

Children's self-report about their social-emotional  
development from third to fifth grade:  
Findings from the ECLS-K

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# Children's self-report about their social-emotional development from third to fifth grade: Findings from the ECLS-K

## Introduction

This paper uses longitudinal self-report data from a nationally representative data set to explore the relationships between self-perceptions of peer relationships and problem behaviors measured at the end of the third and fifth grades and various socio-demographic characteristics and academic performance. Analyses look at children's social-emotional self-perceptions at the end of the fifth grade as well as how these perceptions have changed during these later elementary school years.

The relationship between academic success and healthy social and emotional development is well established (Kauffman 2001; Reid, Gonzalez, Nordness, Trout, & Epstein 2004; Rosenblatt & Rosenblatt 1999; Wagner, 1995). Children who enjoy successful relationships with their peers and teachers are most likely to succeed academically and this relationship is maintained throughout the school years (Kauffman, 2001; Rosenblatt & Rosenblatt 1999). The relationship is reciprocal – children who experience school failure tend to act out or exhibit other maladaptive behaviors, and children with disruptive or troubling behaviors can alienate themselves from peers and teachers and end up excluded from many learning opportunities that come from positive relationships (Brier 1995; Horn & Packard 1995; Kauffman, 2001; Henricsson & Rydell 2004).

The transition from elementary school to middle school years can be a critical period for social and emotional development. This is the juncture where some children's feelings about themselves in relation to their peers markedly decline, and the time for some when socially inappropriate behaviors such as fighting, or internal feelings of anxiety or depression become impediments to healthy development. (Eccles 1999).

This paper describes children's perceptions of their social-emotional development in the period that for many children immediately precedes the transition to middle school – right at the end of fifth grade. Additionally, the changes in development from the end of third grade to the end of fifth grade are examined to describe the trajectory of development as children enter the middle

school years. Overall self-perceptions are examined, as well as differences among children from different socio-demographic backgrounds and for children with different academic abilities.

### **Data Source**

This data analyzed in this paper are from the Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K). Sponsored by the National Center for Education Statistics (NCES), part of the U.S. Department of Education's Institute of Education Sciences, the ECLS-K is a nationally representative sample of children enrolled in kindergarten in the fall of 1998, with a base-year sample of 22,782 children who attended 1,277 schools with kindergarten programs in the school year for 1998-99. Currently the ECLS-K has followed these children through fifth grade and has collected information directly from the children, their families, their teachers, and their schools.

### **Measures**

#### **Self-perceptions**

In both the third grade and the fifth grade, the ECLS-K children completed the 42-item Self-Description Questionnaire (SDQ), which is designed to measure children's self-perceptions of their school abilities and interests, their peer relationships, and problem behaviors they may have. The three scales that relate to social-emotional development are used in this paper, self-perceptions of their (1) peer relationships, (2) internalizing problem behaviors, and (3) externalizing problem behaviors. Fifth-grade scale scores were based on the mean values calculated from the items that composed each SDQ scale administered in fifth grade.<sup>1</sup> Changes between children's third-grade and fifth-grade SDQ scores were calculated by subtracting the third-grade SDQ score from the fifth-grade SDQ score for each of the three scales.<sup>2</sup> To complete the SDQ, children were read a series of behavioral statements about their perception of themselves and asked to respond on a scale from 1 to 4, including "not at all true," "a little bit

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<sup>1</sup>The standard deviations for each of the fifth grade SDQ scale scores are as follows: peer relationships = 0.63, externalizing problem behaviors = 0.68, and internalizing problem behaviors = 0.62. Thus, differences in group mean scale scores were considered substantive if they were statistically significant and greater than or equal to 25% of a standard deviation (0.16 on the peer relationships scale, 0.17 on the externalizing problem behaviors scale, and 0.15 on the internalizing problem behaviors scale).

<sup>2</sup> The standard deviations for each of the SDQ change scores are as follows: peer relationships = 0.71, externalizing problem behaviors = 0.70, and internalizing problem behaviors = 0.71. Thus, differences in group mean scale scores were considered substantive if they were statistically significant and greater than or equal to 25% of a standard deviation (0.18 on the peer relationships scale, 0.17 on the externalizing problem behaviors scale, and 0.18 on the internalizing problem behaviors scale).

true,” “mostly true,” and “very true.” Children’s scale scores on each of the SDQ scales represent the mean rating of the items included in the scale. The peer scale captured how easily they found it to make friends and to get along with children, as well as their perception of their popularity. The final two scales were based on responses to items that characterize externalizing and internalizing problem behaviors. For instance, the externalizing problem behavior scale was based on responses to items about fighting and arguing with other children, disturbing others, and problems with distractibility. The internalizing problem behavior scale focused on behaviors such as feeling ashamed of mistakes, worrying about school and friendships, and expressing that they often feel sad and/or lonely.

### **Academic performance**

The scores used in these analyses are from the reading and mathematics ECLS-K direct child cognitive assessments. The ECLS-K battery used a two-stage assessment approach in which the first stage in each domain contained a routing test that determined the child's approximate skills. According to the child's performance on the routing test, the child is administered one of the three skill level assessments in that domain (the second stage). This adaptive approach is used in all administrations of the assessments. The reading assessment includes basic literacy skills, vocabulary, and comprehension items. The mathematics assessment measures conceptual understanding of numbers, shapes, patterns, mathematical operations, and processes for problemsolving. This paper examines the overall Item Response Theory (IRT) scaled achievement score for each subject area from the spring of fifth grade.

### **Sociodemographic variables**

Comparisons are made for 7 background variables.

*Child's sex:* Male or female

*Child's race/ethnicity:* White, non-Hispanic; Black, non-Hispanic; Hispanic, Asian/Pacific Islander; and Other, non-Hispanic (which includes American Indians, Alaska Natives, and non-Hispanic multiracial children). White children are the reference group against which the other groups are compared.

*Household federal poverty status:* At or above the federal poverty threshold vs. below the poverty threshold)

*Family type:* Single-parent household vs. two-parent/other household

*Mother's highest education level:* Less than high school diploma/GED vs. high school completion or higher level of educational attainment); and

*Primary home language:* English vs. non-English

*School type:* Public vs. Private school vs. changed school types during the study

### **Analyses**

Mean differences in the SDQ scores are analyzed with t-test comparisons using a Bonferroni adjustment for multiple comparisons.<sup>3</sup> Due to the large sample size, many differences, no matter how substantively minor, are statistically significant. We report only differences that were also “substantively different,” differences of one-quarter of a standard deviation or more (representing an effect size of .25). In addition to the bivariate comparisons, ordinary least squares (OLS) regression analyses were conducted in order to describe the relationship of selected child, family, and school variables to children’s SDQ scores, after controlling for other variables. Independent variables were entered simultaneously for each regression analysis. White children served as the reference racial/ethnic group, and children who attended public school for the first 6 years served as the reference school-type group. *T* test comparisons for other groups (e.g., Hispanic vs. Black) were conducted using the unstandardized coefficients produced in the regression analyses. The same significance criteria used in the bivariate analyses (*p* value of .05 or less and effect size of 0.25 standard deviation or higher) was used for the regression coefficients.

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<sup>3</sup>When scores were compared for each of the 5 dichotomous characteristics, among the 5 race/ethnicity groups, and among the three school types, the Bonferroni adjustment was made to maintain a .05 chance of making a Type I error for each set of 18 comparisons.

## **Findings**

### **Peer Relationship SDQ Scores at Fifth Grade**

Fifth grade children responded positively about their relationships with their peers, with an overall mean score on the peer relationships scale of 3.0 (“mostly true”) (table 1). The relatively high scores on this measure indicated that children generally felt that they made friends easily and got along well with their peers. Black fifth-graders reported more positive perceptions of their peer relationships than Asian children. The regression analyses suggest that, after accounting for other characteristics in the model, 5<sup>th</sup> grade females had more positive perceptions about their peer relationships than males, Black children had more positive perceptions than children from all other race/ethnicity groups, and Asian children had less positive perceptions than White and Hispanic children (table 3)

### **Changes in Peer Relationship SDQ Scores Between Third and Fifth Grade**

Overall, the SDQ scores for children’s perceptions of their ability to make and maintain friends did not change between third and fifth grades (table 1). In the bivariate analyses, the change in the peer relationship perceptions from third through fifth grade differed depending on children’s reading ability (table 2). Fifth-grade children with the lowest third of reading assessment scores had peer relationship SDQ scores that declined 0.1 point between third and fifth grades, while scores for those in the highest reading ability group increased 0.1 points. The regression analyses (table 4) did not show substantively significant relationships between cognitive ability and the change in perceptions of peer relationships between third and fifth grades<sup>4</sup>. However, this analysis did suggest that, after accounting for these other characteristics, the change in peer relationship perceptions was more positive for Black children than Asian children.

### **Internalizing and Externalizing Problem Behavior SDQ Scores at Fifth Grade**

Internalizing and externalizing problem behavior scales provided information about children’s perceptions of their own problem behaviors and feelings. The internalizing problem behavior SDQ items tapped anxiety about school, feeling ashamed of mistakes, sadness, and loneliness. The externalizing problem behavior items assessed behaviors such as fighting and arguing with other children, disturbing others, and problems with attention and distractibility. On average,

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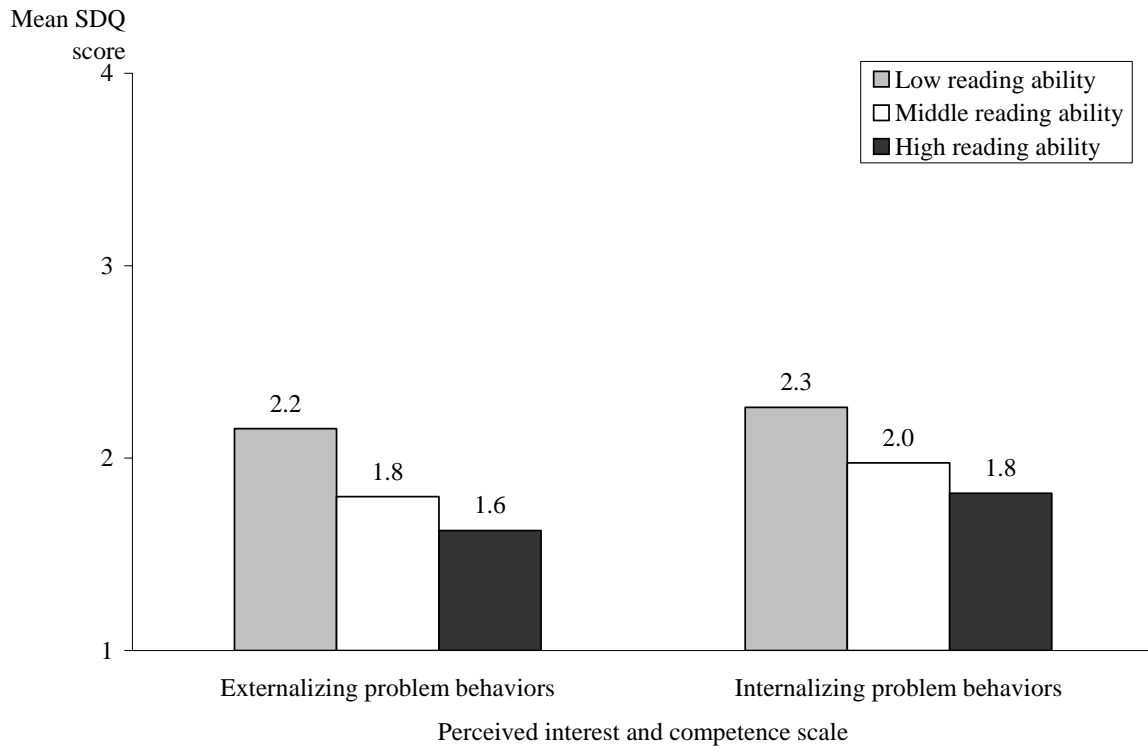
<sup>4</sup> These coefficients were statistically significant, but were not large enough to correspond to an effect size of .25, thereby failing to meet our definition of substantively significant.

children reported that the items on the externalizing problem behavior scale and the internalizing problem behavior scale were “a little bit true” for them, with means of 1.9 and 2.0, respectively (table 1).

Children’s reports of their problem behaviors at fifth grade varied by child characteristics (table 1). In bivariate mean comparisons, boys were more likely than girls to indicate that they exhibited externalizing problem behaviors. Black children had higher reports of externalizing problem behaviors compared to Hispanic, White, and Asian children; and Hispanic and children from “other” race ethnicity groups had higher average scores than Asian children. Additionally, Black and Hispanic children had higher self-reports of internalizing problem behaviors compared to White and Asian children. Certain family risk factors measured in kindergarten were also related to children’s reported perceptions of both internalizing and externalizing behavior problems at fifth grade. Living in a home with a household income below the federal poverty threshold, having a mother who did not have a high school diploma or equivalent, and living in a single-parent family were each associated with higher externalizing and internalizing SDQ scores.

The fifth-grade SDQ scores for problem behaviors (table 1) were also related to the children’s reading ability and mathematics ability. Children in the lowest reading ability group had the highest SDQ scores for externalizing behaviors and internalizing behaviors compared to those in the middle third of the reading assessment scores; and this middle reading ability group had higher scores than those with the highest reading ability (figure A). Children in the lowest mathematics ability group had the highest SDQ scores for externalizing behaviors and internalizing behaviors compared to those in the middle third of the mathematics assessment scores; and the middle mathematics ability group had higher scores than those with the highest mathematics ability.

Figure A. Mean scale scores for fall 1998 first-time kindergartners' perceptions of problem behaviors in the spring of fifth grade, by their spring fifth-grade reading achievement status: Spring 2004



NOTE: Perceived competence and interest scores are from the Self-Description Questionnaire (SDQ). Scores on the SDQ scales ranged from 1 “not at all true” to 4 “very true.” Children were categorized into three equally sized ability groups (lowest, middle, and highest) for reading and mathematics based on their scale scores for each subject area. Estimates reflect the sample of children assessed in English in all assessment years. Although most of the children in the sample were in fifth grade in spring of 2004, 13 percent were in fourth grade and 1 percent were enrolled in other grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K), Fifth Grade Restricted-Use Data File, spring 2004.

Some of the bivariate findings were supported in the corresponding regression analyses (table 3). For instance, after accounting for other characteristics, higher levels of externalizing problem behaviors were reported by boys than girls, and by Black or “other” race/ethnicity children compared with Asian children. Reading and mathematics ability were related to both internalizing and externalizing problem behaviors. Those in the lowest reading ability group reported the highest levels of externalizing and internalizing behaviors and the lowest levels of these



behaviors were reported by those in the highest reading ability group. Children in the lowest mathematics ability group reported higher levels of externalizing and internalizing problem behaviors than those in the highest mathematics ability group.

### **Changes in Internalizing and Externalizing Problem Behavior SDQ Scores between Third and Fifth Grade**

Overall, children reported less sadness, loneliness and anxiety problems (internalizing behaviors) in fifth grade than they had reported in third grade (table 1). The average internalizing SDQ scores declined from 2.2 to 2.0 (about a third of a standard deviation). When change scores for each of the problem behavior SDQ scores were compared for different groups of children, only cognitive ability was related to differences in how these scores changed from third to fifth grade (table 2). Those with the lowest reading ability reported internalizing behaviors that were lower in fifth grade compared to third grade, while the group with the highest reading assessment scores had no average change in their internalizing problem behavior SDQ scores. Additionally, those with the lowest mathematics ability reported internalizing behaviors that declined further from third to fifth grade compared to those with the highest mathematics assessment scores. In the regression analyses where all characteristics are considered together, no factor met the criteria for a “substantive difference”.

### **Summary**

In the spring of the kindergarten year, ECLS-K teachers reported that most children tended to form friendships easily (82 percent), accept peer ideas in cooperative activities (77 percent) and few exhibited problem behaviors such as fighting with others (8 percent) or get angry easily (9 percent) (West, Denton, and Reaney 2001). In the third and fifth grades, the ECLS-K children were given the opportunity to report for themselves about their peer relationships and any problem behaviors they may be exhibiting. Like they had in third grade, children in fifth grade expressed generally positive feelings about their ability to make and maintain friendships. Fifth grade children reported lower levels of internal problem behaviors (e.g., feeling ashamed of mistakes, worrying about school and friendships, and feelings of sadness or loneliness) than they had reported in third grade although these were generally low in both grades. Perceptions of externalizing problem behaviors (e.g., fighting and arguing with other children, disturbing others, or causing distractions) were low in both third and fifth grade.

Even after accounting for other factors, fifth grade girls reported less externalizing problem behaviors compared to boys. There were some differences in perceptions associated with the children's race/ethnicity. For example, at fifth grade, Black children responded more positively about their peer relationships than Asian children. Black children reported higher levels of externalizing problem behaviors compared to Hispanic, White and Asian children, and Hispanic children reported higher externalizing problem behaviors compared to Asian children. Black and Hispanic children reported had higher levels of internalizing problem behaviors compared to White and Asian children. None of these race/ethnicity differences persisted substantially after controlling for cognitive abilities and other characteristics, with the exception of the peer relationship scale. It appears that relationships between race/ethnicity and perceptions about problem behaviors can be largely attributed to other factors.

Family risk factors did not appear to be primary sources of differences in fifth graders social and emotional self-perceptions. Living in a home with a household incomes below the federal poverty threshold, having a mother who did not have a high school diploma or equivalent, and living in a single-parent family were each associated with higher externalizing and internalizing problem behaviors, but none of these relationships persisted after accounting for cognitive ability.

The type of school the child attended between kindergarten and fifth grade (public school at all rounds, private school at all rounds, or changed school type during the study) did not emerge as an important factor related to children perceptions at fifth grade or in their change in perceptions from third to fifth grade.

Children's cognitive ability in reading and mathematics appears to be important factors with regards to their problem behaviors. After accounting for other characteristics, those in the lowest ability group within each subject area (reading and mathematics) reported substantially higher levels of externalizing and internalizing behaviors at fifth grade compared to children in the corresponding highest ability groups. Associations between family risk factors and problem behaviors found in the bivariate analyses did not emerge as important factors after adjusting for these cognitive differences.

This paper finds that children who have lower cognitive achievement levels are not only losing some of their interest in school and optimism about their ability to do well in school (Eccles 1999, Freedman-Doan et al. 2000) they are also more likely to be experiencing greater levels of both

externalizing and internalizing problem behaviors as they end their elementary school years. As the ECLS-K follows the trajectories of children's growth into the eighth grade year in the spring of 2007, the important links between cognitive growth and student's social-emotional self-perceptions will continue to be studied.

## Data Tables

**Table 1. Mean scale scores for fall 1998 first-time kindergartners' perceptions about their peer relationships and problem behaviors in the spring of third and fifth grade, by selected child, family, and early school experience characteristics: Spring 2004 and spring 2002**

Selected child, family, and school characteristics	Peer relationships			Externalizing problem behaviors			Internalizing problem behaviors		
	3rd grade	5th grade	Score change	3rd grade	5th grade	Score change	3rd grade	5th grade	Score change
Total	3.0	3.0	0.0	2.0	1.9	-0.1	2.2	2.0	-0.2
Child's sex									
Male	3.0	2.9	-0.1	2.1	2.0	-0.1	2.2	2.0	-0.2
Female	3.1	3.1	0.0	1.9	1.7	-0.2	2.2	2.0	-0.1
Child's race/ethnicity									
White, non-Hispanic	3.0	3.0	0.0	1.9	1.8	-0.1	2.1	1.9	-0.1
Black, non-Hispanic	3.1	3.1	0.0	2.2	2.1	-0.1	2.5	2.2	-0.3
Hispanic	3.0	2.9	-0.1	2.0	1.9	-0.2	2.3	2.1	-0.2
Asian/Pacific Islander	3.0	2.9	-0.1	1.8	1.7	-0.1	2.0	1.9	-0.1
Other, non-Hispanic	3.0	3.0	0.0	2.1	2.0	-0.1	2.2	2.1	-0.2
Poverty status <sup>1</sup>									
Below poverty threshold	3.0	2.9	-0.1	2.2	2.1	-0.1	2.5	2.3	-0.3
At or above poverty threshold	3.0	3.0	0.0	1.9	1.8	-0.1	2.1	2.0	-0.1
Mother's education									
Less than high school	3.0	2.9	-0.1	2.2	2.1	-0.2	2.6	2.3	-0.3
High school degree or higher attainment	3.0	3.0	0.0	2.0	1.8	-0.1	2.1	2.0	-0.1
Family type <sup>1</sup>									
Two parents/other	3.0	3.0	0.0	1.9	1.8	-0.1	2.1	2.0	-0.1
Single parent	3.0	2.9	-0.1	2.2	2.0	-0.1	2.4	2.2	-0.2
Primary home language									
English	3.0	3.0	0.0	2.0	1.9	-0.1	2.2	2.0	-0.2
Not English	3.0	3.0	0.0	2.0	1.8	-0.2	2.3	2.1	-0.2
School type									
Public school, all rounds	3.0	3.0	0.0	2.0	1.9	-0.1	2.2	2.0	-0.2
Private school, all rounds	3.0	3.1	0.0	1.9	1.7	-0.2	2.0	1.9	-0.1
Change in school type during study	3.0	3.0	0.1	1.9	1.8	-0.1	2.0	1.9	-0.1

<sup>1</sup>Poverty status, mother's education, family type, and primary home language use information from the child's kindergarten year.

NOTE: Scale scores on children's perceptions come from a self-description questionnaire (SDQ). Scores on the SDQ scales ranged from 1 "not at all true" to 4 "very true." Estimates reflect the sample of children assessed in English in all assessment years. Although most of the children in the sample were in third grade in the spring of 2002, 10 percent were in second grade, and about 1 percent were enrolled in other grades. Although most of the children in the sample were in fifth grade in the spring of 2004, 9 percent were in fourth grade, and about 1 percent were enrolled in other grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K), Longitudinal Kindergarten-Third Grade Public-Use Data File, and Fifth Grade Restricted-Use Data File, fall 1998, spring 1999, spring 2000, spring 2002, and spring 2004.

**Table 2. Mean scale scores for fall 1998 first-time kindergartners' perceptions about their peer relationships and problem behaviors in the spring of fifth grade, by their spring fifth -grade reading, mathematics, and science achievement scores: Spring 2004**

Child's level of achievement in 5th grade	Peer relationships			Externalizing problem behaviors			Internalizing problem behaviors		
	3rd grade	5th grade	Score change	3rd grade	5th grade	Score change	3rd grade	5th grade	Score change
Total									
Reading achievement									
Lowest third	3.1	2.9	-0.1	2.2	2.2	-0.1	2.5	2.3	-0.3
Middle third	3.0	3.0	0.0	2.0	1.8	-0.2	2.1	2.0	-0.2
Highest third	3.0	3.0	0.1	1.8	1.6	-0.2	1.8	1.8	0.0
Mathematics achievement									
Lowest third	3.1	3.0	-0.1	2.2	2.1	-0.1	2.5	2.2	-0.3
Middle third	2.9	2.9	0.0	2.0	1.8	-0.1	2.1	2.0	-0.1
Highest third	3.0	3.0	0.0	1.8	1.7	-0.1	1.9	1.8	-0.1

NOTE: Scale scores on children's perceptions come from a self-description questionnaire (SDQ). Scores on the SDQ scales ranged from 1 "not at all true" to 4 "very true." Estimates reflect the sample of children assessed in English in all assessment years. Although most of the children in the sample were in third grade in the spring of 2002, 10 percent were in second grade, and about 1 percent were enrolled in other grades. Although most of the children in the sample were in fifth grade in the spring of 2004, 10 percent were in fourth grade, and about 1 percent were enrolled in other grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K), Longitudinal Kindergarten-Third Grade Public-Use Data File, and Fifth Grade Restricted-Use Data File, fall 1998, spring 1999, spring 2000, spring 2002, and spring 2004.

**Table 3. Regression of fall 1998 first-time kindergartners' perceptions about their peer relationships and problem behaviors in the spring of fifth grade, on their fifth grade achievement scores and selected child, family, and early school experience characteristics: Spring 2004**

Selected child, family, and school characteristics			
	Peer relationships	Externalizing problem behaviors	Internalizing problem behaviors
Intercept	3.13 *	1.43 *	1.76 *
Male	-0.16 *	0.27 *	-0.05
Child's race/ethnicity			
Black, non-Hispanic	0.17 *	0.15 *	0.09 *
Hispanic	-0.01	0.03	0.10 *
Asian/Pacific Islander	-0.17 *	-0.03	-0.02
Other, non-Hispanic	-0.01	0.17 *	0.04
Living below poverty threshold	-0.10 *	0.10	0.10 *
Mother's education less than high school	-0.05	0.00	0.13
Single-parent household	-0.06	0.06	0.02
Primary home language non-English	0.05	-0.04	0.04
School type across all waves			
Private school, all rounds	0.05	0.00	0.03
Change in school type during study	0.07	-0.01	-0.04
Reading achievement			
Lowest third	-0.06	0.32 *	0.23 *
Middle third	-0.03	0.10 *	0.07 *
Mathematics achievement			
Lowest third	-0.03	0.19 *	0.21 *
Middle third	-0.07	0.08 *	0.12 *

<sup>1</sup>Poverty status, mother's education, family type, and primary home language use information from the child's kindergarten year.

NOTE: Scale scores on children's perceptions come from a self-description questionnaire (SDQ). Scores on the SDQ scales ranged from 1 "not at all true" to 4 "very true." Estimates reflect the sample of children assessed in English in all assessment years. Although most of the children in the sample were in third grade in the spring of 2002, 10 percent were in second grade, and about 1 percent were enrolled in other grades. Although most of the children in the sample were in fifth grade in the spring of 2004, 10 percent were in fourth grade, and about 1 percent were enrolled in other grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K), Longitudinal Kindergarten-Third Grade Public-Use Data File, and Fifth Grade Restricted-Use Data File, fall 1998, spring 1999, spring 2000, spring 2002, and spring 2004.

**Table 4. Regression of fall 1998 first-time kindergartners' change in perceptions about their competence and interest in school subjects, peer relationships, and problem behaviors from the spring of third grade to the spring of fifth grade, on their fifth grade achievement scores and selected child, family, and early school experience characteristics: Spring 2002 and spring 2004**

Selected child, family, and school characteristics	Peer relationships	Externalizing problem behaviors	Internalizing problem behaviors
Total	0.08	-0.17	0.02
Male	-0.06	0.05	-0.09 *
Child's race/ethnicity			
Black, non-Hispanic	0.12	0.07	-0.06
Hispanic	-0.01	0.01	-0.04
Asian/Pacific Islander	-0.11	0.08	-0.06
Other, non-Hispanic	0.05	0.13	-0.01
Living below poverty threshold	-0.08	-0.03	-0.08
Mother's education less than high school	-0.03	-0.07	-0.06
Single-parent household	-0.07	-0.04	0.03
Primary home language non-English	0.10	-0.09	0.03
School type across all waves			
Private school, all rounds	0.01	-0.04	0.02
Change in school type during study	0.07	0.03	0.06
Reading achievement			
Lowest third	-0.16 *	0.12 *	-0.12 *
Middle third	-0.10 *	0.02	-0.10 *
Mathematics achievement			
Lowest third	-0.01	-0.04	-0.09 *
Middle third	0.06	-0.03	-0.01

NOTE: Scale scores on children's perceptions come from a self-description questionnaire (SDQ). Scores on the SDQ scales ranged from 1 "not at all true" to 4 "very true." Estimates reflect the sample of children assessed in English in all assessment years. Although most of the children in the sample were in fifth grade in the spring of 2004, x percent were in fourth grade, and about x percent were enrolled in other grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K), Longitudinal Kindergarten-Third Grade Public-Use Data File, and Fifth Grade Restricted-Use Data File, fall 1998, spring 1999, spring 2000, spring 2002, and spring 2004.

## Standard Error Tables

**Table 1a. Standard errors: Mean scale scores for fall 1998 first-time kindergartners' perceptions about their peer relationships and problem behaviors in the spring of third and fifth grade, by selected child, family, and early school experience characteristics: Spring 2004 and spring 2002**

Selected child, family, and school characteristics	Peer relationships			Externalizing problem behaviors			Internalizing problem behaviors		
	3rd grade	5th grade	Score change	3rd grade	5th grade	Score change	3rd grade	5th grade	Score change
Total	0.015	0.014	0.016	0.017	0.015	0.015	0.019	0.013	0.018
Child's sex									
Male	0.023	0.023	0.025	0.025	0.023	0.028	0.025	0.019	0.028
Female	0.021	0.021	0.023	0.022	0.023	0.020	0.025	0.020	0.021
Child's race/ethnicity									
White, non-Hispanic	0.019	0.016	0.021	0.018	0.017	0.017	0.021	0.015	0.021
Black, non-Hispanic	0.046	0.044	0.050	0.057	0.048	0.054	0.056	0.040	0.057
Hispanic	0.039	0.035	0.033	0.039	0.037	0.033	0.039	0.027	0.030
Asian/Pacific Islander	0.058	0.053	0.075	0.040	0.045	0.056	0.054	0.040	0.041
Other, non-Hispanic	0.079	0.060	0.093	0.053	0.074	0.065	0.094	0.089	0.059
Poverty status <sup>1</sup>									
Below poverty threshold	0.041	0.035	0.047	0.044	0.048	0.032	0.041	0.036	0.038
At or above poverty threshold	0.017	0.015	0.018	0.018	0.014	0.016	0.021	0.014	0.019
Mother's education									
Less than high school	0.016	0.016	0.018	0.017	0.014	0.015	0.017	0.012	0.018
High school degree or higher attainment	0.053	0.046	0.071	0.051	0.061	0.058	0.049	0.059	0.050
Family type <sup>1</sup>									
Two parents/other	0.016	0.014	0.017	0.017	0.014	0.017	0.019	0.013	0.019
Single parent	0.040	0.039	0.036	0.044	0.036	0.040	0.039	0.035	0.039
Primary home language									
English	0.016	0.015	0.017	0.018	0.016	0.016	0.019	0.014	0.018
Not English	0.050	0.032	0.056	0.039	0.042	0.040	0.048	0.037	0.040
School type									
Public school, all rounds	0.018	0.017	0.018	0.019	0.018	0.018	0.020	0.017	0.021
Private school, all rounds	0.028	0.023	0.029	0.041	0.028	0.030	0.037	0.022	0.027
Change in school type during study	0.054	0.047	0.071	0.048	0.043	0.049	0.053	0.039	0.064

<sup>1</sup>Poverty status, mother's education, family type, and primary home language use information from the child's kindergarten year.

NOTE: Scale scores on children's perceptions come from a self-description questionnaire (SDQ). Scores on the SDQ scales ranged from 1 "not at all true" to 4 "very true." Estimates reflect the sample of children assessed in English in all assessment years.

Although most of the children in the sample were in third grade in the spring of 2002, 10 percent were in second grade, and about 1 percent were enrolled in other grades. Although most of the children in the sample were in fifth grade in the spring of 2004, x percent were in fourth grade, and about x percent were enrolled in other grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K), Longitudinal Kindergarten-Third Grade Public-Use Data File, and Fifth Grade Restricted-Use Data File, fall 1998, spring 1999, spring 2000, spring 2002, and spring 2004.



**Table 2a. Standard errors for the mean scale scores for fall 1998 first-time kindergartners' perceptions about their peer relationships and problem behaviors in the spring of fifth grade, by their spring fifth -grade reading, mathematics, and science achievement scores: Spring 2004**

Child's level of achievement in 5th grade	Peer relationships			Externalizing problem behaviors			Internalizing problem behaviors		
	3rd grade	5th grade	Score change	3rd grade	5th grade	Score change	3rd grade	5th grade	Score change
Total									
Reading achievement									
Lowest third	0.03	0.03	0.04	0.03	0.03	0.04	0.03	0.03	0.04
Middle third	0.02	0.02	0.03	0.02	0.02	0.03	0.02	0.02	0.03
Highest third	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Mathematics achievement									
Lowest third	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.03
Middle third	0.03	0.03	0.03	0.03	0.02	0.03	0.03	0.02	0.03
Highest third	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02

NOTE: Scale scores on children's perceptions come from a self-description questionnaire (SDQ). Scores on the SDQ scales ranged from 1 "not at all true" to 4 "very true." Estimates reflect the sample of children assessed in English in all assessment years. Although most of the children in the sample were in third grade in the spring of 2002, 10 percent were in second grade, and about 1 percent were enrolled in other grades. Although most of the children in the sample were in fifth grade in the spring of 2004, 10 percent were in fourth grade, and about 1 percent were enrolled in other grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K), Longitudinal Kindergarten-Third Grade Public-Use Data File, and Fifth Grade Restricted-Use Data File, fall 1998, spring 1999, spring 2000, spring 2002, and spring 2004.

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