

Pre-kindergarten teachers' use of transition practices and children's adjustment to kindergarten

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Received 2 June 2006; received in revised form 3 June 2007; accepted 5 June 2007

Abstract

This study describes pre-kindergarten teachers' use of kindergarten transition practices and examined the extent to which these practices were associated with kindergarten teachers' judgments of children's social, self-regulatory, and academic skills upon their entry into kindergarten. Participants were 722 children from 214 pre-kindergarten classrooms participating in the National Center for Early Development and Learning's (NCEDL) Multi-State Pre-kindergarten Study. Of nine transition practices intended to promote children's adaptation to kindergarten, pre-kindergarten teachers reported implementing, on average, six transition practices, with notable variation across pre-kindergarten classrooms. Children were judged by their kindergarten teachers to have more positive social competencies and fewer problem behaviors when they attended pre-kindergarten classrooms in which more transition activities were implemented and, specifically, in which teachers discussed curricula or specific children with kindergarten teachers. In addition, positive associations between kindergarten teachers' perceptions of children's social competence and pre-kindergarten transition activities (total number of activities and activities that children experience directly) were stronger for children who experienced social and economic risks. Implications of these findings related to alignment across the pre-kindergarten to kindergarten settings to improve children's school readiness are discussed.

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Keywords: Pre-kindergarten; Transition; Kindergarten adjustment

1. Introduction

Given evidence that high-quality, comprehensive pre-kindergarten experiences can ameliorate the negative effects of poverty on young children's emerging academic, social and self-regulatory competencies (e.g. Consortium for Longitudinal Studies, 1983; Peisner-Feinberg et al., 2001; Reynolds, 2000; Reynolds, Temple, Robertson, Mann, 2001; Schweinhart & Weikart, 1997), early childhood education has received increased funding and is being offered to growing numbers of American children as a means of promoting their readiness for kindergarten. However, as Pianta (1999) describes, successful entry into elementary school requires more than ensuring that children have the requisite competencies to carry with them into a kindergarten setting. Smooth transitions from pre-kindergarten to kindergarten are also a function of linkages that are made between systems, such as connections between schools and families and between pre-kindergarten and kindergarten teachers and classrooms. The need for purposeful coordination between the pre-kindergarten and elementary setting has recently drawn attention as an underutilized avenue that can maintain and

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potentially maximize gains for children achieved in pre-kindergarten (Bogard & Takanishi, 2005). There is evidence that suggests children may be at greater risk for school failure and social adjustment problems when experiencing an ineffective transition between pre-kindergarten and kindergarten (Conyer, Reynolds, & Ou, 2003; Goal One Ready Schools Resource Group, 1995), and attention is needed to understand the mechanisms that facilitate smooth transitions and successful child adjustment to the start of formal schooling.

One approach to help children's transition to and adaptation within kindergarten is the use of specific practices that facilitate connections between children, families, pre-kindergarten and kindergarten teachers and classrooms to foster adaptive and supportive experiences (Bogard & Takanishi, 2005; Kagan, 1991; Zigler & Kagan, 1982). School transition practices aimed at enhancing this supportive link may include visits to kindergarten classes by pre-kindergarten children and teachers, orientation programs for children and parents, or individual meetings between pre-kindergarten teachers and parents and pre-kindergarten teachers and kindergarten teachers. Although there have been widespread attempts to incorporate such transition practices into teachers' yearly routines (e.g., Head Start Performance Standards), Schulting, Malone, and Dodge (2005) recently presented the first and only known empirical study actually linking improved outcomes for kindergarten children to transition activities provided by their kindergarten teachers. Noting the benefits when kindergarten transition planning is evident, there is a need to expand this empirical research base, particularly as it relates to pre-kindergarten teachers' efforts to provide coherent, supportive transition practices to create more successful kindergarten experiences for children. To address this in the current study, we used data from the National Center for Early Development and Learning's (NCELD) Multi-State Study of Pre-Kindergarten to describe the frequency with which pre-kindergarten teachers use transition practices and examine the extent to which pre-kindergarten teachers' use of transition practices are associated with kindergarten teachers' judgments of children's social, self-regulatory, and academic skills upon their entry into kindergarten.

1.1. Defining school readiness from a developmental/ecological perspective

When the National Education Goals Panel set forth the goal that "all children in American will start school ready to learn" (National Education Goals Panel [NEGP], 1995; Shore, 1998), school readiness implied that a child possessed a certain set of skills that determined if he or she was ready to start school. Ramey and Ramey (1999) identified this view of school readiness as "severely flawed by a disproportionate focus on the child's skills" (p. 218). Although child level factors clearly play a part in school performance (Gutman, Sameroff, & Cole, 2003), La Paro and Pianta (2000) found that less than one-fourth of children's kindergarten performance is accounted for by their preschool abilities.

Instead of focusing exclusively on the child as the school readiness indicator, new models encompass a transition to school or "ready schools" framework, seeing the child and his or her abilities as situated within and dependent on a broader contextual perspective (Ramey & Ramey, 1999). These recent models of school readiness emphasize the dynamic nature of relational and informational linkages that provide a web of support for children during a time of immense change (Belsky & MacKinnon, 1994; Downer, Driscoll, & Pianta, 2006; Mashburn & Pianta, 2006; Shonkoff & Phillips, 2000). Specifically, Rimm-Kaufman and Pianta (2000) note that, in a developmental ecological model, child, family, school, peer, and community factors are interconnected and interdependent throughout the transition period and can be aligned in ways that support children's adjustment to early schooling. Coherent connections within and between these multiple contexts in a child's life leads to stability in relationships and consistency in information-sharing, particularly between pre-kindergarten and kindergarten teachers, and teachers and families, which may promote greater early school success. Efforts to create a continuous, seamless experience across settings through curriculum and policy-level issues are often referred to as alignment, whereas transitions practices are the actual intentional attempts to create support and familiarity across pre-kindergarten and kindergarten. Linkages can be forged in different ways, like district initiatives and federal transition policies that attempt to regulate development of school, family, and community connections. At a more proximal level, pre-kindergarten teachers' practices can create a bridge of support for children as they transition to kindergarten; it is these transition efforts that are the focus of our study.

1.2. Transition practices

A developmental ecological transition to kindergarten model implies that the use of transition practices will be most effective when aimed at enhancing the linkages between people and settings during early schooling. Specifically,

Rimm-Kaufman and Pianta (2000) describe effective teacher-initiated transition practices as those that involve reaching out proactively to families and other teachers, and doing so with a high level of intensity, prior to the actual physical move into a new classroom. However, studies of teachers' use of transition practices (e.g., Love, Logue, Trudeau, & Thayer, 1992; Pianta, Cox, Taylor, & Early, 1999; Rathbun & Germino-Hausken, 2001) consistently find a very different reality; teachers' and schools' use of transition practices tend to take place after the start of school and/or involve low intensity, generic contact such as flyers, brochures, or group open-houses. On the whole, findings from teacher surveys suggest that the typical transition for children consists of contact with their new school that is too little, too late, and too impersonal—a conclusion that is highly consistent with what parents report about the kindergarten transition experience (Pianta & Kraft-Sayre, 2003).

In the only study known to date that connects children's transition experience with outcomes, Schulting et al. (2005) examined kindergarten transition practices and children's academic outcomes at the end of the kindergarten year. Using the ECLS-K data, this study examined the experience of over 17,000 children in nearly 1000 schools. The authors concluded that more transition activities at the beginning of kindergarten were associated with academic gains on standardized tests over the kindergarten year, even after controlling for other factors, including family socio-economic status. Further, the effect was stronger for children of lower financial means, suggesting transition activities provided a moderating effect between poverty status and child outcomes. The use of transition practices, then, has the potential to improve children's abilities to adapt to kindergarten classrooms, particularly for children who experience social and economic risks and enter school lagging behind their peers (Schulting et al., 2005). Similar to what has been found in other studies (Pianta et al., 1999), however, transition practices are used less frequently and are less intensive in communities with higher concentrations of racial/ethnic minorities and poverty, leaving a potentially positive resource untapped.

Recent initiatives, such as the School Readiness Pathway from the Pathways Mapping Initiative of the Project on Effective Interventions at Harvard University (www.PathwaysToOutcomes.org), apply the developmental ecological model to school transition, focusing on pre-kindergarten and school transition policies and practices that may better meet children's needs through the creation of early, individualized linkages between homes-schools and pre-kindergarten-kindergarten classrooms. The School Readiness Pathway makes explicit what families, schools and communities can do to link together children's experiences to optimize their ability to start school successfully. There is evidence that parents and teachers both benefit from and want more of these types of transition practices that emphasize connections between systems (Pianta & Kraft-Sayre, 2003), particularly in comparison with more traditional static and impersonal transition efforts. Despite these reports of satisfaction, empirical evidence that links developmental ecological pre-kindergarten transition practices with children's adjustment to kindergarten is lacking. Given that a major goal of transition practices is to support children's early school adjustment, there is clearly a need to examine pre-kindergarten teachers' use of specific transition practices in relation to children's kindergarten socio-emotional and academic competencies.

Effective transition planning is expected to connect a child's support systems as a way to offer social and emotional support to the child during a potentially challenging time, as well as build coherence and consistency in curriculum, expectations and experiences across settings (Pianta & Cox, 1999). Specifically, children whose pre-kindergarten teachers use many of the transition practices will gain familiarity with their kindergarten classroom and teacher ahead of time, will have parents who understand what kindergarten will be like and can speak about it regularly in a positive manner, and will have kindergarten teachers who know something about them already from conversations with parents and pre-kindergarten teachers. These occurrences are expected to provide a comfortable, supportive adjustment period for children during the days leading up to kindergarten and through the first weeks of school, thus resulting in higher ratings of social and emotional competence at the beginning of the year than for children whose teachers did not use as many transition practices. Academic skills, in contrast, are not expected to be related to these types of transition practices at the beginning of kindergarten, because most of the practices are not focused on exposing children to academic learning opportunities that mirror kindergarten expectations. Instead, as could be the case in Schulting et al.'s study (2005), it is more likely that transition practices facilitate quicker social and emotional adjustment to kindergarten, which then allows them to take better advantage of learning opportunities in the classroom. As a result, by the end of the kindergarten year they are doing better academically than their peers who did not experience the benefits of transition practices. Pre-kindergarten transition practices are designed then, to increase a child's ability to function successfully within the classroom, a precursor for later school success that sets the stage for academic skill development (Burgess & Ladd, 1999; Ladd & Price, 1987).

1.3. At-risk children and the transition to kindergarten

In a survey of a national sample of kindergarten teachers, one-third of teachers reported that half their class or more begin kindergarten with difficulties following directions, demonstrating academic skills, and working independently, while one sixth faced more severe adjustment problems (Rimm-Kaufman, Pianta, & Cox, 2000). Teachers' judgments of children's abilities are particularly important as they are used to refer children for special services, place children into ability groupings and inform parents, administrators and other teachers about children's competencies that establish expectations for their performance (Harlen, 2005). Additionally, there is evidence that teachers' perceptions of children's abilities are strong predictors of future social and academic functioning (Badian, 1976; Hamre & Pianta, 2001; Hoge & Butcher, 1984; Kenoyer, 1982; Pianta, Steinberg, & Rollins, 1995; Quay & Steele, 1998).

Of greatest concern is evidence from recent nationally representative assessments of children's readiness skills clearly demonstrating that differences attributable to family income/poverty are present at the very start of children's schooling (National Center for Education Science [NCES], 2000) and that the gap persists throughout the early grades (NCES, 2004). As Entwisle and Alexander (1993) underscore, social stratification emerges at the earliest stages of a child's school career, which is particularly significant given the consistent link between children's early school adjustment and later educational success (Alexander & Entwisle, 1988; Reynolds, 2000; Reynolds et al., 2001). Because of this relative stability, some theorists have suggested that the transition into kindergarten and first grade is a "critical" period for children's school success (Entwisle, 1995) and that additional supports to children during this time are likely to hold great benefits, particularly for children from families with lower incomes (Schulting et al., 2005).

1.4. Present study

The NCEDL Multi-State Study of Pre-Kindergarten provides a unique opportunity to examine the association between pre-kindergarten teachers' use of transition practices and kindergarten teachers' initial perceptions of children's social and academic adjustment to the kindergarten setting. Pre-kindergarten teachers reported the extent to which they used nine different transition practices in their classrooms throughout the pre-kindergarten year. During the following fall, kindergarten teachers made independent ratings of how well the study children were adjusting to the kindergarten classroom, including displays of social competence (e.g., frustration tolerance, peer social skills, task orientation), problem behaviors (e.g., conduct problems, learning problems), and language and literacy skills.

In this study, three research questions were addressed. First, to what extent do pre-kindergarten teachers use transition practices? Second, is the use of transition practices during pre-kindergarten associated with kindergarten teachers' perceptions of children's socio-emotional and academic competencies at the start of kindergarten? Finally, does pre-kindergarten teachers' use of transition practices moderate the associations between child risk factors (family poverty, race/ethnicity, less educated mothers) and kindergarten teachers' perceptions of children's academic and social competencies? It is expected that there will be considerable variability in the types and number of transition practices that pre-kindergarten teachers report. In addition, it is hypothesized that teachers' use of more transition activities during the pre-kindergarten year will moderate the association between risk and children's positive school adjustment in kindergarten.

2. Method

2.1. Participants

Participants were 722 children enrolled in 214 pre-kindergarten classes from six states that were involved in the National Center for Early Development and Learning's (NCEDL) Multi-State Study of Pre-Kindergarten during the 2001–2002 school year. The six states were selected for participation in this study from among states that had committed significant resources to pre-kindergarten initiatives and that served at least 15% of their 4-year-old children in state funded pre-kindergarten programs. States were also selected to maximize diversity with regard to geography, program location, program length, and educational requirements for teachers. In four states, a stratified random sample of 40 centers/schools was selected from the list of all the state-funded pre-kindergarten centers/schools provided by each state's Department of Education. In two geographically large states, a random sample of 40 sites was drawn from all state-funded pre-kindergarten programs within a large pre-defined geographic area. One class-

Table 1
 Characteristics of children and kindergarten teachers' ratings ($n = 722$)

	<i>n</i>	%	<i>M</i>	S.D.	Range
Child characteristics					
Boy	351	49			
Race					
Black	161	22			
Hispanic	167	23			
Other race	73	10			
Caucasian	321	45			
Mother's education (years)			12.6	2.2	8–20
Family is poor	390	54			
Pre-kindergarten classroom characteristics					
Program is Head Start	62	29			
PK located in school	123	58			
Emotional quality			5.37	.75	2.4–6.6
Instructional quality			1.94	.83	1.0–4.3
Kindergarten teachers' ratings					
Teacher–Child Rating Scale					
Social competence			3.45	.81	1.1–5.0
Problem behaviors			1.74	.84	1.0–4.8
Language and Literacy Rating Scale					
Total			2.41	.91	1.0–5.0

room in each center/school was selected at random for participation in this study, and from each class, four children were randomly selected from all eligible children in selected classrooms. Eligible children were those who (1) had parental consent, (2) met the age criteria for kindergarten eligibility in fall 2002, (3) did not have an Individualized Education Plan, according to the teacher, and (4) spoke English or Spanish well enough to understand simple instructions, according to the teacher. On average, 60% of eligible children's parents consented to have their child participate.

As part of the on-going data collection, study children were followed into their kindergarten year. Data collectors went to the study children's kindergarten classroom during the fall of their kindergarten year, with all visits occurring between 2 weeks after school started until just after Thanksgiving. During this site visit, kindergarten teachers completed several instruments, including the ones used in this study and discussed in more detail below.

The complete sample in the NCEDL Multi-State Study of Pre-Kindergarten comprised 238 pre-kindergarten classrooms and 1015 children, which includes any child and classroom that was enrolled in the study at any time during the pre-kindergarten year. One hundred and four children were excluded from the study because their pre-kindergarten teacher did not provide information regarding their use of transition practices. An additional 189 children were excluded because their kindergarten teachers did not provide ratings of children's school adjustment at the beginning of kindergarten—the result of not locating children's kindergarten teachers by the beginning of the kindergarten year. The original sample of children that participated in the Multi-State Study of Pre-Kindergarten was compared with the 722 children included in this study to examine possible attrition biases. The sub-sample of children excluded from this study were more likely to be poor, $\chi^2(1, N = 293) = 7.36, p = .007$, have mothers with lower levels of education, $t(1013) = -1.93, p = .05$, and be non-Caucasian, $\chi^2(1, N = 293) = 11.97, p = .001$.

The resulting sample of children in the study included a diverse group of children and classrooms (Table 1). Nearly one-half of the sample (49%) were male, and slightly more than one-half of the sample (54%) came from families that were poor, defined as annual family income less than or equal to 150% of the federal poverty guidelines for their family's size. Mothers of participating children averaged 12.6 years of education, which varied widely (S.D. = 2.2) and ranged from 8 to 20 years. Slightly less than one-half of the sample (45%) identified as Caucasian, and slightly less than one-fourth of the sample identified as either Hispanic/Latino (23%) or African-American (22%). The remaining 10% of the children were Asian, Pacific Islander, Native American, or multi-racial.

The 214 pre-kindergarten classrooms participating in this study also varied across a number of dimensions (Table 1). A majority of classrooms (58%) operated from within local public schools, and thirty-percent of the classes were part of the federal Head Start program. There was a wide range of variability in background characteristics of pre-kindergarten teachers who participated. Pre-kindergarten teachers' reported their highest level of education, and 18% had received an AA degree, approximately one-third (35%) had received a bachelor's degree, approximately one-fourth (24%) received an advanced degree. Teachers' fields of study also varied—nearly half (47%) majored in early childhood education, 19% majored in elementary education, and the remainder (34%) received their highest degree in another field, which included special education, ESL, child development, or a different field. Ninety-nine percent of the pre-kindergarten teachers were female, with 64% identifying themselves as Caucasian, 15% African American and 12% Latina.

Of the kindergarten teachers who participated, 99% reported their highest level of education of at least a Bachelors degree. Kindergarten teachers' field of study was predominately elementary education (51%), followed by early childhood education (26%). Similar to pre-k, kindergarten teachers were predominantly female (98%), with 79% identifying themselves as Caucasian, 9% Latina, and 7% African American.

2.2. Measures

2.2.1. Control variables

A number of characteristics of children, families, and pre-kindergarten programs were included as control variables, in order to examine the unique influence of pre-kindergarten transition activities on children's competencies at kindergarten entry. Specifically, child and family characteristics included in the models were: sex, race, mother's education, and poverty status. Program characteristics included location in a public school, whether the program was administered by Head Start, and observed program quality. In addition, to account for potential systematic differences in child outcomes across the six states, five state dummy variables were included as control variables.

Pre-kindergarten program quality was measured using the Classroom Assessment Scoring System (CLASS, Pianta, La Paro & Hamre, 2004), an observational instrument that measures quality in classroom environments. Although only used in this analysis as a control variable, CLASS dimensions have been shown to significantly predict gains in children's achievement and social functioning in pre-kindergarten (Howes et al., 2005), kindergarten (Pianta, La Paro, Payne, Cox, & Bradley, 2002) and first grade (NICHD ECCRN, 2002). The CLASS comprises nine scales that create two dimensions of teacher quality—social-emotional climate and instructional supports for learning. Social and emotional climate measures include five scales: Positive Climate, Negative Climate, Teacher Sensitivity, Over-Control and Behavior Management. Instructional Quality dimensions are measured on four scales: Productivity, Concept Development, Instructional Learning Format and Quality of Feedback. Each of the nine scales is rated by a trained observer along a 1–7 rating scale with 1 or 2 indicating low quality, 3, 4, or 5 in the mid-range of quality, and a 6 or 7 indicating high quality. Prior to these observations, data collector reliability was tested on the CLASS in terms of agreement with taped master-coded segments. Data collectors' mean weighted kappa was .67. On average, 89% of data collector responses were exactly the same or within one scale-point of the expert codes.

2.2.2. Transition practices

A list of common and/or known supportive transition activities was included as part of the NCEDL pre-kindergarten teacher survey, which was modified from the NCEDL (Pianta et al., 1999) kindergarten transition study. In spring 2002 at the end of the pre-kindergarten year, pre-kindergarten teachers indicated (yes/no) whether they did or planned to do each of the following activities that may assist children's transitions into kindergarten: (1) pre-kindergarten children visit a kindergarten class, (2) pre-kindergarten teacher visits kindergarten class, (3) kindergarten teacher visits pre-kindergarten class, (4) spring kindergarten orientation for pre-kindergarten children, (5) spring kindergarten orientation for pre-kindergarten children's parents, (6) school-wide elementary school activity for pre-kindergarten children, (7) individual meetings with parents about kindergarten, (8) share written records about children's pre-kindergarten experience with elementary school and (9) contact with kindergarten teacher about curriculum and/or specific children. Teachers' responses were summed to create a 9-item transition activity composite index.

2.3. Outcomes

2.3.1. Social competence and behavior problems

The kindergarten teachers completed the Teacher–Child Rating Scale (Hightower et al., 1986), a widely used behavioral rating scale that reflects seven elements of social and emotional competencies. The items form two broad scales of children’s social–emotional competencies, social competence and behavior problems. For the social competence items, teachers rated children individually using a scale from 1 to 5 on how well statements described the child with 1 = not at all, 2 = a little, 3 = moderately well, 4 = well, and 5 = very well. Examples of social competence items include: “participates in class discussions,” “completes work,” and “well-liked by classmates”. For behavior problem items, teachers rated children individually using a scale from 1 to 5 on how well statements described the child with 1 = not a problem, 2 = mild, 3 = moderate, 4 = serious, and 5 = very serious problem. Examples of behavior problem items include: “disruptive in class,” “anxious,” and “difficulty following directions.” For this instrument, authors report test-retest validity between .61 and .91 and internal consistency ranging from .85 to .95 using four scales for social competence and three scales for problem behaviors. For this study, scales were examined empirically to determine if all should be used in the analysis, and it was determined that leaving one of the sub-scales out for social competence and problem behaviors improved the psychometric properties. The three sub-scales frustration tolerance, task orientation, and peer social skills were used to reflect social competence ($\alpha = .85$) and the two sub-scales conduct problems and learning problems were used to reflect problem behaviors ($\alpha = .82$). Means on these two scales were then computed. The bi-variate correlation between social competence and behavior problem scales in this sample is $-.76$.

2.3.2. Academic Rating Scale

The Academic Rating Scale (Perry & Meisels, 1996) measures teachers’ perceptions of children’s language and literacy skills, and was completed by kindergarten teachers of the study children during fall 2002. Teachers rate a child’s proficiency in nine skills such as speaking, listening, early reading and writing using a scale ranging from 1 to 5 that is anchored as follows: 1 = not yet; 2 = beginning; 3 = in progress; 4 = intermediate, and 5 = proficient. All items of the scale were used in the scale. The internal consistency (α) for the Language and Literacy scale was .91.

2.4. Analysis

This study involved a multi-level design in which multiple children (approximately 3.4 children) were nested within multiple pre-kindergarten classrooms (214 classrooms). Thus, teachers’ ratings of children’s adjustment to kindergarten included two sources of variance—variability in ratings for children who shared the same pre-kindergarten classrooms, and variability in mean ratings between pre-kindergarten classrooms (HLM, Raudenbush & Bryk, 2002), and the Proc Mixed command in SAS was used to first estimate these two sources of variance (Singer, 1998). Two-level baseline models were analyzed for each of the three outcome variables in which no predictor variables were included, which is equivalent to a One-Way ANOVA that assesses the extent to which there are mean differences in ratings between pre-kindergarten classes. In the first level of the two-level model, a teacher’s rating for a child is a function of the mean rating for all children who attended that classroom and the error term associated with this estimated mean, which has an associated variance. In the second level model, teachers’ mean ratings of children who attended the same pre-kindergarten classroom is a function of the overall mean rating across all classrooms and a second source of error in ratings related to mean differences in ratings between classrooms, which has an associated variance. Thus, the following estimates result from the unconditional model: mean rating across all children, the error term associated within classroom variability, and the error term associated with between classroom variability.

Following the partitioning of variance into two sources – within classroom and between classroom – child and family characteristics were added to the first level equation to account for variance in ratings among children who shared the same pre-kindergarten classes. As a result, the mean rating of children who attended the same classroom was adjusted for the characteristics of children in each class. In the second level model, mean ratings after adjusting for characteristics of children who share the same pre-kindergarten class are a function of the grand mean, variability in ratings across children who attended different pre-kindergarten classes and characteristics of these classrooms. The following characteristics of pre-kindergarten classrooms were entered as control variables, including the quality of the emotional and instructional climates, and whether the program was Head Start and located in a school.

Table 2
Transition activities by classroom characteristics ($n = 214$)

	Total sample	Percentage of total	Mean	S.D.	Range
Total in sample	214				
Transition activities during PK					
PK children visit KG class		74			
PK teacher visits KG class		78			
KG teacher visits PK class		42			
Spring orientation for PK children		62			
Spring orientation for PK parents		65			
School-wide activity for PK children		55			
Individual meetings with parents		68			
Written records shared with KG		79			
Contact with KG teacher about curriculum or specific children					
9-item transition activities composite			5.95	2.33	0–9
Activities children directly experienced			1.91	.99	0–3
Contact between teachers			2.66	1.24	0–4
Contacts between teachers and parents			1.33	.73	0–2

After controlling for child, family and program characteristics, three separate models examined the extent to which transition practices had main effects and moderated effects on children's adjustment to kindergarten. In the first model, the 9-item transition index was entered to examine the linear associations between the number of transition activities that pre-kindergarten teachers implemented and kindergarten teachers' perceptions of children's adjustment. The second model included each of the nine transition activities to examine the extent to which each individual activity was associated with kindergarten teachers' ratings of children at the beginning of kindergarten. The final model included the 9-item transition index, as well as two-way interactions between the transition index and children's race (Caucasian vs. African American, Latino, other), the transition index and child's maternal education level, and the transition index and children's economic status (less than vs. greater than 150% of poverty).¹

3. Results

Question 1: To what extent do pre-kindergarten teachers use various transition activities?

The frequency with which pre-kindergarten teachers implemented the nine transition practices is reported in Table 2 and correlations with program features are reported in Table 3. For the 9-item transition activities composite index, pre-kindergarten teachers reported implementing an average of 5.95 (S.D. = 2.3) activities, with a range of 0–9. The most frequently reported practice was pre-kindergarten teachers sharing written records about children's pre-kindergarten experiences with the elementary school (78%), and the least frequently reported practice was kindergarten teachers visiting pre-kindergarten classes (42%).

Question 2: Are pre-kindergarten teachers' transition activities associated with kindergarten teachers' perceptions of children's social-emotional and academic competencies at the start of kindergarten?

Model 1 included the following predictors—child gender, ethnicity, family poverty level, child's maternal education level, pre-kindergarten location, pre-kindergarten Head Start status, pre-kindergarten classroom quality, and state variables to serve as a control, and all subsequent models included these covariates entered first. Model 2 examined the

¹ An alternative set of analyses were run that included two characteristics of kindergarten teachers – level of education and years of teaching experience – that may influence teachers' judgments of children's adjustment to kindergarten. Teachers' years of experience were negatively associated with teachers' ratings, and level of education was not associated with teachers' ratings. However, the results of these alternative analyses did not change the magnitudes of the effects of pre-kindergarten transition practices on kindergarten teachers' ratings that are reported in the results. One reason for this is that pre-kindergarten transition practices predicted the between-classroom portion of the variability in kindergarten teachers' ratings specified by the multi-level models, and the kindergarten teacher characteristics explained the within-classroom portion of the variability because pre-kindergarten children did not attend the same kindergarten classrooms, and as a result, there was variability in kindergarten teacher characteristics for children who attended the same pre-kindergarten classroom.

Table 3
Correlations between pre-kindergarten transition practices and pre-kindergarten program characteristics ($n = 214$)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 PK children visit KG class	–													
2 PK teacher visits KG class	.63**	–												
3 KG teacher visits PK class	.21**	.09	–											
4 Spring orientation for PK children	.19**	.15*	.15*	–										
5 Spring orientation for PK parents	.01	.06	.16*	.62**	–									
6 School-wide activity for PK children	.23**	.20**	.25**	.26**	.18**	–								
7 Individual meetings with parents	.14*	.20**	.08	.15*	.19**	.19*	–							
8 Written records shared with KG	.34**	.24**	.24**	.16*	.12	.32**	.23**	–						
9 Contact with KG teacher about curriculum or specific children	.47**	.40**	.36**	.15*	.05	.39**	.21**	.51**	–					
10 Transition activity index	.61**	.56**	.51**	.57**	.48**	.60**	.47**	.60**	.69**	–				
11 PK located in elementary school	.33**	.27**	.28**	–.01	–.08	.24**	.04	.29**	.39**	.34**	–			
12 PK is a Head Start	.10	.17*	–.07	.16*	.17*	–.04	.15*	.13	.01	.15*	–.20**	–		
13 PK emotional quality	.11	.07	–.01	.07	.01	–.00	–.00	–.12	–.04	.02	.09	–.20**	–	
14 PK instructional quality	–.02	–.07	–.01	.00	–.09	.02	–.05	–.09	–.04	–.06	.09	–.21**	.36**	–

* $p \leq .05$.

** $p \leq .01$.

association between the 9-item composite transition activity index and kindergarten teachers' perceptions of children's social-emotional and academic competencies, after controlling for child, family, program and state variables. As indicated in Table 4, more transition activities implemented by pre-kindergarten teachers was positively associated with kindergarten teachers' perceptions of children's social competencies. In model 3, each of the individual transition activities were simultaneously included as predictors of kindergarten teachers' perceptions of children's social-emotional and academic competencies. One transition activity – contact between the pre-kindergarten and kindergarten teacher about specific children and/or curricula – was associated with kindergarten teachers' perceptions of positive social competence and less negative behavior problems.

To determine if this one transition activity was responsible for the main effect found in Model 2 for the 9-item transition activity composite, a follow-up analysis was conducted using an 8-item transition index that excluded the item measuring contact between pre-kindergarten and kindergarten teachers. The association between the 8-item transition index and kindergarten teachers' perceptions of children's social competence approached significance ($p = .06$), suggesting that there is a positive influence of greater numbers of transition activities that is independent of the influence of direct contact between pre-kindergarten and kindergarten teachers.

Question 3: Do pre-kindergarten teachers' use of transition practices moderate the associations between child risk factors (family poverty, race/ethnicity) and kindergarten teachers' perceptions of children's academic and social competencies?

As a final set of analyses, interactions between children's social and economic risk and pre-kindergarten teachers' use of transition practices were examined in Model 4. Results in Table 4 indicate that the associations between three social and economic risk factors (family poverty, race/ethnicity, child's low maternal education) and kindergarten teachers' perceptions of children's social-emotional and academic competencies were moderated by the number of transition activities implemented within pre-kindergarten classes. For example, significant interactions between children's family poverty status and transition practices were found, such that the positive influence of pre-kindergarten transition practices on kindergarten teachers' ratings of social competencies was stronger among children from poor families compared to children from non-poor families. Additionally, the number of transition activities implemented by pre-kindergarten teachers had a differential effect for Caucasian children and non-Caucasian children for teachers' ratings

Table 4

Unstandardized regression coefficients (S.E.) for pre-kindergarten transition activities as predictors of kindergarten teachers' ratings of children's social and academic skills

	Social competence	Problem behaviors	Language and Literacy Rating Scale
Model 1: control variables			
Child gender	-.40 (.06)**	.52 (.06)**	-.17 (.06)**
Child is Black	-.16 (.08)	.17 (.08)*	.08 (.09)
Child is Hispanic	-.13 (.10)	-.01 (.10)	-.22 (.12)
Child is other ethnicity	-.01 (.11)	-.03 (.11)	.12 (.12)
Child maternal education	.03 (.01)*	-.03 (.02)	.08 (.02)**
Child's family is poor	-.16 (.07)*	.15 (.07)*	-.11 (.08)
PK located in elementary school	.03 (.08)	-.06 (.08)	-.03 (.09)
PK is a Head Start	-.09 (.09)	-.01 (.09)	-.10 (.11)
PK emotional quality	.05 (.05)	-.09 (.05)*	-.06 (.05)
PK instructional quality	.02 (.04)	.01 (.04)	.08 (.05)
State			
Model 2: PK transition index			
Transition activity index (0–9)	.04 (.02)*	-.02 (.02)	.01 (.02)
Model 3: PK transition activities			
PK children visit KG class	-.07 (.10)	.01 (.10)	-.03 (.12)
PK teacher visits KG class	-.01 (.10)	.02 (.11)	-.07 (.13)
KG teacher visits PK class	-.04 (.07)	.01 (.07)	-.09 (.08)
Spring orientation for PK children	.13 (.08)	-.06 (.09)	.03 (.10)
Spring orientation for PK parents	-.11 (.09)	.04 (.09)	.05 (.11)
School-wide activity for PK children	.11 (.07)	-.05 (.07)	.12 (.09)
Individual meetings with parents	.06 (.07)	.06 (.08)	-.05 (.09)
Written records shared with KG	-.11 (.10)	.10 (.09)	.01 (.11)
Contact with KG teacher about curriculum or specific children	.27 (.09)**	-.22 (.09)*	.08 (.11)
Model 4: interactions			
Transition activity index × Black	.10 (.04)**	-.06 (.04)	.03 (.04)
Transition activity index × Hispanic	.05 (.03)	-.06 (.03)	.06 (.04)
Transition activity index × other	.07 (.04)	-.10 (.04)*	-.02 (.05)
Transition activity index × maternal Ed.	-.01 (.01)	.01 (.01)	-.02 (.01)**
Transition activity index × family is poor	.06 (.03)**	-.04 (.03)	.04 (.03)

Notes: Child gender, child ethnicity, mother's education of child, child's family in poverty, location of program, program is Head Start, emotional and instructional classroom quality and state are included as control variables in Models 2–4.

* $p \leq .05$.

** $p \leq .01$.

of social competence and behavior problems. Specifically, compared to Caucasian children, more transition practices had a stronger influence on kindergarten teachers' positive judgments of children's social competence for African-American children and on kindergarten teachers' less negative judgments of behavior problems for children with other race/ethnicity. Transition practices also moderated the association between maternal education and teachers' reports of children's academic skills. In particular, the positive influence of transition practices on kindergarten teachers' ratings of children's language and literacy skills was stronger for children whose mothers had lower levels of education.

For illustration purposes, Fig. 1 represents the family poverty-by-transition practices interaction for children's social competence. The number of transition practices teachers implemented was separated into low, medium and high groups, with 0–4 practices representing "low" practices, 5–7 representing "medium" practices, and 8–9 representing "high" practices. For children from families that were not poor, there was no difference in kindergarten teachers' ratings of social competence between children whose pre-kindergarten teachers utilized low transition activities ($M = 3.98$), medium transition practices ($M = 3.72$), and high transition practices ($M = 3.84$). For children from poor families, however, kindergarten teachers' perceptions of children's social competence was significantly lower when pre-kindergarten teachers used low transition activities ($M = 3.25$) compared to medium ($M = 3.46$) and high transition activities ($M = 3.66$).

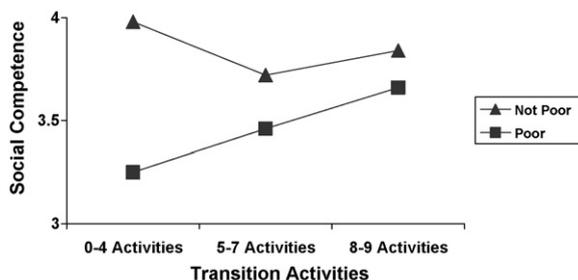


Fig. 1. Interaction between pre-kindergarten transition activities and child risk (poor) on kindergarten teachers' ratings of children's social competence.

Follow-up analyses were run to uncover the specific types of transition activities that were driving these moderated effects between the transition practice index on the association between family income and kindergarten teachers' ratings. First, we assigned transition activities into three categories that addressed different linkages that may promote children's readiness. One index comprised transition activities children directly experienced (pre-kindergarten children visit KG class, spring orientation for pre-kindergarten children, school-wide activity for pre-kindergarten children), another comprised activities that involved contact between teachers (pre-kindergarten teacher visits KG class, KG teacher visits pre-kindergarten class, written records shared with KG, contact with KG teacher about curriculum or specific children) and the last comprised activities between teachers and parents (spring orientation for pre-kindergarten parents, individual meetings between pre-kindergarten teachers and parents). Each of the three indices was tested for main effects and then interacted with children's family poverty status, and the children's experience index was a significant moderator of the relation between family poverty and children's social competence.

4. Discussion

Transition practices that enhance relational and informational linkages during children's shift from pre-kindergarten to kindergarten are one way to promote stability and support that may facilitate early school adjustment (Kagan & Neuman, 1998). Although such practices receive positive reviews from both parents and teachers (Pianta & Kraft-Sayre, 2003), there is a need to empirically address whether use of transition practices is associated with children's social, behavioral and academic adjustment to kindergarten. In this study, pre-kindergarten teachers reported that they used a wide range of transition activities to support children's successful adjustment to kindergarten, and the number of transition activities that pre-kindergarten teachers implemented was positively associated with kindergarten teachers' perceptions of children's adjustment, particularly among children who experienced social and economic risks. The types of transition practices that had significantly stronger benefits for children who experience social and economic risks were those that children directly experienced. After disaggregating the 9-item transition practices index, results further indicated that one practice in particular was consistently and positively associated with kindergarten teachers' perceptions of children's skills—contact between pre-kindergarten and kindergarten teachers about curriculum or a specific child. These findings provide some of the first evidence in the school readiness literature that pre-kindergarten teachers' use of transition practices are associated with their students' adjustment during early kindergarten, which is of particular importance given that future academic and behavioral outcomes are associated with teachers' perceptions of children's competencies (Badian, 1976; Hamre & Pianta, 2001; Hoge & Butcher, 1984; Kenoyer, 1982; Quay & Steele, 1998). The following sections discuss the implications of these findings for teachers and schools in terms of facilitating children's adjustment to kindergarten.

4.1. Pre-kindergarten teachers' use of transition practices

Recent literature about the transition to kindergarten calls for transition practices that are more individualized, initiated earlier, and focused on both vertical (e.g., pre-kindergarten classroom-kindergarten classroom) and horizontal (e.g., pre-kindergarten teacher-parents) connections (Kagan & Neuman, 1998; Pianta & Kraft-Sayre, 2003). Pre-kindergarten teachers in the current study reported using a multitude of practices in their efforts to prepare children for successful entrance into kindergarten. Similar to studies of kindergarten teacher transition practices (Pianta et al.,

1999), many of these strategies utilized a static “one-size-fits-all” approach, such as providing a spring orientation for parents. Personalized transition practices, however, were also well represented, as were practices that emphasized linkages across systems and attention to the transition in advance. For example, nearly three-quarters of the pre-kindergarten teachers reported that they took their class to visit a kindergarten, showing early awareness and sensitivity to the upcoming transition. Additionally, pre-kindergarten teachers individualized children’s transitions horizontally by meeting with parents to discuss kindergarten or supported connections vertically by contacting kindergarten teachers about curriculum issues or specific children. Such findings are promising in that they demonstrate attempts in a nationally representative group of early education classrooms to connect children’s support systems during the transition to school, moving beyond a skills-only, child-centered perspective of school readiness.

On the other hand, visits from kindergarten teachers to pre-kindergarten classrooms were the least reported transition practice (42%). This finding is similar to previous work showing somewhat limited outreach by kindergarten teachers to parents and pre-kindergarten programs that would require transition activities outside of the classroom and school (Pianta et al., 1999; Schulting et al., 2005). Elementary schools’ efforts to reach back to pre-kindergarten counterparts continue to be an overlooked and underutilized practice, and likely will remain so unless school district policies are changed to respect and facilitate such outreach as a vital element of children’s educational experience.

4.2. *Transition practices and children’s adjustment to kindergarten*

Although developmental theory identifies transition practices as critical to supporting children’s negotiation of the move from pre-kindergarten to kindergarten (Kagan, 1991; Kagan & Neuman, 1998; Kraft-Sayre & Pianta, 2001), few studies have examined the association between the use of such practices and children’s adjustment to kindergarten. In the current study, when pre-kindergarten transition practices were examined using a summative approach (i.e., creating a nine-item transition index), the number of transition practices was positively linked to kindergarten teachers’ perceptions of children’s social competence. Importantly, these associations between transition activities and perceptions of children’s socio-emotional adjustment are seen after controlling for child, family and pre-kindergarten program characteristics (e.g., observed emotional and instructional support). Thus, transition practices seem to have a unique positive association with kindergarten teachers’ perceptions of children’s socio-emotional adjustment, independent of the type and quality of the program children attend. These results parallel findings reported by Schulting et al. (2005) that kindergarten teacher transition practices at the beginning of the year are related to children’s achievement at the end of kindergarten, suggesting that such practices are helpful regardless of whether they are initiated by pre-kindergarten or kindergarten teachers.

Transition activities were also disaggregated to discern whether certain practices, or sets of practices, had more robust associations with children’s kindergarten adjustment than others. The individual transition activity of a pre-kindergarten teacher connecting with a kindergarten teacher about curriculum issues and/or specific children had the strongest and most consistent associations with children’s adjustment as perceived by kindergarten teachers. The pre-kindergarten teacher’s effort to connect vertically and improve continuity between settings, either for a particular child or about curriculum, provides increased opportunities to share relevant developmental or systemic information. Although this item lacks specificity given that it includes contact between pre-kindergarten and kindergarten classrooms that could either be focused on vertical alignment of curricula or individualized information-sharing about particular children, either case fits within a developmental/ecological approach to transitions which emphasizes connections made between the two educational systems (Rimm-Kaufman & Pianta, 2000). The apparent value of the linkages that build continuity between settings underscores the National Education Goal Panel’s (1995) emphasis on relationships for successful transitions, identifying them as useful tools to improve connections between home, pre-kindergarten and elementary school, resulting in enhanced competence for all children. Future empirical work would benefit from incorporating more specific questions about what is being communicated between settings in order to better understand what is most useful in enhancing alignment.

Of note is that the pre-kindergarten transition practices were associated with beginning of the year kindergarten teachers’ perceptions of children’s social and behavioral competencies (not academic), and that Schulting et al. (2005) found kindergarten transition practices linked to end of the kindergarten year increases in academic achievement. Attention to the mechanisms through which transition practices are expected to impact children’s adjustment provides a clear developmental explanation for the different but connected results. The timing and intent of the pre-kindergarten transition activities explored here were designed to increase familiarity with and comfort the days leading up to

kindergarten and through the first weeks of school. As noted previously, children who experienced these activities received higher ratings of social and emotional competence at the beginning of the year than children whose teachers did not use as many transition practices. As could be the case in [Schulting et al.'s study \(2005\)](#), it is more likely that transition practices facilitate quicker adjustment to kindergarten, which then allows children to take better advantage of learning opportunities in the classroom so that by the end of the year they are doing better academically than their peers who did not experience the benefits of transition practices. If teachers and schools are interested in having children actually enter kindergarten with advanced academic skills, then broader issues of vertical curriculum alignment and continuity likely need to be addressed.

4.3. *Transition practices as a moderator of risk*

Although all children appear to benefit from pre-kindergarten teachers' use of transition practices, children at-risk for early adjustment problems in elementary school may especially benefit from transition practices that create a stable, well-connected experience from pre-kindergarten to kindergarten. In examining interactions between the transition practices index and different types of demographic risk, positive effects were noted in specific competencies with regard to ethnicity and lower maternal education and children from families in poverty. More specifically, pre-kindergarten teachers' use of activities that directly involve children was more positively associated with kindergarten teachers' ratings of children's social competence and more negatively related to ratings of behavior problems for economically disadvantaged children than their more advantaged peers. Interestingly, these findings replicate what [Schulting et al. \(2005\)](#) found when examining kindergarten teacher transition practices and are congruent with a growing body of literature that shows children at-risk for difficulty during early schooling benefit most from supportive pre-kindergarten experiences ([Hamre & Pianta, 2001](#); [Reynolds, 2000](#); [Reynolds et al., 2001](#)). Overall, results from this study suggest that transition planning initiated by pre-kindergarten teachers is a potentially supportive intervention – rather than an afterthought – towards promoting all children's competence at the start of kindergarten. And yet, particular attention should be paid to children at greatest risk for adjustment problems during the transition, because they are likely to benefit the most.

4.4. *Limitations and future directions*

Several important limitations from this study need to be considered. First, transition practices were assessed at a classroom level and *not* for individual children, resulting in a lack of specificity when examining impact at the child level. For example, a teacher may report that she shared written records with kindergarten teachers, but this may not have been true for some of the four randomly selected children in her classroom. Similarly, measurement of transition practices was limited to report of intent rather than actually doing the practice. This is in part due to when the data were collected (spring), which was prior to when practices would be implemented. Further, practices were not mutually exclusive and have some overlap, potentially contributing to higher reports of practices than seen in some other studies. Even with these limitations, however, the transition activity composite indices each have a normal distribution characterized by wide variability (as indicated by the standard deviations and ranges) in the number of activities implemented in each classroom; we would expect socially desirable responses to be more skewed.

Also, detection of effects around transition practices is small. When interpreting relatively small effects, though, it is important to consider that small differences in children's competencies could have a proportionately greater impact on the population over time. This is particularly true among young children, for whom small increases in competencies early in children's academic careers may provide an early boost in their patterns of development that result in improvements in children's long-term academic trajectories ([Hamre & Pianta, 2001](#)). Also important to consider here is that the findings are actually similar in magnitude to those found in the [Schulting et al. \(2005\)](#) study (e.g. kindergarten academic achievement went up .03 S.D. for each school level transition practice). Both this study and the [Schulting et al. \(2005\)](#) study explored a very narrow examination of transition practices—either pre-kindergarten only or kindergarten only. Since children have both these experiences, considering the effects of transition practices in combination may result in larger effects.

Both a limitation and strength of this study is that we considered transition practices solely from the perspective of pre-kindergarten teachers. Though this approach provides the only published evidence of pre-kindergarten teacher

transition practices being associated with children's kindergarten competence, it also results in an incomplete picture of what supports and linkages are available (or not) during the pre-kindergarten to kindergarten transition. Future research should explore the types of transition activities provided by parents, community members, kindergarten teachers, and elementary schools, as well as their unique and synergistic influences on children's adjustment to kindergarten. Another important step is to further "unpack" the pre-kindergarten transition practices to better understand what components are the mediating mechanisms that support children's adjustment to kindergarten. For example, the current transition practice items lack specification about intensity or duration, so that two teachers could check "yes" to having held conferences with parents even though one does it twice a month with all families and the other does it once a year with half the families. In addition, exploration of the content and tenor of what is communicated between teachers, parents, and children during these transition activities would contribute to a more in-depth understanding of the particular features of these interactions that create support for children's adjustment.

The relationship between pre-kindergarten transition practices and kindergarten teachers' perceptions of child's adjustment established in this study is correlational in nature. Clearly this study is only a beginning point in examining positive child outcomes related to transition activities; there is the need for quasi-experimental and randomized control intervention trials to establish that transition practices are a causal mechanism in maximizing student adjustment during kindergarten. Also, further work needs to explore empirically if there is some threshold of critical transition elements needed to benefit children.

Additionally, there is room for further inquiry into how pre-kindergarten program policies may explain variance in the number and types of transition practices that pre-kindergarten teachers report using. For example, Vecchiotti (2003) found that pre-kindergarten teachers located in elementary schools were more likely to discuss their children with kindergarten teachers, possibly due to the close physical proximity. This connection between pre-kindergarten and elementary school classrooms, even if only occurring due to increased convenience, may serve as an untapped resource that affords increased opportunities for alignment of relationships, experiences and curriculum across the pre-kindergarten to kindergarten transition. Other policies within pre-kindergarten centers and school districts could serve as facilitators or barriers to the occurrence of transition practices, such as principals and center directors providing scheduled time and compensation for teachers to make transition activities happen, and are another target for future research on the transition to kindergarten.

4.5. Conclusion

In a recent policy statement, Bogard and Takanishi (2005) reflected on the often disconnected worlds of pre-kindergarten and elementary schools and proposed better alignment of learning opportunities for children 3–8. Many states are currently attempting to work collaboratively across regulating agencies on early learning guidelines that systematically align expectations of children's developmental along a continuum in a range of domains. Yet, a recent review of state-level early education standards indicates considerable variability even within the early childhood field in what is considered to be most important to learn during these early years (Scott-Little, Kagan, & Frelow, 2006). Findings from this study identify potential benefits from a more formalized and systematic approach to creating and sustaining transition support plans that may reflect such alignment. Children, especially those from poor families, appear better adjusted to kindergarten when exposed to better-connected support systems. By increasing intentionality in activities that we know contribute to children's adjustment (Pianta & Cox, 1999), transition practices may serve as a prevention strategy for future school problems. Investments in transition practices that build coherence across early childhood settings through vertical and horizontal linkages (Brown & Ing, 2003; Kagan & Neuman, 1998) show promise as a means of supporting children's adjustment during early schooling.

Acknowledgements

The authors gratefully acknowledge the U.S. Department of Education for its support of the Multi-State Study of Pre-Kindergarten and the first author as a Fellow in the University of Virginia Interdisciplinary Doctoral Training Program in Education Sciences. However, the contents do not necessarily represent the positions or policies of the funding agency, and endorsement should not be assumed. The authors are grateful for the help of the many children, parents, teachers, administrators, and field staff who participated in these studies.

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