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Early Predictors of School Performance Declines at School Transition Points

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Abstract

This longitudinal study followed students (n = 265) from kindergarten through seventh grade and examined early social and academic predictors of school performance at two normative school transitions. Questions addressed include: (a) are there changes in students' school performance over time, especially at school transition points; (b) are changes in school performance dependent on sociodemographic factors; and, (c) does early social and academic competence predict stability or change in school performance following transition? Early social and academic competence was assessed in kindergarten via teacher report and standardized tests. Days absent, discipline infractions, and mathematics and language arts letter grades obtained from school records served as outcome variables.

Findings showed stability for outcomes with the exception of discipline; discipline infractions increased after the first transition. Sociodemographic factors predicted greater performance declines following transition. Early social competence predicted reduced discipline; students rated as more socially competent in kindergarten were less likely to show discipline increases during transition, after controlling for demographic factors. Findings emphasize behavioral and academic stability suggesting that early social competencies forecast fewer increases in discipline infractions at school transition points.

Introduction

School districts around the country are examining and re-examining their practice regarding school transitions. Many urban districts including Chicago, Philadelphia, and Baltimore have reduced students' school transitions by shifting to schools that serve students from kindergarten to eighth grade. Other districts such as West Sacramento, Cincinnati, and Milwaukee are changing middle school configurations in favor of K–8 schools. School transitions are a pressing issue to practitioners; however, surprisingly little research exists about the extent to which school transitions pose a challenge and cause academic and social performance declines.

Changing schools in late childhood and early adolescence poses a challenge for students (e.g., Gutman & Midgley, 2000; Seidman, Allen, Aber, Mitchell, & Feinman, 1994; Simmons & Blyth, 1987). Compared to elementary school, middle school classes offer larger and less child-centered environments, more impersonal relationships with teachers, and competition (e.g., Alspaugh, 1998; Eccles & Midgley, 1989). Such changes may contribute to school problems as students become accustomed to new teachers and expectations. Because the onset of puberty coincides typically with the first school transition, students need to cope with biological changes and a new context simultaneously. Investigators have suggested that some students experience a decline in achievement-related behavior due to the systematic changes in the classroom environment after such normative school-to-school transitions (Eccles et al., 1993). Eccles and Midgley argued that such environmental changes can be developmentally mismatched with young adolescents' needs (i.e., heightened self-awareness, a need to engage in higher-level cognitive strategies, and reduced opportunity for close adult relationships).

The present study examines the nature of changes in school performance at transition points, the degree to which these changes are more or less dramatic for different subgroups of students, and the extent to which early social and academic competence predict performance immediately following school-to-school transitions. To accomplish this goal, we examined school-to-school transitions between fourth–fifth grades (elementary to upper elementary school) and sixth–seventh grades (upper elementary to middle school) in a sample of 265 students followed longitudinally from the start of kindergarten. Although the transition between schools can be considered a normative developmental task, few studies have examined patterns of change and early school predictors of students' adjustment during these transition periods. Ultimately, this work has the potential to inform policy and practice pertaining to interventions designed to ease students' transitions to school.

Review of the Literature

Stability and Instability in Students' School Experience

Two bodies of research provide different perspectives on the stability and instability of students' school experience. The first line of inquiry, represented by Alexander, Entwisle, and Dauber (1993), emphasizes the stability of students' characteristics and abilities and describes the importance of early school competence in predicting later school performance. The second line of inquiry, exemplified by Simmons and Blyth (1987), points to the significance of transition for producing discontinuities in students' social and academic performance.

Stability of students' school experience. Prior research has determined that early achievement is consistently correlated with later achievement (Francis, Shaywitz, Stuebing, Shaywitz, & Fletcher, 1994; Shaywitz et al., 1995; Williamson, Appelbaum, & Epanchin, 1991). Education can be viewed as a cumulative process, where lessons learned early serve as a foundation for later knowledge acquisition. For example, Egeland and Abery (1991) concluded that many students from poverty backgrounds fail to acquire basic skills during the elementary years, which leads to problems with later academic achievement. Based on a longitudinal study of over 700 students, Alexander, Entwisle, and Horsey (1997) noted that,

> Once children are in school the 'clean slate' fills rapidly: Students performance patterns and habits of conduct are established, their ideas about self and school begin to solidify, other persons form impressions about their competence and character, students are typically assigned to one or more niches in the school's system of educational tracking, and an official dossier is established that will shadow them for as long as they remain in school. (p. 98)

In a study of early predictors, Gutman, Sameroff, and Cole (2003) reported that students with higher verbal IQ in preschool and fewer risk factors (e.g., non-minority, no father absence, small family size, positive mother-child interaction) were more likely to have higher grades throughout school. Given this evidence of stability over time, the question arises—at what point are these trajectories set? Important to the goals of the present study, Alexander, Entwisle, and Dauber (1993) described "a 'window of opportunity' in the first grade, before achievement trajectories are fully established, when good classroom adjustment helps establish early learning

patterns and places children on favorable trajectories that tend to persist" (p. 812). Given the consistency of students' school performance, this body of research suggests that early success or failure establishes a trajectory that remains stable, and thus, is unaffected by school-to-school transition experiences.

Research on school transitions. An alternative body of literature points to the change that students experience as they make school-to-school transitions. Much of this research examines the transition from elementary school to middle school and views this period as a salient discontinuity in students' social experience, which in turn affects academic and social performance.

Some research describes how the elementary to middle school transition contributes to later adjustment problems (e.g., Eccles, Wigfield, & Schiefele, 1998; Simmons & Blyth, 1987). For example, Skinner, Zimmer-Gembeck, and Connell (1998) followed approximately 1,600 students from grades 3 through 7 (participants transitioned to middle school at grade 6) and found "that generally this (transition) was not a pleasant experience" (p. 157), where students experienced decreasing teacher support paired with increasing academic pressures. These changes in the experience of school occur during a period when regulators of students' school engagement shift from effort to ability. As a result, Skinner and colleagues determined that students show less engagement in learning in elementary school than in middle school.

Students who experience double transitions appear to fare worse. Crockett (1989) and colleagues compared three groups of adolescents: those making a single transition to middle school (before sixth grade); those making a single transition before the seventh grade; and those making a double transition (one before sixth and the second before seventh grade). Students who faced the double transition displayed poorer performance with respect to course grades. Perhaps the most compelling evidence is from a study by Alspaugh (1998), who found increased high school dropout rates for students making double transitions at grades 6 and 9, compared to students who did not make two such transitions. Alspaugh also indicated that students making a double transition experienced a greater achievement loss than did students transitioning to high school from a K–8 elementary school. Thus, experiencing multiple school transitions in close proximity has been linked to difficulties in school adjustment.

What are the mechanisms responsible for performance declines during transitions? Eccles, Lord, and Midgley (1991) and Eccles et al. (1993) offered four related mechanisms that explain why many students have the difficulty with transition to junior high school: (a) increased emphasis on control and discipline, which allows for less personal relationships and fewer opportunities for choice and self-management; (b) higher standards for judging students' performance, which leads to a decline in academic letter grades; (c) greater emphasis on comparing one's performance with others, which contributes to declines in motivation; and, (d) classwork that tends to require lower level cognitive skills than during the last year of elementary school. Consequently, this body of work suggests that school transitions can be stressful for students. Some students have a better likelihood of success than others do in making this transition, and early social and academic competencies are likely to predict this success.

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Other Sources of Successful Adaptation

Sociodemographic factors such as gender, ethnicity, and mother's education may contribute to an understanding of how students adapt to school transitions. Students with more risk factors may demonstrate less resiliency in the face of a school transition. For example, Simmons, Black, and Zhou (1991) found an especially marked decline in academic grades for African American boys during the middle school transition. Other symptoms of problem behavior were high in African American boys if their socioeconomic background was lower class, but not for those from higher social classes.

Given that some students have more difficulty with transition than others do, there is a critical need to identify factors that account for this variability. The present study expands upon existing literature by examining whether early predictors contribute to later school performance upon transition.

Early Competence as a Protective Factor at School Transition

Contemporary developmental theories recognize ways in which the environment supports or deters adaptation. Among the earliest research longitudinally examining risk and resilience, researchers recognized that while the potential for change is likely, past experience is not lost but is assimilated into the new pattern of adaptation (Werner & Kaplan, 1964). The capacity for resilience differs from person to person, and it may develop or decline over time, based in part on protective factors within the person that might inhibit or mitigate the negative effects of stressful events (Henderson & Milstein, 1996). Academic, social, and individual attributes have been identified that lead to successful adaptation and protect students from poor school performance. Such attributes may protect students from experiencing the negative school outcomes during the middle school transition. There are indications in the resilience literature suggesting that academic and social skills may be among the most protective factors in human development (Masten, 1994; Masten, Best, Garmezy, 1990) and thus, operative in promoting successful school transitions.

Early academic competencies. Early academic competence may reduce the stress associated with school-to-school transitions. Garmezy, Masten, and Tellegen (1984) reported that under both high and low stress conditions, students with measured high-IQ sustained high achievement test performance, while students with measured low-IQ demonstrated achievement test performance drops under higher stress conditions. Other researchers have found that teachers rated those students with higher scholastic attainment in first and second grades as more socially mature, in that they are better able to delay gratification, maintain a positive state of mind, and be appropriately socially responsive (Alexander & Entwisle, 1988). Malecki and Elliott (2002) also found that teachers' ratings of academic competence were strongly related to students' standardized test scores.

Early social competency. Previous research has consistently demonstrated a compelling association between early social behavior and later academic performance (i.e., DiPerna & Elliott, 1999; Gresham & Elliott, 1990; Wentzel, 1993). Social competence appears to be a predictor of academic achievement; students whose teachers and peers perceived them as socially responsible earned higher grades, even when taking into account IQ, ethnicity, and family structure (Wentzel). Other researchers have broadened Wentzel's work and found that social skills were a significant predictor of academic competence (Malecki, 1998; Malecki & Elliott, 2002). Malecki concluded that social skills have a significant predictive relationship with academic outcomes. In addition, social skills significantly predicted future academic performance when both social skills and problem behaviors were analyzed concurrently, leading researchers to hypothesize that "classroom social skills may act as academic enablers" (Malecki & Elliott, p. 22). In a longitudinal analysis of the structure and coherence of competence from childhood to adolescence, researchers found conduct problems in childhood to influence academic achievement in adolescence; apparently, antisocial behavior has increasingly negative effects on academic success over time (Masten et al., 1995). The relationship of earlier academic problems to delinquency is mediated by ongoing conduct problems. What lies at the root of the effectiveness of these social skills? Ability to meet age-appropriate social expectations generally signals sound coping skills, results in positive adjustment to school, and subsequently, enhanced academic performance (Garmezy & Masten, 1986).

The present study examines the extent to which students show stability and instability in behavior and academic performance at school transition points from elementary to upper elementary school and from upper elementary to middle school. Our hypothesis is that a greater magnitude of instability in academic outcomes and social outcomes exists during school-to-school transition points. Further, this study examines whether sociodemographic factors, including gender, ethnicity, and mother's level of education, are predictive of student's school performance during transition points. Our hypothesis is that sociodemographic factors associated with risk predict academic and social performance declines at school transition points. In addition, this study examines the degree to which early social and academic competencies relate to less decrease in social and academic performance during school transition. We hypothesize that early academic and social competencies reduce discontinuities in the outcome variables associated with the transition between schools. More specifically, the study addresses whether early patterns of success in school function to predict less than expected rates of decline during the transition between fourth–fifth grades and sixth–seventh grades, even after controlling for sociodemographic factors often associated with school outcomes.

Method

Participants

The sample of 265 students were a subset from an original sample of 585 students consisting of the entire entering kindergarten cohort of 1987–1988 in a small city in the southeast, for whom complete data were available for K–8. The sample (n = 265) used in this particular study, included only those students who remained in the district through seventh grade and had complete data. Comparisons showed no differences between the sub-sample and the students lost to follow-up with regard to gender or mother's level of education.

The sample consisted of 265 students; 112 males and 153 females. Of these participants, 160 were White (60%), and the remaining 105 were non-White (40%), primarily African American. Mother's education was distributed as follows: 31 (12%) completed some graduate work, 37 (14%) were college graduates, 45 (17%) had some college, 92 (35%) were high school graduates, 49 (18%) had some high school, and 11 (4%) had no high school.

Each student attended three schools in a single district between kindergarten and seventh grade, resulting in two school transition points. Students attended one of six elementary schools from kindergarten through fourth grade, a single upper elementary school for fifth and sixth grades, and a single middle school for seventh and eighth grades. These transition points and the number of transitions were not widely used in school districts across the region or state and were distinct to the sample under study. In addition, standard guidance office support was available to assist students in both the upper elementary and middle schools, yet there were no specific transition programs in place.

Procedures

Kindergarten assessment. An initial student assessment was conducted on the first day of kindergarten, when at least one parent and the student completed a comprehensive school entry screening battery. The parent completed a standard demographic data instrument covering student and family information variables. Students were assessed using a short form of the Stanford-Binet, Fourth Edition (Thorndike, Hagen, & Sattler, 1986). Teachers completed the Teacher-Child Rating Scale (Hightower et al., 1986) in November and April of kindergarten.

Demographics including gender, ethnicity, and mother's highest completed level of education were obtained during the initial school entry screening battery. Mothers' level of education was used as an indicator of socioeconomic status based on findings that mother's educational level was more highly correlated with student outcomes than fathers' reported income or occupation (Bouchard & Segal, 1985).

Early social competence was assessed by kindergarten teachers in April using the Teacher-Child Rating Scale (Hightower et al., 1986). It is a 38-item teacher-report rating scale of students' classroom behavior. The items load on seven factor-based subscales: conduct problems, learning problems, shy/anxious problems, frustration tolerance, work habits, assertive social skills, and peer sociability. The social competence index was based on the composite of the frustration tolerance, work habits, and peer sociability subscales. A median split (50.0) was used to divide the sample into a low group (range = 19 – 50, mean = 40.56, sd = 6.94), and a high group (range = 51 – 75, mean = 61.24, sd = 6.55).

Early cognitive competence was assessed using two subtests of the Stanford-Binet, Fourth Edition (Thorndike et al., 1986) administered by trained research assistants on the first day of kindergarten. Median reliability for the Composite Score across all ages is .81. Subtest reliabilities are typically in the .80s and .90s. A composite of the verbal and nonverbal scores was developed by adding the scores and dividing by two, in order to have a total cognitive competence score (the Stanford-Binet cognitive competence index). The cognitive competence index had a mean of 94.32 and a standard deviation of 13.02.

Follow-up assessment. Information was obtained from students' school records from kindergarten through eighth grade and included disciplinary infractions, attendance, and math and language arts letter grades.

School attendance was gathered from report cards. The total number of school days, days attended, and days absent were collected for each year from first through seventh grade. Days absent was coded as the total number of days per school year that the student was absent and ranged from 0 to 98. Logarithmic transformations were computed prior to analysis.

Disciplinary infractions was specified as the number and type of disciplinary infraction. Infractions include unexcused absences, aggressive behavior, and destruction of property among other school behavior problems. Total number of disciplinary fractions per year was used as an indicator of discipline problems.

Disciplinary infractions were coded as the number of disciplinary infractions on the student's record per school year (range = 0 to 62 infractions). The distribution for discipline infractions was skewed, as many of the students did not have any discipline infractions in a given school year. By grade level, the percentage of students having disciplinary infractions greater than zero was: (a) first grade 2.3%, (b) second grade 2.3%, (c) third grade 2.3%, (d) fourth grade 6.0%, (e) fifth grade 31.3%, (f) sixth grade 37.4%, and (g) seventh grade 46.8%. The logarithmic transformations of the number of discipline infractions was computed and used in the analysis.

Academic letter grades, including mathematics and language/arts letter grades, were recorded in elementary school as (1 = Unsatisfactory, 2 = Needs improvement, 3 = Satisfactory, 4 = Good, 5 = Outstanding). Mathematics grades and language arts grades in upper elementary school and middle school were also collected and assigned codes (0 = Incomplete, 1 = F, 2 = D, 3 = C, 4 = B, 5 = A).

Analytic Approach

We considered the possibility of using growth curve analysis to estimate growth and departure from that growth at transition points. However, this approach requires assessing the same participants on measures that are vertically equated (McArdle & Epstein, 1987; Willett, 1997). Our data were not vertically equated, thus eliminating this strategy as a possibility. A doubly multivariate design was chosen because the dependent variables were non-commensurate and measured repeatedly (Tabachnick & Fidell, 2001).

Two repeated measures of doubly multivariate analyses of covariance (MANCOVA), one for social outcomes and one for academic outcomes, were computed following procedures described in Tabachnick and Fidell (2001). Gender, ethnicity, and mothers' education were treated as between subject variables and year in school was treated as a within subject variable. Indices of early social and academic competence were treated as covariates in the model as predictors of stability or change at transition points. Post-hoc contrasts (repeated) between each grade level (grade one to seven) were computed to examine change at transition points; these contrasts compared the mean of each grade level (except first) to the mean of the previous levels. These post-hoc contrasts were used only as evidence of instability in performance warranting further examination. Reported probability values reflect a Bonferroni adjustment used to compensate for problems associated with repeated testing (7 tests, $p < .007$).

Results are presented in relation to the three research questions. For the first research question, between-subjects main and interaction effects are reported for the independent variables (gender, ethnicity, and mother's education), as well as post-hoc contrast differences by grade level for year and interactions with independent variables. This approach addresses the matter of stability or change at transition points. For the second research question, within-subjects main and interaction effects are reported for the independent variables (gender, ethnicity, and mother's education), as well as post-hoc contrasts differences by grade level for year and interactions with independent variables, which addresses the contribution of sociodemographic factors on children's performance during transition points. For the third research question, between-subjects main and interaction effects are reported for the covariates (academic competence and social competence), and post-hoc findings for year and covariate interactions, which addresses the matter of covariates being predictive of stability or change during school transitions.

Table 1
Descriptive Statistics of the Dependent Variables: Days Absent, Discipline Infractions, Mathematics Grades, and Language Arts Grades

	Grade 1		Grade 2		Grade 3		Grade 4	
	M	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Days Absent	9.01	7.59	8.01	7.96	7.62	7.59	7.93	8.29
Discipline	0.03	0.25	0.03	0.21	0.04	0.32	0.25	1.39
Math Grades	3.94	0.95	.	.	4.18	0.81	4.11	0.94
Lang. Arts Grades	4.06	0.93	.	.	4.18	0.82	4.35	0.73

	Grade 5		Grade 6		Grade 7	
	M	**SD**	**M**	**SD**	**M**	**SD**
Days Absent	10.17	11.14	10.37	12.21	10.09	10.92
Discipline	1.37	3.36	1.51	3.83	3.41	7.18
Math Grades	3.91	1.06	3.79	1.11	3.66	1.11
Lang. Arts Grades	3.95	0.99	3.88	1.15	3.47	1.32

Note. Second grade mathematics grades and language arts grades were unavailable.
Sample sizes vary slightly due to missing data.

Results

Table 1 offers descriptive information on students' outcomes over the seven years studied, corresponding to grades 1 through 7. The MANCOVA analyses provide results from between-subjects and within-subjects analysis. The between-subjects information offers a backdrop for our research questions whereas the within-subjects analysis is most central to addressing our research questions on stability or lack of stability over the course of school transitions.

The following is a description of the between-subjects main effects results. According to these analyses, discipline problems occurred more often for males and students from families with low mother education as evidenced by the main effects for gender and mother's education. Discipline problems occurred more often for males whose mothers had lower levels of education than females whose mothers had lower levels of education, but there was no difference between males and females whose mothers had higher levels of education, a finding based on the gender by mother's education interaction. Exact *F* values are shown in Table 2. Students whose mothers had lower levels of education were absent more than those students whose mothers had higher levels of education, demonstrated by the main effects for mother's education (see Table 2).

Non-white students and those from families with low mother's education had lower mathematics and language arts letter grades than white students and students whose mothers had a higher level of education as evidenced by main effects for ethnicity and mother's education for both mathematics and language arts letter grades (see Table 3). In addition, males had lower language arts letter grades than females, as evidenced by a main effect found for gender. The remaining results describe within-subjects main effects as they pertain to the three research questions, which examine the extent to which school performance is stable, or not over time.

Question One: Are there changes in students' school performance over time, especially at transition points?
As shown in Table 2, students' discipline behavior changed over time as evidenced by a within-subjects year

Table 2
Doubly Multivariate Analysis of Covariance for Days Absent and Discipline Infractions

Source of Variance	*df*	Days Absent Univariate *F*	Discipline Univariate *F*	Multivariate *F*
Between Subjects				
Academic Competence	1	0.07	2.99	1.75
Social Competence	1	6.06**	15.84**	14.35**
Gender	1	1.55	7.27**	3.78*
Ethnicity	1	2.06	3.55	3.73*
Mother's Education	5	6.95**	6.54**	5.24**
Gender*Ethnicity	1	1.55	0.72	0.92
Gender*Mother's Education	5	0.51	3.87**	2.19*
Ethnicity*Mother's Education	4	1.56	0.59	1.24
Gender*Ethnicity*Mother's Ed.	4	1.43	0.42	1.05
Error	230			
Within Subjects				
Year	6	1.41	12.21**	3.42**
Year*Academic Comp.	6	0.61	2.74**	1.55
Year*Social Comp.	6	0.94	7.48**	2.36**
Year*Gender	6	0.61	3.23**	1.55
Year*Ethnicity	6	0.39	2.72**	1.29
Year*Mother's Ed.	6	1.36	3.79**	1.48**
Year*Gender*Ethnicity	6	1.41	0.51	0.98
Year*Gender*Mother's Ed.	30	0.78	1.35	0.95
Year*Ethnicity*Mother's Ed.	24	1.01	0.76	1.05
Year*Gender*Ethnicity* Mother's Ed.	24	0.63	0.36	0.64
Error (Year)	1380			

Note. ** $p < .01$, * $p < .05$

main effect. No within-subjects year main effect was shown for the outcome of days absent, which shows that students' absenteeism did not significantly change over time. Within-subjects year main effects were not demonstrated for mathematics letter grades and language arts letter grades (see Table 3), again indicating that students' academic performance did not change significantly over time. Because a within-subjects main effect was found for year and the outcome discipline, this warranted further exploration in which we computed post-hoc contrasts to detect significant changes in discipline between years in school (see Table 4). Post-hoc analyses showed significant increases in discipline from grade 4 to grade 5 [F (1,230) = 6.92, $p < .01$], grade 5 to grade 6 [F (1,230) = 20.41, $p < .01$], and grade 6 to grade 7 [F (1,230) = 13.55, $p < .01$].

Post-hoc contrast findings show differences between grades in number of discipline infractions at transition points and not at transition points. The difference in discipline infractions begins at the first transition point. Thus, some questions are raised: are there sociodemographic factors that might predict students' school behavior over time; and, are there factors such as early social or academic competence that can prevent these rises in discipline?

Question Two: Are changes in students' school performance different depending on sociodemographic factors?

We examined within-subjects interactions between year and the independent variables. For the outcome variables of days absent (see Table 2), mathematics letter grades (see Table 3), and language arts letter grades (see Table 3), no significant interactions were evident between year and the independent variables (gender, ethnicity, and mother's education), indicating that sociodemographic factors were not associated with students' performance as related to absenteeism and academic letter grades over time. The dependent variable discipline did show significant interactions between year and gender, year and ethnicity, and year and

Table 3
Doubly Multivariate Analysis of Covariance for Mathematics Letter Grades and Language Arts Letter Grades

Source of Variance	*df*	Mathematics Univariate *F*	Lang. Arts Univariate *F*	Multivariate *F*
Between Subjects				
Academic Competence	1	1.82	9.21**	5.48**
Social Competence	1	22.21**	11.80**	11.06**
Gender	1	0.43	4.22*	2.93
Ethnicity	1	11.95**	6.37**	5.95**
Mother's Education	5	4.86**	8.45**	4.53**
Gender*Ethnicity	1	0.39	0.01	0.35
Gender*Mother's Education	5	0.43	0.27	0.54*
Ethnicity*Mother's Education	4	0.95	0.82	0.61
Gender*Ethnicity*Mother's Ed.	4	0.25	0.69	0.71
Error	233			
Within Subjects				
Year	5	1.21	2.14	1.79
Year*Academic Comp.	5	0.78	0.71	0.68
Year*Social Comp.	5	0.79	1.33	1.25
Year*Gender	5	1.55	0.71	1.03
Year*Ethnicity	5	0.88	1.69	0.94
Year*Mother's Ed.	25	1.05	1.06	0.89
Year*Gender*Ethnicity	5	2.08	1.23	1.81
Year*Gender*Mother's Ed.	25	1.13	1.29	1.08
Year*Ethnicity*Mother's Ed.	20	0.85	0.88	0.81
Year*Gender*Ethnicity* Mother's Ed.	20	1.23	1.53	1.27
Error (Year)	1165			

Note. ** $p < .01$, * $p < .05$

mother's education (see Table 2). Further exploration, using post-hoc analyses as described above, illustrated interaction effects. From grade 4 to grade 5, males demonstrated a greater increase in discipline than females as evidenced by a significant interaction between year and gender during that transition year (see Table 4). Non-white students' number of discipline infractions increased significantly more than white students' number of discipline infractions as shown by a significant interaction between year and ethnicity from grade 4 to grade 5. Students whose mothers had higher levels of education had a significantly greater decrease in number of discipline infractions from grade 5 to grade 6 compared to those students whose mothers had lower levels of education. From grade 6 to grade 7, students whose mothers had lower levels of education had a significantly greater increase in discipline infractions when compared to those whose mothers had higher levels of education. These findings were evident by the significant interactions found between year and mother's education for discipline from grade 5 to grade 6, and grade 6 to grade 7. Taken together, these findings show that males, non-whites, and students whose mothers had lower levels of education, for the most part, demonstrated less ideal discipline outcome behaviors when compared to their counterparts.

Question Three: Does early social and academic competence predict stability or change in school performance at such transition points?

To test whether early academic and social competencies reduce discontinuities in the outcome variables associated with the transition between schools, we used an academic competence index and a social competence index as covariates in the MANCOVA design. Table 2 demonstrates the results of the MANCOVA for discipline and days absent. Students with high early social competence had fewer discipline infractions compared to those with low early social competence as indicated by a between-subjects main effect for discipline. Students with high early social competence had more days absent than students with low

Table 4
Within Subjects Contrasts Based on Repeated Measures Doubly Multivariate Analysis of Covariance for Discipline Infractions

		F-Ratios for Contrast Differences by Grade Level					
		1 – 2	2 – 3	3 – 4	**4 – 5**	5 – 6	**6 – 7**
Source of Variance	**df**						
Within Subjects							
Year							
Discipline	1	.02	.75	3.32	**6.92****	20.41**	**13.55****
Year*Academic Comp.							
Discipline	1	.50	.31	.73	**.14**	9.27**	**1.03**
Year*Social Comp.							
Discipline	1	1.26	.18	2.59	**14.68****	2.78	**7.37****
Year*Gender							
Discipline	1	.59	.01	1.29	**9.82****	2.38	**.17**
Year*Ethnicity							
Discipline	1	1.06	2.97	.44	**7.78****	.29	**1.50**
Year*Mother's Ed.							
Discipline	5	.64	.80	1.62	**1.39**	2.45*	**6.92****

Note. ** p < .01, * p < .05
Bold-faced type indicates transition years.

early social competence as also indicated by a between-subjects main effect (see Table 2). Early academic competence did not demonstrate a main effect for discipline or days absent.

In order to examine the impact of early social and academic competence over time, within-subjects year by early academic competence and year by early social competence interactions were examined for the dependent variables. Significant year by early academic competence and year by early social competence interactions were evident for the discipline outcome (see Table 2). Again, post-hoc analyses were examined to better understand the impact of early social and academic competence on students' school performance over time (see Table 4). The following text describes the discipline outcome post-hoc analyses of within-subjects interactions between year and early competencies which addresses the matter of early social and academic competence as being predictive of stability or change during school transitions (which are most germane to the present study).

In examining whether early social and/or academic competence were predictive of stability or change during school transitions, post-hoc contrasts were again explored for evidence of significant interactions between year and early social competence. The number of discipline infractions during school-to-school transition years increased significantly more for students with low early social competence than students with high early social competence. This finding supported the hypothesis that the early indicator of social competence related to fewer disciplinary infractions during school transitions (see Figure 1). Significant interactions were found for discipline from grade 4 to grade 5 [F (1,230) = 14.68, $p < .01$], and from grade 6 to grade 7 [F (1,230) = 7.37, $p < .01$] (Table 3). Students with low early academic competence had an increase in discipline infractions from grade 5 to grade 6, while students with high early academic competence had a decrease in discipline during this time, as demonstrated by a significant interaction between year and early academic competence for discipline from grade 5 to grade 6 [F (1,230) = 9.27, $p < .01$], a non-transition year. Thus, findings did not support the hypothesis that high early academic competence in kindergarten would relate to fewer discipline infractions during transition.

Year by early academic competence and year by early social competence interactions were not demonstrated for the outcome days absent (see Table 2). This finding failed to support the hypothesis that high early social and/or early academic competence indices in kindergarten would relate to less increase in absenteeism during school transition points.

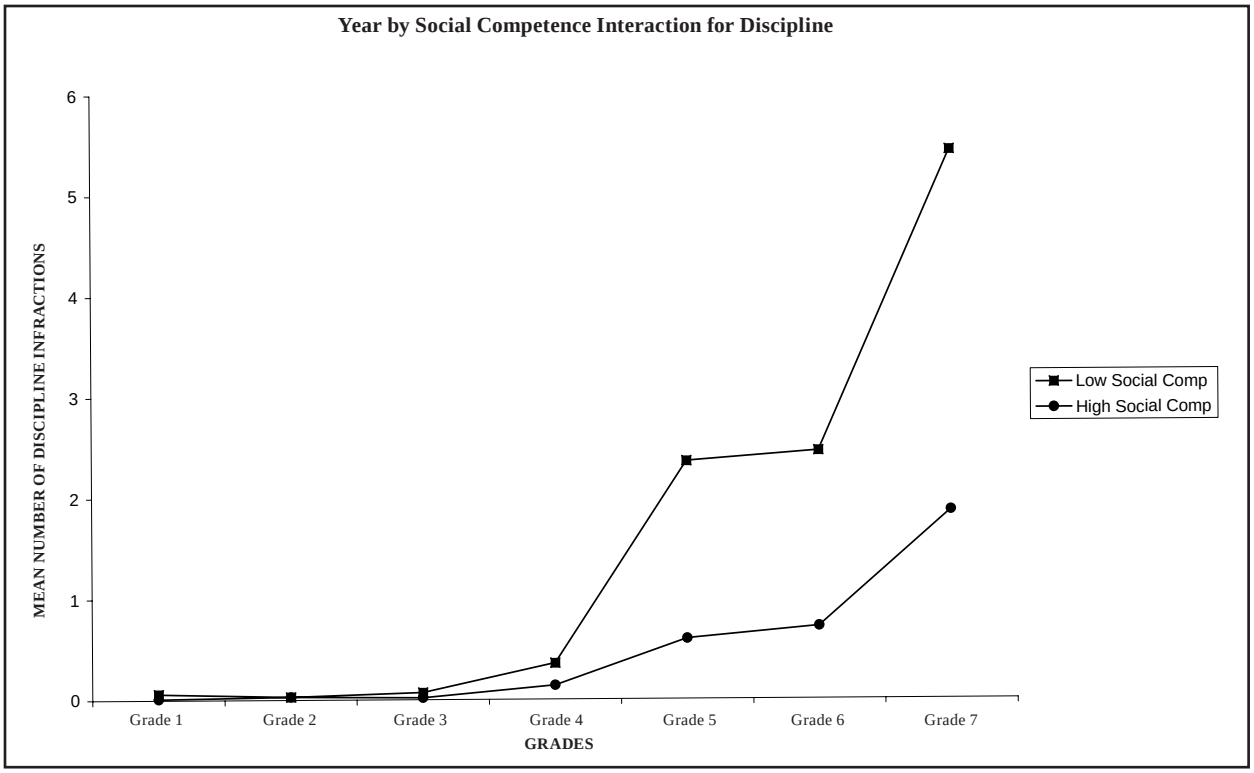

Figure 1. Increases in discipline infractions over time as a function of early social competence

Table 3 illustrates the results of the MANCOVA for academic outcomes. Students with high early social competence indices had higher mathematics grades than students with low early social competencies, as demonstrated by a between-subjects main effect for early social competence. Early academic competence provided no reliable unique adjustment associated with mathematics letter grades. Students with high early academic competence and/or high early social competence had higher language arts letter grades than students with low early academic and/or low early social competence; for language arts letter grades, the model demonstrated between-subjects main effects for early academic competence and early social competence (see Table 3).

Again, post-hoc contrasts were examined for evidence of significant interactions between year and early social and or academic competence as predictive of stability or change during school transitions. Year by early academic competence and year by early social competence interactions were not demonstrated for the outcomes mathematics letter grades (see Table 3), and language arts letter grades (see Table 3). These findings failed to support the hypothesis that high early social and or early academic competence indices in kindergarten would relate to less decrease in mathematics and language arts letter grades during school transition points.

Discussion

Three findings emanated from this study. First, on average, school transitions were not associated with noted instability in school performance (e.g., social or academic performance) at transition points. However, we note one exception. We did find that discipline problems rose notably at students' first transition point. Second, for some students, school transition points were associated with greater discontinuities in school performance. Specifically, students who were male, non-white, and whose mothers had lower levels of education, for the most part, demonstrated more problematic discipline histories and greater increases in discipline problems at transition points when compared to their counterparts. Third, early social competence appeared to play a protective role, that is, students high in social competence during the kindergarten year showed fewer increases in discipline problems at transition points. Generally speaking, these findings suggest that school transition points are not critically important in relation to predicting absenteeism and declines in academic

achievement. However, school transitions may be particularly problematic in relation to discipline problems, especially for students from at-risk sociodemographic backgrounds and for students low in social competency in the early years of school. Currently, many districts are grappling with the decision about how to handle the middle school years and many urban schools have shifted to a K–8 model. The present findings suggest that transition points are more problematic in some domains than others, and for students already at risk for school failure because of sociodemographic characteristics or low social competency early in their school career.

Evidence Supporting the Stability of School Performance Regardless of Transition

In general, results showed patterns of stability, not change for academic letter grades (mathematics and language arts) and absenteeism as participants progressed from first through seventh grades, regardless of a school-to-school transition. This is consistent with evidence supporting the stability of students' academic achievement as they progress through school (e.g., Francis et al., 1994). For example, Rabiner and Coie (2000) found that reading ability in the first grade was the most important predictor of reading ability in fifth grade.

Findings for students' discipline history were quite distinct—students showed an increase in discipline problems in the fifth grade, coinciding with the first school transition. Jimerson, Egeland, and Teo (1999) found that socioemotional and behavior problems accounted for a decline in academic achievement, and that over time, students displaying these problem behaviors fell further behind their peers. Such findings are consistent with previous research showing that students' developmental pathways remain stable to a point, then branch off in early adolescence toward either healthy adaptation or maladjustment (Pickles & Rutter, 1991).

Compared to individuals in other developmental stages, adolescents display a proportionately higher amount of risk taking, sensation seeking, and reckless behaviors (Spear, 2000; Trimpop, Kerr, & Kirkcaldy, 1999; Walker, 2002). Further, Steinberg (2004) noted increases in vulnerability to antisocial peer influence between preadolescence and mid-adolescence, with peaks of such susceptibility occurring in mid-adolescence; and gradual declines in such susceptibility thereafter. Graber, Brooks-Gunn, and Petersen (1996) found illegal behaviors (i.e., use of illicit substances) are more frequent during adolescence than other developmental stages and such behaviors seem to be constant across contexts and cultures. In addition, adolescence is a time when peer groups are more likely to influence disruptive behavior (Battistich, Solomon, Dong-il, Watson, & Schaps, 1995).

The fact that discipline problems increase upon school transitions suggest that this new school environment poses a challenge to students during early adolescence. As support, others have argued that the middle school environment does not fit with adolescents' developmental status, and that the poor fit between stage and environment may induce declines in performance (Eccles & Midgley, 1989). Specifically, they argue that the typical junior high school climate where the emphasis is on teacher control and discipline paired with decreased opportunities for autonomous student behavior (i.e., decision making, self-management, and choice) is developmentally mismatched with young adolescents' needs for participation in decision making and engagement in higher level cognitive activities. This raises issues that have implications for practice, as researchers, policy makers, and practitioners consider what developmentally appropriate environments are for adolescents. Since the increase in discipline coincided with the transition to a new school, this calls for further study.

Demographic Factors Related to Stability and Instability in School Performance

Those students who were male, non-white, and whose mothers attained lower levels of education, when compared to their counterparts, displayed steeper declines in school performance during school transition points—particularly the first transition. It is useful to examine local, contextual factors to explain this. In the current study, the students from six separate elementary schools join together in the fifth grade. Declines in school performance during the transition points may be because non-white students are moving from a context where they are the ethnic majority to a context where they are an ethnic minority. Such findings are also consistent with work that found the transition to middle school to be particularly difficult for minority youth (Seidman et al., 1994). Similarly, in a longitudinal study of academic trajectories, researchers found

that socioeconomic status (SES) predicted students' achievement as they progressed through school; those students from higher SES demonstrated improvement in achievement across the years while those from lower SES "fell further and further behind" (Jimerson et al., 1999, p. 124). The findings in the present study are also consistent with prior research (Gutman et al., 2003; Gutman, Sameroff, & Eccles, 2002) that showed negative effects of social risk on academic and behavioral school performance. Pianta and Walsh (1996) clarified that although most of the discourse on potential risks focuses on each risk singly, it is important to understand that these risks are highly interrelated. The present findings suggest that the presence of numerous school transitions may constitute one additional stressor for students who are already at risk for school failure.

Early Academic and Social Competency as Protective Factors

School transition points were not equally problematic for all students, and students whose kindergarten teachers rated them high on measures of early social competence demonstrated less of an increase in discipline problems at both transition points. Thus, early social competence appeared to play a protective role. Sroufe and Rutter (1984) maintained that the development of healthy relationships and adjustment to school are necessary tasks during early to middle childhood. Success in these relationships with peers and teachers establishes an important marker of students' adaptation to school.

Early evidence of social competence may also indicate students' success in reaction to a stressor, such as the transition to a new school. Characteristics such as predictable behavior, sense of humor, proactive behavior, high verbal skills, strong interpersonal skills, and high malleability have been identified as characteristics that help disadvantaged children show resilience to life stressors (e.g., Masten, 1994; Werner & Smith, 1982). Such characteristics have been shown to facilitate school adaptation, predict future achievement and social competence with peers, and ultimately, result in improved job competence, greater perception of self-worth, and better mental health (Masten & Coatsworth, 1995; Parker, Rubin, Price, & DeRosier, 1995). In contrast, peer rejection and the presence of aggressive and disruptive behavior forecasts difficult adjustment (Cicchetti & Bukowski, 1995; Hartup, 1983; Masten & Coatsworth; Newcomb, Bukowski, & Pattee 1993). The stress of school transition may exacerbate these skills or negative attributes.

Limitations

Three limitations require mention. First, the outcome measures in this study, particularly discipline infractions, may have different implications at differing grade levels and with individual students. Behaviors that may have been handled in the classroom at the elementary level may be considered appropriate for referral/infraction at the secondary level. Second, the comparison of non-letter grades in elementary school to letter grades in upper elementary and middle school may also have different implications at differing grade levels as comparisons are made across school settings. Third, these findings are correlational in nature. Although the findings convey information about change in students' performance at school transition, there is no evidence that the school transition caused the changes in school performance. This leads to a future hypothesis to be tested as to whether a school transition is a trigger for discipline and increased problem behaviors.

Closing Comments

The transitions between schools pose a challenge to students. Examining changes during transition points provides a view of students' ability to adapt to situations using their academic and social abilities. The present findings support the importance of understanding these early factors for predicting increased problems at transition points, particularly increases in discipline infractions. This study adds to this body of literature by not only describing the relation between early and later behavior problems, but also describing how these early predictors relate to students' ability to cope and adapt to their new school environments.

These results have several implications for parents, teachers, and administrators who make decisions for students about school transitions. Further, such changes in student adjustment call for further research and modified practice in school psychology. In some respects, this period is a time of stability in performance and in other respects and for some subgroups, this represents a time for change. The ideal middle school environment engages young adolescents by helping them feel capable of meeting academic challenges,

offers them choice and control over their learning, and makes them feel safe and secure in their learning environment (Roeser, Eccles, & Sameroff, 2000). Interventions such as the Coping Power Program—a prevention/intervention program implemented the year prior to and immediately following the middle school transition—can help adolescents meet the new demands associated with transition (Lochman & Wells, 2002).

This study raises several issues for future research. First, comparing school records data for students from two types of district—one with a double transition and one with a single transition—would add additional insight into factors contributing to discontinuities in school performance. Second, examining the school and classroom processes that underlie the reported effects would clarify the nature of such changes. For example, prior research (Eccles et al., 1993) has pointed to changes in classroom practices (e.g., emphasis on teacher control, more stringent grading practices) between elementary and middle school. Assessment of the nature of these processes and description of the ways in which they precipitate change will contribute the type of findings necessary to support school administrators striving to make school structure decisions.

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