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RESEARCH ARTICLE

Anxiety, Self-Efficacy, And Self-Regulation in High School Students: The Mediating Role of Attentional Control

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ABSTRACT

Reducing anxiety, developing self-efficacy and self-regulation skills, and increasing attentional control are among the goals of psychological counseling sessions. This study intends to determine whether or not high school students' attentional control over their anxieties is affected by self-efficacy and self-regulation, as attentional control is not seen to have been studied correlationally with other variables in Turkey. 170 girl, 155 boys, total 325 students in Istanbul participated in the research. Data has been collected using the General Self-Efficacy Scale, the Perceived Self-Regulation Scale, the State-Trait Anxiety Inventory, and the Attentional Control Scale. Data were collected in classrooms. Correlation and path-analysis techniques have been used in analyzing the data. According to the findings, self-efficacy is a positive and significant predictor of self-regulation and attentional control and a negative predictor of anxiety in model for the high school students. Attentional control also negatively predicts anxiety. Additionally, attentional control has a partial mediating role between self-efficacy and anxiety.

As an educational environment, schools are focused on having students learn and achieve goals. The performances shown in lectures and exams are important parameters of educational life. Individuals evaluate themselves in this way and develop perceptions about their personal competence or incompetence. High-stakes exams, especially university entrance exams, are very important for individuals who have dreamt of a good future since their childhood. University entrance exams are found in many countries around the world. Countries structure these exams according to their education systems and economies (OECD, 2017). Especially in university entrance exams, individuals have to show what they have gotten from their educational lives and environmental factors (Modisaotsile, 2012). Examining the problems in students' educational environments and individual lives can be important in terms of determining the causes for low success in the exams.

Student characteristics, teaching methods, and learning materials have been examined in order to achieve educational success. Learner-related factors include both structural and psychological processes such as readiness, maturation, intelligence, motivation, age, attentional control, transference, and general excitability. Individuals who are able to focus their attention on the process from the beginning to the end of their education life and who have been highly participatory in their courses can maximally benefit from the educational environment; this situation can reflect onto their exam performance (Senemoğlu, 2018). Attentional control is a mental function with increased importance in child and adolescent development; it guides them through

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their educational lives and at the same time allows them to be functional in everyday life (Diamond, 2013). It is also a mechanism that works together with executive functions and working memory (*Astle & Scerif, 2011; Bester & Brand, 2013). Attentional control is paired with perceiving stimulus, directing attention toward the perceived state, transferring attention from one state to another, thinking flexibly, and being able to control thought (*Derryberry, 2002*). Whether this process works or not can be understood by observing children when they start school.*

Attentional control theory is an approach related to anxiety and cognition and is based on Eysenck and Calvo's (1992) processing efficiency theory. According to the processing efficiency theory, anxiety leads to a reduction in the storage and processing capacity of working memory for a resent task. It also leads to an increase in effort for activities and work designed to improve performance. An important distinction exists in the theory between performance efficiency and process efficiency with the result being that anxiety affects functional behavior negatively. When looking at attentional control theory, this function is strikingly described through the conditions of performance, anxiety, and apprehension. Accordingly, anxiety decreases one's efficiency in daily life and makes performing tasks effectively difficult. According to the theory, the inability to perform effectively means that eliminating wrong options becomes difficult through reduced attentional control, which thus increases the likelihood of making wrong choices. At this juncture, one's attention is more susceptible to distractions. In later stages, one experiences failures in performance. The inability to perform functions appears with this sort of degradation and loss in performance. Those who cannot direct their attention begin to act impulsively. One's behaviors may become unregulated (Eysenck, Derakshan, Santos, & Calvo, 2007). This will lead to more mistakes and, consequently, more anxiety. Afterwards behaviors may be found such as developing uncontrolled behaviors in school and disobeying school rules. Thus a cycle begins in which a situation may be found where variables such as self-efficacy, anxiety, and self-regulation are affected in the school environment.

Anxiety is a normal emotion that people show from time to time. High school students may feel anxious about school and in situations unrelated to school. Nevertheless, anxiety can persist and continue in many situations and may cause people to behave negatively. This may prevent adolescents from performing properly in school (Huberty, 2009). According to Bandura (1997), self-efficacy is the belief in whether one can succeed in a task by evaluating one's abilities. Self-efficacy influences one's emotional state, motivation, and behaviors. Self-efficacy affects anxiety through one's emotional state because a person develops high levels of anxiety when thinking one cannot cope with the difficulties in life. In addition, when one evaluates one's personal capacity and power in life, anxiety may develop if one concludes that one is unsuccessful. People with high self-efficacy are able to calm themselves and seek support from friends and families (Bandura, 2010). Therefore, the aim of the study is to reveal a general picture of the relationships among self-efficacy, anxiety, and attention control, not only in the academic environment but also in life events.

Rezaei, Hosseini Ramaghani and Fazio's (2017) correlational research, which evaluated anxiety and performance in terms of attentional control theory, was done with 318 high school students. Eighty of these students were divided into low and high anxiety groups. A test was done in the form of 64 cards containing performance evaluations, problem solving, cognitive flexibility, and stimulus responses. Those experiencing high anxiety were found to have worse performances than those with low anxiety. In addition, those with high anxiety exerted more effort compared to those with low anxiety, yet ended up with significantly lower levels in performance. Another study (Melendez, Bechor, Rey, Pettit & Silverman, 2017) done with 186 children between the ages of 6-17 studied attentional control and anxiety together. According to the research findings, anxiety has a negative relationship with the skills of attention focusing and attention activation. The ability to focus attention is a significant predictor of anxiety.

Experiencing problems in attentional control leads to impulsive behaviors and thus to difficulties in regulating behaviors. In this case, another function that has been examined theoretically with attentional control is self-regulation. Self-regulation is one of the main concepts that has enabled developmental psychology to bring its perspective to psychopathology. Genetic predispositions and childhood experiences have a mediating role on adult functionality in determining whether or not one has psychological discomfort (Rueda, Posner, & Rothbart, 2016). Self-regulation has been found to have three main roles. The first is children's ability to resist stress. The second is the provision of maintaining focused attention. The last is the ability to interpret one's

own and others' mental states (Fonagy & Target, 2002). In addition to these, self-regulation can be seen as the ability to regulate emotions and thought processes (Mischel & Ayduk 2011). In other words, those with high self-regulation skills manage their own learning processes. For this reason, it is meta-cognitive. It behaves actively in learning processes and provides its own self-motivation (Schunk, 2005). In a two-part study (Diehl, Semegon, & Schwarzer, 2006) performed with 773 people, positive and significant correlations were found between attentional control and self-regulation. The same results in the first part of the study performed with children were also arrived at in the second part performed with adults. Another aspect of the study ascertained the determinants of academic performance. The variables that significantly predicted academic performance are attentional control and self-efficacy. In addition, a correlation value of 0.58 was found for attentional control with self-efficacy, another variable in our study. In the literature, tasks can be performed when focused on a goal, and attentional control and self-efficacy skills must be used together to make it easy.

A child who starts school is expected to gain the ability to read and write. Gaining this skill is equivalent to success. For this reason, the first task of a school-age child is to adapt to the learning environment and show success in his/her courses. Only in this way can a sense of self-efficacy develop. However, studying regularly and having a sense of responsibility can be effective in this process. An individual's ability to organize one's life can be influenced by both familial and environmental variables, as well as educational life. Individuals with the ability to self-regulate, which can be an important criterion in healthy personality development, are able to deal more easily with life problems. They can adapt more easily to the school environment and develop their self-confidence. In addition, they can control anxiety levels and may possess reasoning skills (Fonagy & Target, 2002). This is of course related to the ability to pay attention (Diehl, Semegon, & Schwarzer, 2006). The current study aims to examine self-efficacy, anxiety, and self-regulation skills through the attentional processes that may be important in adapting to school and work life. As such, educators and school counselors may be able to evaluate variables such as anxiety and perceived inadequacy from different perspectives and develop different strategies in the process of evaluating and directing children. In this way, countries will be able educate students to be the labor force they need in the future because one of the skills that countries want to bring youths in secondary education is the training for them to be more compatible with the needs of the labor market (UNICEF, 2017). Thus by examining self-regulation and self-efficacy in relation to attention and anxiety processes, determining the effect of these variables on each other can help field workers develop a different perspective when evaluating individuals. In this way, individuals may be able to perform more in their work life and be more productive. As a result, the data obtained from this study not only apply to high school years but can also be the basis for studies on predictors for adulthood.

In summary, attentional control appears to be interrelated with the variables of anxiety, self-regulation, and self-efficacy. The effects of these variables on attention processes have been emphasized to be significant mainly for children and adolescents in cases such as being able to fulfill tasks or be successful academically. In addition, a study on attention has also been identified to further consider developmental needs at the forefront in childhood (Gözalan & Koçak, 2014) and pre-adolescence (Biederman et al., 2012). Individual differences in attentional control can lead to anxiety. The variations that appear in the skills of concentrating on a situation, being able to distribute attention to various situations, and being able to use attention flexibly while engaging with work can lead to anxiety in students (Reinholdt-Dunne, Mogg, & Bradley, 2013). Directing adolescents and children toward goals and feelings of self-sufficiency allows them to be able to direct their attention (Coombes, Higgins, Gamble, Cauraugh, & Janelle, 2009). Investigating these relationships over high school students is considered important. High-stakes testing is defined as exams that need to be taken for being able to finish school, for demonstrating sufficiency in a practice, for registering in a program, or for placing into a university (Jones, Jones, & Hargrove, 2003). Results from high-stakes exams appear significant to individuals and cause them anxiety (Suen & Yu, 2006). Therefore, studying the concept of attentional control in students who have not yet been diagnosed with any anxiety disorder yet are at risk of experiencing anxiety because of exams is considered important. Also, attentional control in high school students is a topic that has been insufficiently studied in literature. Investigating self-efficacy, self-regulation, and anxiety in high school students preparing for the university exam and the effect of these variables on attentional control is considered important. Showing the relationships among these variables over students would be a guide to teachers and school psychological counselors working in the field of education. Therefore

the purpose of our research is to study the variables of attentional control, anxiety, self-regulation, and self-efficacy in high school students and show their relationships in a path model.

Method

Research Model

This research is a descriptive study. Correlational research design was used to examine the relationships between attention control, anxiety, self-regulation and self-efficacy variables. This is a type of research that determines the relationships between two or more variables. Correlational research design do not give cause and effect relationships. The direction of the relations between the variables is found. This model facilitates the evaluation of relationships between variables. In addition, the ease of explaining and understanding the relationships is one of the advantages of this method (Kothari, 2004).

Population and Sample

The population of the study consists of students receiving education in academic high schools in the Zeytinburnu district of Istanbul during the 2021-2022 school year. Zeytinburnu has six academic high schools with 5,619 students in these schools. The sample involves four academic high schools. The total number of students in these two schools is 3,966. In accordance with the sizes of the population and the sample, 313 individuals are considered an appropriate representation of the population in line with 5% of the sample. The number of students who participated in the research is 325. The number of girls is 170 (52.3%), and the number of boys is 155 (47.7%). The number of students for 9th, 10th, 11th, and 12th grade is 84 (25.9 %), 80 (24.6 %), 81 (24.9 %), and 80 (24.6 %), respectively. The mean score and standard deviations for age belong to girls, boys and all participants are 15,66 ± 1,37, 15,82 ± 1,31 and 15.74 ± 1.34, respectively. The ages of the participants range between 14 and 18. Random sampling was used in the research. The four schools that collected data in the study were randomly selected from six schools. In schools, the classes in which data were collected were also randomly determined.

Data Collecting Instruments

General self-efficacy scale. The Turkish adaptation of the General Self-Efficacy Scale, developed by Sherer, Madddux, Mercandante, and Rogers (1982), was adapted in Turkish by Yıldırım and İlhan (2010) and is a 5-point Likert-type scale consisting of 17 questions and three sub-dimensions: initial, undaunted, and persistent effort/insistence. The total explained variance of the three sub-dimensions is 41.46%. Item-total correlations range from .46 to .70. The scale's Cronbach alpha of internal consistency is .80, and test-retest reliability is .69. For criterion validity, correlation values between scores from the General Self-Efficacy Scale with the Self-Esteem Scale, Learned Difficulty Scale, Locus of Control Scale, and Beck Depression Scale are .48, .58, -.30, and -.49, respectively.

Perceived self-regulation scale. The scale was developed by Arslan and Gelişli (2015). While developing the scale, the 16 items were revealed to be gathered in two dimensions: being open and searching. The explained total variance is 54.3%. The internal consistency coefficient for the whole scale is .90. Item-total correlations range from .52 to .69. The sub-scales are called openness and quest. Cronbach's alphas are .84 for being open and .82 for searching. Confirmatory factor analysis has been performed to verify the scale's one factor structure. The chi-square has been found as χ^2 = 147.60 *SD* = 95, χ^2 / *SD* = 1.55 and fit indexes as *RMSEA* = 0.042, *NFI* = 0.980, *CFI* = 0.990, *IFI* = 0.990, *RFI* = 0.970, *GFI* = 0.940, *AGFI* = 0.920, and *SRMR* = 0.035.

State-Trait Anxiety Inventory. The State-Trait Anxiety Inventory was developed by Spielberger, Gorsuch, Lushene, Vagg, and Jacobs (1983) with the aim of identifying the anxieties of normal and non-normal peoples. The Turkish adaptation of the scale was done by Oner and LeCompte (1983) and is a 4-item Likert-type self-evaluation scale. The scale has two sub-dimensions: state and trait anxiety. Its reliability coefficients are .83 and .87. Test-retest reliability correlation values are .86 for state anxiety and .71 for trait anxiety. Item-total correlations range from .71 to .68 for trait anxiety and from .26 to .68 for state anxiety (Aydemir & Köroğlu, 2000). This study only uses the sub-dimension of trait anxiety.

Attentional Control Scale. The Attentional Control Scale was developed by Derryberry and Reed, and the Turkish form was adapted over 349 people by Akın, Kaya, Çardak, and Demirci (2013) as a 4-item Likert-type scale. The scale consists of 20 items and has a single-dimensional structure. Item-factor loadings are between .28 and .45. The internal reliability coefficient is .78. The test-retest correlation is .61. According to the results from the confirmatory factor analysis, the goodness-of-fit values are χ^2 = 426.76, *SD* = 164, χ^2 / *SD* = 2.60, *RMSEA* = 0.062, *IFI* = .810, *CFI* = 0.800, *GFI* = 0.910, *AGFI* = 0.880, *SRMR* = 0.067.

Data Collection

Permission was obtained from school administrators before collecting data. Informed consent form was taken from student parents. The scales were applied to the students in the class of a lesson-appropriate teacher. In all applications, a researcher was in the classrooms and answered the questions of the students. The personal information form, General Self-Efficacy Scale, Perceived Self-Regulation Scale, Trait Anxiety Inventory, and Attentional Control Scale were introduced to the students. The scales were given to the students who volunteered and implementations were not made for students who didn't want to fill them out. In addition, data were not obtained from students whose parents did not allow. The students filled out the scales in approximately 20-25 minutes.

Data Analysis

The data obtained in the study were made into a data set in the program statistical programme. Frequency, percentage, mean score, and standard deviation analyses were used, and correlation analysis was used to look at the relationships among the variables of general self-efficacy, perceived self-regulation, trait anxiety, and attentional control. Frequency, percentage, mean score, and standard deviation analyses were used, and correlation analysis were made by SPSS 20. Path analysis techniques, measurement models and bootstrap method were used for examining the relationships among these variables. Path analysis, measurement models and bootstrap method were performed by JASP 0.16.0.0.

Results

The measurement models, correlations of the variables, descriptive statistics and path-analysis diagram of the scales that were used are given in this section.

Table 1. Descriptive statistics and correlations of the variables

Variable	M	SD	1	2	3	4
1.Self-Efficacy	61.54	9.75	1	.53*	.48*	-.45*
2.Self-Regulation	58.04	8.70		1	.39*	-.24*
3. Attentional Control	50.77	8.72			1	-.46*
4.Anxiety	26.29	10.40				1

* Correlation is significant at .001 level (two-sided).

According to Table 1, a positive and significant correlations are given for self-efficacy with self-regulation (*r* = .58), self-efficacy with attentional control (*r* = .53), and self-regulation with attentional control (*r* = .38). In addition, anxiety has negative correlations with self-efficacy (*r* = -.48), self-regulation (*r* = -.29), and attentional control (*r* = -.48). As anxiety scores increase, scores for self-regulation, self-efficacy, and attentional control decrease.

Fit indices for path models are shown in Table 2.

Table 2. Fit Indices for Path Model

Fit Indices	Good fit	Acceptable fit
χ^2 / df	≤3	≤5
RMSEA	≤0.05	≤0.08
CFI	≥0.95	≥0.90
TLI	≥0.95	≥0.90
SRMR	≤0.05	≤0.08

For acceptable fit, χ^2 / *df* , *SRMR* (Kline, 2005) and *RMSEA* (Hu and Bentler, 1999) , must be less than 5, 0.08, and 0.08, respectively; *CFI* and *TLI* must both be greater than 0.90 (Hu and Bentler, 1999).

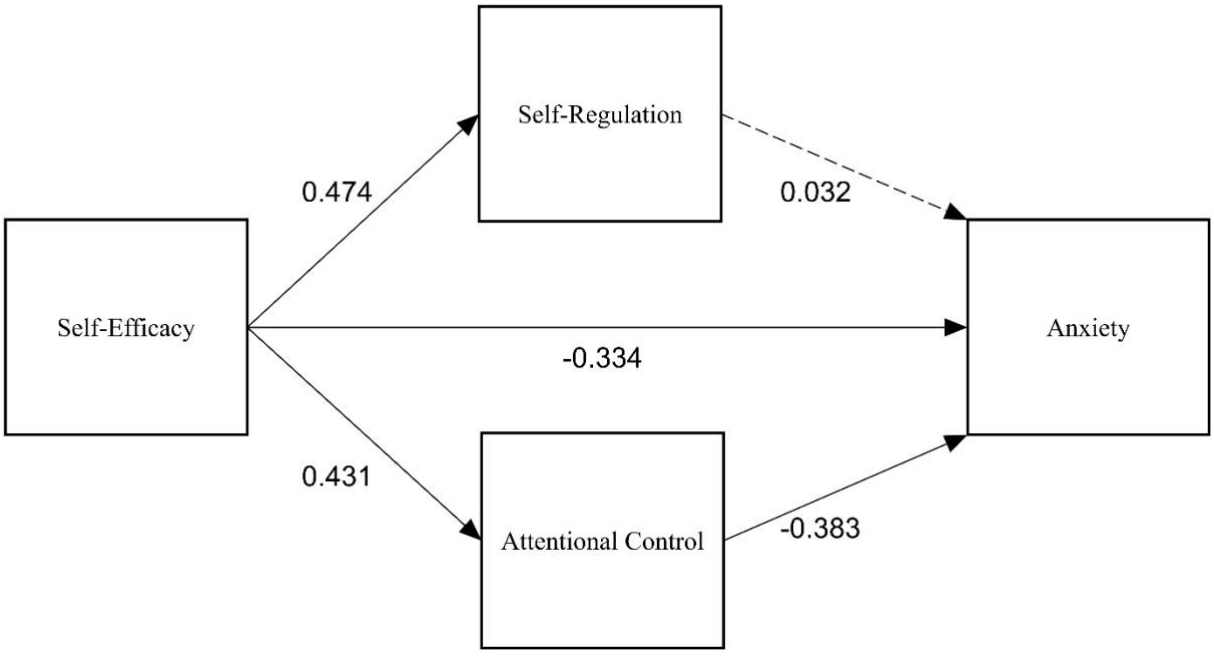
Table 3. Fit Indices of the Measurement Models

Variable	χ^2	df	χ^2 / df	RMSEA	CFI	TLI	SRMR
Self-Efficacy	201.287	99	2.03	0.054	0.910	0.901	0.049
Self-Regulation	200.661	94	2.13	0.058	0.921	0.900	0.048
Anxiety	342.788	158	2.17	0.058	0.908	0.901	0.053
Attentional Control	348.463	157	2.19	0.060	0.903	0.900	0.060

Before performing the path analysis, the measurement models were examined. In all measurement models, it was observed that there was a model-data fit.

The relationships of the variables are shown in Figure 1.

Figure 1. Path model of self-efficacy, self-regulation, attentional control, and anxiety for the group



According to Figure 1, self-efficacy is seen to positively predict self-regulation and attentional control and to negatively predict anxiety. In addition, the variable of attentional control negatively predicts anxiety. According to the path-analysis results, all fit indices are acceptable (r^2 = 2.363, *df* = 1, χ^2 / *df* = 2.363, *p* = .12,

RMSEA = 0.065, *CFI* = 0.995, *TLI* = 0.973, *SRMR* = 0.018). χ^2 / *df*, *CFI*, *TLI* and *SRMR* have good fit for the model. *RMSEA* is acceptable for the model.

According to the results, self-efficacy is a significant predictor of self-regulation (β = .474, $p \leq .001$), attentional control (β = .431, $p \leq .001$), and anxiety (β = -.334, $p \leq .001$), and attentional control is a significant predictor of anxiety (β = -.383, $p \leq .001$). Self-regulation is not a significant predictor of anxiety. The variance percentages explained in the model are 28.3% for self-regulation, 23.2% for attentional control, and 28.6% for anxiety.

Table 4. Regression Coefficients and Bootstrap Results

						95% Confidence Interval		Standardized		
Predictor	**Outcome**	**Estimate**	**Std. Error**	**z**	**p**	**Lower**	**Upper**	**All**	**LV**	**Endo**
Self-Efficacy	Self-Regulation	0.474	0.042	11.321	< .001	0.394	0.554	0.532	0.474	0.055
	Attentional Con.	0.431	0.043	9.906	< .001	0.344	0.524	0.482	0.431	0.049
Attentional Con.	Anxiety	-0.383	0.064	-5.998	< .001	-0.509	-0.235	-0.321	-0.383	-0.321
Self-Regulation	Anxiety	0.032	0.066	0.480	0.632	-0.115	0.165	0.027	0.032	0.027
Self-Efficacy	Anxiety	-0.334	0.065	-5.132	< .001	-0.457	-0.183	-0.313	-0.334	-0.032

Table 4 shows regression coefficients and bootstrap results. Additionally defining the moderator and mediator variables would be useful. The moderator variable is defined as the variable that has the potential to cause a change in the structure or direction of a relationship between the independent and dependent variables. It has no direct effect on the dependent or independent variables. The mediator variable is defined as the variable that eliminates, increases, or decreases the power of an observed relationship between independent and dependent variables and affects both the dependent and independent variables (Çokluk, Şekercioğlu, & Büyüköztürk, 2012). For this reason, attentional control has a partial mediating role between self-efficacy (independent variable) and anxiety (dependent variable) for the model. The mediating role of self-regulation between self-efficacy and anxiety is not significant.

Discussion

The education programs of Turkey desire to educate high school students to have healthy self-perceptions, to recognize their strengths and weaknesses, and to develop adaptation processes using student personality services (MEB, 2006). This study has examined the relationships among the variables of attentional control, anxiety, self-regulation, and self-efficacy and discusses the processes that teachers and school psychologists can take into consideration in evaluating and preparing students for their after-school life.

According to the results from this study conducted with high school students, self-regulation and attentional-control levels increase and anxiety levels decrease as self-efficacy levels increase. Anxiety levels decrease with increases in self-regulation and attentional-control levels. According to the results of the path model, self-efficacy is a predictor of self-regulation and attentional control. The predictors of anxiety are self-efficacy and attentional control. In addition, self-efficacy predicts anxiety through attentional control. Self-regulation is insignificant as a predictor of anxiety.

In one research (Qudysi & Putri, 2016) that studied the variables of anxiety and self-efficacy, self-efficacy was found to be a significant predictor factor of anxiety and to explain 4% of the variance in anxiety. According to the results of the path-analysis study Roick and Ringeisen (2017) made with university students, self-efficacy and anxiety have a negative relationship. Self-efficacy directly predicts anxiety about academic success. In the path-analysis study Guerro, Farkas, and Moncada (2018) did with 106 adolescents, self-efficacy was seen to be a negative predictor of anxiety. A one-unit increase in self-efficacy leads to a .33-unit decrease in anxiety. Yıldırım (2011) examined students' mathematics success on the Programme for International Student Assessment through path analysis using the variables of self-efficacy, anxiety, and intrinsic motivation. For each of the three groups, self-efficacy was also a significant predictor of anxiety. Self-efficacy explained 9% of the variance in anxiety for the Turkish group, 13% for the Japanese group, and 27% for the Finnish group.

Additionally, Themanson and Rosen (2015) found self-efficacy to significantly predict attentional control and academic success to be explained through the mediation of attentional control. Greason and Cashwell (2009) identified the correlation value between self-regulation and attentional control to be .59. These findings in the literature support self-efficacy as a negative predictor of anxiety and as a positive predictor of attentional control. People with low self-efficacy act recessively in the jobs and tasks they need to do. They perceive their responsibilities as threats. They experience difficulty in focusing their attention on tasks that need to be done, instead focusing on their missing aspects, self-inhibiting factors, and negative results. People with high self-efficacy are willing to struggle and undertake difficult tasks. They can concentrate easily on a task. They take the strengths and positive aspects into consideration rather than the negative characteristics (Ritter, Boone, & Rubba, 2001). This explanation is able to show support for how self-efficacy explains anxiety through attentional control.

When looking at the relationship between self-efficacy and self-regulation, Gökçearslan, Mumcu, Haşlaman, and Çevik (2016) identified a positive correlation value of .59 between the two variables. According to Sadi and Uyar's (2013) path model-based study done with 428 high school students, a correlation value of .34 was found between self-efficacy and self-regulation, with self-efficacy significantly predicting self-regulation. According to Usher and Pajares's (2008) study done with 3,760 students, self-efficacy significantly predicts self-regulation. Self-regulation directs how one uses one's own cognitive abilities for success. The skill of self-efficacy has a relationship with using cognitive abilities for success. As a result, increased self-efficacy brings the increased capacities of being goal-oriented and able to regulate behavior. Self-efficacy enables the use of different strategies for various goals (Pintrich, 2004). The dimensions of self-regulation are being goal-oriented, the capacity for behavior regulation, and the capacity for different strategy usage (Zimmerman, 2002). The group that forms the current study's sample had entered their schools with high grades. They are also able to exemplify cases that form the sub-dimensions of the concepts of self-regulation and self-efficacy. The significance of the relationship between self-regulation and self-efficacy and how self-efficacy explains self-regulation may be due to the structure of the sample group.

One finding that emerged in the research is attentional control being a significant and negative predictor of anxiety. Walsh, Balint, Smolira, Fredericksen, and Madsen (2009) reported a correlation value of -.46 between the two variables. According to the research Kertz, Stevens, and Klein (2017) did with 583 university students, focused attention and attention shifting (the sub-dimensions of attentional control) are negative predictors of anxiety. Reinholdt-Dunne et al. (2013) reported in their sample of 193 individuals with depression and 165 separate individuals with anxiety that increases in attentional control brought lower levels of anxiety and depression. Bardeen, Tull, Stevens, and Gratz (2014) found attentional control to have a mediating role between anxiety and negative affectivity in adults 18 to 60 years old. The literature findings support the findings that emerged in the research process. Therefore, interventions are planned based on increasing attentional control while intervening in the process between anxiety and attentional control. This attempts to remove the dysfunctional trait between the two cases (Hsu et al., 2015).

After all, according to attentional control theory, increased anxiety negatively affects attentional control while decreased anxiety increases attentional control. In accordance with the theory, this study has found attention to increase as anxiety decreases and attentional control to have a mediating role between anxiety and self-efficacy. In light of these results, consideration of the factors related to attentional control is advisable while examining the concerns of test anxiety and insecurity that negatively affect examination processes and while examining the causes of negative in-class behaviors. In this way, the study can guide students and teachers both in adapting to education and work life and in developing healthy personalities.

Conclusion and Recommendations for Future Research

This is the first correlational study in Turkey to show the mediating role of attentional control. Showing the relationships among self-efficacy, self-regulation, anxiety, and attentional control over students will be a guide to teachers and school psychological counselors working in the field of education. Firstly, this study can be useful for diminishing behavioral problems in the classroom environment related to attentional control. When a child starts to exhibit mismatches in the group, the whole group is affected and student efficiency drops. However, with individual and group guidance activities, increasing children's attention spans and, accordingly,

reducing their anxiety will be possible. In this process, interviews can be made with families in order to make students feel more competent and responsible. Also, our study can be a guide for following up on students' longitudinal academic success and whether students have learned course topics (Grissmer, Grimm, Aiyer, Murrah, & Steele, 2010; McClelland, Acock, Piccinin, Rhea, & Stallings, 2013). This study additionally shows the need for adding the effectiveness of attentional control when attempting to develop the skill of self-efficacy in psychological counseling sessions that are structured for decreasing the anxiety of those suffering from it. For these reasons, our research can be a reference source for other researchers, teachers, psychological counselors, and psychologists. Our research has limitations in addition to its positive aspects. The population and sample only reflect academic high schools as a type of school. Thus, future researchers are recommended to take their samples from other types of schools. In addition, attentional control and self-regulation are variables that have been studied together alongside academic performance. Thus, future researchers are recommended to add students' academic performances as a variable. Future researchers can also test whether or not this model works on child, early-adolescent, adult, and elderly age groups.

Author Contributions: The research design was made by both researchers. Müge Yüksel wrote the introduction and discussion sections of the study. Data were collected by two researchers. Data analysis was done by Umut Kermen. The Materials and Methods and Results sections were written by Umut Kermen. All authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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Data Availability: The data sets generated during and/or analysed during the current study are available in the Mendeley Data repository, under the doi number DOI: 10.17632/3gx5f24fpv.1

Ethical Disclosure: Informed consent was obtained from the 18-year-old participants in the study. If the age of the participant is younger than 18, informed consent was obtained from both his/her parents and himself/herself.

The study was approved by the Marmara University Scientific Research and Publication Ethics Committee on January 20, 2021 (No: 2021-155). In addition, consent forms were obtained from all participants included in the study. **Ethics Committee Name:** Marmara University Institute of Educational Sciences Research and Publication Ethics Committee **Approval Date:** 20.01.2021 **Approval Document Number:** 2021/155

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