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Is Parent-Teacher Cooperation in the First Year of School Associated with Children's Functioning? --Manuscript Draft--

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Corresponding Author:	Kyle DeMeo Cook Education Development Center UNITED STATES	
Corresponding Author Secondary Information:		
Corresponding Author's Institution:	Education Development Center	
Corresponding Author's Secondary Institution:		
First Author:	Kyle DeMeo Cook	
First Author Secondary Information:		
Order of Authors:	Kyle DeMeo Cook	
	Eric Dearing	
	Henrik Daae Zachrisson	
Order of Authors Secondary Information:		
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RUNNING HEAD: Parent-Teacher Cooperation

Is Parent-Teacher Cooperation in the First Year of School Associated with Children's Academic Skills and Behavioral Functioning?

Kyle DeMeo Cook

Eric Dearing

Henrik Daae Zachrisson

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Kyle DeMeo Cook, Ph.D, Corresponding Author
Education Development Center
43 Foundry Avenue
Waltham, MA, USA 02453
Email: kdemeo@edc.org

Eric Dearing, Ph.D.
Lynch School of Education
Boston College
40 Commonwealth Ave.
Chestnut Hill, MA 02467
Email: dearinge@bc.edu

Henrik Daae Zachrisson, Ph.D.
The Norwegian Center for Child Behavioral
Development & Center for Educational
Measurement at the University of Oslo
Essendrops gt 3, 0306 Oslo, Norway
Email: h.d.zachrisson@atferdssenteret.no

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Abstract

The importance of parent engagement in children's schooling is well documented, yet there is limited research on the quality of parent-teacher relationships specifically. In the present study, we aimed to help build knowledge in this area by investigating parent and teacher reports of home-school cooperation during children's first year of school in Norway. Associations between parents' and teachers' reports of cooperation were examined as predictors of children's academic skills and social functioning during their first year of school in Norway (N=932). Controlling for children's achievement and behavior prior to school entry, children whose parents and teachers both reported very good cooperation with one another were rated as having better academic skills and social skills and as having fewer negative behaviors than children whose parents and teachers did not report very good cooperation. In addition, if both parents and teachers reported very good cooperation children's academic skills were rated as higher than if parents and teachers disagreed such that one reported very good cooperation, but the other did not.

Keywords: parent-teacher cooperation, family-school partnerships, transition to school, academic outcomes, social skills, externalizing behaviors

Résumé

L'importance de l'engagement des parents dans la scolarité des enfants est bien documentée, pourtant il y a peu de recherche spécifique sur la qualité des relations entre parents et enseignants. La présente recherche a pour objectif d'aider à développer les connaissances dans ce domaine en étudiant les bilans des parents et des enseignants sur la coopération entre l'école et la maison pendant la première année d'école des enfants en

Norvège. Les associations entre les bilans de coopération des parents et ceux des enseignants ont été examinées comme prédictives des compétences scolaires et du fonctionnement social des enfants pendant leur première année d'école en Norvège (N=932). En contrôlant la réussite et les comportements des enfants avant leur entrée à l'école, les enfants dont les parents et les instituteurs rapportaient tous deux une très bonne coopération mutuelle avaient des scores plus élevés en compétences scolaires et sociales et moindres en comportements négatifs que les enfants dont les parents et instituteurs ne rapportaient pas une très bonne coopération. De plus, si tant les parents que les enseignants indiquaient une très bonne coopération, les compétences scolaires des enfants obtenaient une note plus élevée que si les parents et les enseignants n'étaient pas d'accord, par exemple l'un rapportant une très bonne coopération et l'autre pas.

Resumen

La importancia del compromiso de padres en la escolaridad de los niños está bien documentada; sin embargo, poco ha sido investigado, específicamente, sobre la calidad de las relaciones entre padres y educadores. El presente estudio busca fortalecer el conocimiento en esta área al investigar informes de padres y educadores sobre la cooperación entre el hogar y la escuela durante el primer año escolar de niños en Noruega. Los informes de cooperación suministrados por padres y educadores arrojaron asociaciones que fueron examinadas como predictores de habilidades académicas y funcionamiento social de los niños durante su primer año escolar en Noruega (N=932). Como factor de control de logros académicos y comportamiento de niños antes de entrar a la escuela, los niños cuyos padres y profesores reportaron muy buena cooperación mutua fueron calificados con mejores habilidades académicas y sociales y menores comportamientos negativos, en comparación con aquellos niños cuyos padres y educadores no reportaron muy buena cooperación. Adicionalmente, en los casos en que padres y educadores reportaron muy buena cooperación, las habilidades

académicas de los niños fueron calificadas como mejores, en contraste con aquellos niños cuyos padres y educadores ofrecieron opiniones contrarias, es decir, cuando uno de ellos reportó muy buena cooperación pero la otra parte no reportó lo mismo.

Introduction

The importance of parent engagement in their children's schooling has been repeatedly documented over the last few decades (Fan & Chen, 2001; Jeynes, 2012; Pomerantz, Moorman, & Litwack, 2007). In part, the value of parent engagement with school, and similarly the value of teacher and school outreach to parents, may benefit child achievement because it helps parents and teachers build mutually supportive relationships (Dearing, Kreider & Weiss, 2008; Dearing, Sibley, & Ngyuen, 2017). Little empirical work, however, has directly focused on the qualities of relationships between parents and teachers. In the present study, we aimed to help build knowledge in this area by investigating parent and teacher reports of home-school cooperation during children's first year of school in Norway. Specifically, we examined how agreement or disagreement about the quality of their relationship was related to children's functioning during this transition year. The transition to school is a milestone for children and families across the globe, variations in age of entry aside, and it is arguable that the connection between parents and their children's teachers is particularly important when children are transitioning into formal schooling for the first time (Bohan-Baker & Little, 2002).

The Importance of the Transition to School

When entering school for the first time, children face a variety of simultaneous changes in their physical settings, social relationships, and learning expectations (Bronfenbrenner, 1979; Fabian 2002; Pianta, Cox & Snow, 2007). While these changes can be somewhat anxiety-provoking for children, and parents and teachers as well (Perry &

Dockett, 2003), successful adaptation to this transition has long-term implications for children's later academic and social success. Indeed, children's initial attitudes toward school, beliefs about themselves as learners, and basic academic skills are built during the earliest school experiences, thereby serving as a launching point for achievement trajectories (Alexander, Entwisle, Blyth & McAdo, 1988). Importantly, theoretical advances on the topic have increasingly pointed toward the value of conceptualizing this transition as a systems process (Rimm-Kaufman & Pianta, 2000). Perhaps most influential in this regard has been the *Developmental Ecological Transition to Kindergarten* model which emphasizes the fact that school transitions are embedded in interacting systems, and successful transitions rely on positive connections among children, families, and schools (Rimm-Kaufman & Pianta, 2000). According to this model, it is hypothesized that supportive alignment across children's ecological settings, namely their home and school, is critical for smooth transitions to school, and this alignment is developed through regular communication, joint decision making, and positive relationships between the members of these settings (Rimm-Kaufman & Pianta, 2000).

Research has, in fact, shown that transition practices used by primary schools and early childhood education and care (ECEC) settings help ease the transition to school for children and families (Ahtola, et al., 2011; Cook & Coley, 2017; Cook, Dearing & Zachrisson, 2017; Schulting, Malone & Dodge, 2005). Specifically, research in a sample of Norwegian children found that when first grade teachers (the first year of schooling in Norway) engaged in information sharing with children's teachers in early childhood education and care programs (ECEC), children were rated as having higher social adjustment at the start of school (Cook, Dearing & Zachrisson, 2017). Another study on transition practices in Finland, found similar results, showing that when ECEC programs and primary schools reported that they shared information around children and programs as children

transitioned to formal schooling, children had higher academic skills at school entry (Ahtola et al., 2011). This research supports the need for positive relationships between adults as children are transitioning to a new environment.

Research on broader transition practices in the United States of America to ease the transition to school for children and families have been found to promote positive academic skills for kindergarten children in the United States (Cook & Coley, 2017; Schulting, Malone & Dodge, 2005). Specifically, in a national sample of U.S. children, Cook & Coley (2017) found that practices directly aimed at parents (i.e. parent orientations) as part of the transition process, were predictive of children's language and math skills in kindergarten, even after controlling for prior skills, other transition practices, and a host of child, family and school characteristics. In addition, Schulting and colleagues (2005), found that the relation between transition practices and positive academic skills was partially mediated by more parent involvement in school during the kindergarten year, suggesting that positive outreach from schools to parents during the transition to school may set the stage for positive parent involvement and in turn, positive outcomes for children (Schulting, Malone & Dodge, 2005).

Positive Family-School Connections during the Transition to School

As noted, within the context of the transition to school, there are many transition relationships that are important, including the relationship between teachers and parents. In addition, there is consistent evidence that family-school connections are important for promoting child achievement and well-being (Dearing, Sibley & Nguyen, 2017; Pomerantz, Moorman & Litwack, 2007)). Communication and cooperation between parents and teachers allows for bi-directional information sharing across home and school, providing both the teacher and parent opportunities to learn from each other about the child's learning and behavior strengths and weaknesses as well as build their knowledge, capacity, and skills for supporting child growth (Dearing, Sibley & Nguyen, 2017;Pomerantz,et al, 2007). In doing

so, they are also able to work together to align developmental supports across home and school, establishing consistent, and coordinated learning supports as well as providing a positive model for child attitudes toward education and engagement with school (National Academies of Science, 2016).

There is at least some evidence that most parents do, in fact, desire to be involved and to have a strong connection with their children's teachers during the transition to schooling (McIntyre, Eckert, Fiese, DiGennaro & Wildenger., 2007). Research in the United States indicates that the vast majority of teachers report that they have contact with parents when children are transitioning into school (Pianta, Cox, Taylor, & Early, 1999). However, other research has suggested that contact between parents and teachers decreases in primary school compared to ECEC settings. For example, in a national sample of Australian children, researchers found lower levels of parent involvement in school at age six compared to ECEC settings at age four (Murray, McFarland-Piazza, & Harrison, 2015). Moreover, beyond decreasing involvement, there are questions over whether the quality of the contact that does occur between teachers and parents is adequate to encourage and develop a cooperative relationship between parents and teachers (Bohan-Baker & Little, 2004).

Norwegian Context

Norway, a country with a universal and highly subsidized early education program starting at one through school entry, provides a relatively unique context for studying parent-teacher cooperation during the transition to school. Ninety-six percent of children in Norway attend an early education program in the year before school entry and 97% attend public primary school in first grade (3% attending private schools, mainly with alternative curricula, such as Steiner, Catholic schools, international schools) (Union of Education Norway, 2015). All schools are, however, required to have their curriculum approved by the Ministry of Education. Children typically keep the same primary teacher for three to four years, and

classroom composition is retained with the same children for the first seven years of primary school.

Cooperation between school and home is mandated through the Education Act (Ministry of Education and Research, 2007), and is formalized at a national level through guidelines provided by the Norwegian Directorate for Education and Training (2017). According to these guidelines, this cooperation is a mutual responsibility, while is to be initiated and facilitated by the school. As recommended by the guidelines, there are typically parent-teacher conferences every semester, where the student's academic and social development and well-being is discussed. Parents are also typically invited to parent meetings twice a year where general information is provided. Beyond this, parents typically receive weekly written information about homework and activities at the school, either through letters brought home by the student, a web-page to be accessed by the parents, or combinations thereof. In addition, the schools are required to have a formalized committee where representatives for the parents and the school meet monthly to discuss school issues (e.g. teaching, the social environment) (FUG, 2017).

Present Study

In the present study, we examined the relation between positive parent-teacher cooperation in the first year of school in Norway, and children's academic skills and social functioning. Specifically, using both parent and teacher reports of whether they viewed their relationship with one another as cooperative, we examined whether mutual positive reports of cooperation between parents and teachers positively predicted children's academic skills and social functioning (social skills and behavior problems) in first grade. We hypothesized that for children to see the benefits of parent-teacher cooperation, it would be important for both parties (parents and teachers) to view their cooperation in a positive light.

Method

Sample

The data were drawn from the *Behavior Outlook Norwegian Developmental Study* (BONDS), a longitudinal study of 1,157 children from five municipalities in south-east Norway. Families were recruited at ‘well-child’ health visits when children were 5-months of age. Of the parents who were initially invited to participate, 79% initially agreed to be contacted and, overall, 60% of those initially invited agreed to participate in the study. Data were collected on children from 6 months of age through to the child’s first year of full-time formal schooling when children were aged 6 years of age. Data included for these analyses are drawn from measures collected when children were aged 4 years, when children were likely to be attending an ECEC program prior to school, and from telephone interviews with parents when children were aged 5 years. Data from questionnaires are also included from ECEC providers when children were 4 years and from questionnaires completed by teachers after school entry (6 years).

In the analyses in this study, data from the three cohorts of children recruited in 2006, 2007 and 2008 are included and this analytic sample includes all children who were still participating in BONDS at first grade and who also had a valid primary school identification number (N=932). Table 1 provides descriptive statistics for all variables used in our regression models. These variables are described in the next section.

Measures

Parent-Teacher Cooperation. Mid-way through the first year of school (November/December of first grade) when children were 6 years, teachers and parents reported on the level of cooperation with one another on a 4-point scale (not good, quite good, good, and very good). The parents were asked “How has cooperation with the teacher

been so far?” The teachers were asked “How good is the cooperation that you have with this student’s parents?” For each child, these two items were combined into a single categorical variable that indicated the level of cooperation reported by teachers and parents on a 4-point scale: 1) neither the parent nor the teacher reported very good cooperation; 2) only the teacher reported very good cooperation; 3) only the parent reported very good cooperation; or 4) both the parent and teacher reported very good cooperation.

Academic and Behavior Outcomes in First Grade. Three outcomes variables were of interest in the analyses: academic skills; social skills; and externalizing problem behaviors. First grade teachers rated children’s academic skills and social functioning in November/December of the first year of school. Teachers rated children’s reading, mathematics, intellectual functioning, and general motivation in relation to their classmates on a 5-point rating scale of competency: 1- lowest 10%; 2 - next 20%; 3 - mid 40%; 4 - almost top 20%; 5 - top 10%. Rating on these four items for reading, mathematics, intellectual functioning, and general motivation were summed and averaged to create an academic skills rating scale. This overall rating had a high internal reliability measured by Cronbach’s alpha ($\alpha=0.94$). Behavioral functioning was also assessed through the Social Skills Inventory Scale (SSIS) (Gresham & Elliot, 2007). Internal reliabilities on the SSIS scales were also high: Social Skills subscale ($\alpha= 0.96$), and Externalizing Behaviors subscale ($\alpha=0.92$).

Covariates. In order to control for child, family and school characteristics in the analyses, we included an array of covariates in each regression models. The descriptive statistics on these covariates are also presented in Table 1 and drawn from data collection when children were 4 years and 5 years, prior to school entry.

- *Child Functioning at age 4 years:* Children’s language ability at four years was assessed by the British Picture Vocabulary Scale – II (BPVS – II; Dunn, Dunn,

Whetton & Pintilie, 1997). Cronbach's alpha for the BPVS-II was .81. Children's behavior was assessed by the teacher report in the ECEC preschool program on the Child Behavior Checklist measuring children's externalizing behaviors, attention problems and aggression at four years (Achenbach, 1991). Cronbach's alpha on this measure was $\alpha=0.93$.

- *Initial Adjustment to School.* First grade teachers also reported in November/December of the school year on how well adjusted children were at the start of the school year. Social and academic adjustment were rated separately on 5-point scales (1 - very poor adjustment to 5 - very good adjustment). Measures of initial social and academic adjustment were only moderately correlated ($r=0.58$) and were used separately in the analyses to assess the two different constructs.
- *Child and Family Characteristics.* Information about children and families included in this study were collected through parent interviews. Variables included in the analyses were: child's sex; child's immigrant status in three categories (Native Norwegian, immigrant from Western- Europe, North America and Oceania, or Non-Western immigrant from Asia, Africa, Latin America and Turkey); parental years of education; whether the child was preterm at birth; whether the child qualified for special education services in first grade; whether the child had siblings; an index of living in poor housing conditions reported as the Housing Deprivation Score. Three items were used to calculate this index from parent report on dissatisfaction with housing, living in a one bedroom or smaller apartment, and not owning home (home ownership is normative in Norway); whether the child's mother was a single parent when child was 4 years;
- and a continuous measure of the number of hours the child was in center-based child care at 4 years of age.

- *Early Childhood Education and Care Center Characteristics.* Centers in Norway employ pedagogical leaders who support school preparation activities. An indicator of whether, or not, the pedagogical leader was trained as an early childhood teacher was included. In addition, the pedagogical leader reported how many school preparation activities that children experiences during the ECEC year (e.g. language skills, motor development, and activities that enabled children to become familiar with the social and physical environment of the school setting, and school rules. These items were summed to create a school preparation index based on the number of activities experienced using a 3-point scale (a lot, some, a little), with low to moderate internal consistency ($\alpha=0.64$). This index was included to account for children's prior ECEC experiences.
- *Primary School Characteristics.* First grade teachers reported on class size, school size, and the number of children in their classrooms receiving special education services. Additionally, the climate of the first grade classroom was assessed through teacher report of fourteen items (e.g., classroom is a calm working environment; students are attentive to the teacher; students are interested and active during class). These items were reported on a 4-point scale (not true to very true), with $\alpha = 0.81$.

Analytic Plan

Ordinary least squares regression (OLS) models were estimated for each of the three child outcomes in first grade (academic skills, social skills and externalizing behaviors). Each model included the full set of child, family, ECEC center and school characteristics as described in Table 2. In addition, the model predicting academic skills also controlled for child prior language skills at four years old, and initial academic adjustment at school entry;

and the models predicting social skills and externalizing behaviors controlled for behavioral functioning at four years old as well as initial social adjustment at school entry.

All models also included indicators for children's home municipality and cohort, as past research with this dataset has indicated that there are important differences across them (Zambrana et al. 2015). The cohort year indicated the year of the child's recruitment into the study (Cohort – 2006, 2007, 2008); and the five local government municipalities from where children were recruited are identified in Table 1. These were dummy coded in the analyses with 2006 and the municipality of Bamble as the reference categories.

In these models, three dummy variables (parents only reported good cooperation, teachers only reported good cooperation, and both teacher and parent reported good cooperation) were included to explore differences based on the reports of parent-teacher cooperation. The comparison reference category group for these analyses were the dyads of parents and teachers in which both had negative evaluations of their cooperation. Post hoc analyses of the OLS models (using the 'lincom' command in Stata 14) were conducted to examining differences between (a) the dyads who both reported good cooperation and (b) those dyads in which only the parent or only the teacher (but not both) reported good cooperation.

To account for clustering of children in first grade (110 schools), all OLS models were estimated using a Huber-White standard error adjustment. In addition, prior to analysis, the dataset was analyzed for missing data. Variable level missing data ranged from 0-32% (see Table 1 for variable level missing data percentages). Little's test for missing completely at random (MCAR) was conducted in Stata 14, revealing that missing values in the data were not MCAR, helping identify that multiple imputation was an appropriate method for addressing missing values (Little, 1988). Therefore, we employed multiple imputation using chained equations in Stata 14 to create 20 complete datasets (Royston, 2005). The missing

data analyses were conducted using the *mi* command in Stata to aggregate results across data sets.

Results

Thirty-eight percent of children in the sample had parents and teachers who agreed that they had a very good cooperative relationship (see Table 1). Nearly 24% of children had teachers only who reported very good cooperation with their parents, and 17% of children had parents only who reported very good cooperation with teachers; 20% of children had neither parents nor teachers who reported that their cooperation was very good.

Prediction of Academic Skills from Parent-Teacher Cooperation

In Table 2, we display results from the OLS models comparing child outcomes as a function of parent and teacher reports of cooperation. In addition, adjusted means from these models are displayed in Figures 1, 2, and 3 for all four cooperation groups with significant differences indicated. For teacher-rated academic outcomes, there were negligible differences (i.e., $b = .00$ and $-.02$) between children who had one adult (but not both) report very good cooperation compared to children in the comparison reference group for whom neither adult reported very good cooperation. However, children who had both teachers and parents reporting very good cooperation had slightly better academic outcomes compared to children for whom neither adult reported very good cooperation ($b = .15$, $p = .07$).

In addition, as displayed in Figure 1, children who had both teacher and parent report of very good cooperation had significantly higher ($p < .05$) academic outcomes than those who either had parent or teacher report good cooperation, but not both. Specifically, children for whom both parents and teachers reported very good cooperation had academic skills approximately 16-18% of a standard deviation higher than children in the other three groups (i.e., 3.72 versus 3.55 to 3.57).

Prediction of Social and Behavioral Functioning from Parent-Teacher Cooperation

Highest social skill scores were evident for children for whom both parents and teachers reported very good cooperation (see Figure 2). For social skills, however, it also appeared that having at least one adult report of very good cooperation was better than having no adults report very good cooperation. Specifically, differences between children with both adults reporting very good cooperation were statistically significant (and ranged in size from 24% to 43% of a standard deviation) compared with: (1) those children for whom neither parent or teacher reported very good cooperation; and (2) those children for whom parents (but not teachers) reported very good cooperation. However, unlike the outcomes on academic skills, there was also a statistically significant difference between having teachers (but not parents) report very good cooperation compared to the reference group in which neither parent or teacher reported very good cooperation (about 39% of a standard deviation difference) or having only parents report very good cooperation (about 20% of a standard deviation). Moreover, children for whom parents (but not teachers) reported very good cooperation also had significantly higher social skills than those for whom neither adult reported very good cooperation (a difference of about 20% of a standard deviation).

For externalizing behaviors, the higher the score the more negatively the child's behavior was rated by the teacher. Results in Table 2 show that there is a statistically significant difference for children whose teacher reported very good cooperation or if both parents and teachers report very good cooperation, compared to children whose parents reported very good cooperation or neither parent nor teachers reported very good cooperation. This implies that children whose teachers only reported very good cooperation or children whose parents and teachers reported very good cooperation were less likely to have externalizing behavior problems, given the negative sign of the coefficients reported in

Table 2, amounting to approximately 11-13% of a standard deviation lower than children who had neither teacher nor parent reporting very good cooperation (see Figure 3.).

Discussion

This study explored if the level of cooperation reported by parents and teachers was associated with children's academic and social outcomes in the first year of school. We hypothesized that the largest benefit would be realized when both parents and teachers agreed on their level of cooperation. Overall, the study found that when parents and teachers both reported very good cooperation then children had higher ratings for academic skills (Figure 1) and social skills (Figure 2), and fewer externalizing behavior problems (Figure 3). Further, for social skills and externalizing behaviors, children whose parents reported very good cooperation with the teachers did not show statistically different scores from children whose teachers reported very good cooperation.

Children whose parents and teachers reported very good cooperation had the highest ratings on academic skills. However, there was no statistically significant differences between children who had both parents and teachers who agreed the cooperation was very good compared to children who had neither a parent or teacher report very good cooperation. These results suggest that having one party (either the parent or teacher) report very good cooperation may be no better for children's academic skills in first grade than having neither party report very good cooperation, and that perceived differences in cooperation may reduce positive effect on academic skills.

This study provides some evidence to support the importance of family-school partnerships and the role of cooperation across home and school during children's early transition to formal schooling. While much research has shown the importance of positive family-school cooperation, little research has explored parents and teacher's views on how

well they are cooperating and whether this is related to children's outcomes during the early school years. This study indicated that parents' and teachers' views of their relationship with one another may play a role in student achievement in the early years of formal schooling (e.g., Pomerantz et al. 2007). This study suggests that the agreement between parents and teachers about their relationship is associated with children's social and academic functioning and the views of teachers appears to be most important to how children social skills and behavior problems are perceived to influence cooperation.

While, in a Norwegian context, some form of cooperation is expected between parents and teachers, the quality of this cooperation may require further attention. First, it is important to note that just over half of children in the sample (58%) had parents and teachers who agreed about the nature of their cooperative relationship (38% agreeing that cooperation was very good, and 20% agreeing that cooperation was not very good). More frequent communication, and mechanisms for soliciting parent views may be needed for schools to better understand how parent-teacher relationships can be improved. Past research has shown that the transition to formal school is an important time for schools to reach out and provide transition activities to children and families, with some research pointing to activities focused on parents specifically as being the most beneficial (Cook & Coley, 2017). This study confirms the importance of building this relationship early in a child's school career and suggests that schools should think carefully about the transition activities they implement to best build cooperative relationships between teachers and parents at school entry. This study further shows that the relationship between teachers and parents may have important implications for how teachers are rating (and perhaps teaching) children in their classes.

It is also important to note some limitations to this study. Child outcomes in the study were measured by teacher report and may be biased by teacher's views of the child. However, multiple steps were taken in order to combat this bias, including the presence of

other teacher-reported beliefs about the child in the analyses as control variables, as well as child, family and school characteristics included in the models as covariates. These covariates help isolate the relationship between parent-teacher cooperation and child outcomes. It is also important to note that while the multivariate design is strong, this is a correlational study and cause-effect relationships cannot be inferred. Overall, this study adds to the limited empirical literature on this topic and provides further evidence that views of the parent-teacher relationship is an important area for further study. And that the level of agreement between parents' and teachers' views on if, and how they cooperate, to support children's learning may be an important predictor of child outcomes. This is not least because of children's own understandings and observations of the nature of the parent-teacher relationships may impact on how they engage in learning at school.

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Table 1. Descriptive statistics for all variables included in regression models

	<i>Mean/%</i>	<i>(SD)</i>	<i>% Missing Data</i>
<i>Parent-Teacher Cooperation</i>			
Neither Parent nor Teacher Report Very Good Cooperation	20.39%	--	12.12%
Teacher Reported Very Good Cooperation	23.93%	--	--
Parent Reported Very Good Cooperation	17.46%	--	--
Both Report Very Good Cooperation	38.22%	--	--
<i>Child Outcomes</i>			
Teacher Report of Academic Adjustment at Entry	4.12	(0.78)	6.65%
Teacher Report of Social Adjustment at Entry	4.04	(0.82)	6.44%
Academic Skills	3.63	(0.94)	5.69%
Social Skills	3.23	(0.41)	5.69%
Externalizing Behaviors	1.38	(0.43)	5.69%
<i>Lagged Dependent Variables</i>			
British Peabody Picture Vocabulary- Age 4	40.17	(10.99)	11.70%
Child Behavioral Functioning- Age 4	3.78	(0.88)	31.22%
<i>Child & Family Characteristics</i>			
Male	51.72%	--	0.00%
Native Norwegian	88.08%	--	0.97%
Western Immigrant	6.28%	--	--
Other Immigrant	5.63%	--	--
Parent Education (yrs)	15.04	(2.39)	0.86
Pre-term Birth	7.77%	--	1.93%
Special Ed Services in First Grade	3.30%	--	5.69%
Siblings in Family	60.54%	--	0.75%
House Deprivation Score	0.12	(0.38)	0.43%
Single Mom at 60 Months	8.79%	--	7.19%
Hours in Child Care at 60 Months	34.71	(5.85)	4.83%
Cohort: 2006	38.52%	--	0.00
Cohort: 2007	44.96%	--	--

Cohort: 2008	16.52%	--	--
Municipality: Bamble	11.31%	--	16.52%
Municipality: Drammen	41.26%	--	--
Municipality: Porsgrunn	26.48%	--	--
Municipality: Skien	12.72%	--	--
Municipality: Tinn	8.23%	--	--
<i>Center & School Characteristics</i>		--	
Preschool Ped Leader Trained as Preschool Teacher	85.20%	--	31.87%
Preschool Center School Prep Activity Index	2.41	(0.21)	31.87%
First Grade Classroom Climate Score	3.08	(0.22)	5.79%
First Grade Class Size	22.79	(8.07)	6.01%
First Grade School Size	345.32	(132.53)	7.19%
# Kids in First Grade Class with Special Ed Services	1.02	(1.74)	7.08%

Notes: N =932

Table 2. Parent-teacher cooperation predicting children's academic and social outcomes in first grade

	Academic Skills		Social Skills		Externalizing Behaviors	
	<i>Coef.</i>	<i>(SE)</i>	<i>Coef.</i>	<i>(SE)</i>	<i>Coef.</i>	<i>(SE)</i>
<i>Parent-Teacher Cooperation</i>						
Teacher Reported Very Good Cooperation	0.00	(0.07)	0.16***	(0.04)	-0.13***	0.04
Parent Reported Very Good Cooperation	-0.02	(0.07)	0.08*	(0.04)	-0.06	0.05
Both Report Very Good Cooperation	0.15+	(0.08)	0.18***	(0.04)	-0.11**	0.04
<i>Child & Family Characteristics</i>						
British Peabody Picture Vocabulary- Age 4	0.01***	(0.00)	--	--	--	--
Child Behavioral Functioning- Age 4	--	--	-0.11***	(0.02)	0.15***	0.02
Teacher Report of Academic Adjustment at Entry	0.59***	(0.04)	--	--	--	--
Teacher Report of Social Adjustment at Entry	--	--	0.13***	(0.01)	-0.07***	0.02
Male	-0.09+	(0.05)	-0.13***	(0.03)	0.15***	(0.03)
Western Immigrant	-0.16+	(0.09)	0.05	(0.05)	-0.06	(0.05)
Other Immigrant	-0.07	(0.10)	0.03	(0.05)	-0.07	(0.05)
Parent Education (Yrs)	0.01**	(0.00)	0.00+	(0.00)	0.00	(0.01)
Pre-term Birth	-0.04	(0.09)	0.03	(0.04)	-0.03	(0.05)
Special Ed Services in First Grade	-0.83***	(0.16)	-0.27**	(0.09)	0.21+	(0.11)
Siblings in Family	-0.07	(0.06)	0.00	(0.02)	0.01	(0.03)
House Deprivation Score	0.08	(0.07)	-0.01	(0.03)	0.03	(0.04)
Single Mom at 60 Months	-0.10	(0.07)	-0.07	(0.03)	0.01	(0.05)
Hours in Child Care at 60 Months	0.00	(0.00)	-0.07	(0.04)	0.00	(0.00)
Cohort: 2007	0.18**	(0.06)	0.03	(0.03)	-0.03	(0.04)
Cohort: 2008	0.33***	(0.08)	0.07	(0.04)	-0.02	(0.04)
Municipality: Drammen	0.12	(0.09)	0.03	(0.04)	-0.14*	(0.05)
Municipality: Porsgrunn	0.25*	(0.10)	0.01	(0.05)	-0.14*	(0.06)
Municipality: Skien	0.21+	(0.11)	0.02	(0.06)	-0.13*	(0.06)
Municipality: Tinn	0.12	(0.13)	0.10	(0.06)	-0.14*	(0.06)
<i>Center & School Characteristics</i>						
Preschool Ped Leader Trained as Preschool Teacher	0.06	(0.08)	-0.01	(0.03)	-0.02	(0.04)
Preschool Center School Prep Activity Index	0.19	(0.14)	-0.11	(0.08)	0.12	(0.07)
First Grade Classroom Climate Score	-0.29*	(0.13)	0.23**	(0.07)	-0.17+	(0.09)
First Grade Class Size	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)

First Grade School Size	0.00	(0.00)	0.00**	(0.00)	0.00	(0.00)
# Kids in First Grade Class with Special Ed Services	0.00	(0.03)	-0.01	(0.01)	0.00	(0.01)
Intercept	0.19	(0.53)	2.70***	(0.31)	1.35***	(0.32)

Notes: $N = 932$; *** $p < .001$. ** $p < .01$. * $p < .05$. + $p < .10$

Note: Matching letter superscripts indicate statistically significant differences between groups ($p < 0.05$).

Figure 1. Comparing first grade child functioning by parent-teacher collaboration: Academic skills

Note: Matching letter superscripts indicate statistically significant differences between groups ($p < 0.05$).

Figure 2. Comparing first grade child functioning by parent-teacher collaboration: Social skills

Note: Matching letter superscripts indicate statistically significant differences between groups ($p < 0.05$).

Figure 3. Comparing first grade child functioning by parent-teacher collaboration: Externalizing behaviors

BOSTON COLLEGE

June 12, 2018

Dr. Donna Berthelsen
International Journal of Early Childhood

Dear Dr. Berthelsen,

We are delighted to resubmit our revised paper, "Is Parent-Teacher Cooperation in the First Year of School Associated with Children's Functioning?" to the *International Journal of Early Childhood*. We thank you for your helpful feedback, which has been incorporated in to this version. We look forward to your response.

My coauthors, Drs. Eric Dearing and Henrik Daae Zachrisson, and I are in agreement with the contents of the manuscript, and note that the study has been conducted under the ethical guidelines of the APA and AERA. The manuscript is original, not previously published and is not under review elsewhere.

Sincerely,

A handwritten signature in cursive script that reads 'Kyle DeMeo Cook'.

Kyle DeMeo Cook, Ph.D, Corresponding Author
Education Development Center
43 Foundry Avenue
Waltham, MA, USA 02453
617-515-3114: kdemeo@edc.org

Other Author Contact Information:

Eric Dearing, Ph.D.
Lynch School of Education
Boston College
140 Commonwealth Ave.
Chestnut Hill, MA USA 02467
617-552-1477: dearinge@bc.edu

Henrik Daae Zachrisson, Ph.D.
The Norwegian Center for Child Behavioral
Development & Center for Educational
Measurement at the University of Oslo
Essendrops gt 3, 0306
Oslo, Norway: h.d.zachrisson@atferdssenteret.no