

Article

Effect of Positive Parenting Styles as Perceived by Middle School Students on Academic Achievement and the Mediation Effect of Self-Esteem and Academic Engagement

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Abstract: This study aimed to identify how positive parenting styles as perceived by middle school students affect their academic achievement and to assess the mediation effect of self-esteem and academic engagement. Data concerning 2590 middle school first graders were obtained from the South Korea Children and Youth Panel Survey 2018, and data analysis was undertaken using the SPSS21.0, AMOS22.0, and PROCESS macro programs. This study identified significantly positive effects of positive parenting styles and academic engagement on self-esteem, and of academic engagement on academic achievement. Furthermore, self-esteem and academic engagement had a mediating effect on the relation between positive parenting styles and academic achievement. Therefore, educators should develop programs that improve positive parenting styles, and specific programs for middle school students to enhance their academic engagement and self-esteem.

Keywords: middle school students; parenting style; self-esteem; academic achievement; academic engagement; social emotions; performance



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1. Introduction

Academic achievement is highly related to not only personal factors such as self-identity development but also environmental factors. Various studies have dealt with relevant family aspects in this respect, especially the role of parents. Kim [1], Park [2], and Yoon [3] examined personal factors related to parents' involvement and showed that parenting styles or personal tendencies, such as parental support, can affect academic performance. Further, Park and Hyun [4] examined parents' relationship with academic achievement using self-encouragement as a variable. The results of these studies showed that parents' support for their children's academic careers improved the children's academic performance and achievement.

However, close relationships with children may not always or necessarily have a positive effect on their academic performance and achievement. It has been claimed that excessive intervention could negatively affect academic performance [5]. Additional research is needed to clarify this matter. While one study [6] examined the correlation between academic achievement and self-identity development, that study was limited as it was conducted on middle school students in only one area in South Korea (Korea hereafter). Therefore, the current study sought to enhance the generalizability of its results by using country-level data on Korean children and youth panel data for analysis.

Given that prior studies have shown that individuals' sustainability orientation, sustainable effort, economic environment, and parental support affect children's academic performance, this study considered the aspects of both their learning environments and their personalities. In particular, this study focused on the students' self-esteem and parents' parenting style. In other words, academic achievement can vary depending on the relationship between parenting style and students' self-esteem [7,8].

This study thus aimed to determine the effects of parenting style, self-esteem, and academic engagement on academic achievement as perceived by middle school students, using data obtained from the Korean Children and Youth Panel Survey (KCYPS). It also attempted to identify more precisely how certain variables affect academic achievement.

Therefore, the authors propose positive parenting attitudes and high self-esteem as prerequisites for improving academic achievement, which will reduce the tendency of managers to leave. Based on the above study, the following hypothesis was proposed to clarify the impact of the environment and propensity according to academic achievement.

Hypothesis 1 (H1). *The positive parenting method perceived by middle school students will related to academic achievement, self-esteem, and academic participation.*

Hypothesis 2 (H2). *Self-esteem and academic participation among middle school students will have a mediation effect on the relationship between perceived positive parenting styles and academic achievement.*

2. Theoretical Background

2.1. Parenting Styles and Academic Achievement

As family households are generally where humans begin their lives and develop their first human relationships, such places provide a foundation for character and personality formation. In particular, the relationship between parents and children is the most important factor in the latter's growth and development as adolescents. However, definitions of parental attitudes have varied in different studies. Parental attitude is defined as general attitudes and behavior a parent adopts toward a child (Kim and Jang, 2016) [9]. Parental attitudes are very important, which is because parents' standards for morals and behaviors are expressed in communication with their children and the children apply the standards to their development [2]. In particular, parents or teachers who guide students at school are interested in the relationship between parentings styles and academic achievement as a major concern for students and children. Parenting styles have been proven to be a strong predictor of academic achievement in previous studies [2,7,10], but the association between academic achievement and positive parenting styles in Korean educational environment and culture remains controversial [5,6]. Therefore, it is necessary to analyze the relation between parentings styles and academic achievement using data from a survey targeting all middle school students rather than specific cases through qualitative research. Although how specific factors relate to each other has been investigated, how academic achievement, self-esteem, learning enthusiasm, and academic achievement are linked to each other is not comprehensively clear yet.

Park (1996) first theorized parental attitudes and classify them into two dimensions: (a) acceptance or rejection and (b) domination or obedience. Reference [11] also classified parental attitudes into two dimensions: (a) affection or hostility and (b) autonomy or control. According to Schaefer, affection refers to parents' positive evaluation of children, emotional expression, and attitudes; hostility refers to attitudes of ignoration or rejection; autonomy refers to acceptability; and control refers to anxiety, protection, coercion, desire to achieve, and interest in health [2]. References [12,13] considered that the sub-factors of parental attitudes involved promise-making, authoritarian, democratic, equal-treatment, and neglectful aspects, while references [14,15] categorized parental attitudes into three dimensions: (a) warmth and hostility, (b) restriction and tolerance, and (c) overprotection and neglect.

According Heo (2012) [16], parenting not only determines the quality of the parent-child relationship, but also has a significant effect on a child's psychological characteristics, which in turn affects the child's intellectual development. These findings are supported by reference [17]. Reference [18] reported a significant correlation between academic performance and school adaptation in a long-term study on the effects of family environment and parent-child relations on children's academic performance. Specifically, they found

that the more children experienced rejection from their parents, the lower were their levels of academic performance and school adaptation. Epstein and Radin claimed that children from families where the father's parenting style was democratic and intimate were motivated positively in terms of academic achievement and school adaptation, whereas children whose fathers frequently punished or restricted them responded negatively to school life and had reduced motivation for achievement. These studies indicated that positive parenting attitudes are closely related to and influence all aspects of children's learning activities, cognitive and affective behavior, and school life adaptation. Accordingly, an empirical study to further clarify the precise effects involved is likely to be useful.

2.2. Mediating Role of Self-Esteem and Academic Engagement in the Relation between Positive Parenting Styles and Academic Achievement

No matter how motivated learners are to participate in learning, they tend to continue their participation selectively depending on their academic engagement [3]. Therefore, academic engagement is an important element in examining successful school life [19] and continuity in learning participation [20]. Self-esteem as a concept has also been used to evaluate individuals' perception of their own value, and reference [21] defined self-esteem as either a positive or negative attitude toward oneself. Conceptualizing one's value may not only relate to academic achievement but also affect other types of behavior among middle school students. According to previous studies, self-esteem has been reported to be a variable affecting academic achievement or adjustment at school [14,22,23]. Further, students with high self-esteem were shown to have high level of adjustment at school and academic achievement, whereas students with low self-esteem had high levels of anxiety and abnormal behavior. Students who had a positive view of themselves and a firm belief in their abilities realized more outstanding academic achievements [2].

Families' functional characteristics such as parenting attitudes and parenting beliefs have a stronger effect on adolescents than their structural characteristics, such as socioeconomic status and family composition [24]. Parent-child relationships are important [25–27] because children learn and imitate their parents' values, lifestyles, and behaviors through interaction with them. During this process, adolescents develop their values and personalities, self-concepts such as self-respect, and social skills such as social-norm learning [28,29].

Parents' parenting attitudes affect their children's school life adaptation, such as their relationships with peers and teachers as well as attitudes toward schoolwork, in varying degrees [28,30]. Family-related variables, including parents, were generally identified and discussed in studies on school life adaptation in Korea [15,17,28]; among these variables, parental attitudes were consistently reported to affect school life adaptation [31]. Studies found that the more affectionate parental attitudes are [27,32,33], the more receptive [33], democratic [34], and reasonable [35] are the parents, and the more likely it is that there will be a positive effect on adolescents' adaptation and academic achievement.

Negative parenting attitudes, such as parental abuse and neglect, negatively affect adolescents' school life adaptation and learning enthusiasm [36]. Parenting is also an important factor influencing adolescent self-esteem [36–38]. Self-esteem is formed through social interactions involving recognition, respect, acceptance, and evaluation of values imparted by important others, as well as successful experiences as individuals [38,39]. The family setting is generally the primary environment for individual development, with parents most likely to have interacted with adolescents for the longest time, that is, since infancy. Therefore, the effect of parents on the development of self-esteem in adolescents is likely to be significant [40] and can be mutually reinforcing, because positive adolescent self-esteem will affect parental self-esteem positively, creating a positive feedback cycle [34].

3. Methods

3.1. Research Model

This study aimed to determine whether self-esteem and academic engagement have a mediating effect on the relationship between positive parenting styles and academic

achievement among middle school students. For this purpose, a research model was constructed, as shown in Figure 1.

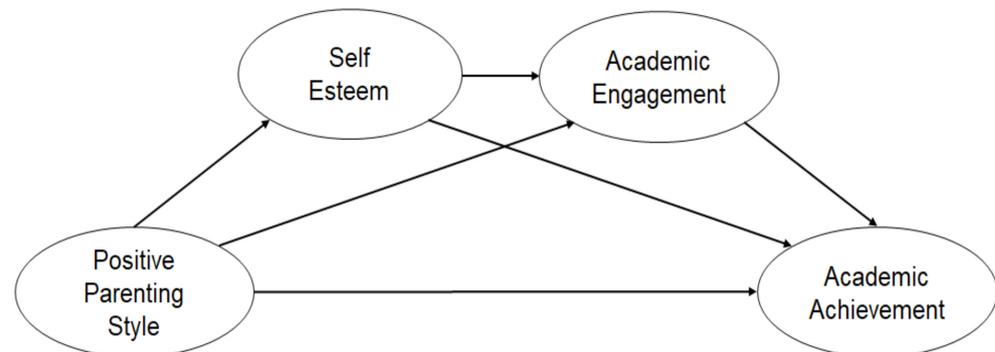


Figure 1. Research Model 1.

3.2. Participants

This study was undertaken using data concerning 2590 middle school first graders in Korea that was obtained from the KCYPS 2018 conducted by the National Youth Policy Institute. KCYPS 2018 was designed to establish data that can show complex changes regarding the growth and development of children and youth from a systemic and multi-dimensional perspective with support from the Ministry of Education, Korea. This panel survey was reviewed by the institutional review board of the National Youth Policy Institute and executed using the tablet-assisted personal interview method for multi-stage stratified sampled middle school first graders.

Among the 2590 participants in the survey, 1409 (54.2%) were male and 1185 were female (45.8%). Of these, 1169 (45.1%) students attended middle school in metropolises, 1054 (40.7%) attended middle school in small or medium-sized cities, and 367 (14.2%) attended middle school in the rural areas of Korea. In addition, the average age of the participants was 13 years old ($M_{age} = 13.052$).

3.3. Measures

Within the panel data of KCYPS 2018, the questionnaire responses on positive parenting styles, self-esteem, academic engagement, and academic achievement of middle school first-grade students were used for this study. To measure positive parenting styles, the Korean version of the Parents as Social Context Questionnaire for Adolescents developed by Kim and Lee [39] was used. This scale consisted of six dimensions: warmth, autonomy support, structure, rejection, coercion, and chaos. Data from a total of 12 items within the warmth, autonomy support, and structure dimensions were used to analyze positive parenting styles in this study. In Kim and Lee's [39] research, the Cronbach's α were as follows: warmth, 0.882; autonomy support, 0.836; and structure, 0.766, all of which were over 0.6. The sample items include "My parents show me that they love me" and "My parents like to be with me."

Self-esteem was measured using Rogenberg's [23] self-esteem scale translated by the National Youth Policy Institute. Participants were asked to estimate their self-esteem through items such as "I feel that I have a number of good qualities," "I am able to do things as well as most other people," and "I take a positive attitude toward myself."

To measure academic engagement, the Korean Academic Engagement Inventory developed by the Lee and Lee [41] was used. This scale consisted of 16 items: four items for each of the four dimensions of vigor, dedication, esteem, and immersion. Lee and Lee's [41] results showed that the eigen values of all items were over 0.5. The sample questions to measure academic engagement include "I'm good at studying," "I am confident in my studies," and "I become energetic while I'm studying."

The questionnaire for academic achievement consisted of two items—the subjective academic achievement level and academic achievement satisfaction level—as developed by the National Youth Policy Institute [42–44].

3.4. Data Analysis and Research Procedures

Data analysis was performed using the SPSS21.0, AMOS22.0, and PROCESS macro programs. The analysis proceeded as follows. First, a frequency analysis was conducted on the independent variables, dependent variables, and mediator variables. Also, measuring Cronbach's α was conducted to confirm the variables' reliability. Second, a confirmatory factor analysis was conducted to confirm the research model's validity. Third, a correlation analysis was conducted to identify the direction of relevance and relationships among the variables. Fourth, a research model and an alternative model were constructed and compared to identify which model was appropriate to use for analysis. Fifth, a structural equation was used to conduct covariance structural analysis, confirm whether there are any influencing effects between the study variables; and confirm the research model's goodness of fit. Sixth, mediator analysis was undertaken for verification using the PROCESS macro. According to Lee [41–44], the PROCESS macro is a useful analytic method for verifying both the mediation and control effects as it does not require separate procedures using regression analysis such as those used by Baron and Kenny [12], or the Sobel test. The PROCESS macro uses bootstrapping to verify mediation effects where the basic number of samples has been set to at least 2000, and it determines the resulting values in a single analysis.

4. Results

To enhance the measuring model's simplicity and accuracy, three sub-categories were determined concerning self-esteem through data parceling, while three and two sub-categories were determined for each of them, respectively, based on the theoretical background. As shown in Figure 2, confirmatory factor analysis was conducted on the research model. The analysis confirmed the model's goodness of fit as well as that the measuring and potential variables were well-organized, as shown in Table 1. Specifically, the fit indexes are acceptable when the comparative fit index (CFI) ≥ 0.9 , normed fit index (NFI) ≥ 0.9 , Tucker-Lewis Index (TLI) ≥ 0.9 , and root mean square error of approximation (RMSEA) ≤ 0.1 ; as the measuring model had fit index values of CFI = 0.930, NFI = 0.927, TLI = 0.902, and RMSEA = 0.088, it found to be fit for this study [12,45]. The regression weight of variables in Confirmatory factor analysis model was found in Table 2.

Table 1. Goodness-of-Fit Indexes for Structural Equation Model.

χ^2	Df	CFI	NFI	TLI	RMSEA	<i>p</i>
946.023	45	0.930	0.927	0.902	0.088	0.000

Table 2. Regression Weight of Variables in CFA.

Latent Variable	Item	Regression Weight	SE	CR	<i>p</i>
Positive Parenting Style	Warmth	1.000			
	Autonomy	0.955	0.028	34.001	0.000
	Support	0.708	0.022	32.892	0.000
Self Esteem	SE1	1.000			
	SE2	0.917	0.029	31.547	0.000
	SE3	0.178	0.044	4.032	0.000
Academic Engagement	Dedication	1.000			
	Vigor	1.047	0.029	35.708	0.000
	Esteem	1.389	0.041	33.496	0.000
Academic Achievement	Immersion	1.149	0.036	32.279	0.000
	Subjective AA	1.000			
	AA Satisfaction	0.777	0.035	22.319	0.000

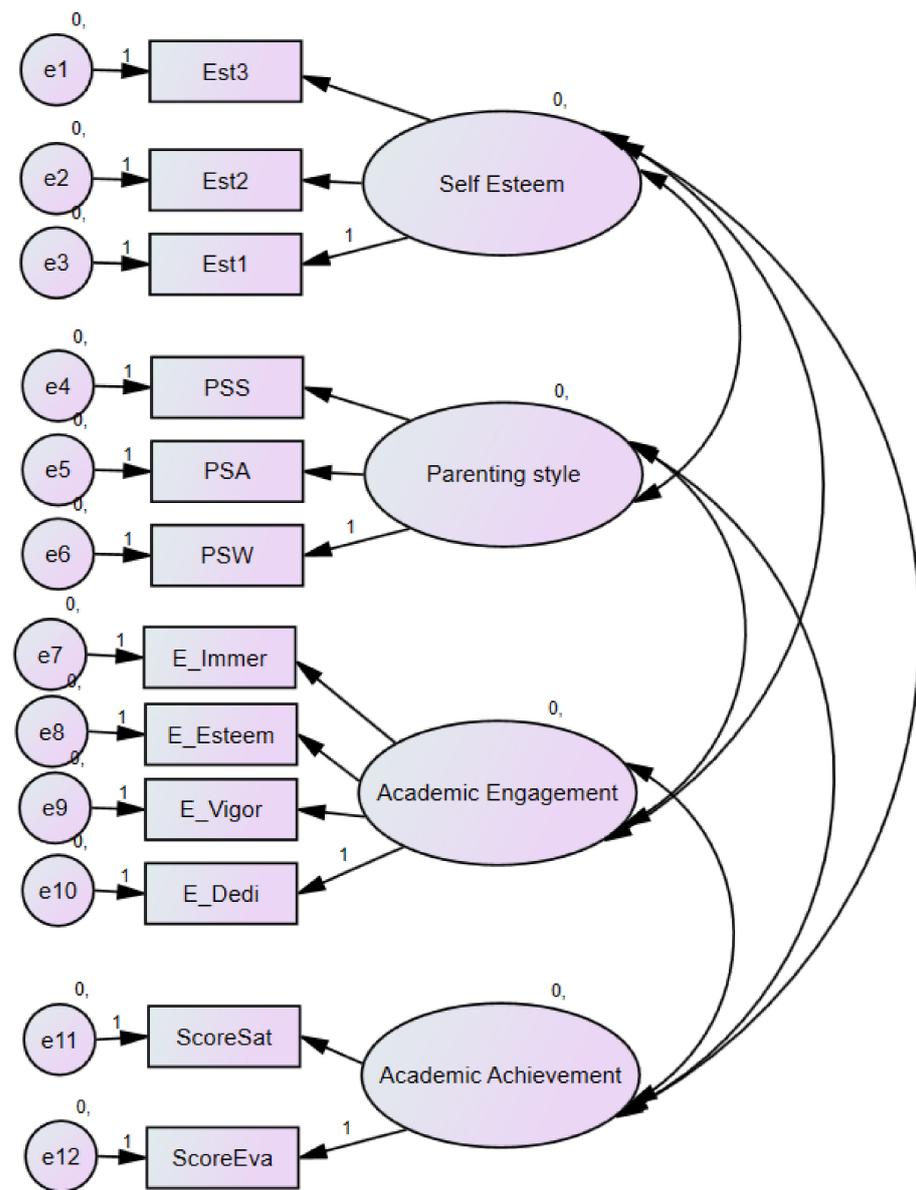


Figure 2. Confirmative Factor Analysis.

The means, standard deviations, Cronbach’s α values, and correlations of the study variables are shown in Table 3. All Cronbach’s α values were over 0.6, and all the variables in the model had a direct relationship with one another. Correlation analysis confirmed that there was a significantly positive relationship between positive parenting styles, self-esteem, academic engagement, and academic achievement.

Table 3. Number, Means, Standard Deviations, Cronbach’s α , Correlations, and Reliabilities of Study Variables.

Variable	M	SD	Cronbach’s α	1	2	3	4
1. Positive Parenting Style	3.26	0.49	0.918	-			
2. Self Esteem	3.49	0.50	0.866	0.51 ***	-		
3. Academic Engagement	2.47	0.55	0.929	0.36 ***	0.45 ***	-	
4. Academic Achievement	3.53	0.96	0.751	0.17 ***	0.25 ***	0.41 ***	-

*** $p < 0.001$.

Each model’s goodness of fit was compared through the comparison between a full-mediation model as the alternative model and a partial-mediation model as the research

model, in accordance with Kelloway [11]. The partial-mediation model was constructed in relation to Hypothesis 2 (H2): Self-esteem and academic participation among middle school students will have a mediation effect on the relationship between perceived positive parenting styles and academic achievement (see Figure 3). The fit indexes of the partial-mediation model showed significance: $\chi^2 = 1079.401$ (degrees of freedom [df] = 45, $p < 0.001$), with CFI = 0.920, NFI = 0.917, TLI = 0.900, and RMSEA = 0.094, as shown in Table 4.

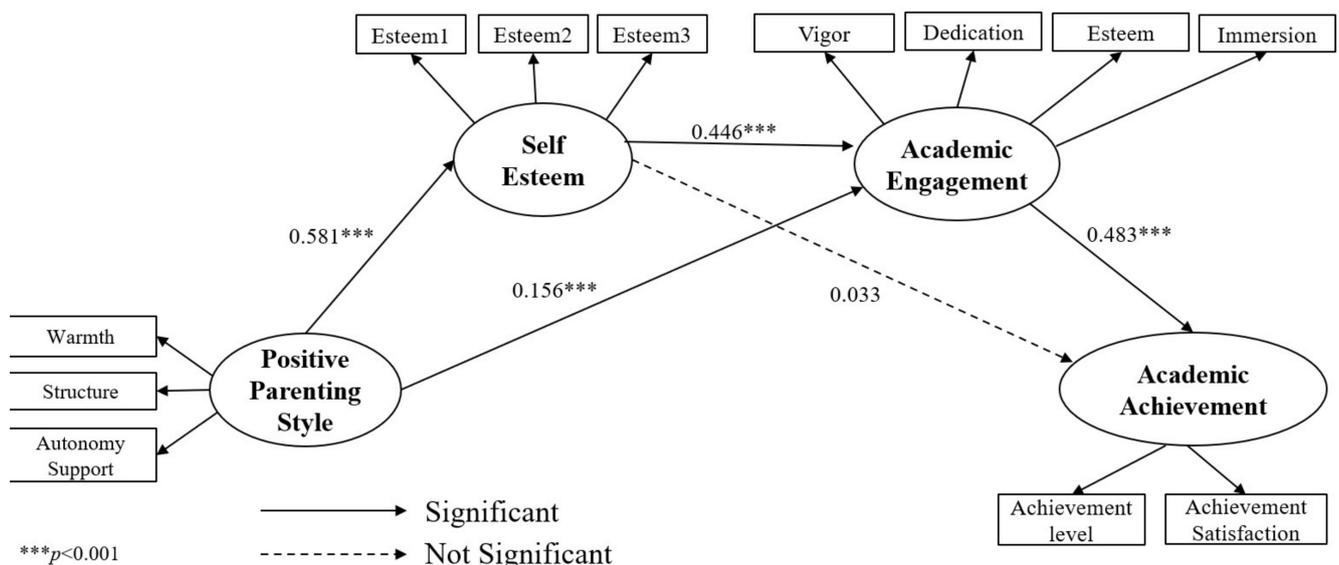


Figure 3. Partial-Mediation Model.

Table 4. Goodness-of-Fit Indexes for Structural Equation Model.

Model	χ^2 (Df)	$\Delta\chi^2$ (Δ Df)	CFI	NFI	TLI	RMSEA
Partial Mediation	1079.4 (45) ***	1.00 (1)	0.920	0.917	0.902	0.094
Full Mediation	1080.4 (46) ***		0.920	0.917	0.900	0.093

*** $p < 0.001$.

In the alternative full-mediation model, the arrow indicating a direct relationship between positive parenting styles and academic achievement was deleted (see Figure 4). The fit indexes of the full-mediation model were significant: $\chi^2 = 1080.407$ (df = 46, $p < 0.001$) with CFI = 0.920, NFI = 0.917, TLI = 0.902, and RMSEA = 0.093, as shown in Table 4. Compared with the partial-mediation model, the full-mediation model was found to have an equivalent goodness of fit.

Next, a model comparison was conducted based on the difference in values between the alternative and research models. The result showed that the difference between the χ^2 was 1.00, which was smaller than the threshold of 3.84 with the difference in df of 1. Therefore, the difference in χ^2 was not significant. When comparing the values and df of the two models, model verification did not reveal significant results. In this case, the model with higher df tends to be selected [11]. In the comparison between the full-mediation and partial-mediation models, the full-mediation model with a higher df was selected. In other words, the full-mediation model was determined to be more appropriate than the partial-mediation model through comparison of the goodness of fit and difference in χ^2 . The partial-mediation model (research model) is presented in Figure 3, and the full-mediation model (alternative model) is presented in Figure 4.

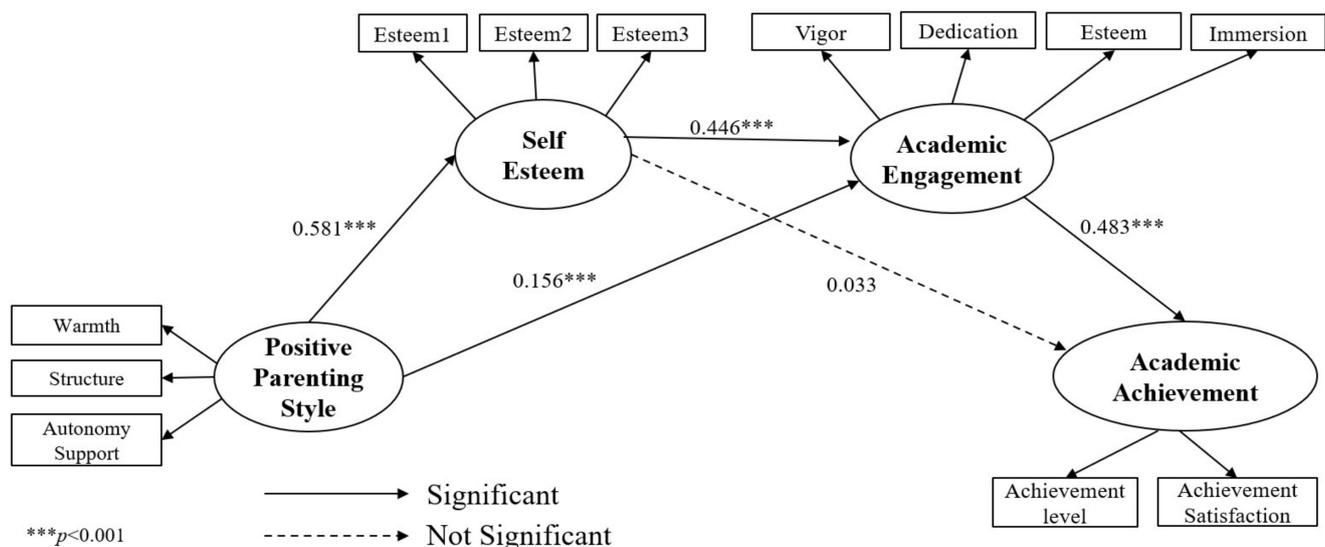


Figure 4. Full-Mediation Model.

For answering Hypothesis 1 (H1), a structural equation was made and covariance structural analysis was conducted between the study variables. To analyze the relationships among the major variables in this study, the standardization route (β), standard error, and t - and p -values were reviewed in the selected research model. The analysis results are presented in Table 5. Positive parenting styles had a significant positive effect on self-esteem ($\beta = 0.581$, $p < 0.001$). The relationship between positive parenting styles and academic engagement was significant ($\beta = 0.156$, $p < 0.001$), and the effect of self-esteem on academic engagement was significantly positive ($\beta = 0.446$, $p < 0.001$). In addition, the effect of academic engagement on academic achievement was significantly positive ($\beta = 0.483$, $p < 0.001$). On the other hand, the relationship between self-esteem and academic achievement was not significant.

Table 5. The path estimates of full mediation model.

Paths	Path Estimates	Standard Error	C.R.
Positive Parenting Style→Self Esteem	0.581	0.023	26.445 ***
Self Esteem→Academic Engagement	0.446	0.028	14.688 ***
Positive Parenting Style→Academic Engagement	0.156	0.026	5.723 ***
Academic Engagement→Academic Achievement	0.483	0.054	13.883 ***
Self Esteem→Academic Achievement	0.033	0.036	1.263

*** $p < 0.001$.

The total effect, direct effect, and indirect effect values among the variables for the partial-mediation model are shown in Table 6. Since the full-mediation model was determined to be more appropriate than the partial-mediation model through comparison of the goodness of fit and difference in χ^2 , the indirect effect of positive parenting styles on academic achievement represents 100% of the total effect. The direct effect of the positive parenting style on academic achievement was found to be insignificant, and the indirect effect showed a larger value than the total effect.

To answer research Hypothesis 2 (H2) more clearly, model number 6 among the models in the PROCESS macro [46] was applied for analysis. The results showed that the indirect effects of positive parenting style as an independent variable, self-esteem and academic engagement as mediating variables, and academic achievement as a dependent variable had the value of 0.3469, as shown in Table 7. Since this value at the 95% confidence level was not 0, the mediation effect was significant.

Table 6. The effect decompositions of partial mediation model.

Path	Total Effect	Direct Effect	Indirect Effect
Positive Parenting Style→Self Esteem	0.581	0.581	
Positive Parenting Style→Academic Engagement	0.417	0.159	0.258
Positive Parenting Style→Academic Achievement	0.203	−0.028	0.231
Self Esteem→Academic Engagement	0.445	0.445	
Self Esteem→Academic Achievement	0.264	0.047	0.217
Academic Engagement→Academic Achievement	0.488	0.488	

Table 7. PROCESS macro Analysis Results.

Path	Indirect Effect	LLCI	ULCI
Parent Style→Self Esteem→Academic engagement→Academic achievement	0.3469	0.2925	0.4024

5. Discussion

This study aimed to identify the effects of parenting style, self-esteem, and academic engagement on academic achievement among 2590 middle school first graders in Korea, using data obtained from the KCYPS 2018, and to verify the mediation effect of self-esteem and academic engagement in the relation between positive parenting styles and academic achievement.

First, positive parenting styles as perceived by middle school students were found to have a statistically significant and positive relationship with academic achievement, and self-esteem and academic engagement mediated this relationship rather than exercising a direct effect. Specifically, the effect of positive parenting styles as perceived by middle school students on self-esteem was statistically significantly positive, as was the effect of self-esteem on academic engagement. Academic engagement had a significant positive effect on academic achievement, but no significant differences were found in the relation between self-esteem and academic achievement.

These results differed from the results obtained by references [46–48], which showed that self-esteem was directly related to academic achievement and also correlated with academic self-efficacy among first graders in middle school. In this study, self-esteem did not have a directly relation with academic achievement; however, the higher the level of self-esteem among middle school students, the more likely it was for them to positively evaluate themselves, which reinforced high levels of self-esteem.

Second, self-esteem and academic engagement were found to mediate the effect of positive parenting styles on academic achievement. According to references [49,50], the higher the level of self-esteem, the more likely it is for students to have improved learning motivation and achievement, although they could not identify any mediating variable. Further research was thus required to clarify the effects of various variables in relation to positive parenting styles. This study's results support the need to develop specific programs to improve self-esteem and academic engagement, as these variables are closely related to academic achievement among middle school students.

Third, the indirect effect of positive parenting styles on academic engagement involved 62.4% of the total effect ($\beta = 0.415$), whereas the indirect effect of positive parenting styles on academic achievement was 100% of the total effect ($\beta = 0.220$). The indirect effect of self-esteem on academic achievement involved 86.7% of the total effect ($\beta = 0.248$). These results help explain why the variables of positive parenting styles and academic achievement may not be directly related, although positive parenting styles improve self-esteem levels, and self-esteem enhances the academic engagement of middle school students. From this perspective, there is a need to determine how positive parenting styles can be fostered, and to help middle school students improve their self-esteem and academic engagement through consultation with suitably qualified career advice consultants. This will ensure that the students advance successfully to college; are able

to confront experiences such as failure, adversity, and psychological pain; and remain focused on academic achievement. Furthermore, appropriate institutional support, such as administrative and financial assistance from the Korean Department of Education and the Office of Education on Classroom Teachers, may be necessary for those offering career advice in middle school [51,52].

Based on this study's findings, the following recommendations are proposed to improve the academic performance of middle school students. First, it is necessary to supplement and expand parental education in a realistic way to aid the development of adults as parents. Second, it is necessary to strengthen family programs and family friendly systems. If parents and children do not have enough time to spend together, they will have fewer opportunities to interact positively. Third, it is necessary to initiate and diversify programs to increase self-esteem among teenagers. Self-esteem has been shown to have a positive effect on academic performance and a significant effect on the subsequent lives of children. Therefore, institutional support is needed, as noted, to develop and revitalize various activities that can increase teenagers' self-esteem. Thus, self-esteem improvement programs are needed that allow participation by parents and adolescents and that are available for implementation by adolescent activity-related institutions; this is especially true given that prior studies clearly show that parents' positive parenting styles affect adolescents' self-esteem [53,54].

This study contributes to the literature by showing that parents' positive parenting styles sustainably affect middle school students' academic performance, and that academic engagement and self-esteem are mediating factors in this relationship.

6. Limitations

Nevertheless, this study had the following limitations: First, the questionnaire measuring the network variables was not sophisticated, which made it difficult to measure multiple questions grouped together. In other words, there was a limitation in terms of accurately measuring the responses to the questionnaires asking about positive parenting styles, Self Esteem, Academic engagement etc. Specifically, it did not reflect the respondents' propensity to pursue both functions because they had to choose one of the two questionnaires measuring their perceived parenting style.

Second, it focused on only middle school students. Further studies are needed that consider high school or elementary school students to determine whether this study's findings are applicable at these levels. Third, this study recognized that schools are important environmental systems that provide services to teenagers for their growth and development. However, it failed to consider the extent to which the schools' capacity to identify and address the needs of adolescents may be affected by their level and quality of service organization. Subsequent studies will need to consider schools as structural and environmental variables and assess the extent to which schools as service providers for all adolescents may positively affect the psychological and physical development of adolescents.

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