Social-emotional Classroom Climate in Child Care, Child-Teacher Relationships and Children's Second Grade Peer Relations

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Abstract

We used a five-year longitudinal study of children's teacher-child relationships and social-emotional competence to examine the relative contributions of preschool social-emotional climate and early individual child-teacher relationships and behavior problems in predicting second grade social competence with peers. Three hundred and seven children (152 girls) had complete second grade data on peer social competence. We used the Peer Play Scale to measure the climate of peer social competence in preschool classrooms. We used the Classroom Behavior Inventory to measure behavior problems and the Student-Teacher Relationship Scale to measure childteacher relationship quality at both the classroom and individual level. Children's second grade social competence with peers could be predicted by preschool classroom social-emotional climate, four-year-old behavior problems and child-teacher relationship quality, and contemporary child-teacher relationship quality. The particular pattern of these predictors differed by aspect of social competence with peers.

Keywords: Classroom climate; child-teacher relationships; peer relationships

The quality of children's early relationships with their teachers in child care is emerging as an important predictor of children's social relations with peers as older children (Howes, Matheson, & Hamilton, 1994; Howes & Tonyan, in press). Much of the work on child-teacher relationships is nested within an attachment theory perspective (Howes, 1999; Pianta, 1998). That is, children are assumed to use their teacher-child relationships to organize their school activities. When children have warm or secure child-teacher relationships they can use their teachers as resources for other social relationships including their peer relationships. In this work we broaden the attachment theoretical perspective to include the social context of the classroom (Boyce, Frank, Jenson, Kessler, Nelson, Steinberg, and the Mac Arthur Network on Psychopathology and Development, 1998; Howes, in press; Pianta, 1998). According to this perspective, individual child-teacher relationships, and teacher perceptions of individual children's behavior problems are constructed within the context of the classroom social-emotional climate.

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192 Carollee Howes

We define classroom social-emotional climate as consisting of the level of aggression and other behavior problems in the group of children, the nature of child-teacher relationships, and the frequency and complexity of play with peers. Using this notion of classroom climate we can describe classrooms on a continuum from positive, prosocial environments characterized by close adult-child relationships, intricate pretend play scenarios and little disruptive behavior to angry, hostile environments characterized by conflictual child-teacher-relationships, angry disruptive children and little constructive peer play. In this analysis we explored the relative contributions of early classroom social emotional climate and individual relationships and behaviors to social competence with peers five years later.

The notion of classroom social-emotional climate is relatively new and previously limited to studies of behavior problems, particularly aggression. Studies of school age children suggest that the level of aggressive, disruptive behavior of individual children is influenced by the aggression and disruptive level of the group (Battistich, Solomon, Kim, & Watson, 1995; Dishion, Spracklen, Andrews, & Patterson, 1996). In one recent study boys rated as highly aggressive in first grade and enrolled in first grade classrooms with other highly aggressive children were more likely than other boys to be rated as highly aggressive in sixth grade (Kellam, Ling, Merisca, Brown, & Ialongo, 1998). Children with similar individual levels of aggression in first grade, but enrolled in classrooms with lower levels of aggression were less aggressive as sixth graders than the first group of boys.

When teachers rate a high proportion of the children in their classroom as problematic and challenging we expect that the child-teacher interaction tone of the classroom also is negative. Studies of family interaction when children are perceived as high in behavior problems suggest that children's aggressive and disruptive behavior is associated with adult irritable and coercive behaviors (Patterson, Reid, & Dishion, 1992). When the predominant child-teacher interaction pattern is angry and insensitive, children and teachers construct relationships that are conflictual as opposed to close in relationship quality (Birch & Ladd, 1997; Howes & Smith, 1995; Pianta, Steinberg, & Rollins, 1995). However, as both teachers and children contribute to the affective quality of child-teacher relationships, we have documented that some teachers can work with children with identified behavior problems to construct predominantly positive child-teacher relationships (Howes & Ritchie, 1998). Therefore, we examined the child-teacher relationship climate of classrooms as well as the behavior problem climate. Another important feature of the social-emotional climate of the classroom concerns peer interaction. Our observations of preschool classrooms suggest that these classrooms vary greatly in the overall complexity of peer interaction (Howes & Matheson, 1992). In some classrooms children engage in complex and sustained social pretend play games, while in others peer interaction primarily consists of parallel activities on materials. Classrooms that emphasize basic skills and classrooms in which adults ignore peer play often are associated with low levels of complexity of peer play (Howes & Matheson, 1992).

Children become competent with peers when they engage in increasingly complex play sequences with them (Howes & Matheson, 1992; Rubin, Chen, McDougall, Bowker, & McKinnon, 1995). In one longitudinal study children's behaviors with peers as preschoolers and toddlers in child care predicted social competence with peers as third graders. (Howes & Phillipsen, 1998). While individual children can withdraw from peers in a socially interactive classroom, and thus miss opportunities to construct increasingly complex peer play, all of the children in a classroom with a climate that is not conducive to complex peer play may lose opportunities to become socially competent with peers.

We were concerned with two individual characteristics of children: their childteacher relationship quality and their early teacher ratings of behavior problems. Our perspective on teacher-child relationships is drawn from attachment theory (Birch & Ladd, 1997; Pianta, 1998). Attachment theory assumes that children use their relationships with significant adults to organize their experiences. If children feel emotionally secure with the teacher they can use her as a secure base and a resource for exploring the learning opportunities of the classroom. Each child-teacher relationship is constructed independently of the child's prior adult-child relationships (including child-mother attachment security) and of the other child-teacher relationships within the classroom (Howes, 1999). Concurrent and longitudinal studies of child-teacher relationships from preschool-age child care to elementary school suggest that children with close child-teacher relationships also are socially competent with peers (Howes, 1999; Howes & Tonyan, in press).

Previous analyses based on children in the current sample suggest that teacher ratings of children's behavior problems as four-year-olds influence the quality of child-teacher relationships through kindergarten age (Howes, Phillipsen, & Peisner-Feinberg, in press). Children perceived by teachers, as difficult four-year-olds tend to construct child-teacher relationships high in conflict. Conflictual child-teacher relationship tend to persist over time so that by kindergarten children who were problematic four-year-olds tend to be less able than children with other relationship histories to use the child-teacher relationship to master the academic content of school.

Our outcome measure, second grade social competence with peers, is significant because by mid-elementary school individual differences in children's social competence with peers appear to stabilize and predict future adaptive or non-adaptive behavior in adolescence (Asher, Parkhurst, Hymel, & Williams, 1990; Parker & Asher, 1987; Rubin et al., 1995). We selected three constructs to assess social competence with peers in second grade: aggression and disruption; social withdrawal; and prosocial behavior. Social competent behavior with peers is generally considered getting along well with peers (Asher & Coie, 1990; Dodge, 1986; Howes, 1988; Rubin & Asendorf, 1993). Prosocial behavior, helping, sharing, and enhancing relationships with peers, and complex play are indicators of social competence (Hart, McGee, & Hernandez, 1993; Howes, 1988; Ladd & Price, 1993). Aggression and social withdrawal are maladaptive behaviors, indicating the absence of social competence (Ladd & Price, 1993; Rubin et al., 1995). Aggressive and disruptive behaviors with peers are salient and worrisome to parents and teachers as they create discord within families and school settings. Preschool and middle-childhood children who physically aggress against peers tend to be disliked and rejected by peers (Coie, 1990; Hart et al., 1993).

In summary, by combining two theoretical perspectives, attachment theory and attention to the social context of the classroom, we predict that for preschool children enrolled in child care centers both the social-emotional climate of the classroom and the quality of the children's relationship with their teachers will contribute to children's social competence with peers as second graders.

Method

Participants

The 793 children (397 girls) and their teachers who participated in this analysis in the first year of the longitudinal study were the Cost Quality and Outcome Study (CQO) child participants. Three hundred and seven children (152 girls) had complete second grade data on peer social competence. The mean age of the children at the first data collection year was 51.6 months (SD = 4.32) and in the fifth year (second grade) 96.4 months (SD = 4.11). Approximately 79% of the children in the second grade sample were white, 8% were African-American, 6% Latino, 5% Asian-American and the remainder of mixed racial background. The education level of the mothers of the children averaged some college (M = 14.76 years; SD = 2.29; range 10–20).

There was planned attrition in the CQO study. Only children who participated in the study in year one and who stayed in the same child care center for the second year of data collection were invited to remain in the sample. These children were followed into kindergarten. There were no differences in first year teacher-child relationships in the children with three full years of data and the children initially in the sample. Children in the first year of the study were somewhat (but not significantly) more likely to have mothers with lower levels of maternal education than children in the longitudinal sample.

The CQO study first identified four states representative of differential child care regulations—California, Colorado, Connecticut, and North Carolina. In each state data were collected on a stratified random sample of 100 licensed full day, full year child care centers. Within each randomly selected child care program, two classrooms including at least one serving preschoolers were randomly selected. Children initially were included in the sample if (1) they were of an age to enter kindergarten in the fall of 1994; (2) if they had been enrolled in the target classroom during the classroom observation data collection phase; (3) if they expected to attend the same center the following year; and (4) if the primary language spoken in the child's home was English. All eligible children in the classroom were invited to participate in the study, up to 12 children could be randomly selected from those with parent permission to participate.

In year one of the study the number of classrooms observed was 178 and the number of children enrolled in a classroom varied from 1 to 12. In year three, kindergarten, the number of participant children enrolled in the same classroom varied from 1 to 3, with only 20% of the 247 classrooms enrolling more than one child. In year five, second grade, the number of children enrolled in the same classroom varied from 1 to 2, with only 10% of the 276 classrooms enrolling more than one child.

Procedures

Three hours of classroom observation were conducted in each classroom in the first year of the study. During the observation one observer completed the Peer Play Scale (Howes & Matheson, 1992). In order to complete the Peer Play Scale two children, one girl and one boy, were randomly selected as target children for this purpose. The girl and boy who were present during the observation with birth dates closest to January 1 were observed to assess the level of peer interaction they experienced during the observation period. No other information was collected on these children.

Preschool teachers completed the Classroom Behavior Inventory (CBI; Schafer, Edgerton, & Aaronson, 1978). Preschool and second grade teachers completed the Student Teacher Relationship Scale (STR; Pianta & Steinberg, 1992) and the Cassidy and Asher (1992) Teacher Assessment of Social Behavior Questionnaire for each child. Parents completed a demographic form that included listing the highest level of maternal education.

Measures

First year preschool social—emotional climate. The social emotional climate measures were created by averaging within a classroom individual children's scores on selected measures (Peer Play Scale, CBI, STR). In year one, all children enrolled in a single classroom received the same preschool social emotional climate score. Children who had been together in the same preschool classroom were never enrolled in the same classroom by kindergarten or second grade. Therefore, by kindergarten and second grade preschool social emotional climate scores of children within the same classroom were independent of each other.

Peer Play Scale. The Peer Play Scale (Howes & Matheson, 1992) is used during focused observations of five minutes each. Each target child was observed for three focused observations over the course of a three-hour observation. The data were averaged to provide peer play scale scores for the classroom. The Peer Play Scale has eight scale points. The first four scale points measure solitary play and low level peer play: onlooker behavior, proximity to peer without interaction and parallel play when the target child and a peer are within three feet of each other and engage in the same activity but do not acknowledge each other. The other scale points capture interactive peer play: parallel play with eye contact; simple social play; complementary and reciprocal play; and two levels of pretend play-cooperative social pretend (the target child and another child enacting complementary roles) and complex social pretend play (the target child and a peer demonstrating both social pretend play and meta-communication about the play). Cooperative and complex pretend play are considered competent forms of preschool play with peers (Howes & Matheson, 1992). The peer play scale points were mutually exclusive and the highest possible observed scale point was recorded in each interval. Inter-observer reliability on Peer Play Scale was originally established during a week long training session for observers from all sites and was re-established through both in-state and betweenstate tests at the mid-point of data collection. Interobserver Kappa reliabilities for the Peer play Scale averaged .93 (range = .86 to .95). Since scores on the Peer Play Scale are confounded with age (Howes & Matheson, 1992), all individual scores were adjusted for child age. For the purposes of this analysis we created two scores to represent classroom peer interaction climate: the average percent time target children spent in interactive peer play and the percent of interactive play spent in pretend play.

Children's behavior problems. The children's preschool teacher completed the Classroom Behavior Inventory (CBI; Schafer, Edgerton, & Aaronson, 1978). The CBI measures teacher's perceptions of children's social adjustment. Forty-two items are rated for how typical they are of the child using a 5-point scale (not at all, very little, somewhat, much, and very much like the child). Following prior work by Schafer et al., 1978, we derived a problem behavior score (α (year 1) = .87; (distractibility, hostility, and consideration (negative)) for each child. A year one classroom behavior

problem climate measure was created by averaging behavior problem scores for all participant children in year one (n = 793).

Teacher-child relationship quality. Teacher perceptions of their relationship with the child were assessed with the Pianta Student Teacher Relationship Scale (STRS, Pianta & Steinberg, 1992). The 30-item, five-point scale yields Closeness and Conflictual relationship quality scores: closeness (α (year 1) = .82; α (year 5) = .85); Conflictual (α (year 1) = .90; α (year 5) = .91). A year one teacher relationship climate measure was created by averaging closeness scores for all participant children in the classroom in year one (n = 793).

Second grade behavior with peers. Measures of social competence with peers were derived from teacher reports using the Cassidy and Asher (1992) Teacher Assessment of Social behavior Questionnaire. The teacher is asked to rate on five-point scales the social behavior of the target child in relation to the other children in her class (e.g., this child is mean to other children). Cassidy and Asher derive four subscales. The subscales were prosocial ($\propto = .83$; e.g., This child is nice and friendly to other children, This child is cooperative with other children, This child is helpful to other children), social withdrawal ($\propto = .89$; e.g., This child is shy with other children, This child seems afraid of other children, This child does not play with other children), disruptive ($\propto = .82$; e.g., This child does not play with other child acts up in class, This child interrupts other children); and aggressive ($\propto = .86$; e.g., This child is mean to other children, This child starts fights, This child hurts other children).

Results

Second Grade Child-Teacher Relationships and Behavior with Peers

Descriptive statistics associated with teacher perceptions of children's social competence in second grade are in Table 1. Although there was considerable variability within ratings, teachers generally perceived the children to be low in aggressive and disruptive behaviors with peers and in conflictual child-teacher relationships and high in prosocial behaviors with peers and in close child-teacher relationships. We compared differences in measures of children's social competence using multivariate analysis of covariance with race and gender as grouping factors and maternal edu-

	Mean	SD	Range
Competence with peers			
Aggression	1.51	.85	1 - 4.67
Disruptive	1.91	1.09	1 - 5.00
Social withdrawal	1.50	.67	1-4.33
Prosocial	3.93	.92	1 - 5
Relationships with teacher			
Closeness	3.98	.61	2-5
Conflict	1.54	.66	1 - 4.18

Table 1. Social Competence as Second Graders

	Social con Aggress	mpetence with Disruptive	n peers Social		Relationship with teacher		
	Aggress	Disruptive	withdrawal	Prosocial	Closeness	Conflictual	
Social competence							
with peers	1.0	<		C A ala ala ala	20444	c d ale ale ale	
Aggression	1.0	.67***	.03	64***	30***	.64***	
Disruptive			.01	60***	28***	.69***	
Social withdrawal				31***	36***	.16**	
Prosocial					.49***	67***	
Relationship with							
teacher							
Closeness						45***	

Table 2. Intercorrelations Among Second Grade Measures of Social Competence

Note: Numbers in tables are Pearson Product Moment Correlations; $**p \le .01$; $***p \le .001$.

	Mean	SD	Range
Mean Behavior Problems Mean Peer Behavior	2.41	.45	1.29–3.68
Percent time with peers	.77	.14	.21-1.06
Percent time in pretend play Mean Child-Teacher closeness	.05 4.22	.09 .33	0350 2.77-4.91

Table 3. Preschool Classroom Social-Emotional Climate

cation as a covariate. There were no significant main effects or interactions, although maternal education and gender both approached significance ($p \le .10$).

Intercorrelations among these measures of social competence are in Table 2. Children rated high in peer aggression, disruption, and social withdrawal also were rated high in child-teacher relationship conflict and low in child-teacher relationship closeness. Children rated high in prosocial behavior with peers also were rated high in childteacher relationship closeness and low in child-teacher relationship conflict.

Preschool Social-emotional Classroom Climate

Descriptive statistics (peer behaviors are adjusted for age) associated with preschool classroom social and emotional climate are in Table 3. Classrooms tend to be relatively high in percent time spent with peers and child-teacher closeness, and relatively low in percent time in pretend play. The mean level of behavior problems was somewhat high in relation to teacher ratings of second grade aggressive and disruptive behaviors (see Table 1). Intercorrelations among measures of classroom social-emotional climate are in Table 4. Classrooms with higher levels of behavior problems had lower levels of child-teacher closeness.

	Mean Peer Behavior Time	Pretend	Mean child-teacher closeness
Mean Behavior Problems Mean Peer Behavior	01	11*	30***
Percent time Percent in pretend play		.13*	.11* .06

 Table 4. Intercorrelations Among Measures of Preschool Classroom Social-Emotional Climate

Note: Numbers in tables are Pearson Product Moment Correlations; $*p \le .05$; $**p \le .01$; $***p \le .001$.

Prediction of Second Grade Behavior with Peers

We used hierarchical multiple regression to predict second grade social competence with peers. We entered children's demographic information into the model as control variables. We entered preschool classroom social-emotional climate variables as a second step in the analysis. We then entered individual four-year old measures of behavior problems and child-teacher relationship quality in order to test classroom effects against individual effects. The final step in the analysis consisted of contemporary (second grade) ratings of children's child-teacher relationship quality. This regression analysis is in Table 5. The β eta values and corresponding T tests in the table are from the final model. The partial correlations are associated with the hierarchical step in the model.

Children's second grade social competence with peers ratings could be predicted by preschool classroom social-emotional climate, four-year-old behavior problems and child-teacher relationship quality, and contemporary child-teacher relationship quality. Aggression ratings were best predicted by a preschool classroom high in behavior problems and low in child-teacher closeness, by the child's poor child-teacher closeness as a four-year-old, and by contemporary child-teacher relationship conflict. Inspection of the partial correlations suggests that individual behavior problems and high child-teacher conflict as a four-year-old, and low child-teacher closeness as a second grader also contributed to the prediction of aggression.

Disruption ratings could best be predicted by being a boy, preschool classroom climates high in behavior problems and low in child-teacher closeness, by the child's poor child-teacher closeness as a four-year-old, and by high levels of child-teacher conflict as a second grader. Again inspection of the partial correlations suggests that individual behavior problems and high child-teacher conflict as a four-year-old and low child-teacher closeness as a second grader also contributed to the prediction of disruption.

Prosocial ratings could best be predicted by being a girl, preschool classroom climates high in time spent interacting with peers, by the child's low levels of behavior problems as a four-year-old, and by high levels of child-teacher closeness and low levels of child-teacher conflict as a second grader. Inspection of the partial correlations suggests that low child-teacher conflict and high child-teacher closeness as a four-year-old also contributed to the prediction of prosocial ratings.

	Second grade social competence with peers					
Outcome Predictor	Final R	Final R ²	$R^2\Delta$ for step	Final β	sr^2	t
Aggression	.68***	.47				
Demographics						
Mothers education				02	04	.53
Race				.04	.02	.82
Gender				.01	.01	.10
Preschool classroom			.06			
climate						
Behavior problem				.14	.13	2.40*
Child-teacher closeness				19	18	3.12**
Percent time with peers				08	07	1.62
Percent pretend				.05	.04	1.05
Preschool individual behavior			.16			
Behavior problems				.13	.38***	1.74
Child-teacher closeness				14	11	2.18*
Child-teacher conflict				.11	.35**	1.65
Second grade child-teacher relationships			.25			
Child-teacher closeness				05	26**	.95
Child-teacher conflict				.56	.56***	9.74***
Disruption	.74***	.54				
Demographics						
Mothers education				.05	.04	1.19
Race				.04	.03	.99
Gender				.15	.14*	3.28**

Table 5. Prediction of Second Grade Social Competence with Peers

Table 5.	(continued)
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	Second gra	Second grade social competence with peers				
Outcome Predictor	Final R	Final R ²	$R^2\Delta$ for step	Final β	sr^2	t
Preschool classroom climate			.05			
Behavior problem				.11	.07	2.15*
Child-teacher closeness				14	08	2.41*
Percent time with peers				01	01	.32
Percent pretend				05	03	1.08
Preschool individual behavior			.19			
Behavior problems				.30	.44***	4.311***
Child-teacher closeness				15	10	2.53**
Child-teacher conflict				.06	.30***	.99
Second grade child-teacher relationships			.27			
Child-teacher closeness				04	20***	.95
Child-teacher conflict				.63	.61***	11.68***
Prosocial	.74***	.55				
Demographics						
Mothers education				.01	.02	.14
Race				.01	.01	.12
Gender				11	09	2.45**
Preschool classroom climate			.03			
Behavior problem				05	05	.99
Child-teacher closeness				.10	.08	1.79
Percent time with peers				.10	.12*	2.41**
Percent pretend				.02	.07	.48

200

Carollee Howes

Preschool individual behavior			.14			
Behavior problems				15	38***	2.20*
Child-teacher closeness				.11	.15**	1.83
Child-teacher conflict				01	28***	.03
Second grade Child-teacher relationships			.37			
Child-teacher closeness				.28	.50***	5.65***
Child-teacher conflict				54	50***	10.64***
Social withdrawal	.41***	.17				
Demographics						
Mothers education				06	04	1.015
Race				06	05	.99
Gender				.02	.01	.77
Preschool classroom climate			.01			
Behavior problem				.17	.04	2.42**
Child-teacher closeness				.11	.04	1.44
Percent time with peers				03	06	.57
Percent pretend				01	04	.63
Preschool individual behavior			.03			
Behavior problems				26	04	2.74**
Child-teacher closeness				07	09	.82
Child-teacher conflict				.11	.05	1.33
Second grade Child-				.13		
teacher relationships						
Child-teacher closeness				36	36	5.40***
Child-teacher conflict				.07	.19**	1.01

* $p \le .05$; ** $p \le .01$; *** $p \le .001$.

202 Carollee Howes

Finally ratings of social withdrawal could best be predicted by a classroom climate high on behavior problems, low levels of individual behavior problems as a four-year old, and low levels of child-teacher closeness as a second grader. The partial correlations suggest that high levels of second grade child-teacher conflict also contributed to the prediction of social withdrawal.

Discussion

The analysis presented in this paper represents an integration of two theoretical perspectives: attachment theory as applied to teacher-child relationships (Howes, 1999; Pianta, 1998) and social contextual theory (Boyce et al., 1998). Both of these perspectives provided were needed to understand children's social competence with peers in second grade classrooms. The findings suggest that considerable individual variation in children's social competence with peers as second graders can be understood by examining both their individual experiences and behavioral characteristics as fouryear-olds in child care and the social and emotional climate of their child care classroom. These findings support the premise that individual relationships are constructed within particular contexts and that both the contributions of the individual children and their teachers and of the climate of the context are important predictors.

Child care classrooms have been described as a matrix of social relationships within which children first establish their own patterns of relationship quality (Howes, Matheson, & Hamilton, 1994). The influence of the qualitative nature of these relationships appears to persist over time and over the transition into more formal school. The particular pathways in which preschool social and emotional climates and individual behavior interactive are consistent with theoretically predictions and with the growing literature that suggests that contemporary and earlier positive child-teacher relationships are linked to social competence with peers (Howes, in press). Aggression and disruption as a second grader was best predicted by being a four-year-old boy whose teacher both perceived to have behavior problems and to have constructed a conflictual child-teacher relationship and who was enrolled in a classroom characterized by conflictual social interactions and relationships. This description is similar to descriptions of coercive, unpleasant family climates in which the provocative behaviors of all members of the group tend to escalate conflict (Dishion et al., 1996). In contrast, children who as second graders appear to have withdrawn from peers are best predicted by being a child with low levels of behavior problems as a four-year-old who was enrolled in a preschool with a conflictual social emotional climate. This description is similar to children who are observed to avoid social contact with peers and adults in child care (Howes, Matheson, & Hamilton, 1994). While problem behavior and teacher-child relationship preschool climate measures predicted second grade aggression, disruption, and social withdrawal, the peer social emotional climate predicted prosocial behavior. These findings are consistent with other studies which suggest that social competence with peers as opposed to maladaptive behaviors with peers appears to be best predicted by early opportunities to engage with peers (Howes & Phillipsen, 1998).

Second grade teachers completed both the ratings of behavior problems and childteacher relationship quality. Therefore, it is not surprising that second grade measures of behavior problems and relationships are intercorrelated. However, earlier ratings of behavior problems and child-teacher relationship quality are independent of secondgrade ratings of children, as they were completed by preschool teachers four years before. Likewise, although classroom social and emotional climate and individual ratings were not completely independent when the children were four-years-old, since the same teacher completed both ratings and more than one child per classroom was observed, by second grade there was only one child from each of these preschool classrooms per second grade classroom.

The findings from this study suggest that both child care teachers and elementary teachers may benefit from an increased awareness of the importance of the social and emotional climate of the classroom. Only nine percent of the variance (r = .30) in teacher child-teacher relationship quality was explained by problem behaviors, indicating that some teachers form positive relationships with troubled children. We suggest that teacher preparation programs may need to focus on this aspect of curriculum for young children as well as on more traditional material.

References

- Asher, S. R. & Coie, J. (1990). *Peer rejection in childhood*. Cambridge: Cambridge University Press.
- Asher, S. R., Parkhurst, J. T., Hymel, S., & Williams, G. (1990). Peer rejection and loneliness in childhood. In S. R. Asher & J. Coie (Eds.), *Peer rejection in childhood* (pp. 253–273). Cambridge: Cambridge University Press.
- Battistich, V., Solomon, D., Kim, D., & Watson, M. (1995). Schools as communities, poverty levels of student populations, and student's attitudes, motives, and performance: A multilevel analysis. *American Educational Research Journal*, 32, 627–658.
- Birch, S. & Ladd, G. (1997). The teacher-child relationship and children's early school adjustment. *Journal of School Psychology*, *35*, 61–79.
- Boyce, W. T., Frank, E., Jenson, P. S., Kessler, R. C., Nelson, C. A., Steinberg, L., and the Mac Arthur Network on Psychopathology and Development (1998). Social context in developmental psychopathology: Recommendations from the Mac Arthur Network on Psychopathology and Development. *Development and Psychopathology*, 10, 143–164.
- Cassidy, J. & Asher, S. (1992). Loneliness and peer relations in young children. *Child Development*, 63, 350–365.
- Dishion, T., Spracklen, K., Andrews, D., & Patterson, G. (1996). Deviancy training in male adolescent friendships. *Behavior Therapy*, 27, 370–390.
- Dodge, K. A. (1986). A social information processing model of social competence in children. In M. Permutter (Ed.), *Minnesota Symposium on Child Psychology* (pp. 77–125). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Hart, C. H., McGee, L., & Hernandez, S. (1993). Themes in the peer relations: Correspondence to playground interactions portrayed in children's literature. In C. H. Hart (Ed.), *Children on playgrounds: Research Perspectives and Applications* (pp. 371–415). Albany, NY: State University of New York Press.
- Howes, C. (1999). Attachment relationships in the context of multiple caregivers. In Cassidy, J. and Shaver, P. R. (Eds.). *Handbook of Attachment Theory and Research* (pp. 671–687). NY Guilford Publications.
- Howes, C. (In press). Social development, the family and attachment relationships of infants and toddlers: Research into practice. In Cryer, D. & Harms, T. (Eds.). *Infant and Toddler Care.*
- Howes, C. (1988). Peer interaction of young children. *Monographs of the Society for Research in Child Development*, 53 (1, serial no. 217).
- Howes, C. & Matheson, C. C. (1992). Sequences in the development of competent play with peers: Social and social pretend play. *Developmental Psychology*, 28, 961–974.
- Howes, C., Matheson, C. C., & Hamilton, C. E. (1994). Maternal, teacher and child care history correlates of children's relationships with peers. *Child Development*, 65, 264–272.
- Howes, C. & Phillipsen, L. C. (1998). Continuity in children's relations with peers. Social Development, 7, 340–369.
- Howes, C., Phillipsen, L., & Peisner-Feinberg, E. (in press). The consistency of teacher-child relationships between preschool and kindergarten. *Journal of School Psychology*.

- Howes, C. & Ritchie, S. (1998). Changes in child-teacher relationships in a therapeutic preschool program. *Early Education and Development*, *4*, 411–422.
- Howes, C. & Smith, E. (1995). Children and their child care teachers: Profiles of relationships. Social Development, 4, 44–61.
- Howes, C. & Tonyan, H. A. (in press). Links between adult and peer relations across four developmental periods. In K. A. Kerns, J. Contreras, & A. Neal-Barnett (Eds.). *Examining associations between parent-child and peer relationships*. NY: Greenwood.
- Kellam, S. G., Ling, X., Merisca, R., Brown, C. H., & Ialongo, N. (1998). The effect of the level of aggression in the first grade on the course and malleability of aggressive behavior into middle school. *Development and Psychopathology*, 10, 165–185.
- Ladd, G. W. & Price, J. M. (1993). Play styles of peer-accepted and peer-rejected children on the playground. In C. H. Hart (Ed.), *Children on playgrounds: Research perspectives and applications* (pp. 130–161). Albany, NY: State University of New York Press.
- Parker, J. G. & Asher, S. R. (1987). Peer acceptance and later personal adjustment: Are low-accepted children 'at risk'? *Psychological Bulletin*, 102, 357–389.
- Patterson, G., Reid, J., & Dishion, T. (1992). A social learning approach. Vol. IV. Antisocial Boys Eugene OR: Castalia.
- Pianta, R. Č., Steinberg, M., & Rollins, K. (1997). The first two years of school: Teacher-child relationships and deflections in children's school adjustment. *Development and Psy-chopathology*.
- Pianta, R. C. (1998). *Enhancing relationships between children and teachers*. Washington, DC: American Psychological Association.
- Rubin, K. H. & Asendorpf, J. (1993). *Social withdrawal, inhibition, and shyness in childhood*. Hillsdale, NJ: Erlbaum.
- Rubin, K. H., Chen, X., McDougall, P., Bowker, A., & McKinnon, J. (1995). The Waterloo Longitudinal Project: Predicting internalizing and externalizing problems in adolescence. *Development and Psychopathology*, 7, 751–764.
- Schafer, E. S., Edgerton, M., & Aaronson, M. (1978). Classroom Behavior Inventory. Unpublished rating scale. University of North Carolina, Chapel Hill.

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