

어머니와 교사의 자율성 지지가 아동의 학업지연행동에 미치는
영향: 자기조절학습 효능감의 매개적 역할이보미¹ · 신나나²¹이화여자대학교 아동학과 박사과정생, ²이화여자대학교 아동학과 부교수Mothers' and Teachers' Autonomy Support in Relation to Children's Academic
Procrastination: Self-Efficacy for Self-Regulated Learning as a MediatorBomi Lee¹ · Nana Shin²¹Department of Child Development & Intervention, Ewha Womans University, Ph. D. Student; ²Department of Child Development & Intervention, Ewha Womans University, Associate Professor

Abstract

This study investigated the association between children's perceptions of autonomy support from mothers and teachers in relation to academic procrastination. It also examined the role of self-efficacy for self-regulated learning in mediating these effects. The sample comprised 372 fifth and sixth grade elementary school students from Seoul, Korea. Each completed a questionnaire regarding mothers' and teachers' autonomy support, children's self-regulated learning efficacy, and academic procrastination. The results indicated that whereas mothers' autonomy support had a direct effect on children's academic procrastination, teachers' support did not. In other words, children who perceived higher levels of autonomy support from mothers tended to exhibit less academic procrastination. Regarding indirect paths, children who perceived higher levels of mothers' and teachers' autonomy support displayed greater efficacy for self-regulated learning, which corresponded to lower levels of academic procrastination. The discussion highlights the vital roles of autonomy support from mothers and teachers in enhancing children's feelings of effective self-regulated learning and encouraging them to complete academic tasks. Furthermore, the present study considered not only outward behavioral factors but also the underlying cognitive and affective aspects of delaying behavior that underpin the effects of self-regulated learning efficacy and autonomy support of mothers and teachers on academic procrastination.

Keywords

autonomy support, self-efficacy for self-regulated learning, academic procrastination

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Introduction

Most of us have had the experience of putting off tasks to the very last minute even though they could or should have been done right away. Such behaviors may generally occur on a daily basis, but these behaviors also impact a diversity of situations, such as career decisions, interpersonal interactions (Emmett, 2000), and learning environment (Shih, 2017; Won & Shirley, 2018). Delaying behavior in a learning environment is specifically called academic procrastination and can be described as a tendency to delay in completing assignments related to academic tasks and activities (Steel & Klingsieck, 2016) to the point

of experiencing emotional discomfort (Steel, 2007). Academic procrastination is not just a problem of study habits or time management, but rather a complex phenomenon consisted of behavioral, cognitive, and emotional factors (Rothblum et al., 1986). In this respect, Vestervelt (2000) classified academic procrastination into three dimensions: behavioral, cognitive, and emotional. The behavioral component refers to the tendency to delay the initiation, execution, or completion of tasks until deadlines. The cognitive component refers to the cognitive discrepancy experienced between having goals related to priorities or tasks and intention to accomplish them but not actually performing them. The affective factor refers to the subjective pain experienced by an individual due to the tendency of individuals not to initiate, perform, or complete tasks by deadlines.

Academic procrastination can often crystallize into a chronic habit (Rozental et al., 2015) that negatively affects school adjustment for academic achievement and peer relationships and continually reduces learners' overall life satisfaction through learned helplessness and lowered self-efficacy and self-esteem (Flett & Hewitt, 2013; Vestervelt, 2000; Wolters, 2003). To prevent academic procrastination, it is necessary to pay special attention to middle childhood, a critical period for the development of diligence (Erikson, 1994) and self-regulation (Raffaelli et al., 2005). However, many studies have been conducted on middle school (Ahn & Kim, 2020; Kim & Han, 2019), high school (Jeon & Park, 2014; Ozer & Ferrari, 2011) and college students (Klassen et al., 2009; Onwuegbuzie, 2004). Only a few studies have been conducted to examine academic procrastination during middle childhood (Choi & Kim, 2008; Parantika et al., 2020). This lack of studies is likely due to the belief that during the middle childhood, academic burden and stress is not high enough to display delaying behavior. Contrary to this belief, children in middle childhood, especially during the transition period to middle school, experience a massive amount of academic tasks as much as that of middle school students. In fact, academic procrastination is found to be prevalent in middle childhood (Ahn & Kim, 2020). Moreover, Jang & Lee (2013) stress that delaying behavior, shown

among fifth and sixth graders in elementary school, can be formed into a habit if it is continuously accumulated, and the negative effect of delaying behavior may be greater if it begins in elementary school (Choi & Kim, 2008). Thus, in this study, we investigated factors affecting academic procrastination during middle childhood, especially from fifth and sixth grades, the period of time when self-regulated learning begins to emerge (Armstrong, 1989) and academic procrastination has yet to become a chronic, maladaptive learning attitude. In addition, while most of the studies have been focusing on factors that negatively affect academic procrastination including children's perfectionism (Lee & Yang, 2011), test anxiety (Yerdelen et al., 2016), impulsiveness (Steel, 2007), or parental psychologic control (Kim & Han, 2019), this study focused on variables that contribute to alleviate delaying behavior.

Procrastination can be affected by various environmental factors. Parents' and teachers' autonomy support has been identified as the leading social factor contributing to academic procrastination (d'Ailly, 2003; Ntoumanis, 2005; Tsai et al., 2008; Zakeri et al., 2013). Autonomy support is defined as recognizing and supporting the needs of children who are to be self-directed and autonomous in their learning (Ryan et al., 2015). Parents and teachers who support children's autonomy tend to provide opportunities for children to make their own decisions, to give rational explanations when needed, and to recognize their own feelings (Joussemet et al., 2008). Véronneau et al. (2005) have reported that the need for autonomy plays a core role for children to aid in addressing a variety of challenging tasks related to developmental traits, particularly in the upper grades of elementary school. Kail (1991) has also found that elementary school students with higher levels of academic achievement need to be autonomous in their academic tasks because this is the time when they start to have greater amounts of schoolwork that require greater maturity in academic performance and information processing. Meanwhile, a study conducted on elementary school students (Lee, 2010) showed that both parental and teachers' support directly affect the children's basic

psychological needs. Based on these results, it appears that the roles of parents and teachers should be emphasized as important social factors to meet elementary school students' need for autonomy.

Students who perceive their parents as overly strict or authoritarian have reported more experiences of academic procrastination (Missildine, 1963). In fact, parents' excessive control has been reported to increase student's academic procrastination (Zakeri et al., 2013). In addition, studies comparing mothers and fathers have reported that maternal autonomy support has a greater impact on children's academic performance than that of the fathers' (Gillet et al., 2012; Soenens & Vansteenkiste, 2005). This could be because during the middle childhood, mothers spend more time with their children taking care of children's school activities (Russell & Russell, 1987) and they display higher levels of autonomy support than do fathers (Duineveld et al., 2017). Although no studies have examined the direct effects of teachers' autonomy support on children's academic procrastination, Chirkov (2009) found that the greater the teacher's autonomy support, the greater the children's positive learning motivation and psychological adjustment. Additionally, teachers' support improved children's positive learning outcomes, including more autonomous motivation, greater engagement in learning and homework effort, and better academic performance (Assor et al., 2002; Feng et al., 2019; Katz et al., 2009). From these studies, it can be inferred that if teachers support children's autonomy so that they become agents in their own learning, children will feel autonomy and responsibility regarding their tasks, eventually lowering their levels of academic procrastination.

As discussed above, children's academic procrastination and related behaviors can be directly affected by autonomy support from mothers and teachers. Such behaviors can also be influenced by children's self-esteem (Klassen et al., 2009), anxiety (Klassen et al., 2009; Yerdelen et al., 2016), self-regulation (Senecal et al., 1995), academic self-efficacy (Jeon & Park, 2014), and self-efficacy for self-regulated learning (Klassen et al., 2009; Tan et al., 2008; Yerdelen et al., 2016). Among these potential variables, self-efficacy

for self-regulated learning remained most closely related to academic procrastination (Klassen et al., 2009). Wolter (2003) also reported that among motivational beliefs and learning strategies, procrastination was most clearly related to students' beliefs on their ability to finish academic tasks successfully. In fact, students with low self-efficacy for self-regulated learning reported that they would put off starting their work more frequently than those who were more certain about their capacity. These findings indicate that students with high self-efficacy for self-regulated learning can use a variety of self-regulated learning strategies in order to perform academic tasks successfully and in a timely manner.

The process of self-regulated learning can be explained by Bandura's (1986) social cognitive theory. According to Zimmerman & Schunk (2012), self-regulated learning consists of three sub-processes: self-observation, self-judgment, and self-response. Through these sub-process, self-regulation in learning environments is exhibited in a form of paying close attention during class, encoding, organizing, and rehearsing what is to be remembered to create a productive working environment (Schunk, 1989). It has been found that adolescents' academic procrastination is due to deficits in self-regulatory behavior, such as time management problems (Milgram & Toubiana, 1999; Shih, 2017), and a recent study has proven the effectiveness of an intervention program that teaches self-regulation strategies to reduce academic procrastination (Loeffler et al., 2019). However, self-regulated learning without a sense of efficacy may not be successful because even if learners have self-regulation strategies, they may not be able to master the skill in question if they lack confidence in their ability. With appropriate efficacy, learners use suitable strategic flexibility, have more motivation, look for better solutions to their challenges, achieve higher intellectual performance, and assess their performance more accurately (Zimmerman & Bandura, 1994). Using cross-sectional (Klassen & Kuzucu, 2009; Tan et al., 2008), longitudinal (Yerdelen et al., 2016), and cross-cultural (Klassen et al., 2009) research, Klassen and colleagues have shown that students with high self-

confidence and those who believe they can regulate their learning by themselves are less prone to display academic procrastination. Based on these results, improving children's sense of efficacy in self-regulated learning is clearly important in reducing academic procrastination.

Alivernini & Lucidi (2011) reported that self-efficacy in self-regulated learning develops in an environment where autonomy is supported. In fact, children who perceive high levels of autonomy support from their parents are more likely to demonstrate self-regulated learning efficacy (Won & Shirley, 2018). They also show greater self-regulation (Deci et al., 1991) and self-directed learning (Soenens & Vansteenkiste, 2005), variables that represent similar notions to self-regulated learning efficacy. Regarding teachers' autonomy support, children who perceive high levels of autonomy support from their teachers have shown higher levels of efficacy and intrinsic motivation (Diseth et al., 2012), self-efficacy and self-regulated learning (Wang et al., 2016), and academic motivation (Chirkov, 2009; Vansteenkiste et al., 2012). Autonomy support from mothers and teachers accordingly play a significant role in children's learning and is closely related to self-regulated learning efficacy. Nevertheless, significantly less empirical research has examined self-efficacy for self-regulated learning compared to other learning-related variables. Therefore, it is necessary to investigate the relationship of autonomy support provided by parents and teachers with children's self-efficacy for self-regulated learning.

Interestingly, when it comes to the effects of mothers' and teachers' autonomy support on children's academic procrastination through self-efficacy for self-regulated learning, there have not been any empirical studies that examine autonomy support from both mothers and teachers. A study proving the relationship between mothers' and teachers' autonomy support and self-regulated learning (Alivernini & Lucidi, 2011) suggested the possible impacts teachers along with mothers might have on academic procrastination. Also, considering the fact that not only academic tasks are limited to the school site but it takes place in various places including the home, it is expected

that examining the autonomy support from parents and teachers together will provide important insight for preventing academic procrastination.

Academic procrastination begins to emerge during the elementary school years (Ahn & Kim, 2016) and may become chronic, thus reducing academic motivation and achievement (Jang & Lee, 2013). Although middle childhood is an important period for the development of academic procrastination, most studies to date have focused on adolescents and college students. Therefore, in this study, we aimed at examining academic procrastination during middle childhood, specifically age between 12 to 13 years old, regarded as the critical period that emphasizes the development of diligence and self-regulated learning. The purpose of this study was to examine the direct effects of autonomy support from mothers and teachers on children's academic procrastination alongside the indirect effects found in children's self-efficacy for self-regulated learning.

Methods

Participants and procedure

A total of 327 fifth and sixth grade elementary school students participated in this study. From the fifth grade, 62 participants (47.7%) were boys and 68 (52.3%) were girls. In the sixth grade, 94 (47.7%) were boys and 103 (52.3%) were girls. Participants were recruited from four different elementary schools in metropolitan areas of South Korea. The purpose of the study and instructions regarding the questionnaire were presented beforehand. The questionnaires were distributed to the teachers, and the participants completed the survey in their classrooms at school. A total of 340 questionnaires were distributed, and 335 were collected. A total of 327 questionnaires were used for the analysis except for eight that were unfaithfully completed. The students who participated in the surveys were given a certain gift afterwards.

Measures

Children responded to items using a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) for all questions.

Mothers' autonomy support. Mothers' autonomy support was assessed using the autonomy-supportive behaviors items from the Perceived Parental Autonomy Support Scale (P-PASS; Mageau et al., 2015) translated in Korean by Seo (2017). The autonomy-supportive behaviors items consist of three subscales, each containing four items: choice within certain limits (e.g., "My mother gives me many opportunities to make my own decisions about what I am doing"), rationale for demands and limits (e.g., "My mother makes sure that I understand why she forbids certain things"), and acknowledgement of feelings (e.g., "My mother is able to put herself in my shoes and understand my feelings"). Cronbach alphas were .84, .77, and .85, respectively.

Teachers' autonomy support. Teachers' autonomy support was measured using the Learning Climate Questionnaire (LCQ) adapted in Korean by Jang et al. (2009), which was originally developed by Williams & Deci (1996). The LCQ is an eight-item unidimensional scale that assesses children's perceptions of their teachers' autonomy support. Sample items are "My teacher provides me with choices and options" and "My teachers communicate their confidence in my ability to become what I want to become." The Cronbach's alpha coefficient was .93.

Self-efficacy for self-regulated learning. The Academic Self-Efficacy Scale developed by Kim & Park (2001) was used to assess children's self-efficacy for self-regulated learning. This scale consists of 10 items that ask children to rate their capability to do various self-regulated activities across learning environments. An example of items included is "I get myself to study when there are other interesting things to do." The internal consistency reliability (Cronbach's alpha) was .90.

Academic procrastination. Children rated their tendency to put off studying and assigned schoolwork using the Academic Procrastination Scale developed by Choi & Kim (2008). This measure consists of 33 items regarding behavioral, cognitive, and affective factors. Specifically, 13 items assessed behavioral factors (e.g., "I tend to put off my homework and end up not doing it."), and 12 assessed cognitive factors (e.g., "I think it's better not to do my homework if I can't do it well."). The remaining eight items were for affective factors (e.g., "I feel uncomfortable going to school if I haven't finished my homework."). Cronbach's alphas were .91 for behavioral factors, .88 for cognitive factors, and .81 for affective factors.

Plan of analyses

Independent sample *t*-tests were carried out to compare the mean scores for boys and girls regarding mothers' and teachers' autonomy support, and for children's self-efficacy for self-regulated learning and academic procrastination. To examine intercorrelations among variables, Pearson's correlation coefficients were calculated. Finally, structural relationships between autonomy support from mothers and teachers, children's self-efficacy for self-regulated learning, and academic procrastination were demonstrated using Structural Equation Modeling (SEM). The significance of the indirect effects was examined through bootstrapping methods.

Results

Preliminary analysis

Independent sample *t*-tests were conducted to examine sex differences among the variables. There was no sex difference in teachers' autonomy support. However, in the case of mothers' autonomy support, there was a significant sex difference in choices within certain limits ($t=-2.38, p < .05$). That is, girls ($M=4.03, SD=0.88$) perceived that their mothers gave them choices within certain limits more so than boys ($M=3.80, SD=0.78$). There was also significant

Table 1. Means, Standard Deviations, and Correlations among the Variables (*N*=325)

	1	2	3	4	5	6	7	8
Mothers' autonomy support								
1. Choice within certain limits	-							
2. Rationale for demands and limits	.63 ^{***}	-						
3. Acknowledgement of feelings	.75 ^{***}	.73 ^{***}	-					
Teachers' autonomy support								
4. Teacher's autonomy support	.28 ^{***}	.25 ^{***}	.26 ^{***}	-				
Self-efficacy for self-regulated learning								
5. Self-regulated learning efficacy	.38 ^{***}	.42 ^{***}	.37 ^{***}	.38 ^{***}	-			
Academic procrastination								
6. Behavioral factor	-.33 ^{***}	-.33 ^{***}	-.35 ^{***}	-.25 ^{***}	-.61 ^{***}	-		
7. Cognitive factor	-.35 ^{***}	-.34 ^{***}	-.36 ^{***}	-.25 ^{***}	-.58 ^{***}	.82 ^{***}	-	
8. Affective factor	-.17 ^{**}	-.22 ^{***}	-.22 ^{***}	.02	-.25 ^{***}	.41 ^{***}	.48 ^{***}	-
<i>M</i>	3.92	3.68	3.71	3.90	3.44	2.37	2.90	2.44
<i>SD</i>	0.84	0.79	0.86	0.90	0.76	0.75	0.86	0.86

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

sex difference in self-efficacy for self-regulated learning ($t=-2.17, p<.05$) where girls ($M=3.53, SD=0.77$) showed higher efficacy in self-regulated learning than boys ($M=3.35, SD=0.73$). Finally, regarding academic procrastination, significant sex differences were found in behavioral ($t=2.44, p<.05$) and cognitive factors ($t =2.14, p<.05$). Boys (behavioral: $M=2.56, SD=0.86$, cognitive: $M=2.46, SD=0.75$) showed more academic procrastination than girls (behavioral: $M=2.33, SD=0.84$, cognitive: $M=2.29, SD=0.74$). Since the sex differences were found to be significant, it has been controlled in the following analysis.

Correlations among variables

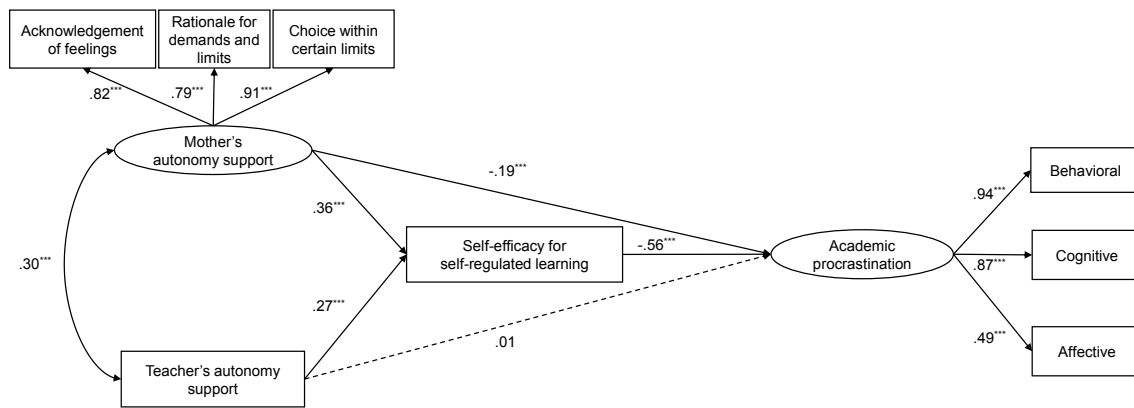
Descriptive statistics and correlations among the variables are presented in Table 1. In terms of the correlations between autonomy support and academic procrastination, the three sub-factors of mothers' autonomy support negatively correlated with behavioral, cognitive, and affective academic procrastination. In addition, teachers' autonomy support was negatively correlated with behavioral and cognitive academic procrastination. Moreover, the three sub-factors of mother's autonomy support positively correlated with children's self-efficacy for self-regulated

learning. Lastly, in terms of the correlations between self-efficacy for self-regulated learning and academic procrastination, efficacy was negatively correlated with behavioral, cognitive, and affective academic procrastination.

Structural model

To test the mediational model, it was evaluated in which autonomy support from mothers and teachers predicted children's self-efficacy in self-regulated learning, and self-regulated learning efficacy predicted academic procrastination. That is, children's self-efficacy for self-regulated learning was tested as a mediator between autonomy support from mothers and teachers, and academic procrastination. In the model, the effects of sex were controlled. The results of structural equation modeling showed that the proposed model had an acceptable model fit, $\chi^2(16)=31.38, p<.05, \chi^2/df=1.96, NFI=.98, TLI=.98, CFI=.99, RMSEA=.05$ (90% CI=.03, .08). The direct and indirect pathways for mothers' and teachers' autonomy support and self-efficacy for self-regulated learning on academic procrastination are presented in Figure 1.

The direct effects of autonomy support from mothers and



*** $p < .001$

Figure 1. A structural model with coefficients. The numbers on the paths are standardized estimates. For clarity, measurement errors in the variables and residuals of the endogenous latent variables are excluded from in the figure. The effects of sex were controlled.

teachers on academic procrastination were significant only in the case of mothers' autonomy support ($\beta = -.19, p < .001$). That is, children who perceived less autonomy support from mothers were likely to put off their academic tasks. Regarding indirect paths, perceived autonomy support from mothers ($\beta = .36, p < .001$) and teachers ($\beta = .27, p < .001$) were significantly associated with children's self-efficacy for self-regulated learning. In turn, the path from self-efficacy for self-regulated learning to academic procrastination was also significant ($\beta = -.56, p < .001$). In other words, children who perceived higher levels of autonomy support from both mothers and teachers displayed higher levels of self-efficacy in self-regulated learning, which was consequently associated with lower levels of academic procrastination.

The significances of indirect effects were examined using the bootstrapping method. The results indicate that the indirect effects on academic procrastination were significant for both mothers' autonomy support ($\beta = -.20, p < .05$) and teacher's autonomy support ($\beta = -.15, p < .05$). Furthermore, the squared multiple correlations (SMC) showed that autonomy support from mothers and teachers in regard to self-regulated learning efficacy explained 26.0% of academic procrastination while autonomy support by itself explained 44.4% of self-regulated learning efficacy.

Discussion

The aim of the present study was to examine the effects of autonomy support from mothers and teachers and its effects on children's self-efficacy for self-regulated learning, specifically in regard to academic procrastination. Regarding the direct effects of autonomy support from mothers and teachers, it was found that higher levels of perceived autonomy support from mothers significantly resulted in less academic procrastination. That is, the more the children perceived their mothers to be giving them autonomy support, the less they procrastinated on their academic tasks. These results are in line with Won & Shirley's (2018) finding that elementary school children who perceived that they had their parents' autonomy support were less likely to put off their tasks. In addition, although there is a slight difference in age, the results of this study are also consistent with the findings of Zakeri et al.'s (2013) study; mothers' autonomy support led children to show less academic procrastination. These results suggest that when mothers acknowledge children's emotions and encourage them to make their own decisions by presenting rational explanations for any given situation, the children are more likely to start or complete their academic assignments on time. Under the same circumstances, children also suppress any inappropriate thoughts throughout their

progress, and they feel fewer maladaptive emotions related to procrastination. Therefore, the results emphasize the importance of parenting in a style that supports children's autonomy by respecting children's thoughts, opinions, and feelings; this will help children manage inappropriate thoughts, feelings, and actions that interfere with the completion of their academic tasks.

Unlike mothers' autonomy support, teachers' autonomy support did not directly affect children's academic procrastination. This result is quite different from previous studies (Assor et al., 2002; Feng et al., 2019; Katz & Assor, 2007) dealing with similar variables (i.e., motivation to do homework, engagement in academic tasks, and participating school activities). However, these earlier studies did not examine the direct relationship between teachers' autonomy support and children's academic procrastination. Findings from previous studies suggest that the more the children perceive to have autonomy support from their teachers, the more motivation they have for doing their homework, and the more they engage in their academic tasks. The findings from this study can be interpreted in two ways. First, since academic procrastination examined in this study usually occurs after school and, most of the time, at home (Levin et al., 1997), mothers' guidance or involvement could be more influential than that of teachers. Another aspect can be interpreted in relation to the changes in classroom atmospheres for the upper grades of elementary school. That is, previous studies reported that children in transition from elementary to middle school have a low perception of classroom belonging and emotional support from teachers (Midgley, 2002). In other words, there is a possibility that during this period, teachers use a more control-oriented strategy and implement strict discipline in managing children who are about to enter middle school. Therefore, it can be inferred that upper elementary school students in the transition period are more likely to perceive teachers' autonomy support generally low or inconsistent.

This study also examined the indirect effects of autonomy support from mothers and teachers on children's academic procrastination by examining the roles of children's self-

regulated learning efficacy. First, regarding mothers' autonomy support, children who perceived elevated levels of autonomy support from their mothers showed higher levels of self-regulated learning efficacy. This indicates that if mothers give children choices within limits, provide rationales, and acknowledge their emotions, such parenting subsequently increases the children's self-regulated learning efficacy, thus helping them to achieve their academic goals by using many strategies to regulate their behavior, cognition, and emotions. Teachers and mothers both contribute to important social factors that influence children's overall development and learning. Teachers' autonomy support plays an essential role in helping children engage in learning and feel empowered in academic-related tasks, and to improve their skills and abilities to perform (Miserandino, 1996). Although most assignments are completed outside teachers' guidance, their autonomy support can facilitate children in fostering self-efficacy in self-regulated learning so as to complete their tasks using self-regulation strategies. These results are in line with those of previous studies for a similar context where adolescents who perceived high levels of autonomy support from their teachers felt more self-regulated learning efficacy (Alivernini & Lucidi, 2011) and academic self-efficacy (Kim & Cho, 2012).

Second, children's self-efficacy for self-regulated learning significantly affects academic procrastination. This result is similar to results from previous studies, which have suggested that self-efficacy for regulated learning showed greater correlation with academic procrastination than with self-esteem (Klassen et al., 2009) or academic self-efficacy (Klassen & Kuzucu, 2009). Taken together, these results indicate that self-efficacy for regulated learning is a driving force for children to start their academic-related work on time. Thus, it is necessary to first enhance their self-regulated learning efficacy so as for children to use self-regulated learning strategies. If so, children with strategies and stronger self-efficacy in self-regulated learning will probably better manage academic procrastination behaviorally, cognitively, and affectively.

Finally, the indirect effects of autonomy support were significant for both mothers and teachers as autonomy support affected academic procrastination through self-efficacy for self-regulated learning. The more children perceive themselves to have autonomy support from their mothers and teachers, the more they have a sense of self-regulated learning efficacy, resulting in less academic procrastination. This result is also consistent with the results of studies proving that mothers' autonomy support lowers children's academic procrastination by affecting children's self-efficacy in self-regulated learning (Won & Shirley, 2018). It is furthermore consistent with findings that show how, through self-efficacy for self-regulated learning, autonomy support from both parents and teachers affects children's motivation for self-determination, their academic performance, and their intention to drop out of school (Alivernini & Lucidi, 2011).

When interpreting the findings of the present study, a few limitations need to be considered. First, all variables for this study were measured using surveys in which children conducted self-reporting. In the case of self-reporting, it is limited because the relationship between variables can be overestimated depending on the viewpoint of a person. Therefore, various research methods such as information in reports and observations of children's task performances from the perspectives of parents, teachers, and observers need to be applied to measure the variables more clearly. In addition, since the data for this study were collected concurrently, causal relationships among the variables cannot be examined. Therefore, it will be necessary to design longitudinal research projects to identify these causal relationships. Finally, this study tried to investigate behavioral, cognitive, and affective factors related to academic procrastination. Among these, whether affective factors such as subjective such as subjective discomfort or anxiety should be included as elements of academic procrastination remains highly debated (Milgram et al., 1993). Much work remains to be done to clarify the nature and elements of academic procrastination.

Despite these limitations, the present study shows

value in many ways. First, academic procrastination has been investigated mostly for middle school, high school or college students. However, this study focused on exploring leading factors affecting academic procrastination in upper elementary school students, in a period before procrastinating behavior becomes a chronic habit. Second, this study is meaningful because while most preceding studies have focused on variables that foster academic procrastination, this study shed light on positive aspects of parent- and teacher-child relationships that can prevent children from developing academic procrastination. Third, this study included both parental and teacher variables and compared their effects on children's academic procrastination while preceding studies focused on largely either parents' or teachers' autonomy support. Fourth, this study emphasizes the significant role of self-efficacy for self-regulated learning as an internal factor; this study confirmed that self-efficacy for self-regulated learning is one of the essential factors that must be developed for practical strategies to be brought into action. Finally, it is important to note that the present study revealed the effects of self-regulated learning efficacy and autonomy support of mothers and teachers on academic procrastination by considering not only outward behavioral factors but also the underlying cognitive and affective aspects of delaying behavior.

Declaration of Conflicting Interests

The authors declare no conflict of interest with respect to the authorship or publication of this article.

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