

What If People Judge Me Unfairly: The Mediating Role of Fear of Negative Evaluation on the Relationship between Perceived Autonomy Support and Academic Risk-Taking Behavior in Social Studies Courses

Servet Üztemur
Gaziantep University, Turkey

Abstract:

This paper aims to investigate the mediation role of fear of negative evaluation (FNE) in the relationship between perceived autonomy support (PAS) and academic risk-taking (ART) in the context of social studies courses. A total of 339 middle school students from Turkey participated in the study. Data were collected through the Learning Climate Scale, Fear of Negative Evaluation in Academic Environments Scale, and Social Studies-Oriented Academic Risk-Taking Scale. Correlation results showed that PAS was negatively correlated with FNE and positively with ART. There was a negative correlation between FNE and ART. Structural equation model analyses showed that PAS predicted FNE negatively and ART positively. In addition, FNE predicted ART negatively. The partial mediation effect of FNE on the relationship between PAS and ART was significant. These results provide empirical evidence for the effect of self-determination theory (SDT) on affective characteristics such as ART and FNE.

Key words: self-determination theory, perceived autonomy support, academic risk-taking, fear of negative evaluation, social studies, mediation

Introduction

Academic risk-taking is a concept that helps to determine the structural features of the learning environment. It is often stated by many teachers that some students are reluctant to participate in class discussions, take initiative, and engage in pair or group work. The main reason for this is the motivational characteristics of students (Hagger & Hamilton, 2018). Self-determination theory (SDT) posits that human behaviors are driven by three psychological needs: autonomy,

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competence, and relatedness. SDT also argues that these psychological needs are universal (Ryan & Deci, 2000). These three basic needs of students should be met in the school environment. This study aimed to investigate the effects of autonomy support given within the scope of SDT on students' fear of negative evaluation (FNE) and academic risk-taking (ART) in the context of social studies courses. In the study, a structural model was constructed: Middle school students with higher levels of perceived autonomy support (PAS) would have lower levels of FNE and would be more willing to engage in ART behavior. SDT has the potential to develop an insight into affective features such as ART and FNE. However, to the best of our knowledge, no empirical study has been conducted on the relevant variables. Therefore, the findings of this study are considered important in terms of extending the impact of SDT.

Perceived Autonomy Support

Autonomy is the ability to make choices and to take initiative according to one's own free will. Autonomous individuals are aware of their wishes and the ways to realize them. SDT posits that individuals' three psychological needs—autonomy, competence, and relatedness—need to be met; otherwise, individuals may be passive and have difficulty adapting to social environments (Deci & Ryan, 2000; Vansteenkiste & Ryan, 2013). In order for autonomous behavior patterns to emerge as a reflection of intrinsic motivation, autonomy-supportive extrinsic motivation must be met by the social environment (parents, teachers, and friends) of the individual (Ryan & Deci, 2000). Autonomy support can be defined as providing meaningful choices to students, supporting their behaviors by trying to understand their perspectives, nurturing students' motivation resources in decision-making processes, and providing appropriate opportunities by minimizing external pressures (Black & Deci, 2000).

SDT posits that teachers' teaching styles can vary on the two ends of the spectrum: control-oriented and autonomy-oriented (Ryan & Deci, 2000). Teachers who adopt control-oriented teaching styles control the behavior of students in the classroom, create an agenda for learning processes, and give instructions for students to follow this agenda. In a teacher-centered classroom, students who comply with predetermined rules are rewarded while sanctions are applied to those who do not obey them (Reeve, 2006). Such teachers do not care about students' criticism of the lesson and even prevent students from expressing their thoughts. They want their students to think like them. Besides, they prepare activities without considering their students' interests and wishes and force them to participate in these activities (Reeve, 2009).

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On the other hand, teachers who support their students' autonomy nurture students' intrinsic motivation sources and design classroom activities according to their interests, preferences, and values (Reeve, 2006). They motivate their students by explaining to them why the lesson to be taught is important for them. Thus, students, seeing that their interests and needs are taken into consideration, adapt more easily to the learning environment (Assor, Kaplan, & Roth, 2002). In a learning environment where students' autonomy is supported, the teacher does not threaten students with low grades. The teacher uses constructive language, avoids giving orders to the students, and shares some of his/her authority with them. He/she provides students with options and supports their active participation in the lesson. He/she respects the students' criticism of the lesson and himself/herself (Mouratidis et al., 2018).

Related studies show that autonomy-supportive teaching approaches positively increase students' intrinsic motivation and intrinsic goal orientations (Garcia & Pintrich, 1996; Griffin, 2016) as well as their autonomous motivation and participation in classroom activities (Raufelder et al., 2016; Schiefele, 2017). On the other hand, teachers who adopt a control-oriented teaching style hinder their students' autonomy and use extrinsic motivation resources rather than intrinsic motivation resources (Gutierrez & Tomas, 2019). Also, it has been reported that students who experience an oppressive learning environment and who are not actively involved in the learning process cannot easily adapt to the learning environment (Haerens et al., 2015), have difficulties in learning concepts (Benware & Deci, 1984), suffer from learning difficulties and emotional disorders (Grolnick et al., 2000), and have lower academic achievement (Grolnick & Ryan, 1987).

Academic Risk-Taking

Clifford (1988) defines ART as the extent to which students are tolerant of their own failures if they are given a chance to choose in the learning process and the extent to which they tend to prefer trying new and challenging things even if there is a possibility of failure. Also, Taylor (2010) defines ART behavior as making decisions that support learning, although there is some degree of uncertainty. Beghetto (2009) evaluates students' willingness to express answers about which they are not sure, to try new and different solutions, and to ask questions in the learning process within the context of ART behaviors. As a common point of the above definitions, ART has two main components: to make choices in challenging situations and to risk possible failures. In student-centered learning environments, students are given the opportunity to choose their academic tasks. For example, when selecting courses from the list of elective courses, when selecting the appropriate project task from a list of project tasks, or when sharing their guesses about the solution of a problem, students need to make decisions. Such decisions are directly

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influenced by students' ART levels (Tan, Lim, & Manalo, 2017) because students who are willing to engage in ART regard situations that are not fully predictable as an opportunity for learning (Gezer, Ilhan, & Sahin, 2014). When they face difficulties in learning activities, they do not give up easily (Clifford & Chou, 1991). They are also eager to participate in classroom activities (Strum, 1971). According to Tan et al. (2017), students who are willing to engage in ART behaviors and who have had this behavioral pattern for a long time will have increased levels of intrinsic motivation (Deci & Porac, 1978) and self-efficacy (Bandura, 1977). Tay, Ozkan, and Tay (2009) reported a significant and positive relationship between ART behaviors and the problem-solving skills of students. In a study conducted by Uztemur, Dinc, and Acun (2020) with middle school students, ART was reported to have a significant positive relationship with epistemic beliefs, deep learning approaches, and academic achievement, and a significant negative relationship with superficial learning. Due to the aforementioned properties, ART behavior, unlike other types of risk-taking behaviors, can be considered an affective feature that contributes positively to the learning process (Beghetto, 2009; Skaar, 2009).

Fear of Negative Evaluation

The term social phobia was coined in 1903 by Pierre Janet to describe individuals experiencing fear of being observed by others while talking, writing, playing the piano, etc. (Caballo, Salazar, & Hofmann, 2019; Heckelman & Schneier, 1995). The DSM-5 defines social phobia, also called social anxiety disorder, as "persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others" (APA, 2013). FNE is at the core of behaviors such as embarrassment, anxiety, and fear that restrict the social performance of social phobic individuals, adversely affect their eating habits, reduce their self-confidence, and hinder interpersonal communication skills (Carleton, Collimore, & Asmundson, 2007; Heimberg, Brozovich, & Rapee, 2010). FNE was first introduced by Watson and Friend (1969) as feeling anxious about other people's evaluations, feeling distressed over their negative evaluations, and fearing that others would make negative comments about oneself to others. Leary (1983), on the other hand, described FNE as a state of anxiety, distress, and fear resulting from one's consideration of others' (real or imagined) negative evaluations about his/her abilities, performance, and behaviors, and trying to avoid such social settings.

Individuals with a high level of FNE usually perceive themselves as more worthless than others; therefore, they attach great importance to other people's views, which is also an indicator of low self-confidence (Utschig et al., 2010). They therefore constantly motivate themselves in order to receive the approval of other people and not to be excluded from social environments (Leary &

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Kowalski, 1995; Weeks et al., 2009). They feel that others hold the same negative evaluations as they hold against themselves. As a result of this cognitive distortion, they often accept feeling humiliated and being humiliated as similar things (Turkcapar, 1999). Because they are excessively shy and afraid to make mistakes, they avoid talking publicly and building social relationships (Moore & Gee, 2003). Even though they are very eager, they are afraid to help someone in need of help because they are afraid of being negatively evaluated and ridiculed (Alkan, 2015). For individuals with high levels of FNE, the easiest way to avoid feeling like this is to stay away from places where they may be evaluated negatively (Weeks, Heimberg, & Rodebaugh, 2008). If they fail to do so, they may develop important problems such as communication disorders, anxiety, and depression (Moeeni & Nejhad, 2014; Teachman & Allen, 2007).

Considering the evaluation process, which has become an indispensable part of the learning environment, FNE is an important affective feature that shapes students' behavioral patterns (Ilhan & Guler, 2018). This is because students are constantly evaluated positively or negatively by their peers and teachers. When the related literature is analyzed, there is a positive correlation between FNE and anxiety (Cam, Sevimli, & Yerlikaya, 2010), academic procrastination (Celik & Odaci, 2015), and academic expectation stress (Kelecioğlu & Bilge, 2009). Considering the research results given above, it can be concluded that FNE is an important affective feature affecting teaching-learning processes.

Relationships between PAS and ART

Autonomy-supportive teachers listen to and care about their students' views. In order to enable their students to participate more actively in the learning process, they approach their students in a less directive manner and avoid telling the answers to the questions immediately (Reeve, Bolt, & Cai, 1999). Thus, students who feel valued and are aware of the importance of their views develop higher levels of self-confidence (Bonneville-Roussy, Vallerand, & Bouffard, 2013; Sheldon, Abad, & Omoile, 2009). It has been reported that students who feel more competent and freer participate more actively, put in more effort, and take responsibility in the learning process (Gillet et al., 2012). Although empirical studies examining the relationship between PAS and ART have not been encountered in the relevant literature, it is expected that students who know that the learning environment is designed according to their own interests and preferences, who are given choices, who show autonomous behavioral patterns and take initiative in the learning process, whose opinions are sought in the decision-making and planning process, who are encouraged to participate actively in the lesson, who know that they will not be subjected to negative evaluations (being ridiculed, humiliation, etc.) when they express their

Corresponding author: servetuztemur@gmail.com

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views, and who feel psychologically safe will have higher levels of ART (Beghetto, 2009; Kalchman & Koedinger, 2005; Nickerson, 1999). Considering that risk-taking behaviors are affected by psychosocial and affective factors, it can be said that autonomy-supportive practices of teachers are of key importance in order to reveal the hidden skills and abilities of their students and to increase their ART levels (Beghetto, 2009; Miller & Byrnes, 1997; Trimpop, 1994).

A classroom culture that promotes ART is tolerant of students' unconventional ideas. Such classes are different from those in which students' unorthodox views are ignored and rejected (Kennedy, 2005). Beghetto (2009) argues that students whose views are respected by their teachers and who receive positive feedback on their competences will have increased self-efficacy, which, in turn, will result in them being more eager to engage in ART behavior. In a classroom managed by a teacher with a controlling teaching style, students are given neither choices nor the right to speak when determining the agenda of the lesson (Reeve, 2009). Since the behaviors of the students are controlled by the teacher in such classrooms, active participation cannot usually be expected from the students (Stroet, Opdenakker, & Minnaert, 2013; Vansteenkiste et al., 2012). Students who are given no choices and who cannot act autonomously will most likely be hesitant to take initiative, to try new and different solutions, to prefer challenging operations, and to share their views (Minstrell & Kraus, 2005). According to Beghetto (2009), it is very difficult for students to develop ART behavior unless they are provided with a learning environment in which they can demonstrate their creative skills. In classrooms managed by teachers with a controlling teaching style, students do not have the opportunity to discuss different ideas because the focus is on the outcome rather than on the process (Reeve, 2009). As a result, it is very likely that students will hesitate to share their views and offer solutions (Minstrell & Kraus, 2005).

Related studies show that, like PAS, ART behaviors are also related to intrinsic motivation (Mendler, 2000). Compared to those with extrinsic motivation, students with intrinsic motivation do not give up easily while learning a subject and are willing to overcome difficulties (Pintrich et al., 1991). This situation is directly linked to "resilience after failure" and "tendency to prefer challenging operations," which are the two sub-dimensions of ART behavior (Korkmaz, 2002). Besides, a positive correlation has been reported between students' interest in the subject and their ART behavior (Renninger, 2000). From this point of view, it is possible that students who can select subjects according to their interests, preferences, and values, who work autonomously, and who take responsibility for their behaviors are likely to have higher levels of intrinsic motivation (Jang, Kim, & Reeve, 2012) as well as ART. These students do not hesitate to decide on their own and take risks because their teachers encourage them to participate actively

Corresponding author: servetuztemur@gmail.com

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in the lesson, give them constructive feedback, offer them options, and support them in developing autonomous motivation (Jang, Reeve, & Deci, 2010; Lietaert et al., 2015).

Mediating Role of FNE on the Relationship between PAS and ART

FNE levels of students play a decisive role in the relationship between PAS and ART behavior. Theoretically, students' ART levels are expected to be high in a learning environment that supports autonomy (Bransford & Donovan, 2005). On the other hand, the study conducted by Cetin et al. (2014) with university students found an inverse correlation between FNE and ART. It has been reported that students with higher levels of FNE had high performance-avoidance tendencies and higher levels of fear of failure and, as a result, were reluctant to participate in classroom discussions and did not express their views or ask questions for fear of being ridiculed by their peers (McKinney, 2003; VandeWalle, 1997). These students tend to become perfectionists, thinking that the people around them expect perfect performance from them. They also have a prejudice that they will not be approved by their social circles if they fail to show a perfect performance (Clark & McManus, 2002). Therefore, when working on a job, they focus on themselves intensively, not paying attention to external stimuli. Normally, focusing should make a positive contribution to performance; however, these individuals focus more on the approval of others than on the work itself, which in turn leads to a decline in their performance. As a result, they begin to doubt their own performance and abilities (Leary & Kowalski, 1995; Rapee & Heimberg, 1997). Since the above-mentioned situation is caused by the individuals' own psychological (intrinsic) traits, it can be concluded that ART behaviors of students whose autonomy is supported in the learning environment are affected positively or negatively by their FNE levels. In other words, since students' ART behaviors are affected by their FNE levels, it can be said that FNE has a mediation role in the relationship between PAS and ART behavior. On the other hand, FNE levels of students are influenced by the learning environment as well as their psychological traits. For example, in courses where the traditional method of teaching and control-oriented motivating style are adopted, students will hesitate to express their views and participate actively in the lesson. For, in such classes, the absolute authority belongs to the teacher, and the students are passive receptors of the knowledge which they do not construct themselves. Moreover, cooperation among students is not considered important, nor is autonomous motivation support given to them (Acikgoz, 2003; Chan & Elliot, 2004). In such learning environments, teachers may ignore students' prior knowledge and prevent them from expressing their views. The use of an all-knowing authoritarian teaching method and aggressive attitudes will most likely negatively affect students' ART levels (Beghetto, 2009; Chin, 2007). In a

Corresponding author: servetuztemur@gmail.com

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performance-oriented classroom environment where exam grades are announced in the classroom and where students are grouped according to their grades, students will also be performance-oriented, and because they are afraid of being evaluated negatively, they will probably avoid ART behaviors like trying different solutions, preferring challenging operations, and sharing their views (Boyer, 2006; Ozgungor, 2006).

Social phobic individuals with a high level of FNE feel the need to attract attention and receive the approval of the people around them; therefore, their FNE levels will be influenced by the characteristics of the learning environment (autonomy-oriented or control-oriented). Students who feel humiliated and embarrassed when they believe that their attempts are not approved tend to avoid situations and environments in which they will be subject to criticism (Alkan, 2015; Durmus, 2008). On the other hand, in an autonomy-oriented learning environment where the focus is on the process rather than the outcome and where mutual trust is established, students are not threatened with low grades, are encouraged to participate actively, are encouraged to make efforts, and are given a chance to choose; also, their criticism and negative opinions about the course are respected, and their mistakes are seen as part of the learning process; therefore, they also focus on the learning itself and have lower levels of FNE (Ames, 1992; Ozgungor, 2006; Zhou, Adesope, Winne, & Nesbit, 2019).

Current Study

In the current study, the hypothesis that students would be willing to engage in ART behavior in autonomy-supportive learning environments and FNE would have a mediation role in the relationship between these two variables is tried to be supported theoretically in light of related studies. A thorough search of the relevant literature yielded no empirical study examining the relationship among these three variables, except for the study that reported an inverse correlation between ART and FNE (Cetin, Ilhan, & Yilmaz, 2014). In that study, FNE was reported to have a significant negative relationship with “resilience after failure” and “a tendency to prefer challenging operations,” the two sub-dimensions of ART behavior (Cetin et al., 2014). It is a matter of curiosity as to how autonomy-supportive learning environments, proved by empirical studies (Stroet, Opdenakker, & Minnaert, 2015) to increase students’ self-confidence and intrinsic and autonomous motivation will affect Turkish students’ FNE, which is known to have a negative impact on ART (Cetin et al., 2014), and ART. In addition, PAS, FNE, and ART behaviors of middle school students are expected to differ due to the nature of the subject area. For example, since mathematics and social studies courses differ in content, students’ ART behaviors in these courses will also probably differ. Considering that autonomy-supportive teaching is generally

Corresponding author: servetuztemur@gmail.com

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associated with foreign language teaching (Balcikanli, 2008; Ozcelik, 2015), it is also a matter of curiosity whether social studies teachers can create autonomy-supportive learning environments or whether middle school students perceive their social studies teachers as autonomy-supportive. Although Turkey adopted an education system based on the constructivist teaching-learning approach in 2004, empirical research shows that it is not easy to abandon traditional teacher-centered teaching methods in social studies courses (Dinc & Uztemur, 2017; Safran & Ata, 2016). Besides, in light of the arguments that autonomy is a concept that is identified with Western culture and that Asian and African students fail to acquire autonomous learning skills effectively as a result of the dominance of collective culture in Asian and African societies (Can, 2012), it is important to determine whether autonomy-supportive motivational strategies are used in social studies courses. From this point of view, there has emerged a need to investigate the reflections of the relationships among these three variables in Turkish culture in the context of social studies teaching. Based on the relevant literature, a hypothetical model (Figure 1) has been proposed in this study showing the relationships among PAS, FNE, and ART behavior of middle school students in social studies courses.

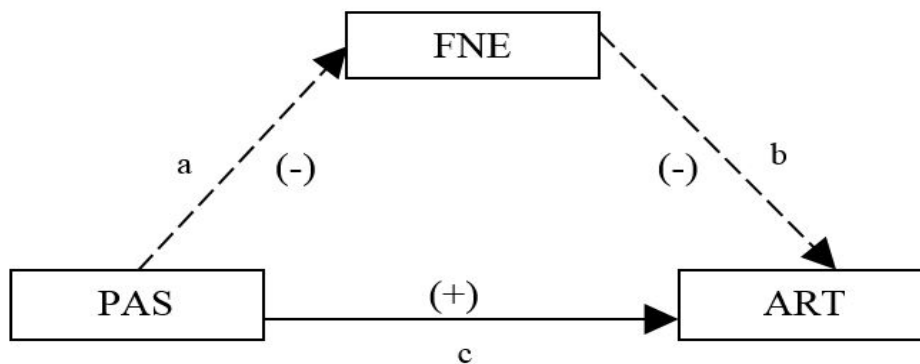


Figure 1. The hypothetical model.

In accordance with the model presented in Figure 1, an answer to the following research question was sought, and then the following hypotheses were tested:

Research Question: What are the students' PAS, FNE, and ART levels, and how are these three variables correlated with each other?

Hypothesis 1 (H1): PAS predicts ART positively (path c).

Hypothesis 2 (H2): PAS predicts FNE negatively (path a).

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Hypothesis 3 (H3): FNE predicts ART negatively (path b).

Hypothesis 4 (H4): In the model tested, FNE has a mediating effect between the predictor (PAS) and the predicted (ART).

Method

Participants and Procedure

The study was conducted with 329 volunteering middle school students (female: 49%, male: 51%) selected by convenience sampling from public middle schools in the city center of Manisa in the west of Turkey. The age range of the participants, who take compulsory social studies lessons, is between 12 and 15, and their grades vary between 5th and 8th grades (5th graders: 15.6%, 6th graders: 24.2%, 7th graders: 24.8%, 8th graders: 35.4%). With the help of the researcher, as well as the instructions on the scale, all participants completed the scales.

Measures

Middle school students' perceptions of their teachers' autonomy support were measured through the 15-item *Learning Climate Scale* developed by Williams and Deci (1996). The original one-dimensional structure of the scale, which was adapted to Turkish culture by Kanadli and Bagceci (2016), was preserved. The responses given to the scale items were ranked between 1 (strongly disagree) and 5 (strongly agree). Except for the reverse coded 13th item, high scores from the scale are interpreted as high levels of perceived autonomy support. In the present study, the items were adapted to the social studies course (Sample item: I think my social studies teacher gives me choices and the right to choose). According to the results of the confirmatory factor analysis (CFA), it was found that the scale retained its original structure and the fit indices were acceptable: $\chi^2 = 110.367$, $df = 75$, $p < .001$, $\chi^2/df = 1.472$, $RMSEA = .03$, $IFI = .97$, $SRMR = .05$, $TLI = .97$, $CFI = .95$ (Schumacker & Lomax, 2010). Factor loads of the scale ranged from .34 to .72, and the alpha internal consistency coefficient was calculated as .88.

FNE levels of the students in the social studies course were measured through the *Fear of Negative Evaluation in Academic Environments Scale* developed by Alkan (2015) for middle school students. The items of the scale consisting of the behavioral effects of FNE (first dimension-12 items) and cognitive effects of FNE (second dimension-10 items) were graded between 1 (strongly disagree) and 5 (strongly agree). High scores indicate a high level of FNE. An instruction added to the scale form enabled students to fill out the scale considering only their social studies courses. According to the results of CFA, it was found that the scale retained its

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original structure and the fit indices were acceptable: $\chi^2 = 243.441$, $df = 162$, $p < .000$, $\chi^2/df = 1.503$, $RMSEA = .04$, $IFI = .93$, $SRMR = .11$, $TLI = .92$, $CFI = .93$. Factor loads of FNE's behavioral effects (Sample item: Even if I do not understand the subjects taught, I avoid asking questions so that others do not think I am unsuccessful) dimension ranged from .41 to .61, and factor loads of FNE's cognitive effects (Sample item: I worry that I won't be able to show the success my teachers expect from me) dimension ranged from .33 to .65. Internal consistency alpha coefficients of FNE's behavioral effects and FNE's cognitive effects dimensions were .79 and .71, respectively.

In order to measure students' ART levels in social studies courses, we utilized the *Social Studies-Oriented Academic Risk-Taking Scale* developed by Gezer et al. (2014) for middle school students. The scale consists of two sub-scales: "Taking academic risks" (16 items) and "Avoiding academic risks" (5 items). The items of the scale are 5-point Likert items (1=strongly disagree, 5= strongly agree). Higher scores from each sub-scale indicate higher or lower levels of academic risk-taking. In the present study, five items that constitute the sub-scale of "avoiding academic risks" were reverse coded; thus, higher scores were interpreted as higher levels of academic risk-taking behavior. The results of the CFA applied to the final version of the one-dimensional scale showed that the fit indices were acceptable: $\chi^2 = 241.737$, $df = 143$, $p < .000$, $\chi^2/df = 1.690$, $RMSEA = .04$, $IFI = .91$, $SRMR = .10$, $TLI = .90$, $CFI = .91$. Factor loads of the scale ranged from .38 to .74, and the internal consistency alpha coefficient was calculated as .80.

Data Analysis

First, exploratory factor analysis was applied to 58 items in three scales, and Harman's single factor test was used to determine whether there was a common method bias problem. As a result of unrotated principal component factor analysis, a total of 16 factors with eigenvalues higher than 1 were obtained. Based on the fact that the variance of the first factor (16.64%) is less than 40% in the data set where 59.62% of the total variance is explained, it can be said that the common method bias is not a significant problem among the related variables (Podsakoff et al., 2003). Then, in order to determine the relationships among all variables, bivariate correlation and descriptive statistics were used through the SPSS program. In the third stage, multivariate normality tests were first performed in the AMOS program, and it was confirmed that the variables in the data set were distributed normally. Then, structural equality modeling (SEM) analyses were performed to reveal the mediation role of FNE in the relationship between PAS and ART. In the related literature, significant relationships were reported between gender and autonomy support (Lietaert et al., 2015; Oelsner, Lippold, & Greenberg, 2011), FNE (Aydin & Sutcu, 2007; Subasi, 2007), and ART behavior (Bozpolat & Koc, 2017). Similarly, grade level was

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found to have significant relationships with ART behavior (Avcı & Ozenir, 2016) and FNE (Cetinkaya-Yildiz & Toprak, 2016). Therefore, in SEM analysis, categorical variables (gender and grade level) were assigned as control variables. In the fourth step, the bias-corrected bootstrapping method proposed by Hayes (2018) was used in AMOS to test the statistical significance of the indirect effect of PAS on ART via FNE. In order to obtain a 95% confidence interval, the number of samples was increased to 10,000 by random sampling. The fact that there is no zero value between the confidence intervals shows that the moderation effect tested in the model is statistically significant (Hayes, 2018). Statistical significance was set at $p < .05$.

Results

Descriptive Statistics and Correlation

Table 1 presents descriptive statistics and correlation values of related variables (PAS, FNE's behavioral effects, FNE's cognitive effects, ART).

Table 1. Descriptive Statistics and Correlations (N = 339)

Variable	M	SD	Skewness	Kurtosis	(1)	(2)	(3)	(4)
1 PAS	3.76	.76	-.70	.40	-			
2 Behavioral effects of FNE	2.52	.85	.49	-.31	-.37**	-		
3 Cognitive effects of FNE	3.73	.87	.86	.25	-.35**	.49**	-	
4 ART	3.67	.64	.63	.78	.53**	.62**	-.41**	-

Note: ** $p < .01$,

When the skewness and kurtosis values in Table 1 are examined, it can be said that the related variables show normal distribution. As expected, PAS has a significant negative correlation with the sub-scales of FNE. The same applies to the correlation values between ART and the sub-dimensions of FNE. There is a significant correlation between the sub-scales of FNE. A significant positive correlation was found between PAS and ART.

Mediation Analyses

In order to test whether FNE has a mediating role in the relationship between PAS and ART, SEM analyses were performed. Gender and grade levels were controlled in all analyses. In order to

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meet the mediation analysis conditions proposed by Baron and Kenny (1986), a direct path was established between PAS and ART (H1), and the independent variable (PAS) predicted the dependent variable (ART) in a significant and positive direction ($\beta = .55$, $SE = .06$, $t = -6.391$, $p < .001$). In the next step, H2, H3, and H4 were tested by adding FNE as a mediator variable to the model (Figure 2).

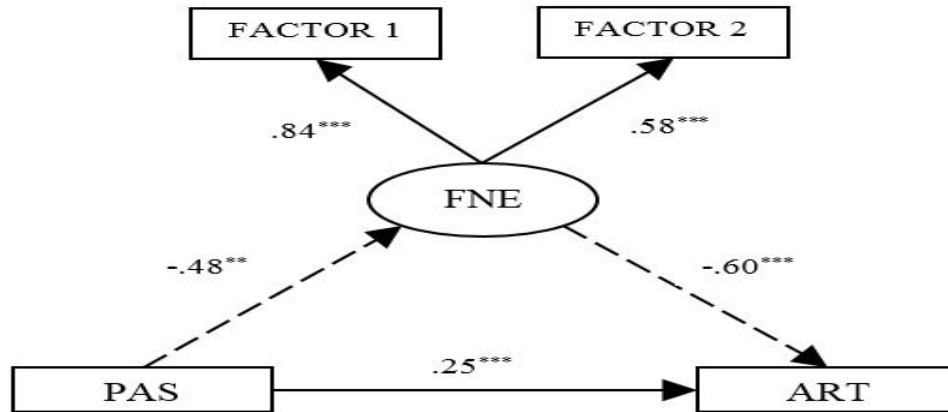


Figure 2. Standardized Beta Coefficients for the Mediating Effect of FNE in the Relationship between PAS and ART, $N = 339$. *** $p < .001$

As shown in Figure 2, PAS predicted FNE significantly and negatively; so, H2 was confirmed ($\beta = -.48$, $SE = .06$, $t = -6.970$, $p < .001$). Also, FNE predicted ART significantly and negatively; so, H3 was confirmed ($\beta = -.60$, $SE = .07$, $t = -7.321$, $p < .001$). After the inclusion of the mediator variable (FNE), PAS significantly predicted ART, but there was a decrease in its effect coefficient ($\beta = .25$, $SE = .04$, $t = 4.236$, $p < .001$). According to these findings, FNE has a partial mediating role in the relationship between PAS and ART. The indirect effect of PAS on ART via FNE ($0.48 \times 0.60 = 0.28$) corresponds to 52% ($0.28 / 0.53 = 0.52$) of the total effect ($0.28 + 0.25 = 0.53$).

The bias-corrected bootstrapping method was used in AMOS to test the significance of the mediation effect of FNE. Direct and indirect effect coefficients and 95% confidence intervals are given in Table 2.

Table 2. The Bootstrapping for the Partial Mediation Model (N = 339)

	Model Paths	SPC	SE	%95 CI	
				Lower	Upper
Standardized Direct	PAS→FNE	-.48**	.07	-.61	-.35
	FNE →ART	-.60**	.05	-.73	-.48
	PAS→ART	.25**	.07	.11	.38
Standardized Indirect	PAS→FNE→ART	.29**	.05	.19	.42

Note: PAS = Perceived Autonomy-Support, FNE = Fear of Negative Evaluation, ART = Academic Risk-Taking, SPC= Standardized Path Coefficient, CI = Confidence Interval, SE. = Standard Error, **p < .01.

According to Table 2, all the direct path coefficients are significant. After 10,000 bootstrap operations, it was found that the indirect path coefficient was significant and there was not zero between confidence intervals (bootstrap coefficient = .29, 95% CI = .19, .42). According to these findings, H4, which suggests that FNE has a mediation role in the relationship between PAS and ART, was confirmed. In addition, PAS, FNE, and two control variables (gender and grade levels) explain 58% of the total variance in ART. When the mediator variable FNE is not included in the model, this rate decreases to 31%. The indices of the final model are excellent: $\chi^2 = 182.049$, $df = 141$, $p < .01$, $\chi^2/df = 1.291$, $RMSEA = .03$, $IFI = .97$, $SRMR = .10$, $TLI = .97$, $CFI = .97$.

General Discussion

The results of the research showed that there was a positive relationship between PAS and ART and a negative relationship between FNE and the other two variables. Autonomy-supportive learning environments (PAS) in social studies lessons positively predicted middle school students' ART behaviors and negatively predicted their FNE levels. Accordingly, as the PAS level increases, the FNE level decreases, but the ART level increases. These results are consistent with those of the studies reporting that students' ART behavior will increase in learning environments where a positive learning climate based on mutual trust is provided (Beghetto, 2009; Kalchman & Koedinger, 2005; Nickerson, 1999). In an autonomy-supportive learning environment, students are intrinsically motivated to participate in classroom activities (Griffin, 2016; Zhou et al., 2019).

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Kalchman and Koedinger (2005) pointed out the importance of the establishment of a positive classroom climate in which students can experiment, explore, and take risks in learning and problem-solving processes in order to increase their tendency to take academic risks in mathematics classes. Similarly, Kennedy (2005) argued that students who are ignored or discouraged by their teachers when they express their views in classroom discussions would probably hesitate to take risks and avoid sharing their views, even if they regard them as very important. Contemporary approaches in psychology, especially SDT, emphasize the importance of autonomous motivation, suggesting that individuals should not be passive, obedient, or dependent on others, but, on the contrary, they should be active and sociable (Ryan & Deci, 2017; Zhou et al., 2019). It is also underlined that high performance, success, and creativity do not depend on biological motives or the reward-punishment paradigm but on the inherent desire to develop one's own skills, to manage one's own life, and to live one's ideal life. The richest experiences in life are often experienced not with extrinsic motivation (e.g., while waiting for the approval of others) but with intrinsic motivation (Calp, 2013). Students whose intrinsic and autonomous motivations are supported and who feel competent do not easily give up in the learning process, are not afraid of making mistakes, prefer challenging operations to improve themselves, build resilience after failures, and share their opinions and views; in short, they easily engage in ART behavior (Beghetto, 2009). Bransford and Donovan (2005) stated that the culture of respecting, asking questions, and risk-taking thrived in learning environments where different thoughts about problems and phenomena are easily expressed and uncertainty and multiple perspectives are accepted as part of participation in scientific research. This is because such behavioral patterns do not stem from extrinsic motivation but from intrinsic motivation. In a result-oriented learning environment where objective learning outcomes (high grades) are valued rather than students' efforts in the learning process, students will most likely not opt for challenging operations in order to get better grades and will hesitate to share their views in the classroom; in other words, they will avoid taking risks. Considering that the relevant literature lacks an empirical study examining the relationship between PAS and ART, it can be stated that the present study provides precious insight into the subject. These results are valuable in that they provide empirical evidence for the positive effects of SDT in learning environments and form the basis for further studies. From this point of view and considering both the empirical evidence and theoretical background of this research, it can be said that increasing students' PAS levels will increase their ART levels.

Another important result of the study is the significant partial mediation effect of FNE in the relationship of PAS with ART. These results are consistent with the results of the study by Cetin

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et al. (2014), which showed the inverse relationship between FNE and ART. Accordingly, we can say that it is difficult to increase students' ART levels unless their FNE levels decrease. The potential of autonomous support within the scope of SDT, assigned as the independent variable, to suppress and reduce the level of FNE is important in this respect ($\beta = -.48$, $p < .001$). Considering that FNE negatively affects ART ($\beta = -.60$, $p < .001$), students who are encouraged to participate actively in classroom discussions, who are not criticized as a result of their mistakes, whose personal preferences and opinions are valued, and who are not threatened with low grades are expected to have lower levels of FNE, which, in turn, are reflected in higher levels of ART. In other words, autonomy support directly and positively affects ART behavior while indirectly reducing the FNE level ($\beta = -.29$, $p < .001$). The role of FNE as a key mediator between the predictor and the predicted variables can be addressed in two items. First, the indirect effect of the predictor (PAS) variable on the variable predicted via FNE (ART) corresponds to 52% of the total effect. Second, PAS, FNE, and control variables (gender and grade levels) all together account for 58% of the variance in ART assigned as the dependent variable in the model. When FNE is removed from the model, this rate decreases to 31%. All of these results indicate that all hypotheses are supported and that the theoretical model is consistent with the data set.

The autonomy support within the scope of SDT does not mean offering students unlimited freedom. On the contrary, this freedom is limited and entails certain conditions. Moreover, autonomy support does not mean that the student should assume full responsibility in the learning process (Holec, 1981; Vansteenkiste et al., 2012). Autonomy support, according to SDT, requires teachers to be tolerant toward their students, respect their autonomy, avoid judging them, and guide and observe their learning process to enable students to successfully perform goal setting, planned work, self-evaluation, and challenging tasks (Little, 2004; Reeve, 2006). SDT also underlines the importance of social support from teachers for students to feel safe in the school environment and thus participate actively in activities (Roorda et al., 2011; Schuitema et al., 2016). Also, the learning environment needs to be well structured. However, in order for the learning environment to be well structured, teachers need to set clear rules and expectations, explain the reasons for these rules, demonstrate consistent behavior, and ensure that students embrace the rules. In this way, the students are provided with a "roadmap" on how to follow their goals (Mouratidis et al., 2018). Such autonomy-oriented teaching styles will be effective in reducing the FNE levels of students, which, in turn, will increase their ART levels. On the other hand, in a learning environment where students assume full responsibility, they will feel alone as they will not be receiving any support from their teachers and will not have a "roadmap." In such

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a learning environment, it is very difficult to reduce students' FNE levels or increase their ART levels.

Implications, Limitations, and Future Direction

The obtained data set supported the predictive model suggesting that middle school students who receive autonomy support from their teachers in social studies lessons are expected to have lower levels of FNE and higher levels of ART and that FNE has a mediation role in the relationship between PAS and ART. These findings prove that the fundamental principles of SDT are built on solid foundations and are adaptable to real life. It is hoped that the results of this research will draw the attention of the relevant stakeholders to the individual psychological traits of students in the learning environment. On the other hand, the research has several limitations. The evidence obtained in this study using a cross-sectional research model is not strong enough to confirm the causal relationships among PAS, FNE, and ART. In order to establish a clear cause and effect relationship among these variables, experimental studies are needed. Another limitation of the study is that the data for all the variables were obtained through self-report measures. Collecting data for multiple variables through self-report measures may lead to a common method bias risk, although this was not the case in this study. To avoid this problem, data can be collected at different times. In addition, with the triangulation technique (using more than one method such as observation, interviews, questionnaires to collect data on the same topic), stronger findings can be obtained (Patton, 2014). On the other hand, Ryan and Deci (2017) emphasized that the use of self-report measures would be more helpful in studies on SDT. For example, the most important indicator of whether a teacher supports students' autonomy is students' reports and perceptions rather than the teacher's self-reports or the scores of neutral observers (Jang et al., 2010; Ryan & Deci, 2017). No matter how autonomy-supportive the teacher thinks he/she is, his/her autonomy support is meaningful only when it is reflected in his/her students' views and perceptions. The divergence in students' and teachers' views concerning autonomy support may be interpreted as teachers and students differently understanding the concept of autonomy support. Further studies can examine the causes of this divergence in-depth and, by considering the views of teachers and students, reveal concrete behavioral patterns that form the components of the concept of autonomy support.

Considering that the relevant literature does not have empirical studies examining the relationships among related variables, it is important to conduct similar studies with a sample with different cultural traits to test the generalizability of the present study. Supporting the obtained results with qualitative research is important in order to better understand the

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behavioral patterns of teachers and students in the learning environment. In the relevant literature, there are clear behavioral expressions for teachers' autonomy support (Assor et al., 2002; Reeve, 2006); however, it is difficult to say the same for FNE and ART. Through in-class observations, students' FNE and ART behavior can be clearly demonstrated. Further research is needed to reveal the situations when students are hesitant to take risks and to uncover concrete indicators of FNE.

Conclusion

In this study, a structural model for the relationships among PAS, ART, and FNE under SDT has been proposed. The empirical findings supported the theoretical model. PAS predicted FNE negatively and ART positively. In addition, FNE predicted ART negatively. FNE has a significant partial mediation effect on the relationship between PAS and ART. According to the results of the research, it can be said that the use of autonomy-supportive learning practices in social studies lessons have an important role in reducing middle school students' FNE levels and in increasing their ART levels.

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About the Author:

Servet Üztemur – Assistant Professor of Social Studies Education, Gaziantep University Faculty of Nizip Education, Turkey

Corresponding author: servetuztemur@gmail.com

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