

The Effect of Early Childhood Teachers' Job Satisfaction on Teacher-Child Interactions: The Moderated Mediating Effect of Teacher Efficacy and Resilience

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Abstract

This study examined the moderated mediating effect of teacher efficacy and resilience on the relationship between early childhood teachers' job satisfaction and teacher-child interactions. A survey was conducted on 409 early childhood teachers in Korea, and the collected data were analyzed using R 4.2.0 and the R version of PROCESSmacro 4.3. The results are as follows: first, early childhood teachers' job satisfaction had a positive effect on teacher efficacy and teacher-child interactions, and teacher efficacy had a positive effect on teacher-child interactions. Second, teacher efficacy had a positive mediating effect on the relationship between job satisfaction and teacher-child interactions. Third, resilience had a buffering moderating effect on the impact of job satisfaction on teacher efficacy. Lastly, the mediating effect of teacher efficacy on the relationship between early childhood teachers' job satisfaction and teacher-child interactions showed conditional effects depending on resilience. These results suggest the need to support the resilience of early childhood teachers as a part of their professionalism to connect the healthy professional life of early childhood teachers with the healthy growth of children.

Keywords : Resilience, Job Satisfaction, Teacher-Child Interactions, Teacher Efficacy

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Introduction

As the number of young children attending kindergartens and preschools continues to increase, the experiences they have in these educational institutions are exerting a greater influence on the development of young children. In Korea, most children aged 3 to 5 attend kindergartens and daycare centers before entering elementary school. As of 2021, there were 1,108,509 children aged 3 to 5 in Korea, of which 52.55% (582,572) attended kindergarten and 45.62% (505,776) attended daycare centers (Korean Statistical Information Service, 2021; Ministry of Health and Welfare, 2021). Given that 98.17% of children aged 3-5 attend early childhood education institutions, early childhood teachers have a significant impact on young children. This has led to increasing attention on the quality of early childhood teachers.

The experiences that children gain in early childhood education institutions are mostly formed through interactions between teachers and children. Therefore, teachers must attempt various interactions with children and support their learning and development. To do this, teachers need to observe children's interests and environments and respond sensitively to them (Choi & Park, 2023). For this to be possible, early childhood teachers need to be fully focused on children. However, there are many factors affecting the quality of teachers while they perform their duties. Among them, job satisfaction is an important requirement because it not only pertains to personal satisfaction with the job but also affects emotional responses to children. In addition, teacher efficacy, which can boost teachers' morale and change their behavior toward children, is also important.

This study aims to confirm the impact of job satisfaction on teacher-child interactions through teacher efficacy. Moreover, this study emphasizes resilience as a factor that can enhance the quality of classroom instruction. Specifically, the research explores whether resilience influences the mediating role of teacher efficacy in the relationship between teacher job satisfaction and teacher-child interaction. Resilience can be a source of strength for early childhood teachers to overcome difficult situations. Prior research on resilience has explored the relationship between resilience and work environment, job stress, job satisfaction, as well as classroom instruction (Kim & Moon, 2016; Park & Lee, 2016). Although previous studies have identified resilience as an important variable for early childhood teachers, these studies

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have tended to investigate the direct relationship between resilience and other variables, without examining the influence of resilience on the relationships between different variables. To better understand the relationship between the variables in detail, it is necessary to use a model that comprehensively includes mediating, moderating, and moderated mediating (Grant et al., 2004). The moderated mediating effect analyzes how and when an indirect effect is conditional on values of a moderating variable (Lee, 2016). In this study, we will use the analysis to analyze the relationship between job satisfaction and teacher-child interactions, with teacher efficacy as the mediating variable and resilience as the moderated mediating variable. The research questions selected for this purpose are as follows.

Research Questions:

1. What is the causal relationship between early childhood teachers' job satisfaction, teacher efficacy, and teacher-child interactions?
2. Does teacher efficacy mediate the relationship between early childhood teachers' job satisfaction and teacher-child interactions?
3. Does resilience moderate the mediating effect of teacher efficacy on the relationship between early childhood teachers' job satisfaction and teacher-child interactions?

The proposed research model is as follows.

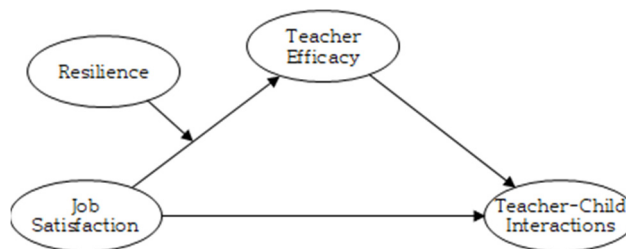


Figure 1. Research Model

Literature Review

Teacher-Child Interactions

The interaction between preschool children and teachers is a holistic process in which young children and teachers exchange verbal and non-verbal communication, influencing each other and building relationships during classroom activities and plays together (Kim & Lee, 2023). Classroom interaction includes not only the language used by the teacher, but also non-verbal interactions such as gestures and behavior, as well as emotional support expressed through facial expressions and eye contact (Lee & Kim, 2021). Therefore, the teacher's interaction is expressed as positive words and actions that influence preschool children. It is necessary to examine the variables that influence teacher-child interactions, as teachers play a significant role in the growth of preschool children.

Previous research has identified variables related to the quality of teacher-child interactions as follows. First, since children and teachers are both subjects, they influence each other. Teacher-child interactions affect children peer play interactions (Sim & Lim, 2017), school readiness (Min, 2019), happiness (Kim et al., 2018), and psychological well-being of teachers (Kim et al., 2016). Next, teacher-child interactions are influenced by both internal and external factors. Specifically, internal factors of teachers include teacher efficacy (Lee & Yoon, 2016), teaching creativity (Lee & An, 2023). External factors include principal leadership (Woo & Lee, 2020), parental cooperation (Lim & Ahn, 2011). These studies suggest the need to explore the variables affecting teacher-child interactions to improve the quality of early childhood education.

Job Satisfaction

Job satisfaction refers to the mental state that includes all emotions determined by the degree to which an individual perceives that their job-related desires are met (Evans, 1998). The job satisfaction of early childhood teachers is the subjective psychological state that teachers feel, arising from complex interactions between the human and physical environment surrounding the job (Gil, 2016). That is, job satisfaction is the totality of

emotions that teachers feel in the course of their work. The higher the level of job satisfaction of early childhood teachers, the more rewarding they find their work and the higher the job performance. Therefore, job satisfaction affects the quality of early childhood education (Jo et al., 2003; Verma, 2014). It also enhances teachers' sense of mission and responsibility, thereby promoting children's learning and development.

The job satisfaction of early childhood teachers also affects their relationship with children. The satisfaction of teachers with their jobs enhances their morale, which is then conveyed to the children (Jo et al., 2003). Prior studies have shown that the higher the sense of reward and value teachers feel for their jobs, the more emotionally stable they feel and the more proactive attitude they have toward their jobs. Therefore, teacher job satisfaction leads to enhanced quality in teacher-child interactions (Kim et al., 2019). On the other hand, teachers' personal stress and emotional fatigue related to their jobs hinder their ability to provide consistent emotional support and positive behavior management necessary for children's positive socio-emotional development (Hamre, 2014). Therefore, the more positively early childhood teachers perceive job satisfaction, the more psychologically stable they become. Enhanced job satisfaction contributes to improved job performance and facilitates positive interactions with children.

Teacher Efficacy

Teacher efficacy is the belief that teachers have about their ability to influence student learning (Epstein & Willhite, 2015). Teacher efficacy acts as a driving force that can lead to more time and effort being invested in teaching activities, ultimately leading to dedication to the organization and teaching profession (Hwang et al., 2013). Therefore, the stronger a teacher's belief is in their positive impact, the more warm, positive, and responsive behaviors are exhibited in interactions with children (Shim & Lim, 2017). Thus, teacher efficacy can impact not only the teacher themselves but also the children.

Previous research has demonstrated a close relationship among teacher efficacy, job satisfaction, and child-teacher interaction, indicating mutual influences between these factors. First, research on the relationship between teacher efficacy and job satisfaction has shown that teachers with high job satisfaction also have high teacher efficacy (Lee & An, 2011).

Additionally, improved satisfaction with work, compensation, promotion, and the working environment corresponds to increased teacher engagement in classroom teaching, resulting in enhanced teacher efficacy. (Heo & Kim, 2019). Meanwhile, teacher efficacy is also related to teacher-child interaction. Teachers with high teacher efficacy feel the value of their educational activities, have positive expectations for children's behavior and achievements, and exhibit stable behavior in interactions with children (Kim & Jang, 2022). These studies show that teacher efficacy is related to job satisfaction and child-teacher interaction.

Resilience

Resilience is the ability of individuals to navigate their way to psychological, social, cultural, and physical resources that sustain their well-being when confronted with substantial adversity (Ungar, 2008). It goes beyond the perception of adversity, hardship, and failure, representing the mental strength to start over again (Kim, 2011). Prolonged exposure to stressful situations during the performance of a kindergarten teacher's duties can reduce job satisfaction and teacher efficacy (Park & Tak, 2014). Therefore, resilience is required for the mental health of kindergarten teachers (Kwon & Lee, 2010), and it helps kindergarten teachers navigate the difficulties of teaching life and immerse themselves in their duties.

The resilience of kindergarten teachers can act as an attitude towards the teaching profession. Depending on the difference in resilience, which means positive adaptation in the context of adversity, one can cope positively or negatively with the same intensity of stress (Luthar et al., 2000). Kindergarten teachers experience considerable job stress due to low wages, promotion conditions, low social recognition, and perception during the job performance process (Kwak & Baek, 2020). Teachers with high resilience tend to approach problems with optimism, drawing on their strengths. This positive outlook enhances their psychological capacity to effectively solve problems and contributes to an increase in their job satisfaction (Choi & Seok, 2013; Bowles & Arnup, 2016).

Interrelationship of Variables

There have been many studies examining the impact of preschool teachers' job satisfaction

and teacher efficacy on child-teacher interaction. For example, Kim et al. (2014) revealed the impact of preschool teachers' job satisfaction and teacher efficacy on children's emotional competence, personality traits, and social skills. Kim and Kim (2021) reported that when teacher efficacy and job satisfaction are high, child-teacher interactions become more vibrant and positive. The results of these studies convincingly demonstrated the impact of teacher efficacy and job satisfaction on child-teacher interaction. However, there remains a gap in examining the relationship between teacher efficacy and job satisfaction. In the research conducted so far, the impact of teacher efficacy on teacher-child interactions has been the primary focus, limiting our understanding of the overall influence of teacher efficacy. There has been a lack of investigation into whether teacher efficacy might also moderate the effect of teacher job satisfaction on teacher-child interactions. Therefore, this study aims to explore the impact of job satisfaction on child-teacher interaction through teacher efficacy.

In addition, this study aims to examine whether resilience moderates the mediating effect of teacher efficacy. To analyze the relationships between variables in detail, it is recommended to use a model that comprehensively includes both mediating and moderating models (Grant et al., 2004). Prior research has indicated the impact of job satisfaction on resilience of kindergarten teachers (Gil, 2020) and positive effects of resilience on teacher efficacy (Go, 2023; Lee et al., 2017). Other studies also explored the relationship between resilience and teacher-child relationships (Go, 2020; Kim & Choi, 2022). Based on these research findings, we can hypothesize that the impact of teacher efficacy on the teacher-child interaction, in relation to teacher job satisfaction, may vary depending on the teacher's level of resilience. This study aims to whether resilience moderates the mediating effect of teacher efficacy in the process of job satisfaction among early childhood teachers affecting teacher-child interactions.

Method

Participants

The participants of this study are 409 teachers in charge of classes for children aged 3 to

5, who are currently working at early childhood education institutions in Seoul and Gyeonggi Province, South Korea. The researchers explained the purpose of the study and distributed questionnaires to the teachers who agreed to participate in the survey research from March 6th to April 7th, 2023, both online and offline. In this study, we collected 421 questionnaires, and after excluding 12 questionnaires that lacked a response to at least one item or contained duplicate responses, we used 409 questionnaires as the final data.

Measures

Job Satisfaction

To measure job satisfaction, this study employed the instrument developed by Jeong (2019), which is an amended and supplemented version of the Early Childhood Job Satisfaction Survey developed by Jorde-Bloom (1989) for South Korean circumstances by adding a factor of 'social recognition'. This scale includes six factors with a total of 21 items: relationship with colleagues (4 items), relationship with the principal (4 items), the job itself (4 items), working conditions (4 items), compensation/promotion (2 items), and social recognition (3 items). Each item was rated on a Likert scale of 5 points. The Cronbach's α for job satisfaction questionnaire in this study was .89.

Teacher Efficacy

To measure teacher efficacy, this study utilized the scale that was developed by Enochs and Riggs (1990) as the Science Teaching Efficacy Belief Instrument, which was later modified and supplemented by Ahn (2002), and validated by Han (2022). This scale includes two factors with a total of 25 items: teacher efficacy (12 items), and personal teaching efficacy (13 items). Each item was rated on a Likert scale of 5 points. The Cronbach's α for teacher efficacy scale in this study was .77.

Teacher-Child Interaction

To measure teacher-child interaction, the scale used by Lee (2003) was employed. This tool was derived from The Assessment Profile for Early Childhood Program (APECPP), The National Association for Education of Young Children (NAEYC), The National Childcare

Accreditation Council (NCAC), and the evaluation standards of the Korea Education Development Institute. However, Lee (2003) did not go through the process of validating the scale. In this study, the same scale was used but was validated by Han (2019). The scale consists of three factors with a total of 21 items: emotional interaction (7 items), linguistic interaction (7 items), and behavioral interaction (7 items). Each item was rated on a 5-point Likert scale. The Cronbach's α for teacher-child interaction scale in this study was .93.

Resilience

To measure resilience, this study utilized the scale developed by Park (2020), which is a modified version of the scale developed by Shin et al. (2009) tailored to early childhood educators. This scale consists of three factors with a total of 27 items: self-regulation (9 items), positivity (9 items), and interpersonal skills (9 items). Each item was rated on a Likert scale of 5 points. The Cronbach's α for resilience scale in this study was .91.

Statistical Analyses

The data collected in this study were analyzed using R 4.2.0 and the R version of PROCESSmacro 4.3 developed by Hayes (2022). The analysis was conducted using several R packages, including processR, lavaan, and ggplot2. The specific data analysis methods were as follows. Frequency analyses were conducted to examine the sociodemographic characteristics of the research subjects. Descriptive statistics were verified to check the general characteristics and normal distribution assumptions of the measured variables. In addition, Cronbach's α was calculated to verify reliability. Correlation analysis was conducted to verify the correlations among the scales. To verify mediation effects, PROCESSmodel 4 was used for analysis, and for moderation effects and moderated mediation, PROCESSmodel 7 was used for analysis. For the moderating effect and the moderated mediating effect, mean centering was applied. However, for the Conditional Effect of the Focal Predictor at Values of the Moderator and the Johnson-Neyman Plot, mean centering was not applied because the actual scores are needed. All verifications were made at the significance level of .05 and 95% confidence intervals.

Results

Preliminary Analyses

To verify the general characteristics of the measured variables and the assumption of normal distribution, descriptive statistics were checked, and a correlation analysis was conducted to understand their relationships and the results are reported in Table 1.

Table 1. *Preliminary Analyses*

	<i>M</i>	<i>SD</i>	<i>Skew</i>	<i>Kurt</i>	Job Satisfaction	Teacher Efficacy	Teacher-Child Interactions	Resilience
Job Satisfaction	3.70	.48	.06	-.23	1			
Teacher Efficacy	3.44	.33	.42	.18	.32***	1		
Teacher-Child Interactions	4.12	.40	.11	-.04	.35***	.39***	1	
Resilience	3.90	.44	-.16	-.39	.53***	.50***	.55***	1

*** $p < .001$

The Direct and Mediating Effects of Teacher Efficacy in the Relationship between Job Satisfaction and Teacher-Child Interactions

The mediation effect of teacher efficacy in the impact of job satisfaction on teacher-child interaction was examined, and the results are reported in Table 2. In the first step, job satisfaction explained 10% of teacher efficacy ($R^2 = .10$), and this was statistically significant ($F = 46.05, p < .001$). In the second step, job satisfaction and teacher efficacy explained 21% of teacher-child interaction ($R^2 = .21$), which was statistically significant ($F = 46.05, p < .001$).

Regarding the direct effect of teacher efficacy in the influence of job satisfaction on teacher-child interaction, which corresponds to the first research question of this study, job satisfaction was found to have a positive causal relationship with teacher efficacy of .22 ($t = 6.79, p < .001$) and a positive causal relationship with teacher-child interaction of .21 ($t = 5.43, p < .001$). Additionally, teacher efficacy had a positive causal relationship with teacher-child interaction of .38 ($t = 6.56, p < .001$).

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Table 2. *Direct Effects*

	Teacher Efficacy			Teacher-Child Interactions		
	Coefficient	SE	t	Coefficient	SE	T
Job Satisfaction	.22	.03	6.79***	.21	.04	5.43***
Teacher Efficacy	-	-	-	.38	.06	6.56***
Constant	2.64	.12	22.27***	2.04	.21	9.95***
R^2		.10			.21	
$F(df_1, df_2)$, p-value		46.05(1, 407) ***			53.00(2, 406) ***	

*** $p < .001$

The Mediating Effect of Teacher Efficacy in the Relationship Between Job Satisfaction and Teacher-Child Interaction

To ascertain the mediating effect of teacher efficacy on the impact of job satisfaction on teacher-child interaction, 5,000 bootstrap samples were conducted, and statistical significance was verified through a 95% confidence interval.

Table 3. *Mediating Effects*

Independent Variable	Mediator Variable	Dependent Variable	Mediator Coefficient	BootSE
Job Satisfaction	Teacher Efficacy	Teacher-Child Interactions	.08	.02

As Table 3 shows, the results of the analysis of the mediating effect of teacher efficacy on the relationship between job satisfaction and teacher-child interaction revealed a positive mediating effect of .08.

The Moderated Mediation Effect of Teacher Efficacy and Resilience in the Relationship Between Job Satisfaction and Teacher-Child Interaction

The Moderating Effect of Resilience in the Relationship Between Job Satisfaction and Teacher Efficacy

The moderating effect of resilience in the relationship between job satisfaction and teacher efficacy was examined, and the results are reported in Table 4. Job satisfaction, resilience,

and the interaction term (job satisfaction \times resilience) explained 28% of teacher efficacy ($R^2=.28$), and this was statistically significant ($F=51.94, p<.001$).

Table 4. *Moderating Effect of Resilience in the Effect of Job Satisfaction on Teacher Efficacy*

	Teacher Efficacy		
	Coefficient	SE	t
Job Satisfaction	.03	.03	.82
Resilience	.36	.04	9.67***
Job Satisfaction \times Resilience	.20	.06	3.52***
Constant	3.42	.02	225.40***
$R^2(\Delta R^2, p\text{-value})$.28(.02***)		
$F(df_1, df_2), p\text{-value}$	51.94(3, 405) ***		

*** $p<.001$

The moderating effect of resilience on the relationship between job satisfaction and teacher efficacy, which corresponds to the second research question of this study, was positive, and the magnitude was .20 ($t=3.52, p<.001$).

In the next step, we utilized the Johnson-Neyman technique to identify moderating regions. Specifically, we investigated whether there are differences in the causal relationship between teacher job satisfaction and teacher efficacy based on the magnitude of resilience. No mean centering was applied to determine the actual score of regions. The results of this inquiry are reported in Table 5. Please note that due to page limits, the results are reported in two columns. Specifically, the left group corresponds to data with resilience values ranging from 2.44 to 3.64, while the results for the right group are reported for resilience values ranging from 3.77 to 4.96.

As reported in Table 5, when resilience was less than or equal to 3.19 (7.10% of the total), job satisfaction had a statistically significant negative causal relationship with teacher efficacy. When resilience was equal to or greater than 4.10 (66.01% of the total), job satisfaction had a statistically significant positive causal relationship with teacher efficacy. The effects of job satisfaction on teacher efficacy according to ± 1 SD of resilience are illustrated in Figure 1, and the Johnson-Neyman Plot is shown in Figure 2.

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Table 5. Conditional effect of focal predictor at values of the moderator (Mean-Centered Not Applied)

Resilience	Effect[95% CI]	SE	t	Resilience	Effect[95% CI]	SE	t
2.44	-.26[.01, -.44]	.09	-2.76**	3.77	.00[.93, -.07]	.04	.09
2.58	-.23[.01, -.40]	.09	-2.68**	3.90(Mean)	.03[.40, -.04]	.03	.85
2.71	-.20[.01, -.36]	.08	-2.58**	4.04	.06[.11, -.01]	.03	1.62
2.84	-.18[.01, -.32]	.07	-2.45*	4.10	.07[.05, .00]	.03	1.97*
2.97	-.15[.02, -.28]	.07	-2.30*	4.17	.08[.02, .01]	.04	2.31*
3.11	-.13[.04, -.24]	.06	-2.11*	4.30	.11[.00, .03]	.04	2.84**
3.19	-.11[.05, -.22]	.06	-1.97*	4.34(+1SD)	.11[.04, .19]	.04	2.96**
3.24	-.10[.06, -.21]	.05	-1.86	4.43	.13[.00, .05]	.04	3.20**
3.46(-1SD)	-.06[.15, .03]	.05	-1.28	4.57	.16[.00, .07]	.05	3.44***
3.37	-.07[.13, -.17]	.05	-1.54	4.70	.18[.00, .08]	.05	3.59***
3.50	-.05[.26, -.13]	.04	-1.12	4.83	.21[.00, .10]	.06	3.69***
3.64	-.02[.56, -.10]	.04	-.58	4.96	.24[.00, .11]	.06	3.74***

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

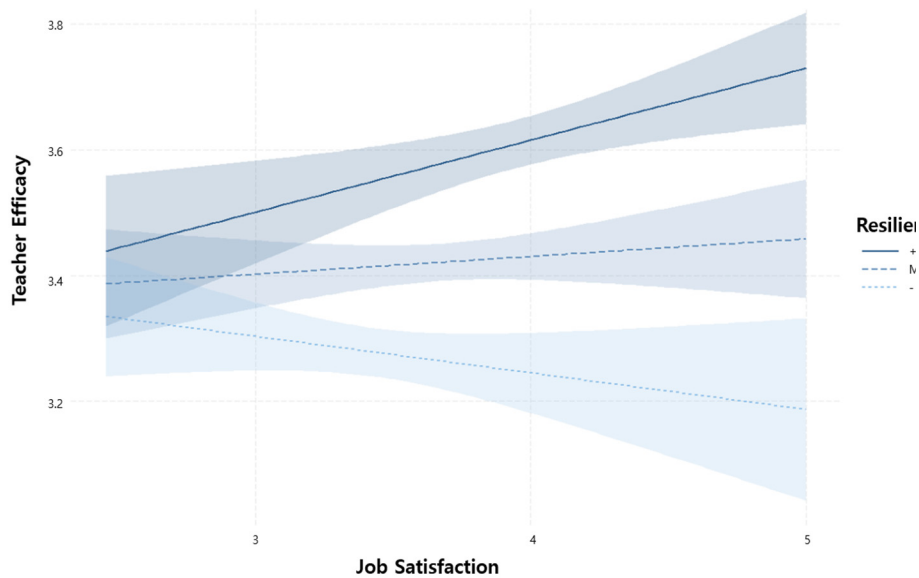


Figure 2. Changes in the Impact of Job Satisfaction on Teacher Efficacy Depending on the Level of Resilience (-1 SD, Mean, +1 SD)

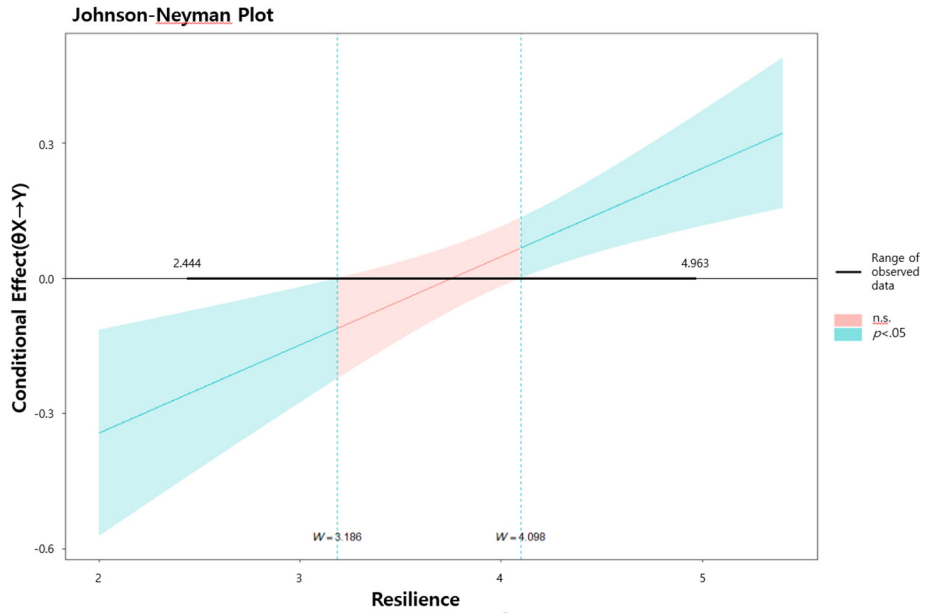


Figure 3. Johnson-Neyman Plot

Table 6. Moderated Mediation of Resilience

	Teacher Efficacy			Teacher-Child Interactions		
	Coefficient	SE	t	Coefficient	SE	t
Job Satisfaction	.03	.03	.82	.21	.04	5.43***
Teacher Efficacy	-	-	-	.38	.06	6.56***
Resilience	.36	.04	9.67***	-	-	-
Job Satisfaction × Resilience	.20	.06	3.52***	-	-	-
Constant	3.42	.02	225.40***	2.82	.20	14.20***
$R^2(\Delta R^2, p\text{-value})$.28(.02***)			.21(-)		
$F(df_1, df_2), p\text{-value}$	51.94(3, 405)***			53.00(2, 406)***		
Index of moderated mediation Index (BootSE)				.07(.03)		

*** $p < .001$.

The Mediating Effect of Teacher Efficacy and the Moderated Mediation Effect of Resilience in the Relationship Between Job Satisfaction and Teacher-Child Interaction

Following Hayes (2022), the moderator variable was divided into three groups based on ± 1 SD, and 5,000 bootstrap samples were conducted with a 95% confidence interval to confirm the moderated mediation effect. Consequently, this study divided resilience into three groups (-1 SD [3.46], mean [3.90], and +1 SD [4.33]) and examined whether the mediating effect of teacher efficacy in the relationship between job satisfaction and teacher-child interaction was significant for each group.

The results showed that the mediating effects within the -1 SD and Mean groups were not statistically significant, but the mediating effect within the +1 SD group was significant at .04. These results confirmed that the higher the resilience, the more the mediating effect of job satisfaction on teacher-child interaction through teacher efficacy was buffered. To confirm the statistical significance of these results, we checked the Index of moderated mediation, which was statistically significant at .07. Figure 3 below illustrates the variations in direct effects and mediation effects according to changes in resilience.

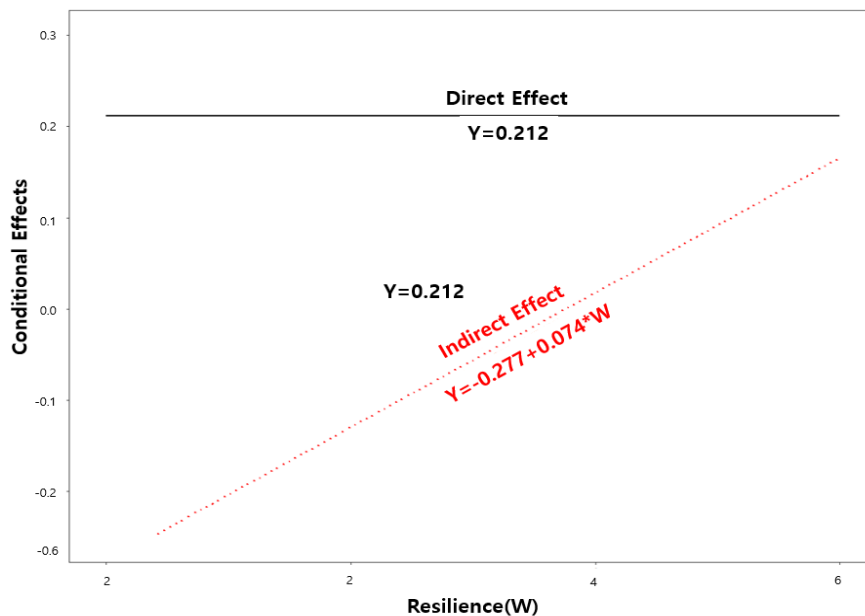


Figure 4. Plot of direct and mediating effects of moderated mediating effects

Discussion

This study analyzed the conditional effects of teacher efficacy and resilience in the relationship between early childhood teachers' job satisfaction and teacher-child interactions. The results revealed significant relationships among early childhood teachers' job satisfaction, teacher-child interactions, teacher efficacy, and resilience. The key research findings and discussions are as follows:

The Direct Effects Among Job Satisfaction, Teacher-Child Interaction, and Teacher Efficacy

Early childhood teachers' job satisfaction positively affected teacher efficacy and teacher-child interactions, and teacher efficacy positively affected teacher-child interactions. The result suggests that the more satisfied teachers are with their jobs, the higher their perceived teacher efficacy, and the better the interactions with children. Moreover, teachers with high teacher efficacy have smooth interactions with children. These results are consistent with previous studies that have found the positive relationship between that the higher the job satisfaction of early childhood teachers, the higher their teacher efficacy (Lee & An, 2011; Hwang, 2013). The findings further corroborate the results from previous research, indicating that job satisfaction among early childhood teachers leads to increased active and diverse patterns of interaction between teachers and children (Choi & Moon, 2013). For example, Thomason and La Paro (2013) reported that as teachers' job satisfaction increases, the probability of fostering children's cognitive development and creating opportunities for exploration in the classroom also rises. Furthermore, Son and Baek (2023) partially aligns with our findings in that early childhood teachers' job satisfaction enhances their job engagement.

Meanwhile, with respect to the impact of teacher efficacy on teacher-child interactions, Chung et al. (2005) reported a positive correlation between teaching efficacy and teacher-child relationships, and Epstein and Willhite (2015) also found that teachers with high teacher efficacy demonstrate exceptional abilities in overall management and education of children. Consequently, this allowed us to verify the causal relationships among job satisfaction,

teacher efficacy, and teacher-child interactions in early childhood teachers.

The Mediating Effect of Teacher Efficacy on the Relationship Between Job Satisfaction and Teacher-Child Interaction

In the relationship between job satisfaction and teacher-child interaction, teacher efficacy exhibited a positive mediating effect, which suggests that the greater the job satisfaction early childhood educators feel, the higher their perceived level of teacher efficacy, which in turn has a positive impact on teacher-child interaction. In contrast to previous studies that investigated the relationship between teacher efficacy, job satisfaction, and teacher-child interaction, our study made a significant contribution by revealing the mediating effect of teacher efficacy on the relationship between job satisfaction and teacher-child interaction.

Since teachers are an important element of the environment for young children, numerous studies have been conducted to explore the relationship between job satisfaction (Kim et al., 2019), teacher efficacy, and teacher-child interaction (Kim & Kim, 2021; Lee & Yoon, 2016). There are also studies, such as those by Kim et al. (2014) and Kim & Kim (2021), that selected job satisfaction and teacher efficacy as variables to investigate their influence on young children. These studies are significant in that they have identified job satisfaction and teacher efficacy as important variables related to teacher-child interaction. However, there is scarce research examining how the relationship between job satisfaction and teacher efficacy affects teacher-child interaction. These research findings suggest that enhancing teacher efficacy can mitigate the decrease in interactions between teachers and children, which tends to occur when teacher job satisfaction is low.

The Moderated Mediation Effect of Teacher Efficacy and Resilience in the Relationship Between Job Satisfaction and Teacher-Child

The analysis of the moderated mediating effect of resilience revealed that the impact of teacher efficacy on the relationship between teacher job satisfaction and teacher-child interactions varies based on the teacher's level of resilience. Specifically, groups with low resilience had lower teacher efficacy as job satisfaction increased, while groups with high

resilience had higher teacher efficacy as job satisfaction increased. The direction of the mediating effect varied depending on the resilience level. While the negative mediating effect in the group with low resilience was not significant, the mediating effect of teacher efficacy in the group with high resilience are meaningful. The insights derived from this result are outlined below:

First, the impact of job satisfaction on teacher efficacy varied according to the difference in resilience. In groups with low resilience, teacher efficacy decreased as job satisfaction increased. On the contrary, in groups with high resilience, teacher efficacy increased with higher job satisfaction. This can be understood by examining what resilience is. Resilience is a positive ability to overcome physical and psychological risk factors and adapt successfully to the environment (Kim, 2011). Teachers with high resilience do not easily get frustrated in stressful situations and respond flexibly to overcome difficulties (Gil, 2016; Kim & Moon, 2016). On the other hand, teachers with low resilience have low competencies in areas such as learning support, understanding the curriculum, and child protection. They tend to be easily exhausted due to their jobs (Park & Oh, 2021; Shin & Lee, 2020). In other words, how well they cope with adverse challenges depends on how resilient teachers are in the same situation. Accordingly, teachers with high resilience can have a strong will in their teaching life and they tend to be satisfied with their jobs. However, teachers with low resilience have a characteristic of having less strength to overcome adversity, and as a result, even when they are satisfied with their job, there is a tendency to become complacent in classroom situations, leading to a decrease in their perception of efficacy in performing duties as teachers.

It is noteworthy that in the high-resilience group, a positive mediating effect of teacher efficacy was observed between job satisfaction and teacher-child interactions. This indicates that teachers with high resilience tend to exhibit increased teacher efficacy when satisfied with their jobs, consequently fostering more active interactions with children. The impact of resilience on teacher efficacy and job satisfaction was evident in a study conducted with early childhood teachers during the COVID-19 pandemic. Many kindergarten teachers faced elevated stress levels, coupled with the serious risk of infection, adversely impacting their well-being at work (Nong et al., 2022; Tebben et al., 2021). Fox and Walter (2022) studied teachers' stress and resilience during this period and found that when educational institutions provided appropriate emotional support, teachers were able to maintain happiness in their

work. However, if they felt isolated from the teacher community, their job satisfaction decreased. This shows the importance of resilience in adversity.

Resilience can be seen as part of the bioecological model, which is a concept that development and behavior are the products of a complex network of internal and external systems (Bronfenbrenner & Morris, 2007). The bioecological model is a theory that explains the various layers of the environment that affect human development (Bronfenbrenner, 1979, 1995). This model emphasizes that individual development is determined by interactions with various environmental systems in which they live, and that biological characteristics of the individual also affect these interactions (Bronfenbrenner & Morris, 1998). Accordingly, resilience is determined by the interaction of internal and external factors, and it can vary among individuals and change over time (Gu & Day, 2007). Yang et al. (2023) investigated how Korean teachers collectively developed resilience and transformed education during COVID-19. In this study, Korean teachers actively utilized a combination of situational resources and collaborative expertise, rather than relying solely on personal resources, to ultimately bring about collective resilience.

To bring about lasting changes in teaching, it is essential to mobilize a collective array of multidimensional resources to fortify teachers' resilience. As previously noted, resilience is not a trait that preschool teachers cultivate independently; rather, it is dynamic and subject to change based on circumstances. The resilience of preschool teachers plays a crucial role in influencing their well-being, perceived efficacy, and interaction with children, which underscores the importance for stakeholders to provide comprehensive support to nurture its development.

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