

The Mediating Effect of Self-Regulatory Skills on the Relationship between Mothers' Parenting Attitude and School Adjustment*

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After experiencing school closures and online learning caused by COVID-19, the important role of school education was reinforced. Elementary school is the foundation of life and allows students to develop both social and academic skills. The purpose of this study was to examine the mediational role of Self-Regulatory Skills (SRS) on the relationship between Maternal Parenting Attitude (MPA) and School Adjustment (SA) of elementary school students. A total of 99 students enrolled in an international school in Seoul, Korea from grades 3 to 6 participated in this study. Data were analyzed through Independent Sample T-Test, one way ANOVA, Multiple Regression Analysis, and Hierarchical Regression Analysis using the SPSS 23.0. The findings of the study were as follows. First, there is a difference between genders and among grades. Second, only acceptance was significantly related to school adjustment. Third, acceptance, strict control, and accepted control are significantly related to SRS. Fourth, Self-Regulatory Skills (Sustained Attention) fully mediate the relationship between Maternal Parenting Attitude (Acceptance) and School Adjustment (Academic Attitude/ Rule compliance). Educational implications for understanding the role of parenting attitude and future directions are discussed.

Keywords : mother's parenting attitude, acceptance, self-regulatory skills, sustained attention, school adjustment, mediating effect

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Introduction

The COVID-19 pandemic has reminded society that schools are the center of everyday life of many families and community service. When schools close, society as a whole goes into lockdown. School connects individuals and allows them to develop social relationships. Elementary education especially cannot be fully replaced by online or remote learning. Elementary school students should be present in person at school to interact with teachers and peer students in order to develop social and academic skills. Therefore, it is essential to adjust well to a school environment.

The failure of school adjustment in childhood causes various problems including truancy, dropping out, substance abuse, delinquency, and psychopathology in adolescence (Magelinskaitė-Legkauskienė, Legkauskas, & Kepalaitė, 2018). As school adjustment is known as a prominent factor in one's life, the predictors of successful school adjustment should be investigated. School adjustment is known to be influenced by a combination of external and internal factors such as a child's personal characteristics and experiences at home and school (Lakhani, Jain, & Chandel, 2017). Many studies found that parental involvement and parenting styles are significantly related to children's adjustment to school (Grolnick et al., 1989).

In addition, with the COVID-19 pandemic, students' daily routines drastically changed, which took a toll on their academic learning and school life. The COVID-19 facilitated the use of blended learning (a mix of online and offline learning) in educational settings. Students' inadequate self-regulation could disturb their learning under online education settings more than the traditional circumstance. Children with stronger self-regulatory skills generally demonstrate greater success in school academically and socially in both traditional and modern learning environments (Day & Connor, 2017) including online and blended learning environments. As self-regulation is the one of well-studied topics among educational psychologists, many influential factors such as temperament, genetics, and family environment have been studied. Among many factors, parenting attitudes have been proved to be one of the

important factors in developing self-regulatory skills at a young age (Morawska, Dittman, & Rusby, 2019). Parental attitudes play a prime role in children's development and it is valuable to examine how children's perception of their parenting attitude affects their school adjustment and self-regulatory skills.

Socioeconomic Status (SES; i.e., family income and parents' education levels) is known as an influential factor that affects the development of children and parenting attitudes. Parents' low educational level or economic difficulties negatively affects a mother's psychological well-being and parenting attitude, which can result in child maladjustment in school (Song & Park, 2008). Despite many studies focusing on low SES families, few have investigated high SES families. Thus, this study particularly targeted elementary school students who have grown up in high SES families. The participants of this study were students who attend an international school in Korea. Since the tuition fees of international schools are much higher than those of public schools in Korea, students who attend international schools are generally considered to be from affluent families.

A large number of studies involving parenting attitudes, self-regulation, and school adjustment have examined early childhood, adolescents, or high-risk samples, such as immigrants, ethnic minorities, and students with learning difficulties (Magelinskaitė-Legkauskienė et al., 2018). There is not enough research on the relation of parenting attitude, self-regulation, and school adjustment at the elementary level; what affects elementary school students' school adjustment and the mediating role of self-regulatory skills. To this end, the purpose of this study was to examine the relationship between parenting attitude and school adjustment, and how self-regulatory skills mediate the relationship between parenting attitudes and school adjustment. In this study, we are particularly interested in the relationships among parenting attitudes, school adjustment, and self-regulatory skills of elementary students who are attending an international school in Seoul during a crisis of COVID-19. The unique characteristics of target students (who are assumed to be from high SES) and contextual specificity (i.e., COVID-19 pandemic era) of this

research added new insights into the previous studies.

In this study, gender and grade differences were also examined. The previous studies have shown the gender differences in perception of parental attitude, self-regulatory skills, and school adjustment. According to Chen & Zhou (1997), girls were more responsive and sensitive to parental attitudes than boys. Another previous research conducted with preschoolers showed girls outperformed boys in classroom self-regulatory behaviors (Matthews, Ponitz, & Morrison, 2009). In general, girls adjust better at school than boys, however, the research conducted with the upper elementary school students reported there were no gender differences in school adjustment (Oh & Lee, 2019).

Research Questions

1. How does children's perception of their Maternal Parenting Attitude (MPA) affect School Adjustment (SA)?
2. How does children's perception of their MPA affect Self-Regulatory Skills (SRS)?
3. Are there any differences between genders (boy and girl), and grades (Grade 3 to 6) on MPA, SRS, and SA?
4. How does SRS mediate the relationship between MPA and SA?

Literature Review

Maternal Parenting Attitude (MPA)

Parenting attitudes are internal and external attitudes or behaviors generally expressed by parents or guardians (Choi & Kim, 2004) and it has been explained by various factors/components. Schaefer (1965) divides parenting attitudes into two dimensions: love *vs.* hostility and autonomy *vs.* control. Schaefer (1965) defined love as positive bonding, sharing, expression of affection, and emotional support, while

hostility as irritability and negative evaluation. Control was defined as parental direction, the suppression of intrusiveness, and setting limitations, on the other hand, autonomy as an allowance of independent thinking and self-direction (Schaefer, 1965).

There are two ways to measure a parent's parenting attitude: perceived by parents themselves, and the child's perception of parental attitudes (Choi & Kim, 2004). There was a huge difference in parents' and children's responses, and parents tend to say they are more supportive than how their children perceived (Gaylord, Kitzmann, & Coleman, 2003). Schaefer (1965) hypothesized that children's awareness of their parental attitude can change children's behavior, which means children's perception is more influential on children's development. Grolnick and Ryan (1989) found the mother's involvement is more influential on children's schooling, motivation, and self-regulation than the father's. Therefore, this research focuses on the mother's parenting attitude perceived by children relating to Schaefer's definition and hypothesis.

Children's perception of maternal parental attitude, specifically acceptance, accepted control, strict control, and extreme autonomy were measured in this study. Acceptance means a clear expression of affection and emotional support, promotion of open communication, freedom to express oneself, allowance of independent thinking, positive involvement, and being sensitive to the needs of the child (Richaud de Minzi, 2007). It was also found that parents with higher SES tend to show higher acceptance attitudes (Floyd & Saitzyk, 1992).

Accepted control means setting limits and standards showing that the parent cares for their children (Richaud de Minzi, 2007). Accepted control allows children to learn the limitations/boundaries and rules to show the appropriate behaviors. Maternal limit-setting and sensitive responsiveness have been identified as the contribution of the development of self-regulation (Crossley & Buckner, 2012). According to Choi and Kim (2004), children who perceive their parents controlling them in an accepted way tend to be more satisfied with school life. This shows accepted control has more

positive effects than excessive affection and interest on the child's adjustment to school life.

Strict control /pathological control refers to the setting of limits and rules through excessive parental supervision using negative evaluation and punishment (Richaud de Minzi, 2007). Children perceive it as an imposition, rejection, or over control while blaming and applying overly strict standards (Richaud de Minzi, 2007). Children who perceive their parents as strict control tend to get less accepted by peers and show low school achievement. Prohibition and power assertion are causing anxiety, fear, and frustration in children (Xu et al., 2020). In general, strict control/pathological control negatively affects children's school adjustment and self-regulatory skills.

Finally, extreme autonomy means extreme permissiveness or neglectfulness, which refers to total freedom given to the child without imposing any standard rules or limitations (Richaud de Minzi, 2007). Children who perceive their parental attitude as inconsistent and ignorant have a hard time adapting to school life (Han, 2002). Parents' permissiveness, inconsistent and unclear behavioral limits, unrealistic parental expectations, negative communication patterns, and lack of parental monitoring were associated with higher rates of drug use in adolescents (Baumrind, 1991). Children from low SES families often perceive their parents' attitude as extreme autonomy. In general, extreme autonomy has negative effects on children.

School Adjustment (SA)

There are changes in teachers, peers, class rules, and procedures every year as grade level changes in schools and these changes can be stressful for some students. Successful overcome of these challenges predicts school success (Lakhani, Jain, & Chandel, 2017). The previous studies defined school adjustment as children "being interested, engaged, comfortable, and successful in the school environment" (Betts & Rotenberg, 2007, p.492). Children who adjust well to school have fewer internalization problems such as depression and anxiety, as well as externalization

problems such as delinquency and aggression (Lee & Lee, 2004). It means children who well adjust to school can conduct appropriate behavior in interpersonal relationships, understand and follow school norms/rules, and be satisfied with school life (Lee & Lee, 2004). School adjustment is related to children's attitudes towards school, anxieties, loneliness, academic motivation, and self-efficacy (Lakhani, Jain, & Chandel, 2017). The past studies included major components of school adjustment as academic performance, classroom involvement (participation), school avoidance, positive relationships with peers, and teachers. Magelinskaitė-Legkauskienė et al., (2018) conceptualized school adjustment as the combination of school anxiety, academic achievement, and student-teacher relationships, and they found school adjustment has a strong correlation with social competence.

There are two ways to assess school adjustment: children's self-ratings (e.g., school liking), and teacher ratings (e.g., cooperative participation in class) on children's performance. In this study, students self-rated their school adjustment, and four factors (academic attitude/ rules compliance, relationship with teachers, relationship with peers, school satisfaction) were measured in three aspects of school adjustment: social, academic, and psychosocial. First, the academic aspect of school adjustment indicates a child's ability to cope with academic demands. In this research, academic attitude and rule compliance are combined as those share similar contents of questions including active participation in class activities, putting effort into learning activities, obeying rules, voluntary participation in school activities, and positive attitude toward learning (Joe & Doh, 2018). Better academic results are linked to more positive attitudes to school, less stress, better mental health, and lower absenteeism (Magelinskaitė-Legkauskienė, Legkauskas, & Kepalaitė, 2018).

Second, the social aspect of school adjustment reflects the ability of a child to meet communication requirements at school, including relationships with teachers and peers. Teachers play an important role in enhancing the classroom environment and motivating the learner to learn multidimensional aspects of school adjustment (Lakhani, Jain, & Chandel, 2017). The teacher-student relationship can be

characterized by the levels of conflict, closeness, and dependency between the teacher and the student (Li & Lau, 2019). Children who have good relationships with their teachers also build positive relationships with their peers as it is linked to positive social competence (Hughes, 2012). Moreover, there is plenty of evidence that peers play a dynamic role in school adjustment. Peer relationships can be characterized as closeness, intimacy, positive interaction with social-emotional skills. Negative friendship qualities lead to less engagement in classrooms. Students who are accepted by their peers are more likely to enjoy school and their class (Verkuyten & Thijs, 2002).

Third, a psychosocial aspect of school adjustment is the combination of psychological and social factors, including school satisfaction. There is only a small number of studies on school satisfaction and it is often neglected. The level of school satisfaction is important as it affects psychological well-being, as well as school engagement, absentee rate, drop-out, and behavioral problems (Verkuyten & Thijs, 2002). Children who are adjusting well have a sense of belonging to the new school and they feel comfortable, secure, and relaxed rather than anxious, fearful or upset (Lakhani, Jain, & Chandel, 2017). Multilevel analysis showed that school satisfaction was dependent on the classroom context. The academic and social climate in the class had positive effects on the level of satisfaction with school (Verkuyten & Thijs, 2002).

Self-Regulatory Skills (SRS)

A wide range of studies has discussed the important function of self-regulation for positive developmental outcomes. Self-regulation is a multi-dimensional concept involving more than one distinct psychological process (Duckworth & Carlson, 2013). In educational psychology, researchers have focused on the role of self-regulatory skills in students' academic functioning (Rizzo, Steinhausen, & Drechsler, 2010). Blair and Diamond (2008) defined self-regulation as

a primarily volitional cognitive and behavioral process through which an individual maintains levels of emotional, motivational, and cognitive arousal that are conducive to positive adjustment and adaptation, as reflected in positive social relationships, productivity, achievement, and a positive sense of self. (p.990)

Etkin (2018) explained self-regulation using five domains: biological domain, emotional domain, cognitive domain, social domain, and prosocial domain. Children's difficulties during the first years at school are often considered as poor academic skills, indeed, it is a result of self-regulatory difficulties (Blair & Diamond, 2008). Self-regulation is significantly influenced by children's self-perceptions of regulatory skills (Rizzo et al., 2010). Children's self-perceptions of regulatory skills are closely related to metacognitive skills which helps them become aware of self (Rizzo et al., 2010).

In this study, the term SRS will be used and defined as an active process by which people learn to control their own behaviors, cognition, motivation, and emotions. SRS continuously develops from early childhood to adolescence and it is an important predictor of school adjustment. Self-regulation gives the ability to control impulses to sit and listen in the classroom, behave in socially acceptable ways, express emotions in appropriate ways, become more independent, and manage stress (Weis, Trommsdorff, & Munoz, 2016). Research has consistently found positive associations between self-regulatory skills and academic achievement, such as numeracy and literacy between kindergarten and sixth grade (Robson, 2016). Wong (2008) showed behavioral regulation can mediate the link between parenting and school achievement in American adolescents. Built upon the previous studies, this study examined how SRS mediates the relationship between parenting attitude and school adjustment.

In this research, SRS is considerably divided into two parts: behavioral/emotional regulation and cognitive regulation. Behavioral regulation means paying attention, obeying rules, resisting temptation, and inhibiting impulsive behavioral reactions to follow environmental demands (Calkins, 2007). Behavioral regulation is an essential

skill to be successful in school which helps to remember and follow instructions and to concentrate on tasks without getting distracted (Calkins, 2007). Emotional regulation means the process of initiating, inhibiting, avoiding, maintaining, or modulating emotions to achieve individual goals (Eisenberg & Spinrad, 2004). Children who have better emotional, and behavioral regulation get praised more often, find school work easier, enjoy school more, want to spend more time on schoolwork, and hold more positive self-perceptions of themselves as students (Blair & Diamond, 2008). In this research, emotion, motivation, motor activity, and inhibition are classified as emotional/behavioral regulation. Each skill can be briefly defined. Emotion means the ability to alter one's feelings and thoughts. Motivation is the process that initiates, guides, and maintains goal-oriented behaviors. Motor activity is the ability to physically explore while controlling themselves. Inhibition is the ability to stop an impulsive response (McClelland & Cameron, 2011). Inhibition is often considered as cognitive regulation as well, nevertheless, it was included in behavioral regulation.

Cognitive regulation includes effortful control and executive function which involves the ability to sustain and shift one's attention, to inhibit behaviors one wants to engage in (e.g., watching YouTube or playing games), and to initiate behaviors one wants to avoid (e.g., studying regularly) (Wong, 2008). Cognitive regulation continuously develops interacting with the surrounding environment (Higgings & Turnure, 1984). In this research, sustained attention, speed of processing, and distractibility are considered cognitive regulation.

Distractibility and sustained attention have a similar meaning. Distractibility refers to inability, or difficulty, in maintaining attention. Sustained attention is the ability to voluntarily focus on a particular task despite environmental distractions. Speed of processing is a cognition ability of how fast or the speed of a person can understand and react to the information they receive. It was evident attention may be an important mediator of children's early emotion control skills and their school success (Morawska et al., 2019). Deficits in sustained attention have a considerable influence

on later academic success (Sarid & Breznitz, 1997). In other words, children who can direct their attention do better in school.

Methods

Participants

In this study, 99 elementary school students in grades 3 to 6 attending an international school in Seoul, Korea have participated. Since the instruments require respondents' recall memories of certain past instances and abstract thinking skills, it was not appropriate for lower grade students. Thus, we chose to target only grade 3 to 6 students who have advanced metacognitive skills than lower grades. The school is a Western Association of Schools and Colleges (WASC) accredited school that offers international education from Kindergarten to grade 6. There are two classes per grade and approximately 200 students in total. The students should pass an entrance exam and/or interview to be enrolled. There were 32 students(32%) in grade 3, 30 students(30%) in grade 4, 22 students(23%) in grade 5, 15 students(15%) in grade 6. 53 students(54%) were female, and 46 students(46%) were male. The participants are bilingual students who can speak both Korean and English and are raised in high SES families. Students' first language is Korean. Due to the COVID-19 crisis, the school begin the year with online learning and it was continued for two months. The school used Zoom video conferences to held classes. Students started to attend the school from the end of October.

Procedure

After receiving permission from the school, a consent form was distributed to each child explaining the purpose of the research. The parents were clearly told that

participation was anonymous and voluntary. The permission forms were obtained from the parents before the data collection began. The data were collected via Google forms. The researcher sent out the Google form link to participants' school email. Grade 3 to 5 students used school laptops and Grade 6 students used their own laptops. They had 1 hour to answer the questionnaires in class. The researcher was present in class and the students were allowed to ask to clarify the meaning of the questionnaires.

Instruments

“The Argentinean Scale on Perceptions of Relationships with Parents for Children 8–12 Years of Age” by Richaud de Minzi (2007) was used to measure children’s perception of their mother's parenting attitude. It contains 32 questions with 4 subscales: 8 items of acceptance, 7 items of accepted control, 12 items of strict or pathological control, and 5 items of extreme autonomy. Answers are given on a 3-point Likert-Scale; yes (3), somewhat (2), and no (1). The score of the scales is calculated by averaging the item scores for each factor. Higher values reflect the greater strength of the construct. The reliability of the test measured by Cronbach’s alpha coefficient ranged from .60 to .92 (Richaud de Minzi, 2007).

“Self-rating of Self-Regulatory Skills (SelfReg) in Children aged 8 to 10 Years” by Rizzo, Steinhausen, and Drechsler (2010) was used to measure students’ self-regulatory skills. This instrument is to assess metacognitive knowledge of regulatory functions in school children. It contains 28 questions with 7 subscales: emotion (4 items), motivation (4 items), motor activity (4 items), inhibition (4 items), speed of processing (4 items), distractibility (4 items), and sustained attention (4 items). A boys’ and a girls’ version were created separately for each item, with gender-specific names. Half of the items are reverse scored to avoid one-sided answers. Answers are given on a 5-point Likert scale ranging from 1 (= very often) to 5 (= never). The reliability

of the test measured by Cronbach's alpha coefficient ranged from .69 to .83 (Rizzo et al., 2010).

"School Adjustment Scale for Late School-Aged Children" by Joe and Doh (2018) was used to measure school adjustment. There were 30 questions with 4 subscales: 9 items of academic attitude/rule observance, 7 items of relationships with peers, 8 items of relationships with teachers, and 6 items of school satisfaction. 4 Likert-scale strongly agree (4), agree (3), disagree (2), strongly disagree (1). The reliability of the test measured by Cronbach's alpha coefficient ranged from .91 to .93, indicating a high level of internal consistency (Joe & Doh, 2018).

Data Analysis

The collected data were entered into the Statistical Package for the Social Sciences (SPSS, version 23). First, descriptive statistical analysis is conducted to find out the distributions of all variables (maternal parenting attitude, self-regulation ability, and school adjustment). Second, a set of independent sample t-tests was performed to compare the difference between gender (boys and girls). Third, One Way ANOVA was conducted to analyze the differences among the grades and the Scheffe was used for post hoc tests. Fourth, a multiple linear regression analysis was conducted to find the relationship between Maternal parenting attitude and School Adjustment. Also, the relationship between Maternal Parenting Attitude and Self-Regulatory Skills was studied. Fifth, Hierarchical Regression Analysis was used to examine the mediator effect of Self-Regulatory Skills (SRS) on the relationship between Maternal Parenting Attitude (MPA) and School Adjustment (SA) and Sobel-Test was conducted to verify mediating effect.

Results

Descriptive

Means, standard deviations, skewness, and kurtosis values were examined for all variables (MPA, SRS, and SA). First, the mean score of strict control was 24.29, the highest among MPA. Inhibition was 15.18, the highest among SRS, and academic attitude/rule compliance was 19, the highest among SA. Second, the normality of the data was evaluated by examining the skewness and kurtosis values for all variables. All variables appeared to fall within the normal range for both skew and kurtosis. The skewness of the related variables ranges from -1.726 to .527 which is less than the absolute value of 3. The Kurtosis range is -.655 to 2.74 which is less than an absolute value of 10.

Differences in Gender with Independent Samples T-test

An independent-samples t-test was conducted to find gender (boy and girl) differences in MPA, SRS and SA. As Table 1 shows, on average, boys had higher scores than girls and it was statistically significant for accepted control and strict control. Second, there was a gender difference only in the relationship with teachers among all the variables of SA. There was a significant difference in the scores for boys ($M=25.8$, $SD=4.5$) and girls ($M=27.7$, $SD=3.8$) in conditions of $t(97) = 2.336$, $p < .05$ (see Table 2). Third, SRS scores of boys and girls were compared. On average girls ($M=14.5$, $SD=2.9$) scored higher than boys ($M=13.2$, $SD=2.5$) and this difference was statistically significant, $t(97) = -2.298$, $p < .05$ for emotion and motor activities as well; boys ($M=13.5$, $SD=2.8$) and girls ($M=14.98$, $SD=2.9$) in conditions; $t(97) = -2.440$, $p < .05$. There was a significant difference in boys ($M=13.2$, $SD=2.4$) and girls ($M=15.2$, $SD=2.8$) in condition of $t(97) = -3.58$, $p < .001$ for sustained attention (see Table 1).

Table 1. Gender Differences for MPA, SA and SRS

		Girl		Boy		<i>t(p)</i>
		Mean	Standard Deviation	Mean	Standard Deviation	
MPA	Acceptance	20.87	2.974	20.85	2.599	0.036(.972)
	Accepted Control	15.43	3.073	16.89	2.025	-2.741(.007)**
	Strict Control	22.75	4.104	26.07	3.958	-4.070(.000)***
	Extreme Autonomy	8.81	2.184	9.044	2.201	-0.526(.600)
SA	Academic Attitude/ Rule Compliance	30.13	4.256	28.87	3.891	1.532(.129)
	Relationship W Teachers	27.74	3.799	25.76	4.513	2.364(.020)*
	School Satisfaction	19.25	3.961	19.37	3.744	-0.160(.873)
	Relationship W Peers	21.87	4.114	22.76	3.554	-1.147(.253)
SRS	Emotion	9.51	2.913	10.76	2.505	-2.274(.025)*
	Inhibition	8.32	3.167	9.39	3.337	-1.636(.105)
	Motivation	10.08	2.630	10.52	2.747	-0.825(.411)
	Motor Activity	9.02	2.906	10.43	2.845	-2.440(.016)*
	Speed of Processing	10.89	2.715	11.33	2.212	-0.874(.384)
	Distractibility	10.55	3.184	11.09	2.179	-0.970(.335)
	Sustained Attention	8.79	2.844	10.72	2.438	-3.587(.001)***

* $p < .05$, ** $p < .01$, *** $p < .001$

Differences among Grades with One-Way ANOVA

A One-Way ANOVA was conducted to compare the difference among grades in MPA, SRS, and SA. There was no difference among grades in MPA and SRS. As Table 2 shows, there is a statistically significant difference among grades in SA: academic attitude/rule compliance [$F(3, 95) = 4.007, p = .010$], and relationship with teachers [$F(3, 95) = 3.801, p = .013$]. To compare differences between groups' means, a post hoc test, specifically Scheffé test was used. The result indicated in table 2 the mean score for grade 5 was significantly higher than grade 3 in academic attitude and relationship with teachers.

Table 2. One-Way ANOVA Grades Difference in MPA, SA and SRS

	Grade	Mean	Standard Deviation	<i>F</i>	<i>p</i>	Post Hoc Scheffé
SA	3	28.16	3.944	4.007	.010*	5>3 (<i>p</i> =.014)
	4	29.77	4.133			
	5	31.82	3.775			
	6	28.73	3.770			
Relationship W Teachers	3	24.88	4.884	3.801	.013*	5>3 (<i>p</i> =.045)
	4	27.80	3.986			
	5	28.14	3.590			
	6	27.07	2.711			
School Satisfaction	3	19.81	3.487	.863	.463	
	4	18.37	3.952			
	5	19.64	4.489			
	6	19.60	3.334			
Relationship W Peers	3	22.00	3.341	.185	.907	
	4	22.13	4.361			
	5	22.73	3.870			
	6	22.53	4.207			

p*<.05, *p*<.01, ****p*<.001

Multiple Linear Regression Analysis of Maternal Parenting Attitude (MPA) and School Adjustment (SA)

A multiple linear regression analysis was conducted to investigate the relationship between MPA and SA. The overall regression model was found to be significant; however, only acceptance shows a statistically significant association with academic attitude/rule compliance, relationship with teachers and relationship with peers. First, the results of the regression analysis indicated acceptance ($\beta = .270, p < .01$) was the predictor of academic attitude/ rule compliance ($R^2 = .134, F(2, 55) = 2.367, p < .01$),

which explained 13.4% of the variance (See table 3). Second, as Table 3 and 4 show the coefficient of determination (R-Squared) is .203 (20%), which suggests that 20.3% of the variance in relationship with teachers can be explained by acceptance and strict control, $F(2, 26) = 3.894, p < .01$. Third, as Table 4 shows, the results of the regression analysis indicated that the model explained 24.5% of the variance and that the model was a significant predictor of relationship with peers, $F(2, 26) = 4.967, p < .001$.

Table 3. Multiple Linear Regression Analysis of Strict Control (MPA) and SA

DV (SA)	UnStd. Coefficients		Std. Coefficients	<i>t</i> (<i>p</i>)	Collinearity Statistics		<i>F</i> (<i>p</i>)	<i>R</i> ²	Adj. <i>R</i> ²
	B	SE	Beta		Tolerance	VIF			
	Relationship W Teachers	.256	.122		.262	2.09 (.039)*			

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 4. Multiple Linear Regression Analysis of Acceptance (MPA) and SA

DV (SA)	UnStd. Coefficients		Std. Coefficients	<i>t</i> (<i>p</i>)	Collinearity Statistics		<i>F</i> (<i>p</i>)	<i>R</i> ²	Adj. <i>R</i> ²
	B	SE	Beta		Tolerance	VIF			
	Academic Attitude/ Rule Compliance	.398	.148		.270	2.68 (.009)*			
Relationship W Teachers	.299	.147	.197	2.04 (.044)*	.931	1.074	3.894 (.002)**	.203	.105
Relationship W Peers	.642	.130	.463	4.93 (.000)***	.931	1.074	4.967 (.000)***	.245	.195

* $p < .05$, ** $p < .01$, *** $p < .001$

Multiple Linear Regression Analysis of Maternal Parenting Attitude (MPA) and Self-Regulatory Skills (SRS)

A multiple linear regression analysis was conducted to investigate the relationship

between Maternal Parenting Attitude (MPA) and Self-Regulatory Skills (SRS). The overall regression model was found to be significant except for motor activity and speed of processing. First, as Table 5 shows, the results of the regression analysis indicated that accepted control was a significant predictor of distractibility ($R^2 = .155$, $F(2, 55) = 2.820$, $p < .05$). Second, as Table 6 shows strict control negatively predicted distractibility ($R^2 = .155$, $F(2, 55) = 2.820$, $p < .05$) and emotion ($R^2 = .197$, $F(2, 55)$)

Table 5. Multiple Linear Regression Analysis of Accepted control (MPA) and SRS

DV (SA)	UnStd. Coefficients		Std. Coefficients	<i>t</i> (<i>p</i>)	Collinearity Statistics		<i>F</i> (<i>p</i>)	<i>R</i> ²	Adj. <i>R</i> ²
	B	SE	Beta		Tolerance	VIF			
	Distractibility	.256	.122		.262	2.09 (.039)*			

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 6. Multiple Linear Regression Analysis of strict control (MPA) and SRS

DV (SA)	UnStd. Coefficients		Std. Coefficients	<i>t</i> (<i>p</i>)	Collinearity Statistics		<i>F</i> (<i>p</i>)	<i>R</i> ²	Adj. <i>R</i> ²
	B	SE	Beta		Tolerance	VIF			
	Distractibility	-.190	.080		-.308	-2.39 (.019)*			
Emotion	-.207	.081	-.323	-2.57 (.012)*	.552	1.810	3.764 (.002)**	.197	.145

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 7. Multiple Linear Regression Analysis of Acceptance (MPA) and SA

DV (SA)	UnStd. Coefficients		Std. Coefficients	<i>t</i> (<i>p</i>)	Collinearity Statistics		<i>F</i> (<i>p</i>)	<i>R</i> ²	Adj. <i>R</i> ²
	B	SE	Beta		Tolerance	VIF			
	Sustained Attention	.398	.148		.270	2.68 (.009)**			
Motivation	.299	.147	.197	2.04 (.044)*	.931	1.074	3.894 (.002)**	.203	.105
Inhibition	.642	.130	.463	4.93 (.000)***	.931	1.074	4.967 (.000)***	.245	.195

* $p < .05$, ** $p < .01$, *** $p < .001$

=3.764, $p < .01$). Third, the results of the regression indicated acceptance was a significant predictor of sustained attention ($R^2 = .202$, $F(2, 26) = 3.894$, $p < .01$), motivation ($R^2 = .155$, $F(2, 55) = 2.820$, $p < .05$) and inhibition ($R = .132$, $F(2, 26) = 3.339$, $p < .001$) (See Table 7).

Mediated Hierarchical Multiple Regression Analysis of Sustained Attention

Hierarchical Regression analysis was used to investigate the hypothesis that Self-Regulatory Skills (SRS) mediates the effect of Maternal Parenting Attitude (MPA) on School Adjustment (SA). In this research Baron & Kenny (1986) mediation analysis steps were followed. A mediation analysis consists of three sets of regression: $X \rightarrow Y$, $X \rightarrow M$, and $X + M \rightarrow Y$.

Overall, the result of this study shows only sustained attention had a mediating effect on the relationship between acceptance and academic attitude/rule compliance. As Table 8 shows, the results indicated that sustain attention fully mediates the relation between acceptance and academic attitude/rule compliance positivity.

In step 1, the influence of the independent variable (acceptance) on the mediating variable (sustained attention) was examined and it had a significant effect ($\beta = .218$, $p < .05$). In step 2, the influence of the independent variable (acceptance) on the dependent variable (academic attitude/rule compliance) was examined and it had a significant effect ($\beta = .262$, $p < .01$). In step 3, the independent variable (acceptance) and the mediating variable (sustained attention) were input to verify the influence on the dependent variable (Academic Attitude/Rule Compliance). Only the mediating variable (Sustained Attention) had a significant effect on the dependent variable (Academic Attitude/Rule Compliance). The influence of the independent variable on the dependent variable decreased compared to the second step (2nd step: $\beta = 2.262$, 3rd step: $\beta = .165$). It can be seen that the mediating variable (Sustained Attention) has a perfect mediating effect between the independent (Acceptance) and dependent variables (academic attitude/rule compliance). The Sobel-Test was conducted to

verify the mediating effect of sustained attention on the relationship between acceptance and academic attitude/rule compliance. For the Sobel Test, the mediating effect is significant when the z value is greater than +1.96 or less than -1.96. It was found to be significant ($Z=2.00813, p=.045$).

Table 8. Mediating Effect of Sustained Attention on the Relationship between Acceptance and Academic Attitude/Rule Compliance

Model	Variable	Unstd. Coefficients		Std. Coeff.	<i>t</i> (<i>p</i>)	<i>F</i> (<i>p</i>)	<i>R</i> ²	Adj. <i>R</i> ²
		B	SE	β				
1 (Independent→ Mediator)	(Constant)	14.28	2.10		6.78***			
	Acceptance → Sustained Attention	.22	.10	.218	2.22*	4.85*	.048	.038
2 (Independent→ Dependent)	(Constant)	21.47	3.04		7.06***			
	Acceptance → Academic Attitude/Rule Compliance	.387	.145	.262	2.68**	7.17**	.069	.059
3 (Independent, Mediator → Dependent)	(Constant)	30.75	3.31		9.27***			
	Acceptance → Academic Attitude/Rule Compliance	.244	.133	.165	1.83	16.61***	0.26	0.24
	Sustained Attention → Academic Attitude/Rule Compliance	.649	.132	.445	4.93***			

* $p < .05$, ** $p < .01$, *** $p < .001$

Discussion and Conclusion

This study aimed to examine the mediating effect of SRS in the relation between MPA and SA. The results of the present study provide strong evidence that acceptance enhances elementary school children’s ability to adapt successfully to both academic and social adjustment at school. Acceptance predicted academic

attitude, relationship with teachers, and relationship with peers. Students who perceive their mothers as supportive, being involved, and shows open communication and positively engaged in their education adapt successfully to both academic and social adjustment at school. This coincides with the recent studies of the positive impacts of authoritative parenting on school adjustment. The positive and desirable mother's parenting means the higher the level of adaptation to school (Song & Park, 2008). However, there was no relationship between maternal parenting attitude and school satisfaction. School satisfaction might be more related to the climate of the classroom rather than the parenting attitude.

Interestingly, children's perception of their mother's strict control enhances relationships with teachers. This result can be explained relating to the analysis of Bronstein et al.'s (1996) study. Bronstein et al. (1996) found fifth-grade girls whose parents were more punitively controlling tended to be more popular with peers. It was analyzed that these girls may seek the social support in school that they were not receiving at home. Students who perceive their parents' attitude as strict control may seek support from their teachers and perceive they have a positive relationship with teachers. On the other hand, a mother's strict control has a negative influence on emotional and motivational regulatory skills. Park & Moon (2014) reported when parents show strict control over their children, their self-regulatory abilities decline while modeling their parents' aggressive behavior or being intimidated.

MPA predicted SRS as well. Acceptance has a positive influence on SRS, both emotional/behavioral and cognitive regulation: sustained attention, motivation, and inhibition. This supports the past studies, for example, a responsive parenting attitude facilitates children's motivation to meet situational demands which helps them to understand cause and effect and to make appropriate choices (Maccoby & Martin, 1983). The international school parents have high interests in their children's education and students put more effort to meet their parents' expectations. This might have affected the result. Besides, maternal warmth was positively related to children's behavioral regulation, whereas responsiveness was positively associated

with children's attention and inhibitory skills (Von Suchodoletz, Trommsdorff, & Heikamp, 2011).

It was found there were gender differences in all variables; MPA, SA, and SRS. The previous studies suggest that the mother's parenting practices impact both boys' and girls' development differently and girls are more sensitive to parental attitude (Colman et al., 2006). In fact, in this research boys were found to be more sensitive to their mother's strict and accepted controls than girls. This supports Kolburan et al.'s (2012) study that males perceive their mothers as more protective and controlling. It can be predicted girls are more sensitive to autonomy and boys are more sensitive to controlled attitudes (Choi & Kim, 2004). The previous research found a developing sense of autonomy, self-concept and self-efficacy are especially important for boys while connectedness and intimacy are particularly important for girls (Bronstein et al., 1996). This explains why girls had a better relationship with teachers than boys. In general, girls' school satisfaction and prosocial behavior are significantly higher than boys (Tian, Du, & Huebner, 2015). Girls' sensitivity to the relationship might have affected the result. The previous studies found girls were more satisfied with the school than boys because boys develop more negative relationships with classmates (Verkuyten & Thijs, 2002). However, there was no gender difference in school satisfaction and relationship with peers. The two factors (school satisfaction and relationship with peers) may be intertwined which may have caused no difference in the relationship with peers. In the previous research, gender differences in children's and adolescents' self-regulation were noticed and overall, girls have stronger self-regulatory skills than boys (Von Suchodoletz et al., 2011). The result of this research was different from previous studies; boys scored higher than girls in emotion and motor activity.

Moreover, there was a difference among the grades. Grade 5 students make a conspicuous figure in SA (academic attitude/rule compliance and relationship with teachers) and SRS (motivation). Grade 5 students denote higher scores than grade 3 and 4 students. It can be predicted Grade 5 is considered almost the last year of

elementary school and will be exploring the middle school curriculum. Grade 5 students are encouraged and expected to require less guidance and support from teachers at school and to be more independent in their learning.

The result indicated only sustained attention had a mediating effect on the relationship between acceptance and academic attitude/rule compliance. Attention is an important skill at school as it allows children to focus on the task and to obey the rules. In the previous studies, children who have poor attentional skills were more likely to have difficulties in reading, mathematics, and academic learning (Day & Connor, 2017). Another study shows parents' social impact on their children's academic attainment is mediated through the children's use of self-regulatory processes to learn and perform in school (Martinez-Pons, 2002). Robson (2016) found young children's activity and attention spans increased with adult presence. When the research was conducted, students returned to school from online learning for two months. A high percentage of parents are non-working moms and stayed home with their children while online learning. Student might felt they received more supports which enhanced their attention skills. Adults may particularly support children's expressions of metacognitive knowledge and develop attention skills which positively affects school adjustment. Self-regulatory capacity is a learned skill and it can be strengthened with practice and training. As a result, it is necessary to develop attention capacity intervention programs to help students successfully adjust in school. Teachers should also encourage students or integrate programs into a class to develop attention spans at school. Furthermore, intervention or educational programs promote parents' understanding of the positive parenting practices and deliver different developmental and school adjustment outcomes. The result of this study desperately proves family intervention programs or parental educational programs are needed.

There are several limitations in this study that should be acknowledged. First, the sample size is small. The result cannot be generated as students are attending an international school which is a specialized case. Future studies should acquire larger

samples with students from at least two different schools. Second, since the research tools used in this study are self-reporting methods for children, the result might not be accurate. It can be biased or students might have answered dishonestly or rushed to finish the questionnaire. Third, students might have a short period of time to adjust to their new school year. Since the school follows the American curriculum, the school year started in August/September. The research was conducted from November to January and they started the school year with online learning. Therefore, their answers might be not inaccurate. Fourth, the measurement instruments/tools used in this research are culturally inconsistent. The measurement tools were created for Australian, Korean, and Argentinean children. Future studies should use culturally relevant and consistent measurement tools that can reflect the participants.

In this study, the participants are all from high-income families who attend an international school. Due to the COVID-19 pandemic, socio-economic inequalities have strengthened, so that it created huge learning gaps. For future studies, it would be meaningful to compare low and high SES families and find ways to help students in low SES families with fewer learning opportunities. Second, this research focused only on the mother's parenting attitude, but future research should include the father's parenting attitude. Much more research on the influences of both mother and father on children's self-regulatory skills and school adjustment targeting elementary school students is needed. Third, future studies should aim to track the ways to improve self-regulatory skills, especially sustained attention.

References

- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173-1182. doi: 10.1037//0022-3514.51.6.1173.
- Baumrind, D. (1991). The influence of parental style on adolescent competence and substance use. *Journal of Early Adolescence*, *11*(1), 56-95.
- Blair, C., & Diamond, A. (2008). Biological processes in prevention and intervention: The promotion of self-regulation as a means of preventing school failure. *Development and Psychopathology*, *20*(3), 899-911.
- Bronstein, P., Duncan, P., D'Ari, A., Pieniadz, J., Fitzgerald, M., Abrams, C. L., Frankowski, B., Franco, O., Hunt, C., & Susan Y. Oh Cha. (1996). Family and Parenting Behaviors Predicting Middle School Adjustment: A Longitudinal Study. *Family Relations*, *45*(4), 415–426. <https://doi.org/10.2307/585171>
- Calkins, S. D. (2007). The emergence of self-regulation: Biological and behavioral control mechanisms supporting toddler competencies. In C. A. Brownell & C. B. Kopp (Eds.), *Socioemotional development in the toddler years: Transitions and transformations* (pp. 261-284). New York, NY: Guilford Press.
- Choi, H., & Kim, S. (2004). Relations of parental child-rearing styles with school adjustment for early adolescents. *Studies on Korean Youth*, *15*(2), 57-92.
- Colman, R. A., Hardy, S. A., Albert, M., Raffaelli, M., & Crockett, L. J. (2006). Early predictors of self-regulation in middle childhood. *Infant and Child Development*, *15*(4), 421-437.
- Crossley, I., & Buckner, J. (2012). Maternal-related predictors of self-regulation among low-income youth. *Journal of Child & Family Studies*, *21*(2), 217-227.
- Day, S. L., & Connor, C. M. (2017). Examining the relations between self-regulation and achievement in third-grade students. *Assessment for Effective Intervention*, *42*(2), 97-109.

- Duckworth, A. L., & Carlson, S. M. (2013). Self-regulation and school success. In B. W. Sokol, F. M. E. Grouzet & U. Müller (Eds.), *Self-regulation and autonomy: Social and developmental dimensions of human conduct* (pp. 208-230). New York, NY: Cambridge University Press.
- Etkin, J. (2018). Understanding self-regulation in education. *BU Journal of Graduate Studies in Education*, 10(1), 35-39.
- Floyd, F. J., & Saitzyk, A. R. (1992) Social class and parenting children with mild and moderate mental retardation. *Journal of Pediatric Psychology*, 17(5), 607-631.
- Gaylord, N. K., Kitzmann, K. M., & Coleman, J. K. (2003). Parents' and children's perceptions of parental behavior: Associations with children's psychosocial adjustment in the classroom. *Parenting: Science and Practice*, 3(1), 23-47.
- Grolnick, W. S., & Ryan, R. M. (1989). Parent styles associated with children's self-regulation and competence in school. *Journal of Educational Psychology*, 81(2), 143-154. doi: 10.1037/0022-0663.81.2.143
- Hughes, J. (2012). Teacher–student relationships and school adjustment: Progress and remaining challenges. *Attachment & Human Development*, 14(3), 319-327.
- Joe, S. J., & Doh, H. (2018). The development and validation of a school adjustment scale for late school-aged children. *Korean Journal of Child Studies*, 39(2), 95-111.
- Kim, L., Kim, K., & Myoung, S. (2020). A study on factors influencing young children's self-regulations in Korea. *The Korea Contents Society*, 255-256.
- Kolburan, G., Comert, I. T., Narter, M., & Isozen, H. (2012). Parental attitude perception in adolescents by gender. *Social and Behavioral Sciences*, 47 (2012), 1299-1304.
- Lakhani, P., Jain, K., & Chandel, P. K. (2017). School adjustment, motivation and academic achievement among students. *International Journal of Research in Social Sciences*, 7(10), 333-348.
- Lee, J. Y., & Lee, K. A. (2004). Individual and familial factors in relation to school adjustment of elementary school students. *The Korean Journal of Counseling and Psychotherapy*, 16(2), 261-276.

- Li, J.-B., & Lau, E. Y. H. (2019). Teacher-student conflict and preschoolers' adjustment in the transition to primary school: The role of child self-regulation and parents' positive relations with others. *Early Education & Development, 30*(3), 423-437.
- Maccoby, E. E., & Martin, J. A. (1983). Socialization in the context of the family: Parent-child interaction. In P. Mussen (Ed.), *Handbook of child psychology* (Vol. 4, pp. 1-101). New York: Wiley.
- Magelinskaitė-Legkauskienė, Š., Legkauskas, V., & Kepalaitė, A. (2018). Teacher perceptions of student social competence and school adjustment in elementary school. *Cogent Psychology, 5*(1), 1-15.
- Martinez-Pons, M. (2002). Parental influences on children's academic self-regulatory development. *Theory Into Practice, 41*(2), 126-131.
- Matthews, J. S., Ponitz, C. C., & Morrison, F. J. (2009). Early gender differences in self-regulation and academic achievement. *Journal of Educational Psychology, 101*(3), 689-704.
- McClelland, M. M., & Cameron, C. E. (2011). Self-Regulation and academic achievement in elementary school children. *New Directions for Child and Adolescent Development, 133*, 29-44.
- Morawska, A., Dittman, C. K., & Rusby, J. C. (2019). Promoting self-regulation in young children: The role of parenting interventions. *Clinical Child and Family Psychology Review, 22*(1), 43-51. doi: 10.1007/s10567-019-00281-5
- Oh, S., & Lee, S. (2019). Effects of childhood development on the application of primary school 1st grade by gender. *The Journal of Child Education, 28*(3), 135-149.
- Park, K., & Moon, H. (2014). The mediating effects of self-regulation on the relation between mother's rearing attitude and preschool adjustment. *The Korean Society for Early Childhood Teacher Education, 18*(3), 135-157.
- Rizzo, P., Steinhausen, H., & Drechsler, R. (2010). Self-perceptions of self-regulatory skills in children aged 8 to 10 Years: Development and evaluation of a new self-rating scale. *Australian Journal of Educational & Developmental Psychology, 10*(2), 123-

143.

- Richaud de Minzi, M. C. (2007). Argentinean scale on perceptions of relationships with parents for children 8–12 years of age. *Journal of Diagnosis and Psychological Evaluation, 1*(23), 63-81.
- Sarid, M., & Breznitz, Z. (1997). Developmental aspects of sustained attention among 2- to 6-year-old children. *International Journal of Behavioral Development, 21*(2), 303-312.
- Schaefer, E. S. (1965). Children's reports of parental behavior: An inventory. *Child Development, 36*(2), 413-424.
- Song, SY., & Park, SY. (2008). The effects of SES, mother's psychological well-being, child-rearing behavior and child's peer relationship on school adjustment. *Family and Environment Research, 46*(5), 19-33.
- Verkuyten, M., & Thijs, J. (2002). School satisfaction of elementary school children: The role of performance, peer relations, ethnicity and gender. *Social Indicators Research, 59*(2), 203-228.
- Von Suchodoletz, A., Trommsdorff, G., & Heikamp, T. (2011). Linking maternal warmth and responsiveness to children's self-regulation. *Social Development, 20*(3), 486-503.
- Weis, M., Trommsdorff, G., & Munoz, L. (2016). Children's self-regulation and school achievement in cultural contexts: The role of maternal restrictive control. *Frontiers in psychology, 7*(222), 1-11.
- Xu, X., Zhao, S., Yiu, W. Y. V., Li, D., Liu, J., Liu, S., & Chen, X. (2020). Relations between maternal power-assertive parenting and adjustment in Chinese children: A longitudinal study. *International Journal of Psychology, 55*(2), 154-162.

The Mediating Effect of Self-Regulatory Skills on the
Relationship between Mothers' Parenting Attitude and School Adjustment



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