

PREVENTION OF ACHIEVEMENT LOSS IN THE MIDDLE SCHOOL
TRANSITION: EVALUATION OF A SOCIAL-EMOTIONAL LEARNING
INTERVENTION

by

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ABSTRACT OF THE DISSERTATION

Prevention of Achievement Loss in the Middle School Transition: Evaluation of a Social-

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Decades of research have shown a normative decline in academic performance to be associated with the transition from elementary school to middle school. Based on the idea that these difficulties stem from a lack of relevant coping skills, the current study focused on the preventive effects of a three-year social and emotional learning (SEL) program in mitigating transitional achievement loss. Quality of implementation, a crucial, but often overlooked, factor in program evaluation, is the framework through which students' intervention experiences were defined. In each intervention year, implementation was assessed through teacher-reported curriculum fidelity and teacher's perception of program quality. These factors were tested as predictors of changes in GPA and standardized test scores across the transition. Intervention dosage received over the fifth grade year emerged as a significant predictor of GPA change. Dosage was unrelated to standardized test change, though differences between genders and ethnic groups in transitional standardized test performance were found. Teachers' ratings of program effectiveness were also unrelated to outcome, but were associated with intervention dosage.

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Prevention of Achievement Loss in the Middle School Transition: Evaluation of a Social-Emotional Learning Intervention

Transitioning from elementary to middle school constitutes a number of significant changes in the lives of early adolescents. Aside from moving to a new physical location, the middle school environment poses new social structures, increased academic demands, and a greater expectation of personal responsibility. Often, several elementary schools feed into one middle school, leading to a reorganizing of social groups and friendships. Even seemingly smaller changes, such as navigating the practical challenges of moving from class to class, remembering locker combinations, and bringing the correct books to various classes are all reported by transitioning students to be sources of stress (Elias, Gara, & Ubriaco, 1985).

Unfortunately, this transition is timed such that it coincides with a host of significant biological changes. Transitioning students are very likely to face the challenges of middle school at the same time that they are facing the challenges of puberty, as well as possible accompanying changes in relationships with the opposite sex, the nature of their friendships, and their status at home. The overlay of school change on top of a period already rife with change, has led researchers to question the effects of transitioning students during this developmental period. The result is decades of research showing significant academic declines to be associated with the concurrent physical, social, and environmental changes characteristic of the middle school transition.

Though much of this work started to appear in journals nearly twenty years ago, the middle school structure remains the norm in most of the country. Some recent efforts have been made to alter the ecology of the middle school such that the environment

provides a more appropriate match to students' developmental needs (see Juvonen, Le, Kaganoff, Augustine, & Constant, 2004). While this is a promising area of reform, the focus on school ecology has led to the relative neglect of a potentially powerful avenue of intervention: the strengthening of individual skills, strategies, and resources to better prepare students to meet the challenge of transition.

The current study focuses on the evaluation of an intervention rooted in this skill-building perspective. *Social-emotional learning* (SEL) is a term used to describe a class of interventions that focuses on expanding traditional curricula to include lessons and activities designed to develop emotional and interpersonal skills. Specifically, SEL interventions target areas such as emotional awareness and self-regulation, empathy, interpersonal problem-solving, and decision making (Elias et al., 1997). SEL interventions have been found to positively impact academic performance (for a review, see Zins, Bloodworth, Weissberg, & Walberg, 2004). As the problem of transition has been characterized as one of heightened social and emotional stressors leading to academic difficulties, SEL interventions are particularly well-suited to prevention efforts. Preliminary support has already been established for the efficacy of SEL programs in preventing transitional achievement loss (Elias, Gara, Ubriaco, & Rothbaum, 1986; Rosenblatt & Elias, under review). This study aims to further these findings, focusing specifically on urban, minority populations.

Normative Patterns in Middle School Transition

General Trends

Studies investigating the transition to middle school began to appear regularly in the literature in the early 1970s. Since that time, the body of accumulated research has

identified the transition to middle school as an event marked by significant declines in academic, behavioral, interpersonal, and emotional functioning. The most informative of these studies compared students in transition districts (which were structured with separate elementary and middle or junior high schools) to students in non-transition districts (which generally employed a K-8 structure). Students in transition schools showed greater declines in achievement test scores (Alspaugh, 1998), grade point average (Blyth, Simmons, & Carlton-Ford, 1983; Simmons, Burgeson, Carlton-Ford, & Blyth, 1987), self-esteem (Blyth, Simmons, & Bush, 1978; Simmons et al., 1987; Simmons, Rosenberg, & Rosenberg, 1973), and participation in extracurricular activities (Blyth et al., 1978; Blyth et al., 1983; Simmons et al., 1987) over the same developmental period. The decline in GPA over the period of transition has been replicated in analyses of multi-school samples controlling for age at the time of transition, grade of transition, and ability level (Seidman, Allen, Aber, Mitchell, & et al., 1994). At least two studies have found transition difficulty to be associated with negative outcomes through high school (Alspaugh, 1998; Eccles, Lord, Roeser, & Barber, 1997).

Demographic Differences

Gender. Though a number of studies have examined gender differences in the experience of middle school transition, few have specifically looked at academic outcomes. Studies examining emotional outcomes have included some variables related to academics (e.g., school commitment). These consistently indicate significant gender differences in transition outcome, but the nature and direction of these differences have shown considerable variation across studies.

Akos and Galassi (2004) examined gender differences in a sample of sixth graders following their transition from elementary to middle school in a school district in the southern United States. They administered self-report questionnaires assessing student's retrospective perceptions of the difficulty of their middle school transition, feelings of connectedness to their middle school, and sources of support through the transition. Gender differences were only found for school connectedness, with girls reporting a greater sense of connection with their new school (though the reverse was found in a second cohort transitioning to high school).

In contrast, Hirsch and Rapkin (1987) found more negative effects for girls than boys following the transition. Girls showed increased rates of psychiatric symptomology, including depression and hostility, while boys reported decreases in these symptoms over the same time period. Girls also showed a significantly greater decline in commitment to school across the transition.

Both of these studies suffer from a major methodological weakness, in that both failed to include a non-transition control group. As such, findings could be interpreted as a reflection of the developmental period as opposed to the experience of transition. This, coupled with the inconsistencies of findings across studies, precludes any meaningful conclusions as to gender differences in transitional outcome.

Ethnicity. The normative academic declines found in predominantly white, middle class samples have been consistently replicated in less advantaged, minority populations (Gutman & Midgley, 2000; Hirsch & Rapkin, 1987; Reyes, Gillock, Kobus, & Sanchez, 2000; Seidman et al., 1994; Seidman, Lambert, Allen, & Aber, 2003). However, studies

examining the relative magnitude of these declines among racial and socio-economic groups have yielded mixed results.

Hirsch and Rapkin showed a drop in self-esteem across elementary to junior high school transition in both African-American and Caucasian samples with no significant difference in magnitude (1987). In a sample of low-SES, urban youth, Seidman and colleagues found support for a general decline in GPA across transition to middle, intermediate, or junior high schools, but failed to find any effect of minority status on this decline (Seidman et al., 1994). The authors noted, however, that statistical limitations may have obscured racial differences such that the failure to find a significant difference should not be taken as evidence that no difference exists.

In contrast, Simmons and colleagues (Simmons, Black, & Zhou, 1991) found that while all racial groups experienced declines in GPA across transition, this decline was significantly steeper for African-American adolescents. Akos and Galassi (2004) found that Latino/Latina students perceived the transition to middle school as significantly more difficult than either African-American or Caucasian students. Wampler and colleagues (Wampler, Munsch, & Adams, 2002) tracked grade trajectories over several points in time across the middle school transition. They found distinct grade trajectories in each of three racial groups (African-American, Caucasian, and Latino/Latina). Latino/Latina students tended to show a significant grade drop followed by a limited recovery. Caucasian students were characterized by a slower, steady decline in grades, while African-American students tended to show little variation in grades across time points. Pre-transition, however, both African-American and Hispanic students had significantly lower grade point averages than their Caucasian peers.

No specific patterns have emerged from these data. Likely, this reflects the variation across studies in factors such as region, school ethnic composition, community socio-economic status, local circumstances, and the timing of data collection. The Wampler et al. study, for example, looked at a sample drawn from an urban school district in the southwestern United States in which Latino/Latinas constituted a large minority of the student body, while African-Americans represented a much smaller proportion. In contrast, Seidman et al. drew from a mid-western university town in which approximately three-fourths of the population was Caucasian, and other quarter almost entirely African-American. These differences are compounded by the fluctuating status of racial relations in the United States across the twenty years these studies span. Issues such as these speak to the inherent complexities involved in studying the impact of race.

Socio-economic status. Low socio-economic status (SES) is consistently associated with poor academic outcome across students' school careers (for a review, see McLoyd, 1998). This cannot be explained solely by their attendance of under-resourced schools; class differences in factors such as increased transience, weaker long-term economic security, and inadequate health care all contribute to poorer academic outcomes (Rothstein, 2004a, 2004b). Low SES appears to confer an increased risk of transition difficulties, with low-SES students experiencing declines in academic and emotional functioning to a greater extent than their peers.

Bronstein et al. (1998) found that lower-income children suffered a more precipitous drop in both GPA and increases in internalizing and externalizing behaviors to a greater extent over the middle school transition than did children from high-income families. Further, poor parenting practices had a greater effect on transitional declines in

low-income groups than children experiencing the same parenting behaviors in high-income households.

A second study found similar results. While high-SES students showed no significant change in self-worth pre- to post-transition, the self-worth of low-SES students suffered a marked decline over this period. Additionally, low-SES students showed a steeper decline in reading scores when compared to their high-SES peers (Grolnick, Kurowski, Dunlap, & Hevey, 2000).

Social-Emotional Factors Related to Risk and Prevention

From a clinical standpoint, mutable protective factors that exist within the individual are of particular interest. While many environmental factors are outside the influence of clinical interventions, an understanding of personal competencies that may mitigate the risks of middle school transition offer guidance toward the development of individually-focused interventions.

Self-Efficacy

Students' sense of their own competencies has been suggested as an important variable to consider in differentiating transition trajectories. Academic self-efficacy has been found to affect grade trajectories across transition. Gutman and Midgely (2000) examined changes in GPA across a fifth-grade to sixth-grade transition in a sample of low socio-economic status African-American youth. Regression analyses found academic self-efficacy to be predictive of grade trajectories across transition even when prior achievement (5th grade GPA) was controlled. In a model that included academic self-efficacy, parental involvement, perceived teacher support, and post-transition feelings of

school belonging, only academic self-efficacy emerged as a significant predictor of GPA change across transition.

Harter and colleagues (Harter, Whitesell, & Kowalski, 1992) looked at the effects of transition on self-efficacy in a study that had the advantage of comparing students undergoing transition to non-transition controls. Four groups were compared: students transitioning to middle school from fifth to sixth grade, students remaining in the same school from fifth to sixth grade, students transitioning to junior high school from sixth to seventh grade, and students remaining in the same school from sixth to seventh grade. Among other variables, they assessed changes in perceived competencies, changes in motivation (on a spectrum ranging from extrinsic to intrinsic), and scholastic anxiety. One of the only differences they found between transition and non-transition groups was that in both transition groups, time 2 scholastic anxiety was negatively correlated with perceived competency and intrinsic motivation. In contrast, both non-transition groups showed perceived competency and motivation to be related, but showed no relationship between these measures and scholastic anxiety. The authors interpreted this to mean that students undergoing transition are forced to re-evaluate their academic competencies, and regardless of the outcome of this evaluation, the process itself creates anxiety. If this were correct, however, one would expect to see general increased rates of anxiety in transition versus non-transition groups. This was not the case; in fact, no differences in academic anxiety, perceived competency, or motivation were found among any of the four groups. The only differences found were in the *relationship* of these variables to one another, suggesting that academic competency and/or motivation become more salient influences on a student's emotional state following a school transition.

Attributional Style

A report by Robinson and colleagues (Robinson, Garber, & Hilsman, 1995) suggests that self-efficacy may interact with attributional style in the determination of outcome. This study followed 287 students across a sixth- to seventh-grade middle school transition in five school districts. Pre-transition assessments were made on global self-worth (as measured by the Harter Perceived Self-Competence scale, and so conceptually similar to self-efficacy) as well as attributional style. Changes in depressive and externalizing symptomology were assessed across the transition. Main effects were found for both low self-worth and negative attribution style on increases in depressive symptoms. Self-worth, but not attributional style, predicted increases in externalizing behavior across transition. In addition to this, attributional style measured pre-transition interacted with the degree of stress students reported post-transition such that among students who perceived the transition as stressful, those with negative attribution styles showed greater increases in depressive symptoms. For students who did not perceive the transition as stressful, attributional style did not affect changes in depression. Finally, a three-way interaction was found among attributional style, self-worth, and stress level. Predictably, students with negative attribution styles, low self-worth, and high perceived stress increased in depressive symptoms to a greater extent than their peers. In low stress situations, self-worth continued to affect changes in depressive symptoms, but attributional style did not. It is important to note that these analyses represented effects on *changes* in depressive symptoms, rather than absolute levels of depression. As such, the findings cannot be interpreted as simply reflecting the association of attribution style, self-worth, and stress on depression, but instead the impact of these variables on the

trajectory of depressive symptoms. In interpreting these results in the context of Gutman and Midgley's findings, it is also important that these two studies used distinct outcome variables, GPA and psychiatric symptoms. Attributional style and self-efficacy may not interact in the same way in academic domains.

Social Problem Solving Skills

Possessing and using social problem solving skills to effectively handle interpersonal challenges and difficulties has also been shown to protect against poor transition outcome. These skills include being able to put a problem into words, formulate a goal, generate alternative solutions, analyze consequences, plan the details of appropriate action, and overcome obstacles encountered along the way. Leonard and Elias (1993) measured several such skills in a sample of pre-transition fifth graders and analyzed their power to predict cross-transition outcome. When GPA change was set as the outcome, planning skills emerged as a significant predictor of adjustment, while teacher-rated behavior, self-concept, and sociometric status all failed to predict academic outcome. Alternately, self-concept and social-cognitive problem solving skills were significant predictors when outcome was assessed through student's report of their own coping with transition stressors.

Interventions targeting the development of social problem solving skills have shown promise in improving transitional outcome. Elias et al. found that a full year of the Social Decision Making/Social Problem Solving (SDM/SPS) Curriculum prior to middle school transition led to students experiencing significantly fewer stressors in middle school than their peers receiving a half-year or no intervention (Elias et al., 1986). Similarly, research on *Talking With TJ*, an adaptation of SDM/SPS for use in urban

settings, found that students who received higher intervention dosages in their fifth grade year showed significantly smaller drops in grade point average across the middle school transition (Rosenblatt & Elias, under review).

Implementation

In interpreting these intervention studies, a critical methodological issue must be addressed: the measurement of implementation. In any intervention or treatment outcome study the level of the independent variable is determined by the degree and quality of its implementation. While this concept, on its surface, may seem relatively basic, recent years have seen critiques published across sub-disciplines of psychology noting a general failure of the field to properly incorporate measures of implementation into evaluative designs.

The consensus among writers on implementation is that the field has suffered from a traditional reliance on “black box” approaches to program evaluation (Domitrovich & Greenberg, 2000; Elias, Zins, Graczyk, & Weissberg, 2003; Greenberg, Domitrovich, Graczyk, & Zins, 2005; Harachi, Abbott, Catalano, Haggerty, & Fleming, 1999). Such an approach focuses on the relationship between program and outcome, without consideration of intervening factors. A medical analogy to this approach would be a pharmaceutical company developing a medication designed to combat a specific disease, giving this medication to doctors, and then measuring the degree to which the disease had subsided in those doctors’ patient groups. If their study failed to find any difference in disease rates among these and other doctors’ practices, the pharmaceutical company would then conclude that the drug was ineffective.

The obvious problem in this case would be that a number of variables contribute to the causal chain linking the doctor's receipt of the drug and the patient's outcome. The doctors might have been wary of the pharmaceutical company's claims, and failed to prescribe the drug. The doctors may have done a poor job of explicating the advantages of the drug to the patients. The drug may have been too expensive for the patient to purchase, or the administration too burdensome to continue. Indeed, there may have been a manufacturing problem and the drug itself might not have been formulated correctly, perhaps rendering it weaker than it should have been to potentially be effective. Relatedly, it might be the dosage of the drug that needs manipulation.

Similarly, when researchers deliver a new program to community service providers and then measure only final outcome, the many variables relegated to the "black box" may hold essential information toward the interpretation of findings. In simplest terms, the task of implementation researchers has been to develop a viable framework for analyzing key information traditionally lost in the black box.

Unfortunately, outcome researchers often fail to adequately address the measurement of implementation in their designs (Greenberg et al., 2005). In 2000, Domitrovich and Greenberg reviewed supporting research behind 34 prevention programs labeled "effective" by a report to the Center for Mental Health Services. Of these, only 59% included some rating of fidelity and adherence. Thirty-three percent reported intervention dosage, and only 32% reported their results in terms of implementation quality (Domitrovich & Greenberg, 2000).

One of the most comprehensive frameworks for incorporating implementation measures into outcome research comes from Greenberg and colleagues (Graczyk,

Domitrovich, Small, & Zins, 2006; Greenberg et al., 2005). The model advocates for the inclusion of multiple means of assessment for implementation quality, to provide a comprehensive picture of both if and how various program components were delivered. Recommended components of assessment include dosage (a quantitative measure of the degree to which a prescribed intervention was delivered); quality of materials; participant responsiveness (in terms of perceptions, skills, and knowledge); and implementer's perception of efficacy (Graczyk et al., 2006; Greenberg et al., 2005).

The Present Study

The present study clarified and expanded the findings of previous studies assessing the preventive impact of SEL interventions on transitional achievement loss. Specifically, this study examined the academic effects of a social and emotional learning program delivered at varying levels of implementation quality over a three year period immediately prior to the transition to middle school.

In addition to replicating initial findings of SEL interventions' preventive effect on achievement loss, the present study expanded upon past designs in two ways. First, the effects of a more extended intervention period were assessed. While past work has looked only at the effects of SEL interventions administered over the year prior to transition, the present study examined the cumulative effects of an intervention delivered across the final three years of elementary school. Second, implementation was evaluated through two separate measures (dosage and teacher perception of quality). This offers a more complete picture of implementation quality than has been available to date, and also allowed for comparison of the predictive powers of each measure of implementation.

The key questions of the study were:

1. Does greater intervention implementation protect against transitional achievement loss?
2. Are these effects moderated by gender, ethnicity, or socio-economic status?
3. Are these effects moderated by baseline social-emotional skills?
4. Can these effects be explained by changes in social-emotional skills?
5. Of available measures of implementation/dosage, which measure (or combination of measures) best predicts program effectiveness?

Methods

Participants

Participant data were collected as part of a larger study investigating the effects of school-based social-emotional learning interventions. All students attended one of ten elementary schools (and then one of two middle schools) in the Plainfield Public School District in Plainfield, NJ. Plainfield is an urban, low-socioeconomic community, with approximately 80% of students qualifying for free or subsidized lunch. The school district has been designated as an Abbott District by the State of New Jersey, a funding category reserved for the state's lowest performing districts.

The sample consisted of 296 students, 175 females (59.1%) and 121 males (40.9%). African-American students made up 76.4% of the sample, with Latino/Latina students making the other 23.6%. Some form of school lunch benefit was received by 77.7% of students in the sample, with 66.9% receiving full lunch subsidies, and 10.8% receiving reduced-rate lunches.

Students were followed from the fall of their third grade year to the spring of their sixth grade year. Students transitioned into one of two district middle schools following

their fifth grade year. To meet criteria for inclusion, students needed to be enrolled in the third grade at a Plainfield school in the first year of the study, and enrolled in the sixth grade in a Plainfield school in the final year of the study. Further, students were only included if implementation information was available for them in at least two of the three intervention years¹. Finally, inclusion required that a student's report card grades be available for both the fifth and sixth grades.

Measures

Demographic Information

Students' gender, ethnicity, and socio-economic status (as measured by qualification for school lunch programs) were obtained through district records.

Social-Emotional Skills

Social-emotional skills were measured in the fall of students' third grade year (pre-intervention) and the spring of students' fifth grade year (post-intervention) through the short version of the Bar-On Emotional Quotient Inventory: Youth Version (EQ-i:YV), a self-report measure assessing emotional intelligence (Bar-On & Parker, 2000). The EQ-i:YV yields a total emotional intelligence score as well as 4 subscale scores: intrapersonal, interpersonal, adaptability, and stress management. Emotional intelligence is a construct that has high definitional overlap with social-emotional skills; the specific skills assessed with the EQ-i:YV are all targeted skills in social-emotional learning programs.

¹ Two of the ten elementary schools in the district returned fifth grade implementation data of questionable validity which were removed from the data set. In one school, teachers in three fifth grade classrooms submitted a single implementation survey that had been signed by all three. In the other school, three fifth grade teachers submitted separate implementation surveys that contained identical responses on each of the more than 100 survey items.

Normative testing on the EQ-i:YV was conducted using a sample of approximately 10,000 children and adolescents ranging in age from 7 to 18. Separate norms were developed for males and females. In the third grade (when baseline EQ-i:YV scores were assessed), males with raw scores between 62.5 and 76.49 (inclusive) are considered to be of average emotional intelligence; for females at this age, average scores fall between 63.5 and 76.49. For fifth graders (when post-intervention scores were taken), males of average emotional intelligence have a total EQ-i:YV score ranging between 60.5 and 74.49, while females with scores falling between 61.5 and 74.49 are categorized as having average emotional intelligence (Bar-On & Parker, 2000).

Among the different scales and age groups, internal consistency ranged from .65 to .90. Internal consistency was lowest for children 7-9, but markedly higher for both the 14-16 and 16-18 age groups (reliability coefficients ranged from .80 to .90). Test-retest reliability scores generally fell around .80 for the four EQ-i:YV skill subscales (Bar-On & Parker, 2000).

Scores on the EQ-i:YV correlate significantly with older children's scores on the adult Bar-On Emotional Quotient Inventory. In addition, the general mood scale is highly correlated with the Children's Depression Inventory. Studies have also found a moderate, negative correlation between the intrapersonal scale and the Connor's Adolescent Self-Report Emotional Problems Scale (Bar-On & Parker, 2000).

In this sample, pre-intervention scores on the EQ-i:YV ranged from 36 to 93, with an average score of 67.10 ($SD = 9.28$). Post-intervention, scores also ranged from 36 to 93, with an average score of 64.61 ($SD = 9.47$).

Intervention Dosage/Implementation

In accordance with the recommendations made by Greenberg et al. (Greenberg et al., 2005), the present study employed multiple measures to develop a more comprehensive picture of implementation quality. The inclusion of multiple measures also allowed for comparisons of predictive power among instruments, potentially informing future assessment strategies.

Two indicators of implementation quality were available. The first was a measure of implementation dosage. Each year, teachers completed a satisfaction survey in which they indicated the number of components they had completed from the intervention curriculum (see Appendices A, B, and C). The survey listed each unit of the curriculum, and each component of that unit (e.g., Unit One, Video #1). Next to each component, teachers were asked to indicate if they had delivered the component, and their Likert rating of their perception of that component's efficacy. Likert responses ranged from 1 ("not at all effective") to 4 ("highly effective"). Surveys varied slightly from year to year, reflecting the grade-specific curriculum components. The third grade survey asked for ratings of 41 program components; the fourth grade survey asked about 43 components, and the fifth grade survey asked about 63 components.

A direct measure of dosage was derived by summing the number of components delivered in a student's classroom in the third, fourth, and fifth grades. Past studies have used a similar approach to defining dosage (Mokrue, Elias, & Bry, 2005). In the third grade, data were collected on 25 classrooms. The number of components delivered in classrooms ranged from 10 to 40, with an average of 28.40 components ($SD = 8.31$), or 69.27% of the total curriculum, delivered in each classroom (the average number of components for each student was 28.98; $SD = 7.93$, or 67.40%). In the fourth grade,

classroom dosage ranged from 0 to 43. The average dosage across 25 classrooms was 25.36 ($SD = 13.12$), or 58.98%, with each student receiving a mean dosage of 26.00 ($SD = 12.61$), or 60.47%. For the fifth grade, dosage information was collected on 18 classrooms. Dosage ranged from 18 to 63 components, with a mean classroom dosage of 38.61 ($SD = 13.16$), or 61.29%, and a mean dosage of 37.42 ($SD = 12.99$), or 59.40%, for each student. Across the three intervention years, students' average dosage ranged from 11.67 to 45.67, with the average student receiving a mean of 30.80 components ($SD = 6.87$) each year. From this, two predictor variables were created. Average dosage across the three year period was used as a measure of cumulative dosage. In addition, dosage in fifth grade (the year immediately prior to transition) was considered in isolation.

While this measure speaks to the quantity of intervention received, it does not offer any indication of the quality of intervention delivery. Greenberg et al. (2005) suggest several means of assessing intervention quality. Among these is implementer perception of program quality. To calculate teacher perception of program quality, teachers' Likert ratings of each program component were used. These were averaged to create a teacher perception of program quality score for each classroom. In the third grade, these scores ranged from 1.40 to 3.85, with an average classroom score of 3.05 ($SD = 0.64$), and an average student score of 3.03 ($SD = 0.59$). In fourth grade, scores ranged from 1.80 to 4.00, with an average classroom score of 2.91 ($SD = 0.58$), and an average student score of 2.95 ($SD = 0.51$). In fifth grade, scores ranged from 1.95 to 3.57; the average classroom score was 2.72 ($SD = 0.53$), and the average student score was 2.73 ($SD = 0.50$). Overall, the average student had a mean teacher perception of quality score of 2.91 ($SD = 0.27$) over the three years, with mean scores ranging from 2.20 to

3.48. As with dosage scores, two predictor variables were created from these data. The teacher ratings in a student's classroom in each of the three intervention years were averaged to create an overall teacher perception of program quality score. Additionally, fifth grade teacher perception of quality was considered independently.

In all, this resulted in four implementation variables, two capturing implementation across the three-year intervention period (average dosage score and average teacher perception of quality score) and two focusing on implementation in the year prior to transition only (fifth grade dosage score and fifth grade teacher perception of quality score).

Academic Performance

Change in grade point average (GPA) was assessed through the comparison of fifth grade (pre-transition) and 6th grade (post-transition) GPA scores taken from district records. Properties of the available data created some important limitations in data analysis. First, in the Plainfield school district, the grading scale employed on report cards changed from fifth to sixth grade. Second, sixth grade report card data available contained records of total GPA only, without the component grades used to calculate this GPA. For these reasons, fifth and sixth grade GPAs were converted to z-scores prior to analysis.

Standardized test scores were used as a second means of assessing achievement change over the transition. Students took the New Jersey Proficiency Assessment of State Standards (NJPASS) in the spring of their 5th grade year, and the School Proficiency Assessment (SPA; a parallel version of the NJPASS for middle school students) the spring of their 6th grade year.

The NJPASS is a commercially developed instrument marketed to New Jersey schools as a means of gauging student progress in years where no state standardized exam is mandated. Material covered on the NJPASS is designed to align with the New Jersey Core Curriculum Standards in language arts and mathematics. The NJPASS is promoted as a “research-based” measure, but specific information on test reliability and validity is released only to school districts that have purchased testing materials and is supposed to be held by them confidentially (Riverside Publishing, 2005). Like GPA, NJPASS and SPA scores were converted to *z*-scores prior to analyses.

Procedure

Letters were sent home prior to each school year, informing parents of the nature and purpose of the study. A passive consenting procedure was used, in which parents were able to deny consent by submitting a mail-in form or contacting the district by telephone. This was done because the intervention and its evaluation were part of the curriculum and instructional processes of the school district and not an “external” intervention. Accordingly, no incentive was offered for participation.

Intervention Program

Classroom teachers were trained in the *Talking with TJ* program, a video-based social and emotional learning curriculum (Hallmark Corporate Foundation, 1994). *Talking with TJ* is based on the Social Decision Making/Social Problem Solving curriculum (Dilworth, Mokrue, & Elias, 2002; Elias & Bruene Butler, 2005a, 2005b), adapted for use in urban, low socio-economic environments. Key program objectives include development of interpersonal skills, effective teamwork, problem-solving strategies, and emotional regulation.

Talking with TJ employs a TVDRP (television, discussion, rehearsal, and guided practice) format, an empirically-supported technique to maximize children's learning (Elias & Tobias, 1996). The program consists of approximately 40 lessons/activities (depending on grade level), divided into five thematic units. Each unit includes a variety of activity types, including video vignettes, in-class activities in which new skills are practiced, family activity projects, workbook exercises, and classroom posters displaying thematic slogans and "teamwork tips" (for more details on specific activities, see Appendices A, B, and C).

Classroom teachers were provided with all curriculum materials and trained in their implementation. Graduate students and trained undergraduate assistants provided optional structural support for teachers, including assistance in lesson preparation and delivery.

Typically, teachers dedicated a weekly time period to *Talking with TJ* activities. Lessons were reinforced throughout the week through visual aides displayed in the classroom (e.g., posters depicting key messages) and by systematically integrating themes and skills from the curriculum into regular language arts/reading lessons. In addition, teachers were trained to incorporate the language and content of the curriculum in their daily classroom management techniques and to encourage students to apply the skills they learned in relevant contexts (e.g., group projects, class debates, student conflicts).

Student Survey Administration

Excepting the EQ-i:YV, all student data was collected through official school records. The EQ-i:YV was administered by individual classroom teachers in conjunction

with a variety of other measures included in the larger research project. Teachers were given specific guidelines for delivering instructions to students and administering the survey. Students were informed that their participation was voluntary. Alternate activities were provided for those students who chose not to participate as well as those who parents had requested withdrawal.

Teacher Survey Administration

Implementation data was collected through surveys administered to classroom teachers. At the close of the program, teachers completed brief questionnaires rating their overall satisfaction with the curriculum, the number of program components they completed, and perceived efficacy of each of the lessons.

Results

Descriptive Analyses

Implementation Groups: Baseline Differences

Each of the four implementation variables (average teacher perception of program quality, 5th grade teacher perception of program quality, average dosage, and 5th grade dosage) were binned into low, medium, and high groups based on percentile splits (see Table 1). Pearson chi-square analyses were used to detect any baseline differences of categorical variables among these groups (see Tables 2 and 3). Significant differences were found for at least one variable in all four grouping schemes. In the average dosage groupings, significant differences were found for ethnicity and SES group. In the 5th grade dosage groupings, significant differences were also found for ethnicity. In the average teacher perception of program quality groupings, significant differences were found along student gender and SES group, and differences in student ethnicity

approached significance. The 5th grade teacher perception of program quality groupings showed significant differences in SES.

Baseline EQ-i:YV was also compared across implementation groups (see Table 4). Significant differences were found among average dosage groups. The medium average dosage group began with a significantly higher mean EQ-i:YV than the high dosage group.

Intercorrelations of Key Variables

Correlation matrices for major study variables are presented in Tables 5 through 8. In general, expected relationships were found within the primary independent (implementation) variables and within the dependent (academic) variables. All academic indicators (grade point averages for 5th and 6th grade and standardized test scores for 5th and 6th grade) were significantly correlated (see Tables 5 & 6). Additionally, in all three intervention years, teacher perception of program quality had a significant, positive relationship with that year's dosage (see Table 7).

Academic indicators and implementation level. Correlations between all academic indicators and dosage levels are presented in Table 5. Independently, neither 3rd nor 4th grade dosage showed a significant correlation with any of the academic outcome variables. Fifth grade dosage and average dosage over the three-year intervention period did correlate significantly with transitional GPA change in the expected direction. However, 5th grade dosage and average dosage also showed a significant negative relationship with 5th grade GPA, suggesting that the dosage-change relationships may be an artifact of regression to the mean. This explanation is supported by a significant negative relationship between 5th grade GPA and transitional GPA change.

Table 6 presents correlations among academic indicators and teacher perception of program quality variables. While teacher perception of program quality scores also showed some correlations with academic indicators, the pattern of relationships was less clear. Teacher perception of program quality ratings did not correlate with change scores for report card grades or standardized tests. Third grade teacher perception of program quality significantly predicted 6th grade GPA and 5th grade NJPASS scores, but 4th and 5th grade teacher perception of program quality scores did not. Fourth grade teacher perception of program quality scores actually showed a significant negative correlation with 5th grade NJPASS scores. Additionally, average teacher perception of program quality significantly predicted 6th grade GPA.

Emotional intelligence. Correlations between implementation measures and pre- and post-intervention EQ-i:YV scores are presented in Table 7. Baseline EQ-i:YV significantly predicted post-intervention EQ-i:YV, but a positive relationship between EQ-i:YV and implementation was not supported. The only significant relationship between EQ-i:YV and implementation went against the predicted direction, with higher 4th grade dosage predicting lower post-intervention EQ-i:YV scores. (A univariate ANOVA also failed to find differences among intervention groups on post-intervention EQ-i:YV scores as well as EQ-i:YV change; see Table 4.)

The relationship between EQ-i:YV and academic performance was supported (see Table 8). Higher baseline EQ-i:YV predicted better standardized test performance in both 5th and 6th grade. Post-intervention EQ-i:YV was positively related to all four major academic indicators (5th and 6th grade GPA and 5th and 6th grade standardized test scores).

Demographic Differences in Achievement Change Across Transition

A series of ANOVAs were performed to detect any differences among demographic groups on transitional change in grade point average and transitional change in standardized test scores. It is important to note that the use of z-scores in creating change scores precluded any investigation into demographic differences in *absolute* change; rather, these results represent changes relative to the other students in the sample.

To provide context for these analyses, ANOVAs were also conducted comparing demographic groups on the individual components of the change scores: 5th grade GPA, 6th grade GPA, 5th grade NJPASS scores, and 6th grade SPA scores. Results are presented in Table 9.

No significant differences were found between males ($M = 0.063$, $SD = 0.99$) and females ($M = -0.09$, $SD = 0.86$; $F(1,294) = 1.92$, $n.s.$); between African-American ($M = -0.0266$, $SD = 0.862$) and Latino/Latina students ($M = 0.09$, $SD = 1.15$; $F(1,294) = 0.77$, $n.s.$); or among lowest ($M = 0.001$, $SD = 0.92$), medium ($M = 0.04$, $SD = 0.88$), and highest socio-economic groups ($M = -0.02$, $SD = 1.01$; $F(2,293) = 0.05$, $n.s.$) on grade point average change across the transition. Females significantly outperformed males on both 5th and 6th grade GPA (see Table 9); no other significant differences in GPAs were found.

Demographic differences were detected in changes on standardized test scores across the transition. Females ($M = 0.11$, $SD = 0.72$) fared better than males ($M = -0.15$, $SD = 0.73$) across the transition, $F(1, 292) = 9.39$, $p < .01$. While no significant difference in test scores existed in the 5th grade, by 6th grade females were significantly outperforming males (see Table 9). Latino/Latina students also differed significantly from African-American students, with Latino/Latina students' scores improving relative

to their peers across transition ($M = 0.21$, $SD = 0.68$) while African-American students' scores declined ($M = -0.06$, $SD = 0.74$; $F(1, 292) = 7.46$, $p < .01$). While the changes were significantly different, this did not result in an overall significant difference in test scores by ethnicity at either time point (see Table 9). Differences in change scores between students receiving free lunch ($M = 0.07$, $SD = 0.76$), those receiving reduced lunch ($M = -0.18$, $SD = 0.72$), and those receiving no benefits ($M = -0.12$, $SD = 0.63$) approached, but did not reach, significance; $F(2, 291) = 2.77$, $p = .06$. In 5th grade, students in the highest SES group significantly outperformed the two other SES categories; in the sixth grade, the highest SES group continued to significantly outperform the lowest (see Table 9).

Intervention Dosage/Quality and Transitional Achievement Loss

A series of ANOVAs were performed to address the primary hypothesis of the study, that higher quality implementation will lead to better transitional outcomes. Two sets of ANOVAs were conducted, one with GPA change entered as the dependent variable, and one with standardized test change entered as the dependent variable. In each case, the model was run separately for each of the following independent variables: average teacher perception of program quality across intervention period, 5th grade teacher perception of program quality, average dosage across intervention period, and 5th grade dosage. Each of these variables was binned into three groups based on frequency splits.

GPA Change

Average teacher perception of program quality across the intervention period did not significantly predict transitional change in GPA, $F(2, 293) = 1.27$, $n.s.$ In the overall

model, fifth grade teacher perception of program quality only approached significance, $F(2, 205) = 2.79, p = .064$, but post-hoc comparisons using Tukey's HSD found a marginally significant difference between the low ($M = -0.21, SD = 1.02$) and the medium ($M = 0.13, SD = 0.80$) perception of program quality groups ($p = .05$). The low perception of program quality group did not significantly differ from the high perception of program quality group ($M = -0.03, SD = 0.78$), though, limiting the interpretability of this finding.

Like average teacher perception of program quality, average dosage failed to significantly predict transitional GPA change, $F(2, 293) = 0.23, n.s.$ However, a significant difference was found among 5th grade dosage groups, $F(2, 205) = 6.54, p < .01$. The low dosage group ($M = -0.31, SD = 0.94$) fared significantly worse across the transition than did either the medium ($M = 0.11, SD = 0.87$) or high dosage groups ($M = 0.16, SD = 0.75$). Differences between the medium and the high dosage groups were non-significant.

As earlier correlational analyses had found that 5th grade GPA was negatively correlated with 5th grade dosage, regression to the mean was a viable alternative explanation for the significant differences in GPA change by 5th grade dosage group. To confirm that this correlation translated to significant differences in 5th grade GPA among 5th grade dosage groups, an ANOVA comparing mean 5th grade GPA across groups was conducted. Significant differences were found, $F(2, 205) = 3.79, p < .05$. Tukey's HSD revealed that the low dosage group ($M = 0.21, SD = 0.97$) had higher 5th grade GPAs than did the high dosage group ($M = -0.22, SD = 1.12$). The medium dosage group ($M = 0.083, SD = 0.76$) did not differ significantly from either of the other two groups. To test

whether effects of 5th grade dosage could be wholly attributed to regression to the mean, the analysis of transitional GPA change by 5th grade dosage group was conducted again, using regressed, rather than simple, change scores. An ANCOVA was conducted with 5th grade dosage group predicting 6th grade GPA, while controlling for 5th grade GPA (equivalent to predicting GPA change while controlling for starting GPA). In this analysis, outcome still differed significantly among 5th grade dosage groups, $F(2, 204) = 4.61, p < .05$. Again, the low group (estimated marginal mean = -0.22, $SE = .093$) fared significantly worse than either the medium (estimated marginal mean = 0.15, $SE = .098$) or the high (estimated marginal mean = 0.11, $SE = .098$) dosage groups, with no significant difference between the medium and the high dosage groups.

Standardized Test Change

As standardized test change across transition was found to vary by gender and ethnicity, analyses were run as ANCOVAs, with both of these variables entered as covariates. In these analyses, average teacher perception of program quality ($F(2, 289) = 1.31, n.s.$), 5th grade teacher perception of program quality ($F(2, 202) = 1.09, n.s.$), average dosage ($F(2, 289) = 0.13, n.s.$), and 5th grade dosage ($F(2, 202) = 1.45, n.s.$) all failed to significantly predict changes in standardized test performance across the transition.

Moderation Analyses

Demographics

To assess potential moderating effects of demographic variables on intervention efficacy, a series of ANOVAs were conducted with implementation level and each of the demographic variables (gender, ethnicity, and socio-economic status) entered as

independent variables, along with implementation by demographic interactions. These analyses were conducted for each of the four implementation variables: average teacher perception of program quality, 5th grade teacher perception of program quality, average dosage, and 5th grade dosage. All of these analyses were conducted twice: once with GPA change entered as the dependent variable, and once with standardized test score change entered as the dependent variable. This resulted in a set of twenty-four separate ANOVA analyses (one for each combination of the three demographic variables, the four implementation variables, and the two dependent variables; for full results, see Table 10).

In all of the relevant models, significant main effects for demographics reported earlier (gender and ethnicity on standardized test change) were confirmed. In addition, 5th grade dosage group continued to significantly predict transitional GPA change when either gender or ethnicity was entered into the model, but with the inclusion of socio-economic status, differences were no longer significant. None of the twenty-four models showed significant interactions. The interaction between average dosage group and socio-economic status on GPA change approached significance, $F(4, 287) = 2.35, p = .055$, as did the 5th grade dosage group by gender interaction on GPA change, $F(2, 202) = 2.93, p = .056$. Fifth grade teacher perception of program quality group also approached significance when ethnicity was present in the model, $F(2, 202) = 2.89, p = .058$.

Emotional Intelligence

To test for moderation of implementation effects by baseline emotional intelligence, a series of eight regressions were conducted. In each, baseline EQ-i:YV, an implementation variable, and the interaction of EQ-i:YV and that implementation variable were entered into the model. Separate regressions were run for each of the four

implementation variables, and these were repeated for both GPA change and standardized test change. To reduce non-essential collinearity, EQ-i:YV scores were centered prior to the creation of the interaction terms.

No significant main effects for EQ-i:YV or EQ-i:YV by implementation interactions were found. Of the eight models tested, only the model including 5th grade dosage and GPA change was significant. The only significant predictor in the model, however, was the main effect for 5th grade dosage (see Table 11).

Mediation by Changes in Emotional Intelligence

To determine if the relationship between 5th grade dosage and GPA change is mediated by changes in emotional intelligence, a Baron-Kenny (1986) mediational analysis was conducted. Baron-Kenny mediational analyses involve three regression models. First, the dependent variable is regressed on the independent variable to establish their relationship. Second, the relationship between the hypothesized mediator and the independent variable is established by regressing the mediator onto the independent variable. Finally, the dependent variable is regressed on both the independent variable and the hypothesized mediator. If the mediator explains the relationship between the independent and dependent variables, one would expect to see the beta weight associated with the independent variable to drop to near zero in the third model and the mediator beta weight to stay significant. If any of the models are non-significant, there is no evidence of mediation.

In the first model of this analysis, GPA change was regressed on 5th grade dosage, which confirmed their relationship, $F(1, 206) = 11.08, p = .001$. In the second model of the analysis, EQ-i:YV change scores were regressed on 5th grade dosage. This regression

failed to reach significance, $F(1, 142) = 0.08$, *n.s.* Because the establishment of a mediational role for EQ-i:YV change is contingent on a significant relationship between EQ-i:YV change and 5th grade dosage, the final model of the analysis was not completed.

Stepwise Regression of Key Variables

For both GPA change and standardized test score change, stepwise regressions were run including all of the study's major independent variables to assess their relative predictive power. To avoid issues of multicollinearity, average implementation variables and 5th grade implementation variables were run separately, resulting in two models for each dependent variable, or a total of four stepwise regressions. In all models, the three socioeconomic status levels were collapsed into two categories (a benefits group and a no benefits group), to eliminate the need for dummy coding.

The first model predicting GPA change included average teacher perception of quality group and average dosage group as predictors, in addition to the predictors included in all four models: gender, ethnicity, socioeconomic status group, and baseline EQ-i:YV. None of these variables were found to be significant predictors of GPA change, and so no predictive model could be generated. This model was then repeated, with 5th grade teacher perception of quality group and 5th grade dosage group replacing the average implementation variables. This analysis generated a one-step solution ($F(1, 176) = 9.06$, $R^2 = 0.05$, $p < .01$) with 5th grade dosage group as the model's predictor ($\beta = 0.22$, $p < .01$).

The same regression models were then run with standardized test change replacing GPA change as the dependent variable. The analysis including the average predictor variables yielded a two-step solution ($F(2, 243) = 7.81$, $R^2 = 0.06$, $p = .001$),

with gender entered in the first step ($\beta = -0.31, p = .001$), and ethnicity entered in the second step ($\beta = 0.22, p < .05$). When 5th grade implementation variables replaced average implementation variables, the model remained the same ($F(2,174) = 5.78, R^2 = 0.06, p < .01$), with gender entered first ($\beta = -0.32, p < .01$) and ethnicity entered second ($\beta = 0.26, p < .05$). Females and Latino/Latina students fared better than their male or African-American peers.

Discussion

Intervention Implementation and Transitional Achievement Loss

The key hypothesis guiding this study was that a well-implemented social and emotional learning intervention could preventively mitigate the achievement loss typically seen across the middle school transition. Broadly speaking, the current results lend support to this hypothesis, albeit with some important caveats.

Change in Grade Point Average

When implementation was defined by intervention dosage, and outcome was defined by changes in grade point average, students in the high and medium dosage groups enjoyed significantly better transitional outcomes than did their peers in the low dosage group. Importantly, these differences were seen only when fifth grade dosage was considered in isolation. Intervention dosage received in the year immediately prior to transition mattered; cumulative dosage across all three intervention years did not. It is also worth noting that significant differences were not found between the medium and high groups. This may indicate that a minimum level of dosage is required for program effectiveness, and that program effects are relatively uniform beyond this threshold.

These findings replicate those of a prior study on a different cohort in the same district (Rosenblatt & Elias, under review). Although this previous work only looked at intervention over the fifth grade year, findings within that time period were very similar to those found here, with fifth grade dosage group found to predict GPA change across transition.

Implementation as measured by teacher perception of program quality did not show an effect on outcome. Despite this, teacher quality perception may still play a key role in intervention effectiveness. In all three intervention years, teachers' perceptions of program quality were significantly correlated with the dosage levels they delivered in their classrooms. It is important to remember that the varying dosage levels in each classroom were not purposely structured as such. All teachers were asked by their district to complete all program components. It is reasonable to conjecture that the correlation of teacher perception of program quality and dosage stems from the fact that teachers who were more satisfied with program quality were then motivated to implement more of the program components. This can not be said with any certainty, though, from the current results. Teacher perception of program quality and teacher's reported program delivery were assessed on a single measure delivered at the close of the school year. It is plausible that there was the inverse causation: teachers who delivered more program components developed a fuller appreciation of the program, or teachers who delivered more of the program components saw better results, leading to a higher perception of the program's quality.

It should also be noted that teachers' retrospective ratings of individual program components' effectiveness may not be the optimal means of measuring their perception

of program quality. Teachers' perception of program quality could be operationalized in a number of ways, and to accurately capture this construct, a more in-depth measure may be needed.

Change in Standardized Test Scores

Although standardized test scores were highly correlated with grade point average at both time points, no evidence was found for a relationship between intervention implementation and standardized test change across the transition. The reasons for this are not clear, though they are consistent with previous findings (Rosenblatt & Elias, under review). This underlies the importance of differentiating between the various means of measuring academic achievement when comparing studies on middle school transition.

A possible explanation for these differences may lie in the relevance of distinct skill sets for achieving high report card grades versus achieving high test scores. More subjectivity is involved in the assignment of report card grades, and a student's interpersonal skills or classroom behavior may enter into a teacher's appraisal. The classroom is, by nature, an interpersonal environment, and the competencies needed to successfully navigate this environment may be substantially different than those needed in a testing environment.

Demographic Differences

Demographic Differences in Transitional Achievement Change

GPA change. Girls had significantly higher GPAs than boys both pre- and post-transition. The degree to which their GPAs changed across transition, however, did not

significantly differ. No differences among SES groups or ethnicities emerged for GPA at either time point, or degree of GPA change across transition.

Standardized test change. Unlike GPA, a number of significant differences were found among demographic groups both in their individual test scores at each time point and in their pattern of change in test scores across transition. While boys and girls did not differ significantly in test scores in the fifth grade, by sixth grade, girls were significantly outperforming boys. This translated to a significant difference in standardized test change scores for boys and girls, with girls improving relative to boys. This finding is of interest in that the current literature search did not uncover any previous studies examining gender differences in standardized test performance change across transition. Those studies that did examine gender differences in transitional academic achievement defined achievement through grade point averages (e.g., Bronstein et al., 1996). As the current study failed to find the same pattern in GPA change as in standardized test change, test scores may be an important variable for future studies of gender differences in transition.

Significant differences were also found between Latino/Latina students and African-American students on test scores. While Latino/Latina students' scores showed significant improvement relative to their peers, there was no significant difference in mean standardized test scores between ethnicities in either the fifth or sixth grade. This would seem to stand in contrast to earlier findings that Latino/Latina students show a greater drop in GPA across transition (Wampler et al., 2002) and report the transition to be more stressful than their African-American peers (Akos & Galassi, 2004). Importantly, though, past work has not defined outcome through standardized test change. These differences may be another reflection of the specificity of transition's

impact on various outcomes. In so much as this finding adds another discrepancy to an already inconsistent literature on ethnic differences in middle school transition, though, it may simply reflect the complexity of race as a variable, and the context-specific meaning of belonging to a given ethnic group.

The differences in transitional standardized test change among SES groups only approached significance, but significant differences did exist at each time point. On fifth grade standardized tests, students in the highest SES group (those receiving no school lunch benefits) significantly outperformed those in both the medium SES group (those receiving a reduced lunch rate) and the lowest SES group (those qualifying for free lunch). By the sixth grade, students in the highest SES group continued to significantly outperform the lowest SES group, but did not differ significantly from the medium SES group.

Demographic Differences in Program Effects

No strong evidence was found for demographic moderation of program effects. Two interactions (average dosage and SES on GPA change and fifth grade dosage and gender on GPA change) approached significance, but given the large number of models run, this is not far from what would be expected by chance.

General Considerations

Findings on demographic differences by ethnicity and socioeconomic status should be considered in context. As the current sample was drawn from an urban, low-socioeconomic school district, the range of students to whom they were compared was limited. This is particularly important because grades and test scores were standardized within the sample, making all outcomes relative, not absolute. Relative improvements

made by Latino/Latina students on standardized test scores across transition, for example, are relative to African-American students only, and say nothing about Latino/Latina performance relative to other ethnicities. Similarly, the “highest” SES group in this study is only high relative to the other students in the sample. The district as a whole is classified as low-SES, and so the students classified as high-SES in this study might well be classified as low-SES in another.

Social and Emotional Skills

The hypothesized mechanism by which the social and emotional learning intervention was thought to affect transitional academic outcomes was through the development of social and emotional skills which enabled students to better navigate the challenges of transition. As such, social and emotional skills (as measured through an emotional intelligence inventory) were hypothesized to affect outcome in two possible ways. First, the social and emotional skills children had already acquired prior to the intervention were hypothesized to moderate the intervention’s effects. Second, changes in social and emotional skills across the intervention period were thought to mediate these effects. Neither of these hypotheses was supported.

The two possible explanations for this are that the social and emotional learning intervention effected changes through some other mechanism, or that the measure used did not adequately capture the social and emotional skills targeted by the intervention. The latter argument is supported by previous suggestions that the emotional intelligence inventory used in this study may not be a strong indicator of social and emotional skills (Ciarrochi, Forgas, & Mayer, 2005), or that it may tap into only part of a larger range of skills targeted with SEL interventions.

Interestingly, emotional intelligence scores did show a relationship with academic performance. Baseline emotional intelligence scores taken in the spring of students' second grade year predicted standardized test performance in both the fifth and sixth grades. Post-intervention emotional intelligence scores were related to all four academic outcome variables (GPA and standardized tests in fifth and sixth grade).

The social and emotional learning program's ability to affect transitional change in academic status without changing emotional intelligence scores, coupled with emotional intelligence scores' ability to predict academic outcomes, pose some interesting questions about both the intervention and the measure, warranting further investigation.

Stepwise Regression of Predictors

Stepwise regression analysis generally provided confirmation of the findings that had emerged through other analysis. The one predictor included in the final model predicting GPA change was fifth grade dosage, which was also the only significant predictor uncovered through separate ANOVAs. The stepwise regressions for standardized test change were also confirmatory, as the two predictors included in the final models (gender first and ethnicity second) were also identified as significant predictors in isolation.

Caveats

One primary caveat is the potential confound of teacher and dosage level. Because teachers were responsible for program delivery, all students who shared the same fifth grade teacher also shared the same dosage level. One concern that this raises is that teachers' individual grading practices could contribute to a systematic difference in

GPA change scores. This is particularly salient in light of the significantly lower fifth grade GPAs of students in the high dosage group. One could pose regression to the mean as an alternative explanation, but this does not seem viable given that the differences persisted when regressed change scores were used. The problem is slightly more complicated than simple regression to the mean, though, because it is not just an issue of legitimate group differences randomly occurring. These group differences may reflect teachers' varying interpretation of grading scales rather than actual differences in achievement. If teachers who delivered high dosage levels also assigned artificially low grades, the change in scores could be attributed to students moving on to a new school and receiving accurate (higher) marks, and the use of regressed change scores would not account for this. Fortunately, the medium dosage group did not share this problem; their mean fifth grade GPA was the highest of the three groups. As the medium dosage group also fared significantly better than the low dosage group across the transition, confounded grading tendencies seems an unlikely explanation.

The positive outcomes of students in high dosage classrooms could be alternatively explained by conceptualizing dosage as a proxy measure of teacher quality (i.e., more dedicated and/or responsible teachers were more likely to deliver a large portion of the curriculum). This problem is mitigated to some degree by anecdotal evidence in the form of notes teachers included with their feedback forms. Several teachers with lower dosages explained that constraints of the school's testing schedule caused them to end early, or that they did not receive the full curriculum package. Even if dosage levels are a reflection of teacher quality, though, this distinction may not be particularly meaningful. If teacher quality is, in fact, the causal agent in a successful transition, the question then

becomes one of what makes a quality teacher; in other words, how does a student's experience differ in a high quality teacher's classroom? If teacher quality is aligned with program delivery to the extent that the measurement of one captures the predictive power of the other, then a key difference would have to be that quality teachers prioritize the teaching of social and emotional skills. That being said, from an empirical perspective, the confound cannot be ignored, and should provide at least some degree of temperance to the interpretation of the findings.

As discussed previously, another caveat emanating from study findings is the necessity of converting grade point average and standardized test scores to *z*-scores prior to analysis. All findings in this study are therefore relative findings, and their meaning in terms of absolute outcome is unclear. While we can say that students receiving high levels of dosage over their fifth grade year had *better* transitional outcomes than those receiving low levels of dosage, for example, we cannot say what their actual performance was. Students in the high dosage group may have actually improved their grades over the transition, or they may have simply declined less dramatically than students in the low dosage group.

Finally, it should be noted that the SEL intervention used was designed to be integrated into the curriculum, and measuring dosage does not adequately capture implementation in terms of integration into the school day (e.g., through the use of classroom management techniques, applied problem-solving, etc.). The findings from this study suggest that dosage is a necessary component of program effectiveness, but this does not mean that dosage alone is sufficient.

Directions for Future Research

Several areas of research would be helpful in contextualizing these results. While completely disentangling the confound of teacher and implementation may not be possible, collection of specific data on teacher characteristics and practices would help in delineating the unique effects of social and emotional learning interventions. Studies following the same teachers over multiple school years may also be useful in this respect.

The link between teacher perception of program quality and dosage is a potentially important one. An intervention's efficacy is irrelevant if it is never delivered, and the current findings suggest that teacher's confidence in a program may be a key ingredient in ensuring that program's delivery. Future work is needed to establish the direction of causality in the satisfaction-dosage relationship, and a deeper understanding is needed of factors that influence teachers' perceptions of a program's utility. A clear understanding of the key predictors of program fidelity would offer school districts direction in effectively establishing new social and emotional learning programs.

Relatedly, the current study measured only two out of a large set of potential implementation indicators. Studies including a broader range of implementation measures will be useful toward identify the essential elements of a successful program, refining means of assessing progress, and prioritizing aspects of program delivery.

The fact that findings differed substantially when outcome was defined by report card grades versus standardized test scores speaks to the importance of carefully considering how outcome is operationalized in transition studies. This not only holds implications for future study design, it raises some interesting questions as to the nature of academic performance in varying domains. An understanding of the fundamental differences between the challenges of achieving high grades and achieving high

standardized test scores could potentially inform any intervention related to academic achievement.

Finally, future work should be directed at finding a useful means of capturing the changes through which SEL programs affect academic outcomes. It may be useful to analyze initial EQ scores for possible threshold levels required for intervention receptivity. Alternative methods for capturing social and emotional learning skills may also merit exploration. In addition to allowing for a deeper understanding of the mechanisms through which SEL programs operate, identifying appropriate measures of progress offers an essential tool for program implementation.

Table 1

*Frequency splits used to define implementation groups.**

	Avg. Teacher Satisfaction	5 th Grade Teacher Satisfaction	Avg. Dosage	5 th Grade Dosage
Low	0.00 to 2.82	0.00 to 2.59	0.00 to 27.81	0.00 to 33.00
Medium	2.82 to 3.05	2.59 to 3.00	27.81 to 35.00	33.00 to 40.00
High	3.05 to 4.00	3.00 to 4.00	35.00 to 45.67	40.00 to 45.67

*5th grade dosage and 5th grade teacher perception of program quality were split based on non-imputed data; average dosage and average teacher perception of program quality were based on imputed data for missing year if applicable.

Table 2

Baseline differences in categorical variables by dosage group: Pearson chi-square analyses.

	Average Dosage					5 th Grade Dosage				
	Low <i>N</i> (Expected)	Med. <i>N</i> (Expected)	High <i>N</i> (Expected)	χ^2	Sig.	Low <i>N</i> (Expected)	Med. <i>N</i> (Expected)	High <i>N</i> (Expected)	χ^2	Sig.
<i>Total N</i>	100	100	96			101	94	101		
<i>Gender</i>				1.77	.41				1.20	.55
Male	43 (40.9)	44 (40.9)	34 (39.2)			30 (27.4)	21 (24.4)	26 (25.2)		
Female	57 (59.1)	56 (59.1)	62 (56.8)			44 (46.6)	45 (41.6)	42 (42.8)		
<i>Ethnicity</i>				9.49	.009				.48	.79
African-American	71 (76.4)	87 (76.4)	68 (73.3)			54 (55.9)	50 (49.8)	53 (51.3)		
Latino/Latina	29 (23.6)	13 (23.6)	28 (22.7)			20 (18.1)	16 (16.2)	15 (16.7)		
<i>SES Group</i>				10.12	.038 ²				10.96	.027
Free lunch	73 (66.9)	67 (66.9)	58 (64.2)			50 (48.7)	47 (43.5)	40 (44.8)		
Reduced lunch	6 (10.8)	8 (10.8)	18 (10.4)			4 (8.9)	6 (7.9)	15 (8.2)		
No benefits	21 (22.3)	25 (22.3)	20 (21.4)			20 (16.4)	13 (14.6)	13 (15.0)		

² This significant difference is likely spurious because of the small *N* in the reduced lunch group.

Table 3

Baseline differences in categorical variables by teacher perception of quality group: Pearson chi-square analyses.

	Average Teacher Perception of Quality					5 th Grade Teacher Perception of Quality				
	Low <i>N</i> (Expected)	Med. <i>N</i> (Expected)	High <i>N</i> (Expected)	χ^2	Sig.	Low <i>N</i> (Expected)	Med. <i>N</i> (Expected)	High <i>N</i> (Expected)	χ^2	Sig.
<i>Total N</i>	101	94	101			67	84	57		
<i>Gender</i>				6.24	.044				1.15	.56
Male	50 (41.3)	30 (38.4)	41 (41.3)			28 (24.8)	28 (31.1)	21 (21.1)		
Female	51 (59.7)	64 (55.6)	60 (59.7)			39 (42.2)	56 (52.9)	36 (35.9)		
<i>Ethnicity</i>				5.20	.074				.31	.86
African-American	76 (77.1)	79 (71.8)	71 (77.1)			49 (50.6)	64 (63.4)	44 (43.0)		
Latino/Latina	25 (23.9)	15 (22.2)	30 (23.9)			18 (16.4)	20 (20.6)	13 (14.0)		
<i>SES Group</i>				14.65	.005				17.54	.002
Free lunch	57 (67.6)	65 (62.9)	76 (67.6)			36 (44.1)	60 (55.3)	41 (37.5)		
Reduced lunch	9 (10.9)	11 (10.2)	12 (10.9)			7 (8.1)	15 (10.1)	3 (6.9)		
No benefits	35 (22.5)	18 (21.0)	13 (22.5)			24 (14.8)	9 (18.6)	13 (12.6)		

Table 4

Differences in EQ-i:YV scores by implementation group.

	Pre-intervention EQ-i:YV <i>M (SD)</i>	Post-intervention EQ-i:YV <i>M (SD)</i>	EQ-i:YV Change <i>M (SD)</i>
<i>Average Teacher Perception of Quality Group</i>			
Low	67.92 (8.86)	65.61 (9.59)	-2.86 (10.88)
Medium	67.47 (9.38)	64.77 (8.82)	-3.37 (10.80)
High	65.83 (9.59)	63.41 (9.97)	-4.91 (12.62)
<i>5th Grade Teacher Perception of Quality Group</i>			
Low	67.03 (8.73)	64.71 (8.26)	-3.48 (11.07)
Medium	67.60 (10.14)	64.47 (9.91)	-3.09 (11.89)
High	67.30 (9.68)	63.34 (9.30)	-5.74 (10.55)
<i>Average Dosage Group</i>			
Low	67.20 (8.10)	66.10 (9.51)	-2.79 (11.02)
Medium	68.99 (9.27)*	63.91 (9.25)	-5.35 (11.37)
High	64.97 (10.00)*	63.65 (9.61)	-2.39 (11.79)
<i>5th Grade Dosage Group</i>			
Low	67.54 (8.31)	63.88 (8.65)	-4.11 (11.67)
Medium	69.09 (9.09)	65.35 (9.58)	-4.48 (10.13)
High	65.57 (11.21)	63.16 (9.32)	-3.35 (12.10)

*Difference between medium and high group significant; $F(2, 244) = 4.04, p < .05$

Table 5

Correlations among academic indicators and dosage levels.

	5 th Grade GPA	6 th Grade GPA	5 th Grade NJPASS	6 th Grade SPA	GPA Change	Std. Test Change	3 rd Grade Dosage	4 th Grade Dosage	5 th Grade Dosage	Average Dosage
5 th Grade GPA	---	.561**	.545**	.604**	-.469**	.085	-.006	.002	-.224**	-.119*
6 th Grade GPA	.561**	---	.491**	.524**	.469**	.050	.015	.025	-.025	.006
5 th Grade NJPASS	.545**	.491**	---	.731**	-.059	-.363**	.082	-.038	-.135*	-.062
6 th Grade SPA	.604**	.524**	.731**	---	-.086	.370**	.012	.032	-.067	-.013
GPA Change	-.469**	.469**	-.059	-.086	---	-.038	.022	.024	.212**	.133*
Std. Test Change	.085	.050	-.363**	.370**	-.038	---	-.095	.095	.091	.065
3 rd Grade Dosage	-.006	.015	.082	.012	.022	-.095	---	.031	.190**	.490**
4 th Grade Dosage	.002	.025	-.038	.032	.024	.095	.031	---	.321**	.735**
5 th Grade Dosage	-.224**	-.025	-.135*	-.067	.212**	.091	.190**	.321**	---	.777**
Average Dosage	-.119*	.006	-.062	-.013	.133*	.065	.490**	.735**	.777**	---

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 6

Correlations of academic indicators and teacher perception of program quality.

	5 th Grade GPA	6 th Grade GPA	5 th Grade NJPASS	6 th Grade SPA	GPA Change	Std. Test Change	3 rd Grade Teacher Perception	4 th Grade Teacher Perception	5 th Grade Teacher Perception	Average Teacher Perception
5 th Grade GPA	---	.561**	.545**	.604**	-.469**	.085	.083	-.002	-.057	.028
6 th Grade GPA	.561**	---	.491**	.524**	.469**	.050	.133*	.033	.036	.130*
5 th Grade NJPASS	.545**	.491**	---	.731**	-.059	-.363**	.116*	-.134*	-.017	-.002
6 th Grade SPA	.604**	.524**	.731**	---	-.086	.370**	.075	-.091	.028	.016
GPA Change	-.469**	.469**	-.059	-.086	---	-.038	.054	.038	.100	.109
Std. Test Change	.085	.050	-.363**	.370**	-.038	---	-.056	.060	.061	.025
3 rd Grade Teacher Perception	.083	.133*	.116*	.075	.054	-.056	---	.062	-.145*	.659**
4 th Grade Teacher Perception	-.002	.033	-.134*	-.091	.038	.060	.062	---	-.003	.600**
5 th Grade Teacher Perception	-.057	.036	-.017	.028	.100	.061	-.145*	-.003	---	.405**
Average Teacher Perception	.028	.130*	-.002	.016	.109	.025	.659**	.600**	.405**	---

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 7

Correlations of implementation measures and pre- and post-intervention emotional intelligence.

	Baseline EQ	3 rd Grade Dosage	3 rd Grade Teacher Perception	4 th Grade Dosage	4 th Grade Teacher Perception	5 th Grade Dosage	5 th Grade Teacher Perception	Post-Intervention EQ	EQ Change	Average Dosage	Average Teacher Perception
Baseline EQ	---	-.001	-.084	-.050	-.083	-.080	.018	.244**	-.595**	-.070	-.099
3 rd Grade Dosage	-.001	---	.330**	.031	-.056	.190**	-.050	.018	.004	.490**	.180**
3 rd Grade Teacher Perception	-.084	.330**	---	.069	.062	.177**	-.145*	-.050	-.009	.254**	.683**
4 th Grade Dosage	-.050	.031	.069	---	.185**	.321**	.201**	-.169**	-.080	.735**	.266**
4 th Grade Teacher Perception	-.083	-.056	.062	.185**	---	.026	-.003	-.054	-.039	.095	.639**
5 th Grade Dosage	-.080	.190**	.177**	.321**	.026	---	.193**	-.057	-.019	.777**	.289**
5 th Grade Teacher Perception	.018	-.050	-.145*	.201**	-.003	.193**	---	-.053	-.078	.194**	.496**
Post-Intervention EQ	.244**	.018	-.050	-.169**	-.054	-.057	-.053	---	.635**	-.119	-.093
EQ Change	-.595**	.004	-.009	-.080	-.039	-.019	-.078	.635**	---	-.045	-.063
Average Dosage	-.070	.490**	.254**	.735**	.095	.777**	.194**	-.119	-.045	---	.329**
Average Teacher Perception	-.099	.180**	.683**	.266**	.639**	.289**	.496**	-.093	-.063	.329**	---

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 8

Correlations of academic indicators and pre- and post-intervention emotional intelligence.

	Baseline EQ	Post- Intervention EQ	EQ Change	5 th Grade GPA	6 th Grade GPA	5 th Grade NJPASS	6 th Grade SPA	GPA Change	Std. Test Change
Baseline EQ	---	.244**	-.595**	.027	.079	.156*	.195**	.057	.059
Post-Intervention EQ	.244**	---	.635**	.168*	.209**	.163*	.230**	.051	.089
EQ Change	-.595**	.635**	---	.088	.085	.063	.046	.000	-.021
5 th Grade GPA	.027	.168*	.088	---	.561**	.545**	.604**	-.469**	.085
6 th Grade GPA	.079	.209**	.085	.561**	---	.491**	.524**	.469**	.050
5 th Grade NJPASS	.156*	.163*	.063	.545**	.491**	---	.731**	-.059	-.363**
6 th Grade SPA	.195**	.230**	.046	.604**	.524**	.731**	---	-.086	.370**
GPA Change	.057	.051	.000	-.469**	.469**	-.059	-.086	---	-.038
Std. Test Change	.059	.089	-.021	.085	.050	-.363**	.370**	-.038	---

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Table 9

Demographic differences in pre- and post-transition academic indicator z-scores.

	5 th Grade GPA		6 th Grade GPA		5 th Grade NJPASS		6 th Grade SPA	
	<i>N</i>	<i>M (SD)</i>	<i>N</i>	<i>M (SD)</i>	<i>N</i>	<i>M (SD)</i>	<i>N</i>	<i>M (SD)</i>
<i>Gender</i>								
Females	175	0.13 (0.97)*	175	0.19 (1.02)**	173	0.07 (1.00)	175	0.18 (0.96) ^{††}
Males	121	-0.19 (1.01)*	121	-0.28 (0.90)**	121	-0.01 (0.99)	121	-0.25 (1.00) ^{††}
<i>Ethnicity</i>								
African-American	226	-0.03 (0.95)	226	-0.57 (0.98)	225	0.02 (0.94)	226	-0.05 (0.10)
Latino/Latina	70	0.01 (1.14)	70	0.19 (1.04)	69	-0.06 (1.19)	70	0.15 (0.99)
<i>SES</i>								
Free lunch	198	-0.06 (0.93)	198	-0.06 (0.95)	197	-0.18 (0.95) [†]	198	-0.11 (0.95) [‡]
Reduced lunch	32	0.01 (1.07)	32	0.05 (1.02)	32	0.27 (1.12) [†]	32	0.09 (1.26)
No benefits	66	0.16 (1.15)	66	0.14 (1.12)	65	0.42 (0.94) [†]	66	0.30 (0.96) [‡]

* significant difference: $F(1,294) = 7.40, p < .01$

**significant difference: $F(1,294) = 16.74, p < .001$

[†] significant difference: $F(2, 291) = 10.23, p < .001$; Tukey's HSD revealed differences between free and reduced lunch and between free lunch and no benefits

^{††} significant difference: $F(1, 294) = 13.10, p < .001$

[‡] significant difference: $F(2, 293) = 4.33, p < .05$; Tukey's HSD revealed differences between free lunch and no benefits

Table 10

Summary of findings for demographic by implementation interactions.

	GPA Change				Standardized Test Change			
	<u>Implementation Measure</u>				<u>Implementation Measure</u>			
	Avg. Teacher Satisfaction F (DF)	5 th Grade Teacher Satisfaction F (DF)	Avg. Dosage F (DF)	5 th Grade Dosage F (DF)	Avg. Teacher Satisfaction F (DF)	5 th Grade Teacher Satisfaction F (DF)	Avg. Dosage F (DF)	5 th Grade Dosage F (DF)
Main effect of gender	1.58 (1,290)	0.85 (1, 202)	1.67 (1,290)	1.14 (1,202)	8.45** (1,288)	5.50* (1,201)	9.17** (1,288)	5.57* (1,201)
Main effect of implementation measure	1.31 (2, 290)	2.45 (2, 202)	0.29 (2,290)	7.22** (2,202)	1.18 (2,288)	1.38 (2,201)	0.08 (2,288)	2.04 (2,201)
Gender x implementation measure	0.83 (2,290)	0.26 (2,202)	0.95 (2,290)	2.93 (2,202)	0.21 (2,288)	0.69 (2,201)	0.39 (2,288)	1.38 (2,201)
Main effect of ethnicity	0.17 (1, 290)	0.029 (1,202)	1.28 (1,290)	0.01 (1,202)	7.17** (1,288)	5.99* (1,201)	6.57* (1,288)	6.64* (1,201)
Main effect of implementation measure	2.43 (2,290)	2.89 (2,202)	0.23 (2,290)	4.53* (2,202)	0.31 (2,288)	0.85 (2,201)	0.59 (2,288)	1.33 (2, 201)
Ethnicity x implementation measure	2.50 (2,290)	0.771 (2,202)	2.36 (2,290)	0.57 (2,202)	1.64 (2,288)	0.24 (2,201)	0.57 (2,288)	0.87 (2,201)
Main effect of SES	0.04 (2,287)	0.38 (2,199)	0.09 (2,287)	0.34 (2,199)	2.17 (2,285)	2.40 (2,198)	2.42 (2,285)	2.92 (2,198)
Main effect of implementation measure	1.21 (2,287)	1.14 (2,199)	0.12 (2,287)	1.15 (2,199)	0.82 (2,285)	0.71 (2,198)	0.54 (2,285)	0.15 (2,198)
SES x implementation measure	0.41 (4,287)	0.83 (4,199)	2.35 (4,287)	1.81 (4,199)	0.21 (4,285)	0.11 (4,198)	0.59 (4,285)	0.43 (4,198)

* $p < .05$

** $p < .01$

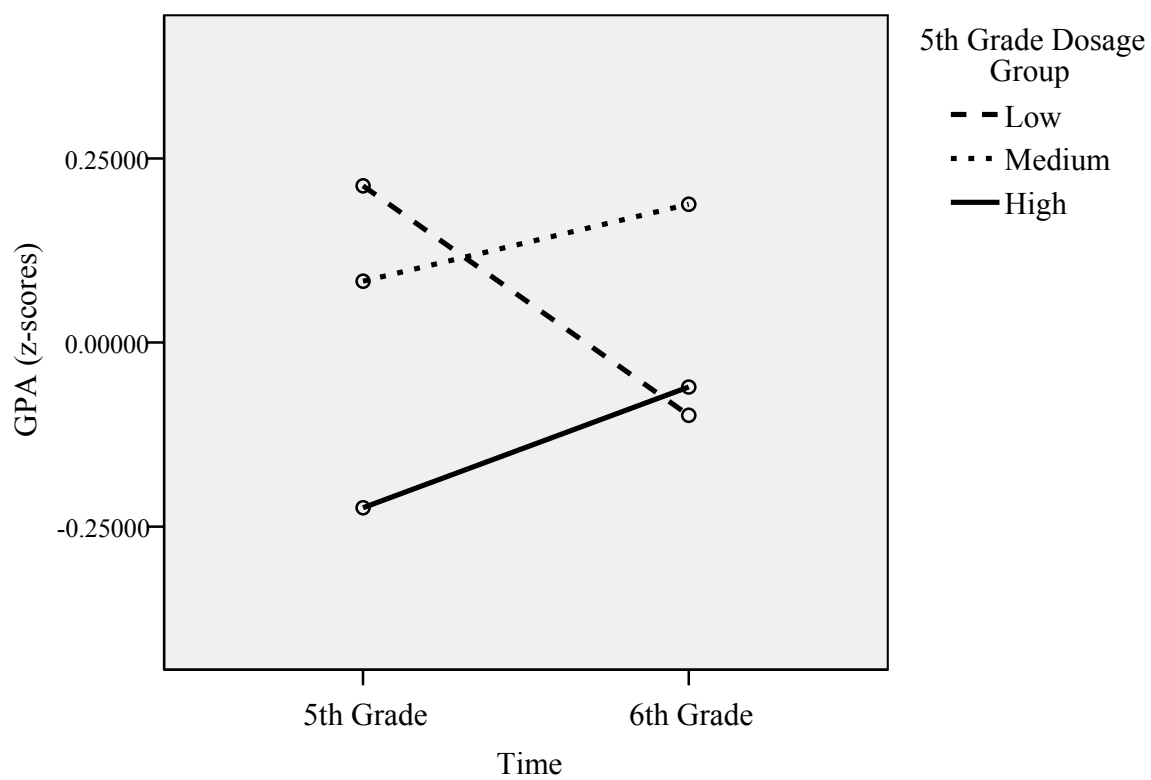
Table 11

EQ-i:YV by implementation interactions.

	GPA Change				Standardized Test Change			
	<u>Implementation Measure</u>				<u>Implementation Measure</u>			
	Avg. Teacher Satisfaction β (SE)	5 th Grade Teacher Satisfaction β (SE)	Avg. Dosage β (SE)	5 th Grade Dosage β (SE)	Avg. Teacher Satisfaction β (SE)	5 th Grade Teacher Satisfaction β (SE)	Avg. Dosage β (SE)	5 th Grade Dosage β (SE)
Main effect of EQ-i:YV	0.21 (0.16)	0.06 (0.18)	0.02 (0.17)	-0.02 (0.17)	0.10 (0.13)	-0.12 (0.16)	-0.02 (0.14)	0.26 (0.15)
Main effect of implementation measure	0.11 (0.07)	0.04 (0.09)	0.11 (0.07)	0.23** (0.08)	0.07 (0.06)	0.07 (0.07)	0.02 (0.06)	-0.04 (0.07)
EQ-i:YV x implementation measure	-0.16 (0.07)	-0.04 (0.08)	0.05 (0.07)	0.06 (0.07)	-0.37 (0.06)	0.22 (0.07)	0.08 (0.06)	-0.02 (0.07)

** $p < .01$

Figure 1. GPA across transition by fifth grade dosage group.



Appendix A: Third grade teacher satisfaction survey

Third Grade T.J. Evaluation-2000/2001

Name: _____

School: _____

It is very important that we have feedback regarding your experience with TJ now that we are nearing the end of the school year. The following is a series of questions that we would like you to answer that will guide changes we may make to the curriculum for next year.

PART ONE

Please indicate if you did a given activity and give it an effectiveness rating using the following scale:

- 1= not at all effective
 2= somewhat effective
 3= moderately effective
 4= highly effective

PREPARING YOU CLASS FOR THE CURRICULUM

ACTIVITY	DID YOU DO IT?		RATING			
	Teamwork Activity/					
Video Introduction	Yes	No	1	2	3	4

UNIT ONE: "WHAT'S THE PLAN?"

ACTIVITY	DID YOU DO IT?		RATING			
Respect Discussion	Yes	No	1	2	3	4
Video # 1	Yes	No	1	2	3	4

Video #1 Discussion	Yes	No	1	2	3	4
“Speaker Power” Activity	Yes	No	1	2	3	4
Thank You Game	Yes	No	1	2	3	4
Comic Activity #1	Yes	No	1	2	3	4
Review the Power Phrase	Yes	No	1	2	3	4
Review Teamwork Tips	Yes	No	1	2	3	4
Sign the Power Phrase Poster	Yes	No	1	2	3	4
Review Previous Lessons	Yes	No	1	2	3	4

UNIT TWO: “ALL TOGETHER NOW”

ACTIVITY	DID YOU DO IT?		RATING			
TJ Video #2	Yes	No	1	2	3	4
Video #2 Discussion	Yes	No	1	2	3	4
We Are the Same and We Are Different	Yes	No	1	2	3	4
Inside and Outside Differences	Yes	No	1	2	3	4
TJ Comic Activity #2	Yes	No	1	2	3	4
Review Power Phrase	Yes	No	1	2	3	4
Review Teamwork Tips	Yes	No	1	2	3	4
Sign Power Phrase Poster	Yes	No	1	2	3	4
Review Previous Lessons	Yes	No	1	2	3	4

UNIT THREE: “TEAM SPIRIT!”

ACTIVITY	DID YOU DO IT?		RATING			
TJ Video #3	Yes	No	1	2	3	4

Video #3 Discussion	Yes	No	1	2	3	4
Friendship Activity	Yes	No	1	2	3	4
Sharing Activity (scenarios)	Yes	No	1	2	3	4
Trusting Our Friends	Yes	No	1	2	3	4
TJ Comic Activity #3	Yes	No	1	2	3	4
Review of Power Phrase	Yes	No	1	2	3	4
Review of Teamwork Tips	Yes	No	1	2	3	4
Sign Power Phrase Poster	Yes	No	1	2	3	4
Review Previous Lessons	Yes	No	1	2	3	4

UNIT FOUR

ACTIVITY	DID YOU DO IT?		RATING			
Honesty Makes Teams Strong	Yes	No	1	2	3	4
Practice Working Cooperatively	Yes	No	1	2	3	4
Lessons From the Geese	Yes	No	1	2	3	4
Human Knot	Yes	No	1	2	3	4
Hassle Log Discussion	Yes	No	1	2	3	4
Puppet Making	Yes	No	1	2	3	4
Conflict Discussion	Yes	No	1	2	3	4
“When Purple Meets Green”	Yes	No	1	2	3	4
Review TJ Teamwork Tips	Yes	No	1	2	3	4
Review TJ Power Phrases	Yes	No	1	2	3	4
Review Previous Lessons	Yes	No	1	2	3	4

Appendix B: Fourth grade teacher satisfaction survey

Fourth and Fifth Grade T.J. Evaluation- 2001/2002

Name: _____

School: _____

It is very important that we have feedback regarding your experience with TJ now that we are nearing the end of the school year. The following is a series of questions that we would like you to answer that will guide changes we may make to the curriculum for next year.

PART ONE

Please indicate if you did a given activity and give it an effectiveness rating using the following scale:

- 1= not at all effective
2= somewhat effective
3= moderately effective
4= highly effective

PREPARING YOU CLASS FOR THE CURRICULUM

ACTIVITY	DID YOU DO IT?		RATING			
"Sharing Circles"	Introducing "Speaker Power", "Listening Position", and					
	Yes	No	1	2	3	4
Class	Introducing TJ to the					
	Yes	No	1	2	3	4

UNIT ONE: "KEEP YOUR COOL"

ACTIVITY	DID YOU DO IT?		RATING			
----------	----------------	--	--------	--	--	--

Video # 1	Yes	No	1	2	3	4
Video #1 Discussion	Yes	No	1	2	3	4
Frame Activity	Troublestoppers Freeze		1	2	3	4
	Yes	No				
Frame Discussion	Troublestoppers Freeze		1	2	3	4
	Yes	No				
Comic Activity #1	Yes	No	1	2	3	4
Review the Power Phrase	Yes	No	1	2	3	4
Review Troublestoppers	Yes	No	1	2	3	4
Sign the Power Phrase Poster	Yes	No	1	2	3	4
Review Previous Lessons	Yes	No	1	2	3	4

UNIT TWO: “TAKE A NEW LOOK”

ACTIVITY	DID YOU DO IT?		RATING			
TJ Video #2	Yes	No	1	2	3	4
Video #2 Discussion	Yes	No	1	2	3	4
Footsteps Activity	Yes	No	1	2	3	4
Instrument Activity	Yes	No	1	2	3	4
TJ Comic Activity #2	Yes	No	1	2	3	4
Review Power Phrase	Yes	No	1	2	3	4
Review Troublestoppers	Yes	No	1	2	3	4
Sign Power Phrase Poster	Yes	No	1	2	3	4
Review Previous Lessons	Yes	No	1	2	3	4

UNIT THREE: "SAY THE RIGHT THING"

ACTIVITY	DID YOU DO IT?		RATING			
TJ Video #3	Yes	No	1	2	3	4
Video #3 Discussion	Yes	No	1	2	3	4
Fix-Up Activity	Friendly Word					
	Yes	No	1	2	3	4
Survey Says Activity	Yes	No	1	2	3	4
Freeze Frame Activity	Yes	No	1	2	3	4
TJ Comic Activity #3	Yes	No	1	2	3	4
Review of Power Phrase	Yes	No	1	2	3	4
Review of Troublestoppers	Yes	No	1	2	3	4
Sign Power Phrase Poster	Yes	No	1	2	3	4
Review Previous Lessons	Yes	No	1	2	3	4

UNIT FOUR: REVIEWING ALL TROUBLESTOPPERS

ACTIVITY	DID YOU DO IT?		RATING			
Story Activity	Multiple Solutions					
	Yes	No	1	2	3	4
Activity	Common Student Problems					
	Yes	No	1	2	3	4
Activity	Different Solutions Have Different Consequences					
	Yes	No	1	2	3	4
A Plan B Activity	It's Important To Have					
	Yes	No	1	2	3	4
Review TJ Troublestoppers	Yes	No	1	2	3	4
Review TJ Power Phrases	Yes	No	1	2	3	4

UNIT FIVE: APPLYING TJ SKILLS TO HEALTH, SAFETY, AND SOCIAL ISSUES

ACTIVITY	DID YOU DO IT?		RATING			
Advertisements Part A	Social Action Activity/					
	Yes	No	1	2	3	4
Advertisements Part B	Social Action Activity/					
	Yes	No	1	2	3	4
Drug Resistance	Using TJ Skills for					
	Yes	No	1	2	3	4
Hassle Log Activity						
	Yes	No	1	2	3	4
Bias Activity	Using TJ to Confront					
	Yes	No	1	2	3	4
Activity	Why Frog and Snake Don't Play Together					
	Yes	No	1	2	3	4
When to Ask for Help						
	Yes	No	1	2	3	4

Appendix C: Fifth grade teacher satisfaction survey

Fifth Grade T.J. Evaluation-2002/2003

Name: _____

School: _____

It is very important that we have feedback regarding your experience with TJ now that we are nearing the end of the school year. The following is a series of questions that we would like you to answer that will guide changes we may make to the curriculum for next year.

PART ONE

Please indicate if you did a given activity and give it an effectiveness rating using the following scale:

- 1= not at all effective
 2= somewhat effective
 3= moderately effective
 4= highly effective

PREPARING YOU CLASS FOR THE CURRICULUM

ACTIVITY	DID YOU DO IT?		RATING			
“Sharing Circles”	Introducing “Speaker Power”, “Listening Position”, and					
	Yes	No	1	2	3	4
Class	Introducing TJ to the					
	Yes	No	1	2	3	4

UNIT ONE: “KEEP YOUR COOL”

ACTIVITY	DID YOU DO IT?		RATING			
Video # 1	Yes	No	1	2	3	4

Video #1 Discussion	Yes (including “respect” discussion)	No	1	2	3	4
Discussion	Troublestoppers Yes	No	1	2	3	4
Troublestoppers Activity	Yes	No	1	2	3	4
Role-Play Activity	Yes	No	1	2	3	4
Activity	“Interview With Peers” Yes	No	1	2	3	4
Review the Power Phrase	Yes	No	1	2	3	4
Review Troublestoppers	Yes	No	1	2	3	4
Sign Power Phrase Poster	Yes	No	1	2	3	4
Review Previous Lessons	Yes	No	1	2	3	4

UNIT TWO: “TAKE A NEW LOOK”

ACTIVITY	DID YOU DO IT?		RATING			
TJ Video #2	Yes	No	1	2	3	4
discussion)	Video #2 Discussion (including “courage” Yes	No	1	2	3	4
Activity	“Points of View” Yes	No	1	2	3	4
Activity	Make A Recipe (Parts I & II) Yes	No	1	2	3	4
Review Power Phrase	Yes	No	1	2	3	4
Review Troublestoppers	Yes	No	1	2	3	4
Sign Power Phrase Poster	Yes	No	1	2	3	4

Review Previous Lessons	Yes	No	1	2	3	4
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UNIT THREE: “SAY THE RIGHT THING”

ACTIVITY	DID YOU DO IT?		RATING			
TJ Video #3	Yes	No	1	2	3	4
Video #3 Discussion (including “fairness” discussion)	Yes	No	1	2	3	4
“Communication Is Key” Activity	Yes	No	1	2	3	4
Freeze Frame Activity	Yes	No	1	2	3	4
TJ Workshop	Yes	No	1	2	3	4
Review of Power Phrase	Yes	No	1	2	3	4
Review of Troubestoppers	Yes	No	1	2	3	4
Sign Power Phrase Poster	Yes	No	1	2	3	4
Review Previous Lessons	Yes	No	1	2	3	4

UNIT FOUR: STRENGTHENING OUR CHARACTER

ACTIVITY	DID YOU DO IT?		RATING			
“Responsibility” Discussion and Activity	Yes	No	1	2	3	4
“Trustworthiness” Discussion and Activity	Yes	No	1	2	3	4
“Character” Activity	Yes	No	1	2	3	4
The Big Picture	Yes	No	1	2	3	4
Review of How To Strengthen Our Character	Yes	No	1	2	3	4

Review TJ Power Phrases	Yes	No	1	2	3	4
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UNIT FIVE: PAVING THE ROAD AHEAD

ACTIVITY	DID YOU DO IT?		RATING			
	“Goals for Middle School and Beyond” Discussion					
and Activity	Yes	No	1	2	3	4
	Transition to Middle School Discussion and					
Activity	Yes	No	1	2	3	4
	“Comrades in Middle					
School” Activity	Yes	No	1	2	3	4
	“Using Character in Middle					
School” Essay	Yes	No	1	2	3	4
Review of Troublestoppers	Yes	No	1	2	3	4
Review of Character Themes	Yes	No	1	2	3	4

SUPPLEMENTAL LESSONS

ACTIVITY	DID YOU DO IT?		RATING			
Anxiety Indicators	Yes	No	1	2	3	4
	Lesson					
Anxiety Check Activity	Yes	No	1	2	3	4
Power Letter Writing	Yes	No	1	2	3	4
	Lesson (1)					
Power Letter Writing (1)	Yes	No	1	2	3	4
	Activity					
Power Letter Lesson (2)	Yes	No	1	2	3	4

Power Letter Writing Activity (2)	Yes	No	1	2	3	4
Social Action through Teamwork/Petition Lesson (1)	Yes	No	1	2	3	4
Power Petitions Activity (1)	Yes	No	1	2	3	4
Social Action through Teamwork/Petition (2)	Yes	No	1	2	3	4
Power Petitions Activity (2)	Yes	No	1	2	3	4
Dealing with Peer Pressure	Yes	No	1	2	3	4
Peer Pressure Activity	Yes	No	1	2	3	4
Peer Pressure Role Plays	Yes	No	1	2	3	4
Keeping out of a fight lesson	Yes	No	1	2	3	4
Keeping out of a fight activity	Yes	No	1	2	3	4
Conflict Role Play	Yes	No	1	2	3	4
Multicultural Unit (1)	Yes	No	1	2	3	4
Multiculturalism Activity (1)	Yes	No	1	2	3	4
Multicultural Readings	Yes	No	1	2	3	4
Multicultural Unit (2)	Yes	No	1	2	3	4
Multiculturalism Activity (2)	Yes	No	1	2	3	4
Understanding Diversity Worksheet and Presentation	Yes	No	1	2	3	4

References

- Akos, P., & Galassi, J. P. (2004). Gender and race as variables in psychosocial adjustment to middle and high school. *Journal of Educational Research*, 98(2), 102-108.
- Alspaugh, J. (1998). Achievement loss associated with the transition to middle and high school. *The Journal of Educational Research*, 92(1), 20-25.
- Bar-On, R., & Parker, J. D. A. (2000). *The Bar-On emotional quotient inventory: Youth version (EQ-i:YV)*. Toronto: Multi-Health Systems.
- Blyth, D. A., Simmons, R. G., & Bush, D. (1978). The transition into early adolescence: A longitudinal comparison of youth in two educational contexts. *Sociology of Education*, 51(3), 149-162.
- Blyth, D. A., Simmons, R. G., & Carlton-Ford, S. (1983). The adjustment of early adolescents to school transitions. *Journal of Early Adolescence*, 3(1-2), 105-120.
- Bronstein, P., Duncan, P., Clauson, J., Abrams, C. L., Yannett, N., & Ginsburg, G. (1998). Preventing middle school adjustment problems for children from lower-income families: A program for Aware Parenting. *Journal of Applied Developmental Psychology*, 19(1), 129-152.
- Bronstein, P., Duncan, P., D'Ari, A., Pieniadz, J., Fitzgerald, M., & Abrams, C. L. (1996). Family and parenting behaviors predicting middle school adjustment: A longitudinal study. *Family Relations: Journal of Applied Family & Child Studies*, 45, 415-426.
- Ciarrochi, J., Forgas, J., & Mayer, J. (Eds.). (2005). *Emotional intelligence in everyday life: A scientific inquiry* (Rev. ed.). Philadelphia: Taylor and Francis.
- Dilworth, J. E. G., Mokrue, K., & Elias, M. J. (2002). The efficacy of a video-based teamwork-building series with urban elementary school students: A pilot investigation. *Journal of School Psychology*, 40(4), 329-346.
- Domitrovich, C. E., & Greenberg, M. T. (2000). The study of implementation: Current findings from effective programs that prevent mental disorders in school-aged children. *Journal of Educational & Psychological Consultation*, 11(2), 193-221.
- Eccles, J. S., Lord, S. E., Roeser, R. W., & Barber, B. L. (1997). The association of school transitions in early adolescence with developmental trajectories through high school. In J. Schulenberg, J. L. Maggs, & K. Hurrelmann (Eds.), *Health risks and developmental transitions during adolescence* (pp. 283-320). Cambridge, England: Cambridge University Press

- Elias, M. J., & Bruene Butler, L. (2005a). *Social decision making/Social problem solving: A curriculum for academic, social, and emotional learning (Grades 2-3)*. Champaign, IL: Research Press.
- Elias, M. J., & Bruene Butler, L. (2005b). *Social decision making/Social problem solving: A curriculum for academic, social, and emotional learning (Grades 4-5)*. Champaign, IL: Research Press.
- Elias, M. J., Gara, M., & Ubriaco, M. (1985). Sources of stress and support in children's transition to middle school: An empirical analysis. *Journal of Clinical Child Psychology*, 14(2), 112-118.
- Elias, M. J., Gara, M., Ubriaco, M., & Rothbaum, P. A. (1986). Impact of a preventive social problem solving intervention on children's coping with middle-school stressors. *American Journal of Community Psychology*, 14(3), 259-275.
- Elias, M. J., & Tobias, S. E. (1996). *Social problem solving: Interventions in the schools*. New York, NY: Guilford Press.
- Elias, M. J., Zins, J. E., Graczyk, P. A., & Weissberg, R. P. (2003). Implementation, sustainability, and scaling up of social-emotional and academic innovations in public schools. *School Psychology Review*, 32(3), 303-319.
- Elias, M. J., Zins, J. E., Weissberg, R. P., Frey, K. S., Greenberg, M. T., & Haynes, N. M. (1997). *Promoting social and emotional learning: Guidelines for educators*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Graczyk, P. A., Domitrovich, C. E., Small, M., & Zins, J. E. (2006). Serving all children: An implementation model framework. *School Psychology Review*, 35(2), 266-274.
- Greenberg, M. T., Domitrovich, C. E., Graczyk, P. A., & Zins, J. E. (2005). *The study of implementation in school-based prevention research: Theory, research, and practice* (Report submitted to The Center for Mental Health Services). Rockville, MD: Substance Abuse and Mental Health Services Administration.
- Grolnick, W. S., Kurowski, C. O., Dunlap, K. G., & Hevey, C. (2000). Parental resources and the transition to junior high. *Journal of Research on Adolescence*, 10(4), 465-488.
- Gutman, L. M., & Midgley, C. (2000). The role of protective factors in supporting the academic achievement of poor African American students during the middle school transition. *Journal of Youth & Adolescence*, 29(2), 223-248.
- Hallmark Corporate Foundation. (1994). *Talking with TJ: A new educational resource to teach teamwork, cooperation, and conflict resolution*. Omaha: Author.

- Harachi, T. W., Abbott, R. D., Catalano, R. F., Haggerty, K. P., & Fleming, C. B. (1999). Opening the black box: Using process evaluation measures to assess implementation and theory building. *American Journal of Community Psychology*, 27(5), 711-731.
- Harter, S., Whitesell, N. R., & Kowalski, P. S. (1992). Individual differences in the effects of educational transitions on young adolescents' perceptions of competence and motivational orientation. *American Educational Research Journal*, 29(4), 777-807.
- Hirsch, B. J., & Rapkin, B. D. (1987). The transition to junior high school: A longitudinal study of self-esteem, psychological symptomatology, school life, and social support. *Child Development*, 58(5), 1235-1243.
- Juvonen, J., Le, V., Kaganoff, T., Augustine, C., & Constant, L. (2004). *Focus on the wonder years: Challenges facing the American middle school*. Pittsburgh: RAND Education.
- Leonard, C. P., & Elias, M. J. (1993). Entry into middle school: Student factors predicting adaptation to an ecological transition. *Prevention in Human Services*, 10(2), 39-57.
- McLoyd, V. C. (1998). Socioeconomic disadvantage and child development. *American Psychologist*, 53(2), 185-204.
- Mokrue, K., Elias, M. J., & Bry, B. H. (2005). Dosage effect and the efficacy of a video-based teamwork-building series with urban elementary school children. *Journal of Applied School Psychology*, 21(1), 67-97.
- Reyes, O., Gillock, K. L., Kobus, K., & Sanchez, B. (2000). A longitudinal examination of the transition into senior high school for adolescents from urban, low-income status, and predominantly minority backgrounds. *American Journal of Community Psychology*, 28(4), 519-544.
- Riverside Publishing. (2005). *New Jersey Proficiency Assessment of State Standards: Overview*. Retrieved April 11, 2005, from <http://www.riverpub.com/products/group/njpass/overview.html>
- Robinson, N. S., Garber, J., & Hilsman, R. (1995). Cognitions and stress: Direct and moderating effects on depressive versus externalizing symptoms during the junior high school transition. *Journal of Abnormal Psychology*, 104(3), 453-463.
- Rosenblatt, J. L., & Elias, M. J. (2008). *Effects of preventive social-emotional learning intervention on achievement loss associated with middle school transition*. Manuscript submitted for publication.
- Rothstein, R. (2004a). The achievement gap: A broader picture. *Educational Leadership*, 62(3), 40-43.

- Rothstein, R. (2004b). A wider lens on the black-white achievement gap. *Phi Delta Kappan*, 86(2), 104-110.
- Seidman, E., Allen, L., Aber, J., & Mitchell, C. (1994). The impact of school transitions in early adolescence on the self-system and perceived social context of poor urban youth. *Child Development*, 65(2), 507-522.
- Seidman, E., Lambert, L. E., Allen, L., & Aber, J. (2003). Urban adolescents' transition to junior high school and protective family transactions. *Journal of Early Adolescence*, 23(2), 166-193.
- Simmons, R. G., Black, A., & Zhou, Y. (1991). African-American versus White children and the transition into junior high school. *American Journal of Education*, 99(4), 481-520.
- Simmons, R. G., Burgeson, R., Carlton-Ford, S., & Blyth, D. A. (1987). The impact of cumulative change in early adolescence. *Child Development*, 58(5), 1220-1234.
- Simmons, R. G., Rosenberg, F., & Rosenberg, M. (1973). Disturbance in the self-image at adolescence. *American Sociological Review*, 38(5), 553-568.
- Wampler, R. S., Munsch, J., & Adams, M. (2002). Ethnic differences in grade trajectories during the transition to junior high. *Journal of School Psychology*, 40(3), 213-237.
- Zins, J. E., Bloodworth, M. R., Weissberg, R. P., & Walberg, H. J. (2004). The scientific base linking social and emotional learning to school success. In H. J. Walberg (Ed.), *Building academic success on social and emotional learning: What does the research say?* (pp. 3-22). New York: Teachers College Press.

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