

Associations between Preschoolers' Engagement and Teacher-Child Interaction, and the Role of Gender

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Abstract

The purpose of this study was to examine the association between teacher-child interaction and preschoolers' engagement, and to explore the role of gender in this association. One hundred and thirty-five preschoolers and their classroom teachers in East Tennessee of the U.S. participated in this study. The parents provided children's demographic information, and classroom teachers completed the questionnaires on preschoolers' engagement and the quality of teachers' interaction with each child. The results showed that boys had lower levels of classroom engagement, and a lower quality of interactions with teachers compared to girls. Hierarchical regression analysis revealed that the quality of teachers' interactions with girls largely accounted for the gender differences in preschoolers' engagement levels. However, the gender as a moderator between teacher-child one-on-one interaction and preschoolers' engagement was not found. Compared to other confounders, preschoolers whose mothers having higher educational degrees were more likely to be engaged in the classroom activities.

Key words: preschoolers' engagement, teacher-child interaction, hierarchical regression

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Introduction

When referring to young children, engagement has been defined as the amount of time a child spends with materials or interacts with caregivers or peers in a developmentally appropriate manner (Doke & Risley, 1972; McWilliam et al., 1985). Numerous studies have consistently demonstrated that children's engagement was not only associated with their current developmental outcomes (e.g., Georges et al., 2012; McWayne et al., 2004; Sabol et al., 2018), but also predicted their later school achievement (Guo et al., 2015; Hughes et al., 2008; Ladd & Dinella, 2009; Ponitz et al., 2009; Williford et al., 2013). Preschool years are a critical period for children to develop learning skills that help them make a smooth transition to kindergarten where a more structured learning environment, more learning hours, higher demand for their focused attention, and more academically oriented work is required (La Paro et al., 2006; Sink et al., 2007). Children's readiness for a more structured primary environment builds the foundation for their later school success (Boivin & Bierman, 2013). It has been suggested that preschoolers' level of engagement is linked to their readiness for school, including the skills and abilities needed for coping in kindergarten (Pianta & Rimm-Kaufman, 2006). The engagement of preschoolers is considered one of the most important components of a successful school transition as rated by kindergarten teachers, even higher than academic knowledge (Dockett & Perry, 2004; Heaviside et al., 1993).

However, not all children start school with high levels of engagement. It has been reported by kindergarten teachers that children's lack of engagement is a major concern (Rimm-Kaufman et al., 2000). Particularly, boys show significantly less engagement than girls in kindergarten (Childs & McKay, 2001; Tach & Farkas, 2006). Also research has demonstrated a decline in the levels of engagement in US schools (Skinner et al., 2008). These findings suggest that it is essential to enhance children's engagement in their early years. Given the significance of children's early engagement, it is important to develop intervention programs to improve preschooler's engagement and give them a chance at a successful school experience. According to Bronfenbrenner's ecological theory (Bronfenbrenner, 1979), teachers are children's microsystem members and their interactions with children have immediate effect on children's learning and development. For an intervention program to be successful, we need to examine what factors influence preschoolers' engagement (e.g.,

teacher-child interaction) and whether boys and girls benefit equally from the same intervention.

Literature Review

Children's engagement and teacher-child interaction

Children's engagement supports academic learning, social-emotional development, and problem behaviors. Bichay (2016) examined the associations between preschoolers' engagement and their math and language skills in 655 Head Start preschoolers across 71 classrooms and found that preschoolers' engagement with tasks was significantly associated with their concurrent language and mathematics achievement. A predictive association was found in Ladd and Dinella's (2009) longitudinal study. This study recruited 383 children as they entered kindergarten and followed them until they completed eighth grade. The results suggested that children's early engagement was a significant predictor of children's positive changes in achievement. Children's engagement within an early childhood setting also contributes to their social- emotional development (Hojnoski & Missall, 2010; Williford et al., 2013). The lack of engagement or low levels of engagement also predict higher school dropout rate, negative teacher-child relationships, and chronic problem behaviors (Claessens et al., 2009; Hojnoski & Missall, 2010; Sabol et al., 2018). Teacher-child interaction has been utilized in numerous studies as an important indicator of high-quality programs (Pianta et al., 2005; Rimm-Kaufman et al., 2009; Weiland et al., 2014). Children in higher quality preschool programs gain more skills than children in lower quality programs and are more likely to sustain these skills after leaving preschool (Yoshikawa et al., 2013). Robust evidence from studies suggests that the quality of teacher-child interaction is an important contributor to young children's academic achievement (Cadima et al., 2010; Doumen et al., 2012; Roorda et al., 2011). For instance, research has demonstrated that teachers' positive instructional interactions with preschoolers promoted their language development (Yeomans-Maldonado et al., 2019), and was positively associated with children's math skills achievement (Mashburn et al., 2008; Rudasill et al., 2017). During the preschool years, the quality of

teacher-child interaction plays a crucial role in facilitating or impeding children's social-emotional development (Cadima et al., 2015; Hamre & Pianta, 2005). Teachers' responsive interactions enhanced children's prosocial behaviors and positive emotions (Longobardi et al., 2020). Additionally, studies demonstrated that children with emotionally supportive teachers displayed higher levels of social skills (Howes et al., 2008; Goble et al., 2019; Schmitt et al., 2018) and lower levels of problem behaviors (Cadima et al., 2010; Mashburn et al., 2008; Pianta & Stuhlman, 2004; Rimm-Kaufman et al., 2002; Rucinski et al., 2018; Weyns et al., 2019).

Teacher-child interaction is a strong indicator of a positive climate in early childhood classrooms, which influences children's engagement (Papadopoulou & Gregoriadis, 2017; Ponitz et al., 2009; Williford et al., 2013). A positive relationship between teacher-child interactions and children's engagement has been well established when assessing the teacher's interaction at the classroom level. This same relationship has been confirmed with preschoolers (Bailey et al., 2016; Casey et al., 2012; Sjoman et al., 2016), kindergarteners, (Aydogan et al., 2015; Mahoney & Wheeden, 1999; Ponitz et al., 2009), and older children, such as 5th graders (Rimm-Kaufman et al., 2014). Children displayed higher levels of classroom engagement when they experienced warm, sensitive, responsive, and elaborative interactions with teachers (Hughes & Kwok, 2006; Raspa et al., 2001). Furthermore, children are more likely to display disruptive behaviors and less likely to engage in learning activities with teachers who are observed to be less sensitive and responsive, and more controlling during interactions (Rimm-Kaufman et al., 2009; Roorda et al., 2017).

However, few studies have examined the association between children's engagement and teacher's one-on-one interaction with each child. These studies focused on children with disabilities (Casey et al., 2012; Mahoney & Wheeden, 1999; Sjoman et al., 2016). The results suggested that teacher's one-on-one interaction styles explained a significant amount of variance in children's engagement. Specifically, teachers' performance orientations (teachers encourage individual children to perform specific tasks and skills) were positively associated with child's social engagement (Casey et al., 2012).

The current study employed a scale that assesses the teachers' perceptions of their interactions with each individual child in their daily activities. Using an attachment perspective, studies have reported that a sensitive and responsive teacher's interaction with

an individual child plays an important role in shaping children's self-awareness and relationships with teachers and peers, thus impacting their behavioral engagement (Bowlby, 1973; Cassidy & Shaver, 2008; Verschueren & Koomen, 2012).

The role of gender in the association of teacher-child interaction and engagement

One factor that might influence a teacher's interaction with each child is the child's gender. Studies of young children's motivation and engagement in learning activities found that both parents and teachers rated girls' motivation and engagement higher than boys (Portill et al., 2014; Searle et al., 2014). Girls experience closer relationships with teachers and more attention from teachers in kindergarten and early elementary grades (Baker, 2006; Portill et al., 2014), and girls display higher levels of engagement (Baker, 2006; Portill et al., 2014; Walker, 2005). Studies have shown that boys' misconduct behaviors tend to have a negative influence on teachers' perceptions of the child, and they receive less responsive interactions from the teachers (Rudasill, 2011).

Given the evidence that boys when compared to girls experience more behavioral problems and lower levels of classroom engagement in the early years (Bulotsky-Shearer et al., 2010; Rudasill, 2011), it is possible that gender is implicated in the association. One possibility is that the gender differences found in the levels of teacher-child interaction may partly explain the gender differences in engagement. It is possible that girls' higher engagement levels may be due in part to their more positive interactions with teachers. Hence the gender differences found in engagement levels may be reduced by increasing the level of positive teacher-child interactions with boys. However, to our knowledge, the Rimm-Kaufman et al.'s (2015) study is the only study that has examined gender differences in the association between teacher-child interactions and children's engagement. The results of this study confirmed that gender moderates the association between teacher-student interaction and student-reported engagement, but not when engagement was observed or reported by teachers. In this study, teacher-student interaction in 5th grade was assessed using the Classroom Assessment Scoring System (CLASS; Pianta et al., 2008) at the class-level. As aforementioned, a sensitive and responsive teacher-child one-on-one interaction plays an important role in

building teacher-child attachment (Bowlby, 1973; Verschueren & Koomen, 2012), and thus enhances children's engagement. Our literature review found no study that has explored the gender differences of the association between teacher-child one-on-one interaction and engagement in the preschool context.

Given the importance of children's preschool learning for future development, understanding these relationships would be helpful when developing preschool interventions to reduce the gender gap in the level of engagement by adjusting the level of teacher's one-on-one interaction with each child. Therefore, it is imperative to explore the role of gender as a moderating variable between teacher-child one-on-one interaction and preschoolers' engagement.

Covariables in the association of teacher-child interaction and engagement

To decrease the bias in the estimate of the regression coefficient and increase variance of other regression coefficients, additional covariables were tested in the study. We added other covariables including program types, child age, mother education level and father education level in the analysis to examine how the covariables affect the association between teacher-child interaction and preschoolers' engagement.

The current study

Although it has been well established that teacher-child interaction at the classroom level is associated with child's engagement (Ponitz et al., 2009; Williford et al., 2013), few studies have examined the influence of teacher-child one-on-one interaction on child's engagement. Depending on the characteristics of the individual child, the level of the teacher-child interaction varies. For instance, children with less self-control were more likely to receive teacher-initiated interactions to correct their behavior (Rudasill & Rimm-Kaufman, 2009). Additionally, given that the moderating role of gender between teacher-child interaction and child's engagement has only been examined in higher grades with inconsistent results (Rimm-Kaufman et al., 2015), it is important to further explore this association in

preschoolers. With these gaps in mind, three research questions were proposed in this study: (1) What is the difference in preschoolers' engagement and teacher-child interaction between girls and boys? (2) What is the association between teacher-child one-on-one interaction and preschoolers' engagement? (3) Does gender moderate the association between teacher-child one on one interaction and preschoolers' engagement? We hypothesize: (1) that girls have higher level of teacher-child interaction and higher levels of engagement, (2) that higher level of teacher-child one-on-one interaction would be significantly associated with higher levels of preschoolers' engagement, and (3) gender moderate the association between teacher-child one on one interaction and preschoolers' engagement, and the association between teacher-child one-on-one interaction with girls would be stronger than the association between teacher-child one-on-one interaction with boys.

Method

Participants

Table 1 displays the demographic information for children and their parents. This study did not include children with disabilities nor families that did not speak English. One hundred and thirty-five children (77 males, 58 females) from 15 preschool classrooms in East Tennessee of the United States were involved in this study with a mean age of 54.93 months and $SD = 7.48$. One hundred and thirty-five parents completed the demographic information survey. Fifteen teachers participated in the study and completed the questionnaires for children's classroom engagement and teacher-child interactions. Mothers had graduate (PhD or masters) degrees (18.5%) and 14.2% of the mothers had college degrees. More than half of the mothers had a high school degree or less education (67.4%). A majority of the fathers had a higher school degree or less education (69.6%). Fathers had graduate (PhD or masters) degrees and college degrees 17.0% and 12.6 % respectively.

Table 1. *Demographic information for children and their parents (n = 135)*

Child's age	M = 54.93 (Month); SD = 7.48	
Child's gender	Male = 77 (57%); Female = 58 (43%)	
Mother's Education	Frequency	Percentage (%)
Graduate degree	25	18.5
College degree	19	14.1
Higher school degree or less	91	67.4
Father's Education		
Graduate degree	23	17.0
College degree	17	12.6
High school degree or less	94	69.6

Procedure

Following study approval from the Institutional Review Board (IRB), recruitment of teachers began. The Head Start manager sent the invitations to 25 preschool teachers asking if they would like to participate in the study, along with the approved teacher consent form. After two rounds of invitations were sent, nine teachers agreed to participate. The director of the university childcare center also sent invitations twice to the program's nine preschool teachers. Six teachers agreed to participate. Therefore, six teachers from the university childcare center and nine from Head Start participated in this study totaling 15 teachers.

After returning their completed consent forms, classroom teachers gave the consent forms only to English speaking parents. These parents had up to two weeks to read the information about the study and make a decision about whether their child could participate. The parents returned the signed consent forms to the teachers along with the child and the parental demographic survey including the child's age, gender, and parents' educational levels. Of the parents contacted, 154 returned parental consent forms to allow their children to participate in the study. We randomly chose 9 children from the ones whose parents signed the consent forms from each classroom. There were 135 children selected to participate in the study. The teachers rated each of the involved child's engagement levels from free-recall impressions of the child's classroom behaviors with peers, adults, and materials.

Measurement

Child Engagement

The Child Engagement Questionnaire (CEQ) (McWilliam 1991) was used to measure the engagement levels for each child. Using this questionnaire, teachers rated children's engagement level from free-recall impressions of children's classroom behaviors with peers, adults, and materials. The CEQ consists of 32 items that rate children's global engagement in the classroom. A four-point Likert scale is used to rate the child's engagement using the following indicators: *not at all typical*, *somewhat typical*, *typical*, and *very typical*. On the questionnaire, the scale developer specified '*typical*' to mean the child spends quite a lot of time in this activity (McWilliam, 1991, p. 1). For each item, examples further clarify what the questionnaire intends to measure. For example, one item says 'watches or listens to adults' and the descriptor is '*When the teacher moves around the classroom talking to the child, the child watches him or her.*' The generalizability coefficient of CEQ was .84, and the alpha coefficient for internal consistency of CEQ was .96 (de Kruif et al., 1999).

Teacher-child Interaction

The teacher-child interaction questionnaire (TCINT) was originally developed by Granlund and Olsson in 1998. Almqvist (2006) employed this questionnaire to assess the interaction between the teacher and the child as well as between the child and a peer. This questionnaire consists of 36 items, covering four interaction dyads: between other children and the child, between the child and other children, between child and teacher, and between teacher and child. To address the research questions, the 10 items that assessed the teacher and child interaction (e.g., *I respond to the child's communication*, *I adapt my communication to the child's pace/level*, *I use language that is appropriate for our interaction*.) were used in the current study. This questionnaire used a five-point Likert scale to examine how often the teacher-child interaction behaviors happen: *seldom*, *fairly seldom*, *50% of the time*, *fairly often* and *often*. The teachers completed the questionnaire one time on each child in the study. The reliability of the teacher's perception of their interaction with the child was high and ranged from .86 to .87 (Almqvist, 2006).

Data Analysis

One-sample t-test was employed to address research question 1 (gender differences of teacher-child one-on-one interaction and preschoolers' engagement). Pearson correlation tested the association between teacher-child one-on-one interaction and preschoolers' engagement for research question 2. Hierarchical linear regressions were used to answer research questions 3 (the moderation of gender between teacher-child one-on-one interaction and preschoolers' engagement). Hierarchical linear regression is an appropriate approach for this study, because it is able to statistically control for certain variables, and exam whether adding other variables significantly improves a model's ability to predict the criterion variable and/or to investigate a moderating effect of a variable (Pallant, 2010). A linear regression in SPSS examined the collinearity. The findings indicated that no collinearity was in the dataset. A scatterplot checked for linearity in a R statistical program, and it was found that there were no non-linear relationships among the variables. The dependent variable in this regression is preschoolers' engagement. Within these regressions, gender was entered at step 1 to examine the unadjusted gender association with preschoolers' engagement. The four covariates (program types including head start and regular childcare centers, child age, mother education level and father education level) were added in step 2. Teacher-child one-on-one interaction was added in step 3 to determine the proportion of variance in preschoolers' engagement that gender explained while adjusting for teacher-child one-on-one interaction level. In step 4, the moderation of gender (teacher-child one-on-one interaction X gender) was added to examine whether gender moderated the association between teacher-child one-on-one interaction and preschoolers' engagement after adjusting the covariates and teacher-child one-on-one interaction. All continuous independent variables were centered before conducting the regression analysis.

Results

Gender differences in teacher-child interaction and child's engagement

Results from the independent-sample t-tests are presented in Table 2. There was a

significant difference in preschooler's engagement level between girls and boys ($t = 3.63, p < .001$). Girls ($M = 3.26, SD = 0.51$) were more engaged than boys ($M = 2.92, SD = 0.56$) according to the teachers' report. Teachers indicated a higher level of one-on-one interaction with girls ($M = 4.60, SD = 0.30$) than with boys ($M = 4.44, SD = 0.36$), and again the gender differences were significant ($t = 2.80, p = .006$).

Table 2. *Descriptive statistics for teacher-child one-on-one interaction and engagement variables, and gender differences ($n = 135$)*

Variables	Mean (<i>SD</i>)	Min	Max	Gender difference <i>t</i>
Child Engagement	3.06 (0.56)	1.38	4	3.63***
Child Engagement Boys ($n = 77$)	2.92 (0.56)	1.38	4	
Child Engagement Girls ($n = 58$)	3.26 (0.51)	2.16	4	
Teacher-Child Interaction	4.51 (0.34)	3.60	5	2.80**
Teacher-Child Interaction Boys ($n = 77$)	4.44 (0.36)	3.60	5	
Teacher-Child Interaction Girls ($n = 58$)	4.60 (0.30)	3.90	5	

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

Correlation between teacher-child interactions and preschoolers' engagement

Pearson correlation test showed that teacher-child one-on-one interaction was highly correlated with preschoolers' engagement ($r = .70, p = .01$). It demonstrated that children who received higher levels of interaction from their teachers had higher engagement levels.

The role of gender in explaining the association between teacher-child one-on-one interaction and preschoolers' engagement

Hierarchical regressions were conducted to determine whether girls' advantages in engagement were due to the higher level of teacher-child interaction. As shown in Table 3, step 1 revealed a small positive effect of gender on child's engagement with girls as the predicting category and boys as the reference category ($\beta = .30, p < .001$). In step 2, the role of gender was further examined after adjusting for the four covariates (mother education, father education, child's age, and program type). The results reported that only mother's

education played a significant role in the association ($\beta = .37, p < .001$). So we created three dummy coded variables of mother's education (mothers with a graduate degree, mothers with a college degree and mothers with a high school degree or lower, and the high school degree or lower group was the reference group). The covariates of mother education were reentered into the model. The gender coefficient was found slightly larger ($\beta = .31, p < .001$), and mothers' education increased the gender gap by 1% at a statistical significance level. Mothers' education explained 37% variances of preschoolers' engagement ($\beta = .37, p < .001$) a statistical significance level. The results signified that the preschoolers with mothers who had a graduate degree or college degree had somewhat less gender differences on preschoolers' engagement levels than preschoolers whose mothers had a high school or lower degree. Preschoolers whose mothers having higher educational degrees were more likely to be engaged in the classroom activities.

In step 3, teacher-child one-on-one interaction was added into the model and the gender gap was markedly reduced ($\beta = .15, p = .021$) by 50%. It signified that teacher-child one-on-one interaction was a large predictor of preschoolers' engagement when considering child's gender and the other covariates ($\beta = .65, p < .001$). After the moderation (teacher-child interaction X gender, girls as the predicting category) was entered in step 4, the gender did not significantly modify the associations between preschoolers' engagement and teacher-child one-on-one interaction as shown in Table 3. This signified that the associations between preschoolers' engagement and teacher-child one-on-one interaction were similar for boys and girls.

Table 3. *Effect of gender and teacher-child one-on-one interaction on preschoolers' classroom engagement (n = 135)*

Regression Model	Independent Variables				Adjusted R ²	ΔR^2	ΔF
	Gender β	Mother Education (Graduate Level) β	Teacher-Child Interaction β	Gender X Teacher-Child Interaction β			
Step 1---gender association: Gender model	.30***				.08	.09	13.21
Step 2---gender association, adjusted for covariates: Gender + covariates model	.31***	.37***			.15	.09	3.69
Step 3---teacher-child interaction	.15**		.65***		.51	.35	95.96
Step 4---interaction Gender X teacher-child interaction	.14**		.58**	.08	.51	.001	.16

Discussion

This study examined the association between teacher-child one-on-one interaction and preschoolers' engagement, and the role that children's gender plays in this association. It contributed to the literature by examining the relationship between preschoolers' classroom engagement and teacher's one-on-one interaction with each child. The findings revealed that although girls have higher levels of classroom engagement and higher levels of interaction with teachers than boys, the association between preschoolers' engagement and teacher-child's one-on-one interaction was similar for both girls and boys once adjusted for the mother's education level.

Our study suggested that children who had higher levels of interaction with teachers had higher levels of engagement, and that girls were more engaged in the classrooms and had more frequent interactions with teachers. This was consistent with previous studies on young children in early childhood settings (Searle et al., 2014; Sjoman et al., 2016). Additionally, research has demonstrated that preschool girls had more emotional knowledge and higher social competence than boys, which may help girls identify teachers' initiation of interaction and respond to teachers, and thus maintain higher levels of engagement (Alwaely et al., 2021).

Furthermore, the current study found that girls' higher levels of interaction with teachers largely explained children's engagement gender differences even after controlling for children's age, program type, and parents' education levels. Girls' higher levels of interaction accounted for 65% of the association between gender and children's engagement. The gender gap of engagement was reduced by 50% after including teacher-child interaction. It reveals that teacher-child one-on-one interaction is a strong predictor of child's engagement. As discussed in prior studies, sensitive, warm, and responsive interaction can be embedded in the classroom environment to ensure children's learning (Hyson & Biggar, 2006), and enhance children's prosocial behaviors and positive emotions (Longobardi et al., 2020; Rucinski et al., 2018; Weyns et al., 2019).

One prior study examined the moderating role of gender between teacher-child interaction and child's engagement and the data collected showed inconsistent results by using students in higher grades as a sample (Rimm-Kaufman et al., 2015). To fill the research gap, we further explored the moderating role of gender in association with teacher-child interaction

and preschoolers' engagement. Contrary to the literature, the moderation role of gender between teacher-child one-on-one interaction and child's engagement after adjusting for mothers' educational levels was not found in this study. That signified that teacher-child one-on-one interaction quality to girls and boys had the same effect on their classroom engagement levels. Additionally, mothers' education explained 15% of the gender differences in preschoolers' engagement levels. This pattern has been found in other studies. For instance, Tok and Unal (2020) investigated the differences of preschoolers' mathematical skills in terms of other variables (e.g., mother education) and found that children of mothers with higher education levels displayed higher levels of mathematical skills than other groups of children. It may be because mothers with higher education levels have more knowledge about children and their gender differences. They may create a more appropriate educational home environment to help their children engage in learning at home (Esmaceli et al., 2019), and this engagement can transfer to the classroom.

Limitations

When interpreting the results from this study, we suggest that readers consider the following limitations. First, this study excluded children with disabilities and children from homes where English was not the home language, so generalization of these findings to other populations is cautioned. To improve the sample representation and the rigor of the study, randomly choosing a larger sample of children with more diversity would enhance the quality of this study. Second, the classroom teachers completed both questionnaires used in this study, child's engagement and teacher-child one-on-one interaction. The results of this study might be different if observation assessments or reports by other agents were used. In Rimm-Kaufman et al.'s (2015) study, three different agents assessed student engagement: teachers, researcher observations, and students. Their results found that gender moderated the association between teacher-students interaction and student-reported engagement, but gender did not moderate the association between teacher-student interactions and observed engagement or teacher-reported engagement. To improve our study, it would be better to collect data from different agents (e.g., teacher-reported, parent-reported) and analyze the data accordingly.

Implications

Several practical implications can be derived from the findings of the current study. First, our findings lend further support for continued attention to the important role of the teacher–child interaction as a predicting factor with respect to children’s classroom engagement during the early years. Studies have demonstrated the efficiency of teacher training interventions in improving the quality of teacher’s interaction with children (Buschmann & Sachse, 2018). The results showed that these preschool teachers had lasting changes in their interaction skills, and children became more engaged in communicating with others. More training should be conducted in early childhood settings to improve the quality of teacher–child one-on-one interaction. Second, boys in preschool who display less engagement in learning than girls, may need extra support from both classroom teachers and mothers to catch up to girls. Therefore, when implementing a preschool engagement intervention, the potential confounders (e.g., mother’s education level) should be considered. Third, mothers with higher educational levels had less gender differences on preschoolers’ engagement, and preschoolers with highly educated mothers were more engaged than their peers. Highly educated mothers are perceived to be more likely to provide healthy food for their children, this might mitigate children’s behavior problems (Wu et al., 2020). Moreover, mothers with increased education alter the frequency and quality of the cognitively stimulating interaction with their children. The changing family routines and practices impact children’s learning and behaviors (Schochet et al., 2020). Therefore, offering education to parents might have a profound effect on children’s classroom engagement.

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