SREE Symposium Submission

Contact: Thomas W. Farmer (session chair) – twf2@psu.edu

Title: Impact and Mechanisms of Change of a Multi-Component Intervention designed to Promote Productive Classroom Contexts for Rural Early Adolescents

Section: First Choice - Social and Behavioral Processes and Outcomes in Education

Second Choice - School and Classroom-Based Educational Practices

Authors: Paper 1 - Tom Farmer (Penn State) twf2@psu.edu

Paper 2 – Jill Hamm (University of North Carolina-Chapel Hill) jhamm@email.unc.edu

Paper 3 – Matt Irvin (University of North Carolina-Chapel Hill) mirvin@email.unc.edu

Paper 4 – Rob Petrin (Penn State) rpetrin@psu.edu

Discussant: Elise Cappella (New York University)
Symposium Justification

Decades of research indicate that early adolescence is a period of developmental vulnerability in which many youth are at-risk for developing significant school adjustment problems in the academic, behavioral, and social domains. The Supporting Early Adolescent Learning and Social Success (SEALS) model has been developed as a professional development and consultation program to train teachers in universal instructional, classroom, and social dynamics management strategies to address correlated risks experienced by students during this developmental period. This symposium will present a series of papers that build from the use of the SEALS model to promote the school adaptation of rural early adolescents in the Rural Early Adolescent Learning Program (Project REAL).

Project REAL is a focused program of research that recently completed the intervention and data collection phases of investigation. This project included a series of small randomized control trials in matched pairs of schools and a clustered randomized trial that was conducted in seven states with 28 schools (14 matched pairs). Consistent with the goal of identifying what works for whom, Project REAL data will be used to examine three complimentary aims that focus on the social and behavioral context of adolescent learning and school adjustment. Each of these aims is briefly described below.

The first aim is to examine the impact of SEALS on teachers’ attunement to and management of peer contextual processes that have been hypothesized to contribute to students’ school engagement. The impact of the SEALS model on teachers’ accuracy in identifying students’ peer group affiliations and managing the peer instructional context was investigated using Project REAL data. The findings demonstrate the importance for teachers to understand student social dynamics, and highlight the enhancing effects of SEALS for teachers as they create supportive learning environments for early adolescents.

The second aim is to examine the impact of the SEALS program on gender differences in students’ perceptions of the school academic and social context. This includes a focus on both the general population of students in the REAL sample and on distinct high-risk subgroups of rural adolescents who were identified by cluster analyses of teachers’ ratings of students’ school adjustment prior to intervention. Overall, analyses indicated that the intervention differentially contributed to how boys and girls experience the school context, particularly in terms of normative beliefs about academic effort and school belonging.

The third aim is to explore contextual factors and processes associated with improving or problematic school adjustment in rural adolescents in general, and identified in distinct high-risk configurations across both the intervention and control conditions. The SEALS model was designed as a universal intervention that would serve as a context for more intensive selected and targeted interventions for high-risk youth. By clarifying process and contextual factors that are associated with either improving or problematic trajectories of high-risk youth, this work yields new insights into “what works for whom” and what should be considered as intervention targets in the development of selected and targeted intervention programs that are aimed at distinct subtypes of high-risk youth.
Title: Overview of Project REAL and the Conceptual Foundations of the SEALS Model

Author: Thomas W. Farmer – twf2@psu.edu
Background / Context:

The early adolescent period and the transition to middle school is a foundational period that is as important to the outcomes of students’ educational careers as is the transition into school. For many early adolescents, the changing contexts and demands of school are just as novel, the stresses are just as great, and the developmental stakes are just as high as when they first began elementary school (Eccles, 1999; Seidman, Allen, Aber, Mitchell, & Feinman, 1994). While the need to help first graders learn how to be productive students is easily recognized, the necessity of fostering new competencies in sixth graders to promote their comfort as autonomous but interdependent learners is not as readily apparent. Yet, research on adolescent adaptation and youth’s adjustment problems during early adolescence strongly suggests there is a need for sixth-grade classroom contexts that help students learn to effectively negotiate new academic, behavioral, and social demands as they develop new identities, relationships, interests, and abilities. The Supporting Early Adolescent Learning and Social Success (SEALS) Model has been developed to address this need.

The SEALS Model builds from three distinct but complementary theoretical perspectives pertaining to youth adjustment and adaptation in school during the early adolescent years. The first framework, the person-environment fit hypothesis, centers on the developmental challenges that youth experience as they transition to middle school (Eccles, 1999). The second framework, developmental science, focuses on how factors and processes in key domains of development coalesce to contribute to individual functioning, adaptation, and growth (Cairns & Cairns, 1994). The third framework, ecological intervention, emphasizes intervention strategies that are aimed at systematically organizing and structuring the environment in ways that correspond with the developmental capacities and needs of individuals and that fosters the development of new skills, opportunities, and social roles that help to sustain productive patterns of adaptation and growth (Cantrell & Cantrell, 2007; Farmer, Farmer, & Brooks, 2010; Hobbs, 1966).

First, in accordance with the person-environment mismatch hypothesis, a central focus of the SEALS model is to teach teachers instructional and classroom management strategies that are responsive to the needs of struggling youth and that focus on structuring the classroom context in ways that teach early adolescents how to be effective middle school students (i.e., autonomous, self-directed learners). From this perspective, it is necessary to create an environment to bridge between the familiar environment of elementary school and the new environment of middle school. This does not mean that teachers during the middle grade years should try to replicate the elementary school context. Instead, the focus is on using strategies that scaffold between students’ individual capacities and facilitates their development of new skills and competencies.

Second, in accordance with a developmental science framework, the SEALS model approaches intervention from the perspective that it is necessary to recognize the holistic nature of early adolescent development and to coordinate intervention across the academic, behavioral, and social domains. Therefore, as depicted in Figure B-1, the SEALS model has been designed to teach teachers that promoting the adjustment of early adolescent learners involves fostering their competencies and growth across these three domains in an integrated and synchronized manner. Further, the three components of the SEALS model (i.e., Social Dynamics Management, Academic Engagement Enhancement, and Competence Enhancement Behavior Management) have been designed to complement each other and to synergistically contribute to the adaptation and functioning of students.

Third, in accordance with an ecological intervention framework, the SEALS model is designed to focus on the daily activities of learning and to structure the context to align with
students’ characteristics and developmental needs. Consequently, rather than focus on trying to “fix the student”, teachers are taught to approach intervention in ways that utilize the context to foster and sustain new competencies and productive behaviors in students. This involves building upon students’ strengths and using problems as opportunities to teach new skills. In addition, the SEALS model builds from research which shows that students’ academic growth is linked to their social and behavioral adjustment during early adolescence and from research on the contributions of peers to learning and school adaptation. Thus, this model involves teaching teachers how to develop an awareness of classroom social dynamics and use this knowledge along with empirically supported management strategies to effectively promote students’ engagement in instruction and to reinforce this by creating and maintaining a peer context that values learning and that fosters positive social behaviors/relationships among classmates.

**Purpose / Objective / Research Question / Focus of Study:**

The purpose of this paper is to provide an overview of the conceptual foundations of the SEALS model and to provide a foundation for the subsequent papers in this symposium that examine the use of the SEALS intervention in the Rural Early Adolescent Learning Program (Project REAL). This paper will involve a brief overview of empirical research that guided the development of the SEALS model as well as pilot research from Project REAL that served as a foundation for the cluster randomized trial that is the base for the other presentations. In addition, considerations for looking beyond the impact of the SEALS universal intervention and examining factors and processes that should be addressed in the development of selected and targeted programs for high-risk subgroups will be presented to foreshadow some of the analyses presented in papers 3 and 4 of this symposium.

**Setting:**

Project REAL took place in public schools serving sixth graders; schools were configured as either middle (grades 6-8) or k8/k12 schools. Schools were located in the Appalachian, Deep South, Southwest, Pacific Northwest, Far West, Southeast, Northern Plains, and Midwest regions of the United States. Participating schools were located in low-wealth communities designated as rural by the National Center for Education Statistics (NCES).

**Population / Participants / Subjects:**

The Project REAL sample involved 36 schools (18 matched pairs) including both pilot (8 schools) and CRT (28 schools) samples; 56% were middle schools. Data from NCES are the source of school demographic data. The current study included 28 Project REAL schools (14 matched pairs); 57% were middle schools. On average, the percentage of students eligible for free/reduced lunch was 61.52% (SD = 28.91). Schools ranged from 0% to 100% minority (M = 33.80%, SD = 38.99). On average 59% of students were at or above grade level for reading and math standardized test scores. Consent rate averaged 64.7% (SD = 13.69). School size ranged from 72-581 students. A total of 1587 students participated; 831 were female.

Teachers in intervention schools took part in the intervention components described below. Teachers in both intervention and control schools participated as research participants. All were sixth grade teachers; 72.6% were female, 47.2% held a graduate degree, 38.4% had done some graduate work, and 14.4% reported their highest degree as a four-year degree. Student participants were the sixth grade students of these teachers in the intervention and
control schools. For these students, 53.6% were female and 51.3% were classified as ethnic minority (African American, Latino, or Native American ethnicity).

**Intervention / Program / Practice:**

The SEALS model is a professional development program designed to train 6th grade teachers in strategies that foster productive classroom contexts. The program consists of three complementary interventions: *Academic Engagement Enhancement, Social Dynamics Management*, and *Competence Enhancement Behavior Management*. Consistent with a holistic model of human development illustrated in Figure B-1, these components are designed to have a collective, synergistic effect. Therefore, it is expected that the impact of each of the components will contribute to and support the impact of the other two components. This corresponds with the view that academic, behavioral, and social adjustment operate as a correlated system and that interventions in one domain should correspond with interventions that address correlated domains (see Farmer, Quinn, Hussey, & Holahan, 2001). The logic model that guides this synergistic approach to intervention is summarized in detail in Table B-1. This model should be viewed as a synergistic effort that links across the three intervention components to impact teacher practices, the peer and school context, students’ general school functioning, and their academic outcomes.

**Academic Engagement Enhancement (AEE).** The AEE component involves providing middle school teachers with a structured format to start class and organize instruction to maintain the attention and involvement of students with learning difficulties (Gut, Farmer, Bishop, Hives, Aaron, & Jackson, 2004; Sutherland & Farmer, 2009). Teachers are taught a variety of strategies that promote the engagement of students whom typically struggle in the classroom. These strategies include oral review and instruction techniques, curriculum modification techniques, peer tutoring and small group activities, information processing strategies, behavioral momentum strategies and strategies to promote engagement by systematically providing at-risk students with frequent constructive feedback and opportunities to respond (e.g., Bos & Vaughn, 1998; Fuchs, Fuchs, & Burish, 2000). The goal is to provide a structure and format that maximizes the capabilities of teachers to be responsive to the diverse needs of students and that promotes the engagement of students who typically have difficulty in large class and didactic instructional settings.

**Social Dynamics Management (SDM).** SDM is an inservice training and directed-consultation model to enhance teachers’ awareness of classroom social dynamics and the corresponding impact of such dynamics on students’ academic engagement and classroom behavior (Farmer, 2000; Farmer & Xie, 2007). This model has been generated from years of research aimed at clarifying the social dynamics of aggressive and disruptive behavior in school (e.g., Cairns & Cairns, 1994; Estell, Farmer, Irvin, Thompson, Hutchins, & McDonough, 2007; Farmer, Estell, Leung, Trott, Bishop, & Cairns, 2003). With this component, teachers learn to identify distinct peer groups, hierarchical social structures, and students’ social roles (e.g., leaders, followers, bullies, victims, and isolates) in the peer system (see Sutherland & Farmer, 2009). An emphasis is placed on understanding and preventing the social dynamics of bullying and social aggression. Teachers are taught how to use this information in their daily instructional and behavior management activities including grouping practices, peer tutoring strategies, and strategies to use peers to model and reinforce desired classroom behavior.

**Competence Enhancement Behavior Management (CEBM).** The CEBM program (Murray & Farmer, 2006) is a professional development training model that centers on proactive
classroom behavior management strategies. Teachers learn to teach and reinforce appropriate classroom behavior while providing constructive consequences to reduce problem behavior. At the core of this model, teachers learn to replace punitive approaches with management techniques that support positive engagement and strengthen prosocial patterns. The CEBM model was developed from evidenced-based practices for promoting positive classroom behavior (e.g., Lewis, Sugai, & Colvin, 1998; Nelson, 1996; White, Algozzine, Audette, Marr, & Ellis, 2001). This model addresses seven areas of behavior management: proactive management aims and goals, establishing productive classroom routines and structures, teaching and reinforcing appropriate alternative behaviors, building supportive relationships, communicating with students, using constructive discipline and natural consequences, and preventing and managing behavioral crises.

A central aspect of the CEBM component is that it is designed to bridge the AAE components and SDM components to create a general classroom ecology that brings together the academic, behavioral, and social aspects of productive classroom behavior. Thus, as depicted in Figure B-2, the focus of the SEALS model is on what happens within the school social context with individuals, peer groups, classrooms, and the entire school acting as components of an ecosystem in which each influences and is influenced by the other. As suggested by the arrow pointing from the teacher, the SEALS model views teachers as being in a position to lead or direct this ecosystem. Consequently, the focus of the SEALS training is at the level of individual teachers and teacher teams. However, as depicted by the other 3 boxes in the perimeter of figure B-2, it is also recognized that what teachers and students do in school is influenced by the administration and other teachers, school polices and school culture, and parent, family, and community factors. Therefore, while the SEALS model is designed to be a manualized intervention with a structured protocol, the fact that it is focusing on the daily school context means that SEALS must be responsive to the unique strengths, resources, and challenges experienced by each individual school site. To do this, the delivery of the SEALS intervention training follows a structured but flexible format that we describe as directed consultation.

The delivery of the SEALS training involves two days of a traditional workshop format immediately prior to the beginning of the school year, 10 internet-based self-guided training modules, and directed consultation. The directed-consultation approach is central to this model. Directed-consultation centers on integrating a standardized intervention into the daily activities and culture of the school. This involves conducting pre-intervention observations to identify the strengths and needs of individual schools and sixth grade teams, making pre-assessments of how the team operates, and determining how to structure the training and content so it is relevant to the goals and challenges that teachers view as their mission. With this approach, teachers assume a partnership role with the intervention specialist who conducts the training. Thus, across the various training components (i.e., inservice workshops, web-based modules, directed-consultation meetings), teachers typically become highly active participants who bring “real world” examples and issues to the training content and, in so doing, readily integrate the SEALS intervention strategies into their daily instructional and classroom management activities. The directed consultation includes at least 10 team meetings that correspond with the internet training modules. Additional team meetings are scheduled as needed (as determined by the intervention specialist) and additional individualized consultation and training may be conducted with one or more teachers on specific interventions when needed or requested.

Research Design:
As an overview, this paper does not present an actual study. However, it does report on the Project REAL cluster randomized trial that serves as the foundation for the other papers in this symposium. Therefore, the research design will be presented in this paper. It is a CRT that involved 28 rural schools from seven states in which matched pairs were randomly assigned to intervention and control conditions. Two cohorts were involved in this study with baseline data collection occurring in the spring of 5th grade and intervention beginning in the fall of 6th grade and implemented across the 6th grade school year. For Cohort 1, students were tracked from spring of 5th grade through spring of 7th grade with data collection occurring both in the spring and fall of the school year. For Cohort 2, data collection followed the same schedule but students were tracked only through the completion of 6th grade.

Data Collection and Analysis:
As a conceptual overview and introduction to the symposium, data collection and analyses are not described in this paper. Instead, each of the subsequent papers in this symposium provide detailed descriptions of the data collection and analyses that reflect the specific research questions that they address.

Findings / Results:
As a conceptual overview and introduction to the symposium, this paper does not present any results of the CRT. Brief results from the pilot work that served to guide the development of the logic model and the design of the CRT will be presented as part of the foundation for the other papers that will be presented in this symposium.

Conclusions:
In conclusion, early adolescence is a time of developmental vulnerability for many youth as they are exposed to new experiences and challenges that have the potential to adversely impact their school adjustment. However, this period can be viewed as a time of developmental opportunity. From this vantage, students can be taught new skills and can be supported by a social context that fosters their interdependence and helps them learn how to become successful learners. The SEALS Model has been developed to assist teachers in facilitating a productive transition from elementary to middle school as well as to support youth as they experience new challenges during early adolescence. Based on RCT and CRT studies from Project REAL, the SEALS model shows significant promise as a universal intervention for increasing teachers’ capacity to manage the classroom, for enhancing students’ experience of the school social and affective context, and for promoting students’ academic, behavioral, and social adaptation. While the REAL findings are encouraging, there is a need for additional work with respect to issues of assessment (e.g., screening) and intervention to evaluate the use of this program in suburban and urban schools. Further, there is a need to move beyond the universal aspects of the SEALS model and to develop selected and indicated interventions that are designed to provide more intensive interventions for youth who are not responsive to the universal SEALS model. When this is accomplished, it may be possible to utilize the early adolescent period and the transition to middle school as an intervention opportunity to promote positive development in all students including youth with disabilities and youth who are at high-risk for significant school adjustment problems.
Appendix A. References


Unpublished training manual.


### APPENDIX B: Table B-1

SEALS Model of Change

<table>
<thead>
<tr>
<th>Intervention Component</th>
<th>Intervention Strategy</th>
<th>Teacher Functioning</th>
<th>School/Peer Context</th>
<th>Student Functioning</th>
<th>Student Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Engagement</td>
<td>starting class</td>
<td>identifies struggling students (weekly online logs: TE)*; instructionally responsive to students (CLASS; COF, TE); reinforcing engaged behavior (CLASS; COF)</td>
<td>peer norms effort (PNAE); affiliations with academically productive peers (SCM-S) emotional risk for academic participation (ER); sense of belonging (SB)</td>
<td>behavioral involvement in instruction (CLASS; MOOSES); Valuing of School (SV)</td>
<td>teacher ratings (ICS-T); school grades (EOC grades); standardized tests (NC EOG assessments)</td>
</tr>
<tr>
<td>Academic Engagement</td>
<td>effective; differentiating instruction; sequencing instruction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competence Enhancement</td>
<td>using rules/ expectations; redirecting problem behavior, using natural contingencies as reinforcers</td>
<td>maintaining productive behavioral context (COF, TE); building supportive relationships (CLASS; TE); using problems to teach new skills (COF, TE)</td>
<td>well organized and supportive class context (CLASS, COF); reduction of prominent problem behavior peer groups (SCM-S; PBA)</td>
<td>positive and productive classroom behavior (PBA, MOOSES, ICS-T configurations); reduction of bullying involvement (PBA, ICS-T)</td>
<td>teacher ratings (ICS-T); school grades (EOC grades); standardized tests (NC EOG assessments)</td>
</tr>
<tr>
<td>Competence Enhancement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavior Management</td>
<td>using rules/ expectations; redirecting problem behavior, using natural contingencies as reinforcers</td>
<td>maintaining productive behavioral context (COF, TE); building supportive relationships (CLASS; TE); using problems to teach new skills (COF, TE)</td>
<td>well organized and supportive class context (CLASS, COF); reduction of prominent problem behavior peer groups (SCM-S; PBA)</td>
<td>positive and productive classroom behavior (PBA, MOOSES, ICS-T configurations); reduction of bullying involvement (PBA, ICS-T)</td>
<td>teacher ratings (ICS-T); school grades (EOC grades); standardized tests (NC EOG assessments)</td>
</tr>
<tr>
<td>Social Dynamics Management</td>
<td>managing peer context; managing processes of social synchrony; using natural leaders;</td>
<td>awareness of peer groups and social roles (SCM-T); seating and grouping practices (COF); using popular productive peers for models and for promoting group productivity (COF)</td>
<td>reduction in hierarchical social structures (SCM); dispersion of peer liking and disliking (SS); social prominence associated with positive group leaders (PBA, SCM); positive intergroup dynamics (SS, SCM); peer intervention in bullying (PPPB)</td>
<td>organizing behaviors around positive peers (SS; PBA; SCM-S) reduction in problem social behaviors and negative peer relations (SS; PBA; ICS-T) reduction in bullying involvement (PBA, ICS-T; COF)</td>
<td>teacher ratings (ICS-T); school grades (EOC grades); standardized tests (NC EOG assessments)</td>
</tr>
</tbody>
</table>

*The corresponding measure for each of these constructs is indicated in parentheses.

The Classroom Assessment Scoring System-Secondary - CLASS-S; Classroom Observation Form – COF; End of Course Grades – EOC; Interpersonal Competence Scale – Teacher – ICS-T; Multiple Observation System for Experimental Studies-MOOS; NC Standard Course of Study End-of-Grade Assessments – NC EOG; Peer Behavioral Assessments – PBA; Emotional Risk – ER; Peer Norms for Academic Effort – PNAE; Sense of Belonging – SB; Perceptions of Peer Protection from Bullying – PPPB; School Valuing – SV; Social Cognitive Mapping–Student – SCM-S; Social Cognitive Mapping-Teacher – SCM-T; Sociometric Status-SS; Teacher Efficacy – TE
Appendix B. Figure B-1. Holistic Model of Development
Appendix B. Figure B-2. The Ecology of Classroom Management

- Teacher Characteristics and Management Skills
- Individual Student Characteristics and Adaptation
- Administration, Peer Teacher, and Support Personnel Characteristics and Functioning
- Peer Group Characteristics and Adaptation
- Classroom Characteristics and Adaptation
- School Characteristics and Adaptation
- School Culture, Discipline Policies and Practices, and Organizational Capacity/Supports
- Parent, Family, and Community Characteristics and Involvement with Students and School
Title: Enhancing the effects of teacher attunement to student peer group affiliations on the school social-affective context: Promotive effects of the SEALS intervention

Author(s):
Jill V. Hamm – jhamm@email.unc.edu
Background / Context:
Keeping students engaged in the schooling process is a challenge for educating students of any age, but perhaps especially for teachers of early adolescents. During this time period, students’ sense of belonging and their valuing of school deteriorate (e.g., Anderman, 2003; Roeser, Eccles, & Sameroff, 2000; Wang & Holcombe, 2010). Moreover, students are increasingly likely to perceive an unsupportive schooling environment for effort and achievement, in terms of perceived peer norms for effort and achievement and emotional risk for participation (Hamm, Schmid, Farmer, & Locke, in press; Hamm & Faircloth, 2005; Juvenen & Murdock, 1993). A supportive social-affective context is foundational to academic engagement and achievement, as well as social and emotional well-being, both in the short- and long-term (e.g., Hamm et al, in press; Roeser et al., 2000; Wang & Holcombe, 2010).

Early adolescence is also a period in which social aggression intensifies as students jockey for social power and membership in the school social system (Pellegrini & Bartini, 2000; Swearer & Cary, 2003). Schools have a bullying culture, which involves not only the actions of bullies and their direct victims, but the inactions of student bystanders, who do not intervene or who can even encourage additional bullying (O’Connell, Pepler, & Craig, 1999; Salmivalli, Lagerspetz, Bjorkqvist, Osterman, & Kaukiainen, 1996). Experiencing a school environment that encourages social aggression undermines positive student adjustment (Baker, 1998).

A challenge for teachers of early adolescents, then, is to support the positive adjustment not only of individual students but of the social-affective context. In a previous study of SEALS intervention effects, we found that the students of teachers trained by the SEALS model perceived a more supportive social-affective school environment at the end of sixth grade (Hamm et al., 2010). Research and theory regarding teacher involvement and classroom management (e.g., Rodkin & Hodges, 2003; Skinner & Belmont, 1993) highlight teacher attunement to, or knowledge and understanding of, students’ peer group affiliations as a condition vital to creating a supportive learning environment. When teachers have an understanding of students’ social status and relationships within the classroom, they are in a better position to direct classroom procedures, make instructional decisions that account for student social dynamics, and support positive relationships among students (Cohen & Lotan, 1995; McFarland, 2001).

Within its multicomponential approach, the SEALS intervention program (described below) incorporates attention to the classroom and school social context, including understanding the nature of student peer group affiliations. Following participation in the SEALS program, greater attunement to students’ peer group affiliations is proposed to be a teacher capacity that is enhanced (see Figure 1). Moreover, when coupled with the SEALS training regarding how to promote a supportive social, academic, and behavioral learning environment, we predict that the benefits of teacher attunement to students’ experience of the school social environment will be enhanced. That is, the most positive school social-affective contexts will reflect not only teachers’ greater understanding of students’ peer group affiliations, but their training regarding how to apply that information to promote a supportive learning environment.

Purpose / Objective / Research Question / Focus of Study:
The purpose of this study was to examine teachers’ attunement to student peer group affiliations as a factor in students’ experiences of the school social-affect context. First, we hypothesize that teacher attunement will be greater in intervention versus control schools...
following initial SEALS training. Second, we predict that experiencing the SEALS program will enhance the effects of teacher attunement to peer group affiliations. That is, we predict that there will be a moderating effect of teacher attunement on an intervention effect. Multiple indicators of students’ experiences of the social-affective context are tested in relation to the interactive effects of intervention and teacher attunement: sense of belonging, valuing of school, perceived norms for effort and achievement, perceived emotional risk of participation, and perceptions of the school bullying context.

Setting:
Project REAL took place in public schools serving sixth graders; schools were configured as either middle (grades 6-8) or k8/k12 schools. Schools were located in the Appalachian, Deep South, Southwest, Pacific Northwest, Far West, Southeast, Northern Plains, and Midwest regions of the United States. Participating schools were located in low-wealth communities designated as rural by the National Center for Education Statistics (NCES).

Population / Participants / Subjects:
The current study included 22 Project REAL schools (11 matched pairs); 55% were middle schools. Data from NCES are the source of school demographic data. On average, the percentage of students eligible for free/reduced lunch was 61.12% (SD = 24.73). Schools ranged from 0% to 98% minority (M = 37.08%, SD = 37.72). On average 60% of students were at or above grade level for reading and math standardized test scores. Consent rate averaged 67.5% (SD= 9.43). School size ranged from 72-622 students. A total of 1620 students participated; 861 were female.

Teachers in intervention schools took part in the intervention components described below. Teachers in both intervention and control schools participated as research participants. All were sixth grade teachers; 77% were female and the average level of education was a bachelors’ degree and some graduate-level work. Student participants were the sixth grade students of these teachers in the intervention and control schools. 53% were female and 34.9% were classified as ethnic minority (African American, Latino, or Native American ethnicity).

Intervention / Program / Practice:
The SEALS intervention is a professional development program that trains 6th grade teachers in the use of three complementary intervention components designed to foster supportive school contexts in early adolescence.

Academic Engagement Enhancement (AEE). The focus of this component is on research-based strategies for structuring and organizing the learning environment to maintain the attention and involvement of all students’ difficulties (Gut, Farmer, Bishop, Hives, Aaron, & Jackson, 2004; Sutherland & Farmer, 2007).

Competence Enhancement Behavior Management (CEBM). From the CEBM component (Farmer, Goforth, Hives, Aaron, Jackson, & Sgammato, 2006; Sutherland & Farmer, 2007), teachers learn to teach and reinforce appropriate classroom behavior while providing constructive consequences to reduce problem behavior. The CEBM model was developed from evidenced-based practices for promoting positive classroom behavior (e.g., Johns & Carr, 1995; Lewis, Sugai, & Colvin, 1998; Nelson, 1996; White, Algozzine, Audette, Marr, & Ellis, 2001).

Social Dynamics Management (SDM). SDM is an inservice training and directed-consultation model to enhance teachers’ awareness of classroom social dynamics and the
corresponding impact of such dynamics on students’ academic engagement and classroom behavior (Farmer, 2000; Farmer & Xie, 2007; Farmer, Xie, Cairns, & Hutchins, 2007). Teachers learn to identify students’ peer groups and social roles (e.g., leaders, followers, isolates) in the peer system, as well as how to recognize and prevent bullying and social aggression.

Each component is designed to complement the others, resulting in a collective impact on what teachers do in the classroom (e.g., teacher attunement); how teacher functioning influences student functioning and creates a peer and classroom context that supports and reinforces positive student functioning; and how, in turn, teacher functioning, school and peer context conditions, and student functioning contribute to students’ academic outcomes (see Figure 1).

Training. The goal is to teach teachers specific strategies, and to provide them with a framework for using them in a systematic manner to promote a supportive and engaging school context. SEALS is multicomponential and designed to move teachers’ understanding and skill-set from more general to more advanced levels. Training involves 1) a site visit by intervention staff that includes directed observations and consultation with 6th grade teams of teachers and school personnel in the spring semester prior to the intervention year; 2) a 1½ day summer institute immediately prior to the beginning of school, that provided teachers with an introduction to the three intervention components and involved direct instruction, group discussion, and hands-on activities, were used to present and discuss the content; 3) teachers’ completion of 8 self-guided web-based instructional modules between September and March; and 8 directed consultation sessions corresponding to on-line modules, and accomplished through videoconferencing between intervention staff and the 6th grade teacher team at the school. On-line mechanisms are used to respond to issues that arise from geographic isolation in rural school districts.

Research Design:

Project REAL followed a cluster randomized control (CRCT) trials design, in which matched pairs of schools were identified and recruited for participation, and one of each pair was randomly assigned to the intervention or control condition. Paired schools were matched on multiple demographic variables (school size, student achievement, percentage minority, student poverty). Intervention schools received a professional development program for all sixth grade teachers (available to control schools following the end of Project REAL). The study followed a longitudinal design; baseline data were collected pre-intervention (spring of 5th grade), and during and post-intervention (fall and spring of sixth grade). Data sources included teacher and student survey completion, classroom observation, and school records.

Fidelity of intervention training was documented through logs of teacher participation. Project REAL teachers completed an average of 27.55 ($SD = 3.76$) hours of professional development. Fidelity of teacher implementation was determined by classroom observation of intervention and control school teachers by trained observers blind to condition. The instrument used was aligned with the intervention components and had acceptable psychometric properties including a scale reliability of $.831-.929$ (Cronbach’s alpha, range for subscales) and $.92$ (overall scale), and interrater reliability of $.881$ (Kappa). Multilevel analyses for CRCT indicated that the instructional practices and classroom environments were significantly more aligned with the ideals of the intervention in intervention versus control schools (Hamm, Farmer, Dadisman, Murray, & Lambert, under review).
Data Collection and Analysis:

Data were collected by project staff with consented participants, following procedures used by the PIs for decades. For the current study, student and teacher surveys, and social cognitive mapping data are included. Teachers’ attunement to peer group affiliations at the fall of 6th grade, and student perceptions of social-affective context at the end of the 6th grade are the specific data points included in the current study.

School-level variables included dummy codes for each matched pair of schools (1=intervention) and intervention condition (1=intervention). Teacher attunement to peer group affiliations is measured at the peer group level; that is, each peer group has a score that reflects the average accuracy of the teachers in the school at identifying the membership of the peer group identified by students. Dependent variables and student demographics are measured at the student level.

Teacher attunement to peer group affiliations. Social-cognitive mapping (SCM) procedures were used with both teachers and students to identify the student peer groups present in each grade (Cairns, Gariepy, Kindermann, & Leung, 1996). The membership of student-generated peer groups was used as the standard against which the membership of teacher-generated student peer groups was compared. Teachers’ attunement to student peer group affiliations reflected the extent to which, for a given peer group, teachers accurately identified the membership identified by students, as calculated by an established index (see Farmer et al., 2010; Hamm et al., in press; Pearl, Leung, VanAcker, Farmer, & Rodkin, 2007).

Emotional risk of participation. A 6-item scale measured perceptions of the emotional risk associated with academic participation (Hamm & Faircloth, 2005). Given the prompt, “If I give a wrong answer to a question in my classes, the following happens:” students rate items such as “…other students will think I’m not smart” on a 6-point scale (strongly disagree to strongly agree). Cronbach’s alpha ranged from .73 to .79 for students of different groups (e.g., ethnic minority, gender).

School belonging. The Psychological Sense of School Membership-Brief is an 11-item measure that assesses students’ sense of school membership and belonging (Hagborg, 1994, 1998). Students rate their agreement with statements on a 5-point response scale ranging (completely false to completely true) to items such as, “I feel a real part of my school”, “Most teachers at my school are interested in me.”, and “Other students like the way I am.”. Cronbach’s alpha ranged from .78 to .86 across diverse groups of students.

Peer norms for effort and achievement. Adolescents’ perceptions of the acceptability of and expectations for academic effort and achievement by their peer group were measured by an 11-item scale (Hamm, Schmid, et al., in press). Students responded to questions such as, “The kids I hang around with at school think it is good to volunteer to answer questions,” by rating their agreement on a scale of 1 = strongly disagree to 6 = strongly agree. Cronbach’s alpha ranged from .79-.83 across diverse student groups.

School bullying context. Three scales measure student perceptions of 1) peer protection, or the inclination of classmates to protect one another from bullying, 2) peer protector, or the inclination of the rater to stand up for peers being bullied, and 3) bullying encouragement, or the likelihood that classmates would encourage continued bullying. Students rate, on a 5-point scale (never to always) between 5-8 items per scale, such as “I would stick up for them” (protector), “My peers would tell others to stop the bullying” (protection), and “My peers would laugh” (encouragement) in response to the prompt, “If someone in my school is being bullied…..” Cronbach’s alphas for all scales and across student gender and ethnicity ranged from .87 to .94.
Student minority status (recoded from race/ethnicity, 1 = African American, Latino, or Native American students, 0 = White students) and gender (1= female) were obtained from school records.

**Findings / Results:**

Hypotheses were tested using hierarchical linear modeling (HLM) procedures for CRCT designs (see Brown, Jones, LaRusso, & Aber, 2010), with 10 dummy-coded blocking variables corresponding to each matched pair included at the school-level. The worst matched pair served as the referent. The test of hypothesis one, that teacher attunement would be greater in intervention versus control schools at the beginning of the school year, involved a 2-level model (peer groups nested in schools), with the school blocking variables and the intervention dummy coded variable entered as predictors in a single model. Teacher accuracy in identifying student peer group affiliations averaged .43 in intervention schools and .39 in control schools, but the results of the HLM analysis indicated that this difference was not statistically significant ($p = .51$).

A series of 3-level models (students in peer groups in schools) were used to test hypothesis two, for a cross-level interactive effect of the SEALS intervention with teacher attunement on students’ perceptions of the school social-affective context. Following inclusion of blocking variables, Model 1 included student-level minority status and gender as dummy-coded variables, teacher attunement at the peer group level, and school-level intervention status. Model 2 added the cross-level interaction term for intervention condition X teacher attunement. Greater teacher attunement at the beginning of the school year was associated with students’ perceptions of less emotional risk at the end of the school year, and with less encouragement of bullying at the end of the school year. As evidenced by a significant intervention condition X teacher attunement interaction, the benefits of teacher attunement were enhanced in intervention schools for both student perceptions of emotional risk of participation (significant trend) and peer encouragement of bullying. Moreover, a significant intervention condition X teacher attunement effect for school valuing indicated a similar promotive effect of the intervention condition for teacher attunement to this outcome. No significant effects were observed for student sense of belonging, perceptions of peer norms for effort and achievement, or the other bullying context variables.

Additional models will be estimated that test for differential effects of intervention and teacher attunement, independently and interactively, by school configuration (middle school vs. k8/k12) and for students of different ethnicities and gender.

**Conclusions:**

These findings help to clarify a condition under which the SEALS intervention has particularly promotive benefits: when teachers start with an understanding of student peer group affiliations. With this greater understanding, teachers are better able to provide a safe and supportive learning environment for students. It was unexpected that teacher attunement did not differ by intervention condition, but it may be the case that in these rural schools, many of which are small and in small communities, teachers naturally possess greater attunement. However, the findings suggest that participation in the SEALS program enhances the benefits of teacher attunement, possibly because teachers learn strategies for how to act on that understanding. Explanations for this relationship, and its implications both for student adjustment and teacher preparation will be discussed in the presentation.
Appendices

Appendix A. References


Appendix B. Tables and Figures

Figure 1: Intervention Model

[Diagram showing the SEALs Intervention Model with different sections for Intervention, Teacher Capacity, Student Capacity, and Outcomes, each with specific subheadings and arrows indicating relationships.]
Table 1
Results of Final HLM Model for Effects of SEALS Intervention on Students’ Experience of School Social-Affective Context

<table>
<thead>
<tr>
<th></th>
<th>Emotional Risk of Participation</th>
<th>Encouragement of Bullying</th>
<th>School Valuing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE</td>
<td>B</td>
</tr>
<tr>
<td>Intercept</td>
<td>2.61***</td>
<td>.04</td>
<td>1.67</td>
</tr>
<tr>
<td>Minority</td>
<td>-.23***</td>
<td>.09</td>
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</tr>
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<td>Male</td>
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<td>.07</td>
<td>.29***</td>
</tr>
<tr>
<td>T Attunement</td>
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<td>.11</td>
<td>-.25**</td>
</tr>
<tr>
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<td>.07</td>
<td>.01</td>
</tr>
<tr>
<td>Teacher Attunement X</td>
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<td>.11</td>
<td>-.47*</td>
</tr>
</tbody>
</table>

Note: Blocking variables are not included.
+p = .08; *p ≤ .05, p ≤ .01, p ≤ .001.
Title: The impact of Project REAL on students’ peer context

Author(s): Matthew J. Irvin – mirvin@email.unc.edu
**Background / Context:**

The stage-environment fit and SEALS intervention models indicate that in order to be academically successful, adolescents need schooling experiences that promote learning and positive adjustment (Eccles & Gootman, 2002; Eccles & Midgley, 1989; Hamm et al., 2010). Across early adolescents, students encounter increasingly unsupportive schooling contexts, especially in terms of perceived peer norms for effort and achievement and emotional risk for participation (Hamm, Schmid, Farmer, & Locke, in press; Hamm & Faircloth, 2005). Students’ sense of valuing of, and belonging to school also decline during early adolescence (Eccles & Midgley, 1989; Fredericks, Blumenfeld, & Paris, 2004). Boys may be especially vulnerable to less supportive school contexts; compared to early adolescent girls, boys at this age report lower school valuing and belonging, have lower academic performance, and lower rates of school completion (Goodenow & Grady, 1993; Kenney-Benson, Pomerantz, Ryan, & Patrick, 2006; Meece & Scantlebury, 2006; Voelkl, 1996). Interventions to improve schooling experiences have been less effective for boys (Maddox & Prinz, 2003). Thus, the current study sought to determine ways in which the SEALS intervention had a differential impact by gender on early adolescents’ experiences of the school social-affective context.

Research also indicates that risk within groups of individuals (e.g., boys, minority youth) is variable (Farmer et al., 2004). During early adolescence, students encounter many challenges at school (e.g., greater academic demands, less adult supervision, maturation) and have a growing need for independence and positive peer relations (Eccles & Midgley, 1989). Thus, during early adolescence, particular students become increasingly vulnerable to academic, social, and behavioral difficulties that put them at risk for developing more serious and long-lasting academic problems (e.g., academic failure, school dropout). Unique combinations of variables tend to cluster in individuals as correlated configurations of multiple risks rather than occur in isolation (Cairns & Cairns, 1994; Farmer et al., 2004). Person-oriented analyses have shown that multiple risk configurations (e.g., academic, behavioral, and social difficulties) are more predictive of outcomes than single problems (e.g., Farmer et al., 2004; Mahoney & Cairns, 1997). Previous research has consistently identified risk configurations, including *Multi-risk* (i.e., high aggression, low academics, and low popularity) and *Tough* (i.e., high aggression and high popularity), that predict problematic outcomes including low achievement, school dropout, and social difficulties (e.g., Estell, Cairns, Farmer, & Cairns, 2002; Estell, Farmer, Cairns, & Cairns, 2002; Estell, Farmer, Cairns, & Clemmer, 2003; Farmer, Estell, Bishop, O’Neal, & Cairns, 2003; Farmer, Leung, Pearl, Rodkin, Cadwallader, & Van Acker, 2002). Risk configurations often vary by gender, given that aggression, popularity, and academics serve different functions for girls and boys (e.g., Estell, Cairns et al., 2002; Estell, Farmer, et al., 2002; Estell et al., 2003; Farmer et al., 2002; 2003). According to the current study undertook cluster analyses separately by gender in order to identify girls and boys with risk configurations across academic, behavioral, and social adjustment.

As a universal model, the SEALS program was designed to target youth in general, as well as those at-risk for school success (Farmer, Hamm et al., under review). Thus, the current study examines the impact of the SEALS program on experiences of the school social-affective context, for youth of different risk configurations.

**Purpose / Objective / Research Question / Focus of Study:**

The general purpose of this study was to investigate the extent to which and ways in which SEALS program effects differ for early adolescent boys and girls. The first aim was to
examine differential effects of SEALS by gender, for students’ perceptions of the social-affective context of school. The second aim was to determine the extent to which the SEALS program offered promotive effects on experiences of the social-affective context, for boys and girls at particular types of risk for positive adjustment.

Setting:
Project REAL took place in public schools serving sixth graders; schools were configured as either middle (grades 6-8) or k8/k12 schools. Schools were located in the Appalachian, Deep South, Southwest, Pacific Northwest, Far West, Southeast, Northern Plains, and Midwest regions of the United States. Participating schools were located in low-wealth communities designated as rural by the National Center for Education Statistics (NCES).

Population / Participants / Subjects:
The current study included 28 Project REAL schools (14 matched pairs); 57% were middle schools. On average, the percentage of students eligible for free/reduced lunch was 61.52% (SD = 28.91). Schools ranged from 0% to 100% minority (M = 33.80%, SD = 38.99). On average 59% of students were at or above grade level for reading and math standardized test scores. Consent rate averaged 64.7% (SD = 13.69). Teachers in intervention schools took part in the intervention components described below. Teachers in both intervention and control schools participated as research participants. All were sixth grade teachers; 72.6% were female, 47.2% held a graduate degree, 38.4% had done some graduate work, and 14.4% reported their highest degree as a four-year degree. Student participants were the sixth grade students of these teachers in the intervention and control schools. For these students, 53.6% were female and 51.3% were classified as ethnic minority (African American, Latino, or Native American ethnicity).

Intervention / Program / Practice:
The SEALS intervention is a professional development program that trains 6th grade teachers in the use of three complementary intervention components designed to foster supportive school contexts in early adolescence.

Academic Engagement Enhancement (AEE). The focus of this component is on research-based strategies for structuring and organizing the learning environment to maintain the attention and involvement of all students’ difficulties (Gut, Farmer, Bishop, Hives, Aaron, & Jackson, 2004; Sutherland & Farmer, 2007).

Competence Enhancement Behavior Management (CEBM). From the CEBM component (Farmer, Goforth, Hives, Aaron, Jackson, & Sgammato, 2006; Sutherland & Farmer, 2007), teachers learn to teach and reinforce appropriate classroom behavior while providing constructive consequences to reduce problem behavior. The CEBM model was developed from evidenced-based practices for promoting positive classroom behavior (e.g., Johns & Carr, 1995; Lewis, Sugai, & Colvin, 1998; Nelson, 1996; White, Algozzine, Audette, Marr, & Ellis, 2001).

Social Dynamics Management (SDM). SDM is an inservice training and directed-consultation model to enhance teachers’ awareness of classroom social dynamics and the corresponding impact of such dynamics on students’ academic engagement and classroom behavior (Farmer, 2000; Farmer & Xie, 2007; Farmer, Xie, et al., 2007). Teachers learn to identify students’ peer groups, social structures, and social roles (e.g., leaders, followers, isolates) in the peer system, as well as how to recognize and prevent bullying and social aggression.
Each intervention component is designed to complement the others, resulting in a collective impact on what teachers do in the classroom (e.g., teacher attunement); how teacher functioning influences student functioning and creates a peer and classroom context that supports and reinforces positive student functioning; and how, in turn, teacher functioning, school and peer context conditions, and student functioning contribute to students’ academic outcomes (see Figure 1).

Training. The goal of the SEALS training is to teach teachers specific strategies, and to provide them with a framework for using them in a systematic manner to promote a supportive and engaging school context. SEALS is multicomponential and designed to move teachers’ understanding and skill-set from more general to more advanced levels. Training involves 1) a site visit by intervention staff that includes directed observations and consultation with 6th grade teams of teachers and school personnel in the spring semester prior to the intervention year; 2) a 1 ½ day summer institute immediately prior to the beginning of school, that provided teachers with an introduction to the three intervention components and involved direct instruction, group discussion, and hands-on activities, were used to present and discuss the content; 3) teachers’ completion of 8 self-guided web-based instructional modules between September and March; and 8 directed consultation sessions corresponding to on-line modules, accomplished through videoconferencing between intervention staff and the 6th grade teacher team at the school. Online mechanisms are used to respond to issues that arise from geographic isolation in rural school districts.

Research Design:
Project REAL followed a cluster randomized controlled trial (CRCT) design, in which matched pairs of schools were identified and recruited for participation, and one of each pair was randomly assigned to the intervention or control condition. Paired schools were matched on multiple demographic variables (school size, student achievement, percentage minority, student poverty). Intervention schools received a professional development program for all sixth grade teachers (available to control schools following the end of Project REAL). The study followed a longitudinal design; baseline data were collected pre-intervention (spring of 5th grade), and during and post-intervention (fall and spring of sixth grade). Data sources included teacher and student surveys, classroom observations, and school records.

Fidelity of intervention training was documented through logs of teacher participation. Project REAL teachers completed an average of 27.55 (SD = 3.76) hours of professional development. Fidelity of teacher implementation was determined by classroom observation of intervention and control school teachers by trained observers blind to condition. The instrument used was aligned with the intervention components and had acceptable psychometric properties scale reliability of .831-.929 (Cronbach’s alpha, range for subscales) and .92 (overall scale), and interrater reliability of .881 (Kappa). Multilevel analyses for CRCT indicated that the instructional practices and classroom environments were significantly more aligned with the ideals of the intervention in intervention versus control schools (Hamm, Farmer, Dadisman, Murray, & Lambert, under review).

Data Collection and Analysis:
Data collection included gathering information via multi-informant measures to capture students’ and teachers’ perspectives of student adjustment and related risk factors. Student data were collected on-site in a group administration format, following a protocol that has been used
with elementary school age students by the Project REAL PIs for over two decades. Teachers completed their assessments of study participants separately. Students received small gifts, and teachers received financial remuneration, for participating in the study. The following instruments were used for the current study:

**Interpersonal Competence Configurations (ICCs).** Configurations were generated from teachers’ responses to the Interpersonal Competence Scale-Teacher (ICS-T), an 18-item questionnaire consisting of seven-point Likert scales (Cairns, Leung, Gest, & Cairns, 1995). The ICS-T yields composite scores on multiple sub-scales: aggression, popularity, academic competence, affiliative, internalizing, and Olympian. Multiple studies indicate strong psychometric properties for this instrument (e.g., Cairns & Cairns, 1994; Cairns, Leung, Gest, & Cairns, 1995; Coie & Dodge, 1983; Farmer, Irvin et al., 2006).

Cluster analyses (Aldenderfer & Blashfield, 1984) of ICS-T scores were used to discern distinct risk configurations separately for boys and girls at the end of the 5th grade. The resulting male and female configurations are presented in Tables 1 and 2. Labels are assigned with respect to whether or not students in a given cluster were higher or lower than average with respect to the 8 ICST subscales (i.e., aggression, affiliative, internalizing, academics, etc.).

**Emotional risk of participation.** A 6-item scale measured perceptions of the emotional risk associated with academic participation (Hamm & Faircloth, 2005). Given the prompt, “If I give a wrong answer to a question in my classes, the following happens:” students rate items such as “…other students will think I’m not smart” on a 6-point scale (strongly disagree to strongly agree). Cronbach’s alpha ranged from was .73 to .79 for students of different groups (e.g., ethnic minority, gender).

**School belonging.** The Psychological Sense of School Membership-Brief is an 11-item measure that assesses students’ sense of school membership and belonging (Hagborg, 1994, 1998). Students rate their agreement with statements on a 5-point response scale ranging (completely false to completely true) to items such as, “I feel a real part of my school”, “Most teachers at my school are interested in me.”, and “Other students like the way I am.”. Cronbach’s alpha ranged from ranged from .78 to .86 across diverse groups of students.

**Peer norms for effort and achievement.** Adolescents’ perceptions of the acceptability of and expectations for academic effort and achievement by their peer group were measured by an 11-item scale (Hamm, Schmid, et al., in press). Students responded to questions such as, “The kids I hang around with at school think it is good to volunteer to answer questions,” by rating their agreement on a scale of 1 = strongly disagree to 6 = strongly agree. Cronbach’s alpha ranged from .79-.83 across diverse student groups.

**School Valuing.** Students rated their agreement with items such as “most of the things we learn in class are useless” on Voelkl’s (1996; 1997) widely used scale of the perceived worthiness of school to one’s future. Cronbach’s alpha exceeded .80 across studies; construct validity has been established through high correlations with academic achievement and class participation (Finn & Frone, 2004; Voelkl, 1996; 1997).

**Student background.** Student minority status (recoded from race/ethnicity, 1 = African American, Latino, or Native American students, 0 = White students) and gender (1= female) were obtained from school records.

**Analysis.** Questions regarding differential intervention effects by gender were tested using hierarchical linear modeling (HLM) procedures for CRCT designs (see Brown et al., 2009), with 13 dummy-coded blocking variables corresponding to each matched pair included at the school-level. The worst matched pair served as the referent. A 2-level model (students nested in schools) was estimated, with an initial model that included the school blocking variables and
the intervention dummy coded variable at level 2 and student gender at level 1 entered as predictors. The next model added the cross-level interaction term for intervention condition X student gender.

Cluster analyses (Aldenderfer & Blashfield, 1984) were conducted using teacher ratings on the ICST to identify distinct risk configurations separately for boys and girls at the end of the 5th grade (Wave 1). Differential effects of the intervention by risk configuration type within each gender were examined using hierarchical linear regression analyses with intervention condition X risk configuration type interaction terms to determine whether the SEALS program had a differing effect on the social-affective context experienced by youth with different types of risk.

Findings / Results:

The results regarding differential effects of the intervention by gender are summarized in Table 1. Results indicate that compared to girls, boys reported peer norms less supportive of effort and achievement, lower levels of school belonging, and less valuing of school. Estimation of the model that included the gender X intervention effect indicated that the intervention condition enhanced the experiences of boys for peer norms and for school belonging. No gender or gender X intervention condition effects were evident for perceptions of emotional risk.

The results from cluster analyses to identify male and female risk configurations for Wave 1 are presented in Tables 2 and 3. Dummy variables were created to capture these risk configurations and entered into initial regression models (Model boys and girls were the reference group). Of focus in these analyses is the interaction between these risk configurations and intervention condition. The results (see Table 4) indicate that for girls classified into the high aggressive risk category or into the multi-risk category, experiencing the intervention condition had a promotive effect on peer norms for effort and achievement. A significant trend toward a promotive intervention effect for school belonging was observed for girls classified as multi-risk. No significant intervention X risk configuration effects were evident for boys.

Conclusions:

Early adolescent boys and girls can be at-risk for positive school adjustment in different ways. The results provide evidence regarding how the SEALS program benefits boys and girls in general, and at particular types of risk for school adjustment. For boys, the SEALS program had a general, promotive effect on two key experiences of the school social-affective context: peer norms for effort and achievement, and sense of belonging. Although the SEALS program did not enhance girls’ experiences of the social-affective context in general, the peer norms for effort and achievement of girls at particular types of risk, including high aggression and multiple social, behavioral, and academic risk, were more supportive in SEALS intervention schools. A trend toward a promotive effect of SEALS was observed for sense of belonging for girls classified as at-risk for high aggression. Thus, the results indicate that the SEALS program has enhancing effect for boys in general, and for girls at particular risks for adjustment. These results highlight particular aspects of adjustment and particular types of students that stand to benefit from the SEALS program, but indicate that students at high levels of risk may require additional support not offered in a universal program.
Appendices

Appendix A. References


Appendix B. Tables and Figures

Figure 1: Intervention Model

SEALS Intervention Model

Intervention
Social Dynamics
Training

Teacher Capacity
Management of Peer Relations/Social Dynamics

Student Capacity
Develop Productive Peer relations/roles

Outcomes

Competence
Enhancement:
Behavior
Management

Teaching and Supporting Positive Classroom Behavior

Develop and Sustain Productive Academic Behaviors

Grades; Standardized Test Scores

Academic Engagement Enhancement

Adapt Instruction to Foster Student Engagement and Success

Develop and Sustain Academic Interests and School Valuing

2011 SREE Conference Abstract Template
Table 1
Results of Final HLM Model for Effects of SEALS Intervention on Students’ Experience of School Social-Affective Context by Gender

<table>
<thead>
<tr>
<th>Peer Norms for Effort and Achievement</th>
<th>School Belonging</th>
<th>School Valuing</th>
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<td>B</td>
<td>SE</td>
<td>B</td>
</tr>
<tr>
<td>Intercept</td>
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<td>Male</td>
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<tr>
<td>Intervention</td>
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<td>.06</td>
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<tr>
<td>Intervention X Gender</td>
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<td>.11</td>
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</table>

Note: Blocking variables are not included.

+p = .08; *p ≤ .05, p ≤ .01, p ≤ .001.
Table 2
*Boys’ Interpersonal Competence Configurations at Spring of Pre-Transition Year (Wave 1)*

<table>
<thead>
<tr>
<th>Clustering Variable</th>
<th>Unengaged</th>
<th>Studious</th>
<th>Tough</th>
<th>Aggressive</th>
<th>Multi-Risk</th>
<th>Model</th>
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<tr>
<td>ICS-T Factor</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Popular</td>
<td>-.57 (.68)***</td>
<td>-.17 (.67) *</td>
<td>.75 (.60)***</td>
<td>-.41 (.71)***</td>
<td>-1.59 (.58) *</td>
<td>1.04 (.61)***</td>
</tr>
<tr>
<td>Olympian</td>
<td>-.61 (.70)***</td>
<td>-.26 (.61) ***</td>
<td>.60 (.69) ***</td>
<td>-.24 (.71) ***</td>
<td>-1.54 (.73) ***</td>
<td>1.12 (.64) ***</td>
</tr>
<tr>
<td>Affiliative</td>
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<td>.18 (.70) **</td>
<td>.48 (.67) ***</td>
<td>-.73 (.74) ***</td>
<td>-1.59 (.88) ***</td>
<td>.88 (.59) ***</td>
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<tr>
<td>Academic</td>
<td>-1.14 (.47)***</td>
<td>.54 (.57) ***</td>
<td>-.25 (.81) **</td>
<td>-.11 (.85)</td>
<td>-.44 (.98) **</td>
<td>1.19 (.41) ***</td>
</tr>
<tr>
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<td>.50 (.74) ***</td>
<td>-.68 (.64) ***</td>
<td>-.16 (.68) **</td>
<td>1.52 (.81) ***</td>
<td>-.74 (.74) ***</td>
</tr>
<tr>
<td>Aggressive</td>
<td>-.42 (.69) ***</td>
<td>-.65 (.64) ***</td>
<td>.27 (.73) ***</td>
<td>1.09 (.60) ***</td>
<td>.38 (.98) *</td>
<td>-.89 (.66) ***</td>
</tr>
<tr>
<td>Cluster n</td>
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<td>111</td>
<td>134</td>
<td>137</td>
<td>48</td>
<td>102</td>
</tr>
</tbody>
</table>

*Note. N = 629 boys. Cells contain means on ICS-T clustering variables for corresponding interpersonal competence configuration (standard deviations given in parentheses).*** p < .001, ** p < .01, * p < .05 for the T-tests of the mean (versus a value of 0).
### Table 3
*Girls’ Interpersonal Competence Configurations at Spring of Pre-Transition Year (Wave 1)*

<table>
<thead>
<tr>
<th>Clustering Variable</th>
<th>Aggressive</th>
<th>Studious</th>
<th>Affiliative</th>
<th>Internalizing</th>
<th>Multi-Risk</th>
<th>Model</th>
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</thead>
<tbody>
<tr>
<td>ICS-T Factor</td>
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<td></td>
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<td></td>
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<tr>
<td>Popular</td>
<td>-.21 (.79) **</td>
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<td>-.48 (.71) ***</td>
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<td>1.04 (.53) ***</td>
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<tr>
<td>Olympian</td>
<td>-.19 (.71) **</td>
<td>.04 (.65)</td>
<td>-.70 (.65) ***</td>
<td>-1.16 (.77) ***</td>
<td>1.02 (.65) ***</td>
<td></td>
</tr>
<tr>
<td>Affiliative</td>
<td>-.58 (.76) ***</td>
<td>.23 (.70) ***</td>
<td>.30 (.64) ***</td>
<td>-1.52 (.80) ***</td>
<td>.74 (.56) ***</td>
<td></td>
</tr>
<tr>
<td>Academic</td>
<td>-.25 (.82) ***</td>
<td>.54 (.057) ***</td>
<td>-1.21 (.65) ***</td>
<td>-.72 (.87) ***</td>
<td>.72 (.62) ***</td>
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</tr>
<tr>
<td>Internalizing</td>
<td>-.14 (.76) *</td>
<td>.23 (.68) ***</td>
<td>.45 (.80) ***</td>
<td>1.24 (.79) ***</td>
<td>-.92 (.66) ***</td>
<td></td>
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<tr>
<td>Aggressive</td>
<td>1.33 (.69) ***</td>
<td>-.59 (.48) ***</td>
<td>-.36 (.63) ***</td>
<td>.25 (1.09) *</td>
<td>-.33 (.74) ***</td>
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<td>Cluster n</td>
<td>143</td>
<td>178</td>
<td>113</td>
<td>92</td>
<td>201</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* N = 727 girls. Cells contain means on ICS-T clustering variables for corresponding interpersonal competence configuration (standard deviations given in parentheses).

***p < .001, **p < .01, *p < .05 for the T-tests of the mean (versus a value of 0).
<table>
<thead>
<tr>
<th></th>
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<td>$SE$</td>
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$\dagger p \leq .10$.  $^* p \leq .05$.  $^{**} p \leq .01$.  $^{***} p \leq .001$. 

Table 4
Results from Regression Analyses for Intervention Effects on Configurations for Girls
Title: The school adjustment of students in distinct risk configurations: Considerations for the development of selected and indicated interventions

Author(s):

Robert A. Petrin – rpetrin@psu.edu
Abstract Body

Background / Context:

As indicated in papers 2 and 3 of this symposium and in published research from Project REAL, there is clear evidence that the SEALS model has a general positive impact on the school context during the early adolescent years. This includes teachers’ enhanced understanding of the peer group social structures formed by students, their management of classroom social dynamics, and their self-efficacy for meeting the instructional and social needs of students (Farmer, Hall, et al., 2010; Farmer, Hamm, et al., 2010; Hamm, Farmer, Dadisman et al., in press). Other positive effects include students’ stronger belonging to and valuing of school, students’ sustained positive perceptions of peer norms for academic effort, peer contexts and peer affiliations that are less supportive of bullying and aggression, and associated higher levels of academic achievement (Farmer, Hamm et al., 2010; Hamm, Farmer, Dadisman, et al., 2010).

However, as suggested by the findings in paper 3 of this symposium, these effects tend to be at the level of the general school and peer context and for youth with low to moderate levels of risk for school adjustment problems, as well as differentiated by gender. The limited impact of SEALS to the general context is expected because it was designed as a universal model that can serve as a Tier 1 base for selected (Tier 2) and indicated (Tier 3) intervention programs. To promote the development of intensive Tier 2 and Tier 3 interventions, there is a need to clarify factors and processes that are associated with improving or sustained positive patterns of academic adjustment in general, and in particular, for high-risk youth across early adolescence. This paper is an initial step in addressing this need.

Purpose / Objective / Research Question / Focus of Study:

The purpose of this study was to identify key process factors that support gains to academic outcomes in general, but specifically for students at-risk for school success. Such analyses will reveal mechanisms and/or student risk configurations that are not responsive to the universal intervention, and that should be considered as possible targets for further intervention. Thus, the focus of these analyses was not on the impact of the SEALS intervention but on differential patterns of adaptation of high-risk youth in relation to a variety of process variables that are possible mechanisms of change. Therefore, the analyses were conducted across the intervention and control samples with an emphasis on variables that distinguished high-risk youth who had positive academic outcomes from those who did not.

Setting:

Project REAL took place in public schools serving sixth graders; schools were configured as either middle (grades 6-8) or k8/k12 schools. Schools were located in the Appalachian, Deep South, Southwest, Pacific Northwest, Far West, Southeast, Northern Plains, and Midwest regions of the United States. Participating schools were located in low-wealth communities designated as rural by the National Center for Education Statistics (NCES).

Population / Participants / Subjects:

The current study included 28 Project REAL schools (14 matched pairs); 57% were middle schools. On average, the percentage of students eligible for free/reduced lunch was 61.52% (SD = 28.91). Schools ranged from 0% to 100% minority (M = 33.80%, SD = 38.99). On
average 59% of students were at or above grade level for reading and math standardized test scores. Consent rate averaged 64.7% (SD = 13.69). School size ranged from 72-581 students. A total of 1587 students participated; 831 were female.

Teachers in intervention schools took part in the intervention components described below. Teachers in both intervention and control schools participated as research participants. All were sixth grade teachers; 72.6% were female, 47.2% held a graduate degree, 38.4% had done some graduate work, and 14.4% reported their highest degree as a four-year degree. Student participants were the sixth grade students of these teachers in the intervention and control schools. For these students, 53.6% were female and 51.3% were classified as ethnic minority (African American, Latino, or Native American ethnicity).

**Intervention / Program / Practice:**

The SEALS intervention is a professional development program that trains 6th grade teachers in the use of three complementary intervention components designed to foster supportive school contexts in early adolescence.

*Academic Engagement Enhancement (AEE).* The focus of this component is on research-based strategies for structuring and organizing the learning environment to maintain the attention and involvement of all students’ difficulties (Gut, Farmer, Bishop, Hives, Aaron, & Jackson, 2004; Sutherland & Farmer, 2007).

*Competence Enhancement Behavior Management (CEBM).* From the CEBM component (Farmer, Goforth, Hives, Aaron, Jackson, & Sgammato, 2006; Sutherland & Farmer, 2007), teachers learn to teach and reinforce appropriate classroom behavior while providing constructive consequences to reduce problem behavior. The CEBM model was developed from evidenced-based practices for promoting positive classroom behavior (e.g., Johns & Carr, 1995; Lewis, Sugai, & Colvin, 1998; Nelson, 1996; White, Algozzine, Audette, Marr, & Ellis, 2001).

*Social Dynamics Management (SDM).* SDM is an inservice training and directed-consultation model to enhance teachers’ awareness of classroom social dynamics and the corresponding impact of such dynamics on students’ academic engagement and classroom behavior (Farmer, 2000; Farmer & Xie, 2007; Farmer, Xie, et al., 2007). Teachers learn to identify students’ peer groups, social structures, and social roles (e.g., leaders, followers, isolates) in the peer system, as well as how to recognize and prevent bullying and social aggression.

Each intervention component is designed to complement the others, resulting in a collective impact on what teachers do in the classroom (e.g., teacher attunement); how teacher functioning influences student functioning and creates a peer and classroom context that supports and reinforces positive student functioning; and how, in turn, teacher functioning, school and peer context conditions, and student functioning contribute to students’ academic outcomes (see Figure 1). The model reflects the idea that in order to promote positive adjustment in early adolescence, it is important to reorganize the academic, social, and behavioral capacities of both students and their schooling contexts.

*Training.* The goal is to teach teachers specific strategies, and provide them with a framework for using these strategies in a systematic manner to promote a supportive and engaging school context. SEALS is multicomponential and designed to move teachers’ understanding and skill-set from more general to more advanced levels. Training involves: 1) a site visit by intervention staff that includes directed observations and consultation with 6th grade teams of teachers and school personnel in the spring semester prior to the intervention year; 2) a
1 1/2 day summer institute immediately prior to the beginning of school that provides an introduction to the three intervention components and involves direct instruction, group discussion, and hands-on activities to present and discuss the content; and 3) teachers’ completion of 8 self-guided web-based instructional modules between September and March; and 8 directed consultation sessions corresponding to on-line modules, and accomplished through videoconferencing between intervention staff and the 6th grade teacher team at the school. On-line mechanisms are used to respond to issues that arise from geographic isolation of rural school districts.

Research Design:
Project REAL followed a cluster randomized control trial (CRCT) design, in which matched pairs of schools were identified and recruited for participation, and one of each pair was randomly assigned to the intervention or control condition. Paired schools were matched on multiple demographic variables (school size, student achievement, percentage minority, student poverty). Intervention schools received a professional development program for all sixth grade teachers (available to control schools following the end of Project REAL). The study followed a longitudinal design; baseline data were collected pre-intervention (spring of 5th grade), and during and post-intervention (fall and spring of sixth grade). Data sources included teacher and student survey completion, classroom observation, and school records.

Fidelity of intervention training was documented via logs of teacher participation. Project REAL teachers completed an average of 27.55 (SD =3.76) hours of professional development. Fidelity of teacher implementation was determined by classroom observation of intervention and control school teachers by trained observers blind to condition. The instrument used was aligned with the intervention components and had acceptable psychometric properties scale reliability of .831-.929 (Cronbach’s alpha, range for subscales) and .92 (overall scale), and interrater reliability of .881 (Kappa). Multilevel analyses for CRCT indicated that the instructional practices and classroom environments were significantly more aligned with the ideals of the intervention in intervention versus control schools (Hamm & Farmer, under review).

Data Collection and Analysis:
Data collection included gathering information via multi-informant measures to capture students’ and teachers’ perspectives of the peer context as well as participants’ school adjustment and related risk factors. Student data were collected on-site in a group administration format, following a protocol that has been used with elementary school age students by the Project REAL PIs for over two decades. Teachers completed their assessments of study participants separately. Students received small gifts, and teachers received financial remuneration, for participating in the study. The following instruments were used for the current study:

Interpersonal Competence Configurations (ICCs). Configurations were generated from teachers’ responses to the Interpersonal Competence Scale-Teacher (ICS-T), an 18-item questionnaire consisting of seven-point Likert scales (Cairns, Leung, Gest, & Cairns, 1995). The ICS-T yields composite scores on multiple sub-scales: aggression, popularity, academic competence, affiliative, internalizing, and Olympian, as well as a total score that signifies overall student adjustment. Multiple studies indicate strong psychometric properties for this instrument (e.g., Cairns & Cairns, 1994; Cairns, Leung, Gest, & Cairns, 1995; Farmer, Irvin et al., 2006). Cluster analyses (Aldenderfer & Blashfield, 1984) of ICS-T scores were used to discern distinct risk configurations separately for boys and girls at the end of the 5th grade (Wave
1) and end of 6th grade (Wave 3). The resulting male and female configurations for Wave 1 are presented in Tables 1 and 2. Labels are assigned with respect to whether or not students in a given cluster were higher or lower than average with respect to the 8 ICST subscales (i.e., aggression, affiliative, internalizing, academics, etc.).

**School Valuing.** Students rated their agreement with items such as “most of the things we learn in class are useless” on Voelkl’s (1996; 1997) widely used scale of the perceived worthiness of school to one’s future. Cronbach’s alpha exceeded .80 across studies; construct validity has been established through high correlations with academic achievement and class participation (Finn & Frone, 2004; Voelkl, 1996; 1997).

**School Belonging.** On Hagborg’s (1998) Psychological Sense of School Membership-Brief (PSSM-B) scale which focuses on the affective ties students feel toward their schools, students rated their agreement with statements such as “I am treated with as much respect as other students.” Strong psychometric data has been reported for this scale (e.g., Hagborg, 1998; Hamm, Farmer, Dadisman, & Robertson, 2007; 2009).

**Social Preference.** Using established sociometric procedures (e.g., Coie, Dodge, & Coppotelli, 1982), students nominated up to three students they liked most (LM) and least (LL). Social preference was calculated as the standardized number of nominations received for LM minus the standardized number of nominations received for LL (Coie & Dodge, 1983).

**School Record Data.** Schools provided participating students’ scores on statewide tests of reading and mathematics, as well as students’ overall grades. These scores were standardized within state to put them on a common metric (i.e., Z-scale). Grades were standardized by putting them on a 0 - 100 scale.

**General Analytic Strategy.** The dependent variables in these analyses were Wave 3 (spring of 6th grade) academic outcomes (grades, standardized test scores). The first set of analyses involved the total sample of REAL participants, and examined wave 2 (fall) and wave 3 (spring) process variables (e.g., school belonging, school valuing, social preference) as predictors of academic outcomes, after controlling on the academic outcome for the prior year. Next, analyses focused on students classified into one of the risk configurations (unengaged, studious, tough, and aggressive or multirisk for boys; aggressive, affiliative/internalizing or multirisk for girls). Analyses, performed separately by gender, examined relations among process variables and academic outcomes, to identify particular factors that promoted achievement gains among students at-risk (controlling for prior year academic outcome). Subsequent analyses focused on the interactions of particular process variables with specific configurations, to determine if students of particular types of risks benefited from particular school experiences. Generalized linear models (McCulloch & Searle, 2001) were used for all analyses.

**Findings / Results:**

For the full sample (i.e., risk and non-risk students; males and females combined), multiple SEALS process variables were associated with an improvement in student academic achievement. For student grades, Waves 2 and 3 school belonging, school involvement, and social impact were positively associated with Wave 3 grades (b’s ranged from .468 - .999, p < .01 for each), controlling on prior year grades. For standardized test scores (math and reading) school involvement at Wave 2 and Wave 3 was positively associated with Wave 3 test scores (b’s range from .083 to .141, p < .05), net of prior year test scores. In addition, social preference scores at Wave 2 and Wave 3 were positively associated with Wave 3 test scores (b’s are .049 and .044, p < .05), net of prior year test scores. Finally, Wave 2 school belonging, school
involvement, and social impact were positively associated with Wave 3 composite ICST score (b’s ranged from .100 to .174, p < .01 for each), controlling on Wave 1 composite ICST score.

Among boys identified as at-risk, Wave 2 school belonging, school involvement, and social impact were positively associated with Wave 3 grades (b’s ranged from .551 to 1.408, p < .05 for each), controlling on prior year grades. Parallel effects were found for the same process variables measured at Wave 3 (b’s ranged from 1.1 to 1.3, p < .05 for each). For standardized test scores, Wave 3 school belonging had a positive association with Wave 3 scores (b = .131, p < .05), net of prior year standardized test score. Wave 2 school belonging, school involvement, and social impact were all positively associated with Wave 3 composite ICST score (b’s ranged from .135 to .167, p < .05 or better for each), controlling on prior year composite ICST scores.

For the sample of girls identified as at-risk, Wave 2 school involvement was positively associated with Wave 3 standardized test score (b = .321, p < .01), net of prior year score.

In preliminary analyses involving a limited number specific risk configurations, for Tough boys, school belonging at Wave 2 and at Wave 3 (b = 2.637 and 1.698, p < .01) was positively associated with Wave 3 grades net of prior year grades; as was Wave 2 school involvement (b = 2.400, p < .01). For Aggressive girls, Wave 3 school involvement had a positive association with grades (net of prior grades, b = 2.321, p < .05); for Multi-Risk girls, Wave 2 social preference was positively associated with Wave 3 grades net of Wave 1 grades (b = 1.142, p < .05). Analyses also identified relationships between process variables school involvement and social preference with standardized test scores for Unengaged and Multi-Risk boys and Multi-Risk and Aggressive girls.

Conclusions:
The current findings provide new insights into mechanisms that may contribute to gains in academic achievement for early adolescent boys and girls, particularly those at-risk for school failure. Findings for the whole sample support the SEALS model, particularly the importance of aspects of social status, experiences of the social-affective context, and student dispositions toward schooling. However, these findings highlight the need to attend to gender differences in Tier II and III follow-up interventions. For boys, dispositions toward school and aspects of social status differentiated the academic gains for boy at-risk. These dispositions were not influenced by the SEALS universal intervention (see paper 3) for boys in high-risk configurations; Tier II and Tier III intervention follow-up with respect to these types of process variables may be effective in promoting the academic success of high-risk boys. However, more positive school dispositions, social status, and experiences of the social-affective context did not consistently differentiate academic gains of high-risk from low-risk girls. In general, more attention is necessary to understand how to promote academic gains among at-risk girls, but aspects of social status and school involvement at minimum should be of focus in Tier II and III follow-up interventions. Additional analyses will be conducted to clarify further which specific risk configurations are in need of targeted intervention, and the process factors that are optimal targets for Tier II and III intervention follow-up among at-risk boys and girls.
Appendices

Appendix A. References:


Appendix B. Tables and Figures

Figure 1: Intervention Model

SEALS Intervention Model

- **Intervention**
  - Social Dynamics Training
  - Confidence Enhancement: Behavior Management
  - Academic Engagement Enhancement

- **Teacher Capacity**
  - Management of Poor Peers/Social Dynamics
  - Teaching and Supporting Positive Classroom Behavior
  - Adapt Instructive, Peer, and Student Engagement and Success

- **Student Capacity**
  - Develop Productive Peer Relationships
  - Develop and Sustain Academic Behaviors
  - Develop and Sustain Academic Interests and School Motivation

- **Outcomes**
  - Grade Improvement
  - Test Scores
<table>
<thead>
<tr>
<th>Clustering Variable</th>
<th>Unengaged</th>
<th>Studious</th>
<th>Tough</th>
<th>Aggressive</th>
<th>Multi-Risk</th>
<th>Model</th>
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<td>Popular</td>
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<td>.75 (.60) ***</td>
<td>-.41 (.71) ***</td>
<td>-1.59 (.58) *</td>
<td>1.04 (.61) ***</td>
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<td>-.26 (.61) ***</td>
<td>.60 (.69) ***</td>
<td>-.24 (.71) ***</td>
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<td>.48 (.67) ***</td>
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<td>.88 (.59) ***</td>
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<td>-.11 (.85)</td>
<td>-.44 (.98) **</td>
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<td>1.52 (.81) ***</td>
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<td>.27 (.73) ***</td>
<td>1.09 (.60) ***</td>
<td>.38 (.98) *</td>
<td>-.89 (.66) ***</td>
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Cluster n: 97 111 134 137 48 102

Note. N = 629 boys. Cells contain means on ICS-T clustering variables for corresponding interpersonal competence configuration (standard deviations given in parentheses).

***p < .001, **p < .01, *p < .05 for the T-tests of the mean (versus a value of 0).
Table 2
Girls’ Interpersonal Competence Configurations at Spring of Pre-Transition Year (Wave 1)

<table>
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<th>Clustering Variable</th>
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<th>Internalizing</th>
<th>Multi-Risk</th>
<th>Model</th>
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<td>.04 (.65)</td>
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<td>-1.16 (.77) ***</td>
<td>1.02 (.65) ***</td>
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<tr>
<td>Affiliative</td>
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<td>***</td>
<td>.23 (.70) ***</td>
<td>.30 (.64) ***</td>
<td>-1.52 (.80) ***</td>
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<td>.23 (.68) ***</td>
<td>.45 (.80) ***</td>
<td>1.24 (.79) ***</td>
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<tr>
<td>Aggressive</td>
<td>1.33 (.69)</td>
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<td>178</td>
<td>113</td>
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<td>201</td>
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</tr>
</tbody>
</table>

Note. N = 727 girls. Cells contain means on ICS-T clustering variables for corresponding interpersonal competence configuration (standard deviations given in parentheses). ***p < .001, **p < .01, *p < .05 for the T-tests of the mean (versus a value of 0).