü, Eskişehir.

Cheng, E. (2011). The role of self-regulated learning in enhancing learning performance. *The International Journal of Research and Review, 6*(1), 1-16.

Cüceloğlu, D. (2000). *İnsan ve Davranışı* (10. Baskı). İstanbul: Remzi Kitabevi.

Çakır, E. (2006). Anadolu öğretmen liselerinde okuyan öğrencilerin depresyon ve motivasyon düzeyleri (Yayımlanmamış yüksek lisans tezi). Sakarya Üniversitesi Sosyal Bilimler Enstitüsü, Sakarya.

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology, 49*(3), 182–185.

Dökmen, Ü. (1997). *İletişim Çatışmaları ve Empati*. İstanbul: Sistem Yayıncılık.

Eisenberg, N., Fabes, R. A., Guthrie, I. K., & Reiser, M. (2000). Dispositional emotionality and regulation: their role in predicting quality of social functioning. *Journal of personality and social psychology*, *78*(1), 136–157.

Eldeleklioğlu, J. (1996). Karar stratejileri ile ana-baba tutumları arasındaki ilişki (Yayımlanmamış doktora tezi). Gazi Üniversitesi Sosyal Bilimler Enstitüsü, Ankara.

Erkuş, A. (2013). *Davranış Bilimleri İçin Bilimsel Araştırma Süreci*. Ankara: Seçkin Yayınları.

Erwin, P. (2000). Çocuklukta ve ergenlikte arkadaşlık. O. Akınhay (Çev.). İstanbul: Alfa Kitabevi.

Gogoi, K. P. (2014). Factors affecting academic achievement, motivation in high school student. *International Journal of Education & Management, 4*(2), 126-129.

Gordon, T. (1999). *Çocukta Dış Disiplin Mi, İç Disiplin Mi?*. İstanbul: Sistem Yayıncılık.

Harma, M. (2008). Ana-baba kontrol davranışlarının ve aile içi çatışmanın ergenlerin öz denetim becerileri ve uyumları üzerindeki etkileri (Yayımlanmamış yüksek lisans tezi). Orta Doğu Teknik Üniversitesi Sosyal Bilimler Enstitüsü. Ankara.

Hofmann, W., Schmeichel, B. J., & Baddeley, A. D. (2012). Executive functions and self- regulation. *Trends in Cognitive Sciences, 16,* 174-180.

Kaya, A., Bozaslan, H., & Genç, G. (2022). Üniversite Öğrencilerinin Anne-Baba Tutumlarının Problem Çözme Becerilerine, Sosyal Kaygı Düzeylerine Ve Akademik Başarılarına Etkisi. *Dicle Üniversitesi Ziya Gökalp Eğitim Fakültesi Dergisi,* 18, 208-225.

Kılıç, M., & Beyazıt, U. (2019). Öz düzenlemenin üst-biliş ve akademik motivasyon arasındaki ilişkide düzenleyici etkisi. *Turkish Studies: Educational Sciences, 14*(4), 1465-1481.

Kopp, C. B. (1982). Antecedents of self-regulation: A developmental perspective. *Developmental Psychology, 18*, 199–214.

Küçükkaragöz, H. (1998). İlkokul öğretmenlerinde kontrol odağı ve öğrencilerin kontrol odağının oluşumuna etkileri. Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü, Eğitim Bilimleri Anabilim Dalı, İzmir.

Landine, J., & Stewart, J. (1998). Relationship between metacognition, motivation, locus of control, self-efficacy, and academic achievement. Canadian Journal of Counselling, 32(3), 200–212.

Linnenbrink, E. A., & Pintrich, P. R. (2002). Motivation as an Enabler for Academic Success. *School Psychology Review, 31*, 313-327.

Nacaroğlu, O., Kızkapan O., & Bozdağ, T. (2021). Özel yetenekli öğrencilerin yaşam boyu öğrenme eğilimlerinin ve öz-düzenleyici öğrenme becerilerine ilişkin algılarının incelenmesi. *Eğitim ve Bilim, 46*(205), 113-135.

Omrod, J. E. (2013). *Öğrenme Psikolojisi*. (6. Basım). M. Baloğlu (Çev.). Ankara: Nobel Yayıncılık.

Ömeroğlu, E., & Kandır, A. (2007). *Bilişsel Gelişim* (6. Basım). İstanbul: Morpa Kültür Yayınları.

Öngen, Y. D. (2003). Denetim odağı ölçeğinin geçerlik ve güvenirlik çalışması. *Kuram ve Uygulamada Eğitim Yönetimi Dergisi, 35*(35), 436-447.

Ören, N. (1991). Üniversite öğrencilerinin denetim odağı ve kendini kabul değerleri arasındaki ilişki. *Türk Psikolojik Danışma ve Rehberlik Dergisi, 1*(2), 20-28.

Pekdoğan, S., & Kanak, M. (2015). Okul öncesi öğretmen adaylarının yaratıcılığa ilişkin algıları: Metafor analizi örneği. *Uluslararası Eğitim Bilimleri Dergisi, 2*(3), 138-147.

Peker, A., & Kağızmanlı, N. (2018). Ebeveyn tutumlarının ergenlerin akademik güdülenme düzeyleri üzerindeki yordayıcı etkisi. *Mersin Üniversitesi Eğitim Fakültesi Dergisi, 14*(1), 210-224.

Pintrich, P. R. (2003). A Motivational Science Perspective on the Role of Student Motivation in Learning and Teaching Contexts. *Journal of Educational Psychology, 95*(4), 667–686.

Ratelle, C. F., Guay, F., Vallerand, R. J., Larose, S., & Senécal, C. (2007). Autonomous, controlled, and amotivated types of academic motivation: A person-oriented analysis. *Journal of Educational Psychology, 99*(4), 734–746.

Rotter, J. B. (1990). Internal versus external control of reinforcement: A case history of a variable. *American Psychologist, 45*(4), 489–493.

Ryan, R. M., & Deci, E. L. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227–268.

Severino, S., Aiello, F., Cascio, M., Ficarra, L., Messina, R. (2011). Distance Education: The Role of Self-Efficacy and Locus of Control in Lifelong Learning. *Procedia-Social and Behavioral Sciences, 28*(2), 705-717.

Schunk, D. H. (2001). Self-regulation of self-efficacy and attributions in academic settings. D.H.Schunk and B. J. Zimmerman (Eds.), *Self-regulation of learning and performance: Issues and educational Applications* (pp. 75- 99). Hillsdale, NJ: Erlbaum.

Schunk, D. H., Meece, J. L., & Pintrich, P. R. (2013). *Motivation in Education* (4.Basım). USA: Pearson.

Sıcak, A., & Başören, M. (2015). Ortaöğretim öğrencilerinin akademik motivasyonlarının çeşitli değişkenler acısından incelenmesi (Bartın Örneği). *Bartın Üniversitesi Eğitim Fakültesi Dergisi, 4*(2), 548-560.

Slavin, R. (2006). *Educational Psychology: Theory and Practice.* Boston: Allyn and Bacon.

Steinberg, L. (2013). *Ergenlik.* F. Çok (Çev.). Ankara: İmge Kitabevi.

Sternberg, R. J., & Williams, W. M. (2002). *Educational Psychology*. Boston: Allyn and Bacon.

Strickland, B. R. (1989). Internal- External Control Expectancies. *American Psychologist, 44*(1), 1 – 12.

Suchodoletz, A., Trommsdorff, G., & Heıkamp, T. (2011). Linking Maternal Warmth and Responsiveness to Children's Self-Regulation. *Social Development, 20*(3), 486-503.

Şanlı, D., & Öztürk, C. (2015). Anne Babaların Çocuk Yetiştirme tutumları ve tutumlar üzerine kültürün etkisi. *Dokuz Eylül Üniversitesi Hemşirelik Fakültesi Elektronik Dergisi, 8*(4), 240-246.

Talbot, G. L. (1981). The effects of student meanings and values of work on intrinsic motivation and subsequent student academic performance. *Journal of New World Sciences Academy, 6*(2), 1397-1409.

Uykan, E., & Akkaynak M. (2019). Ebeveyn Tutumları ile Çocukların Öz Düzenlemeleri Arasındaki İlişkinin İncelenmesi. *Akademik Tarih ve Düşünce Dergisi, 6*(3), 1620-1644.

Vallerand, R. J., & Bissonnette, R. (1992). Intrinsic, Extrinsic, and Amotivational Styles as Predictors of Behavior: A Prospective Study. *Journal of Personality, 60*, 599-620.

Vauras, M., Liskala, T., Kajamies, A., Kinnunen, R., & Lehtinen, E. (2003). Shared regulation and motivation of collaborating peers: A case analysis. *Psychologia An International Journal of Psychology in the Orient, 46*(1), 19–37.

Yağışan, N., Sümbül, A.M. ve Yücalan, Ö. B. (2007). Eğitim fakültesi güzel sanatlar ve diğer bölüm öğrencilerinin benlik imgesi ve denetim odaklarının karşılaştırılması. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 17, 595-607.

Yavuzer, H. (1992). *Ana-Baba ve Çocuk*. İstanbul: Remzi Kitabevi.

Yavuzer, H. (2008). *Çocuğu Tanımak ve Anlamak*. İstanbul: Remzi Kitabevi.

Yörükoğlu, A. (2016). *Değişen Toplumda Aile ve Çocuk.* İstanbul: Özgür Yayınları.

Vallerand, R., Pellectier, L., Blanis, M., Briere, N., Senecal, C., & Vallieres, F. (1992). The academic motivation scale: A measure of ıntrinsic, extrinsic and amotivation in education. *Education and Psychological Measurement, 52*, 1003-1017.

Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. İçinde M. Boekaerts, P. R., Pintrich, and M. Zeidner (Eds.), *Handbook of self-regulation* (s. 13- 39). San Diego, CA: Academic Press.

Zumbrunn, S., Tadlock, J., & Roberts, E. D. (2011). Encouraging self-regulated learning in the classroom: a review of the literature, *Metropolitan Educational Research Consortium (MERC).* Virginia Commonwealth University.