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Conceptual Foundations and Components of a Contextual Intervention to Promote Student Engagement During Early Adolescence: The Supporting Early Adolescent Learning and Social Success (SEALS) Model

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Decades of research indicate that many early adolescents are at risk for developing significant school adjustment problems in the academic, behavioral, and social domains during the transition to middle school. 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 (Tier 1) instructional and classroom management strategies to address the correlated risks experienced by students during this time. This article reviews the conceptual foundations of the SEALS model, provides an overview of SEALS intervention

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*components, describes the SEALS professional development train-
ing and consultation framework, reviews preliminary findings of
the impact of SEALS in rural school settings in the United States,
and discusses research needs and future directions regarding the
use of the SEALS model.*

During early adolescence, students are vulnerable to a range of developmen-
tal changes related to school performance. As children become adolescents,
they experience a variety of academic, behavioral, emotional, physical, and
social challenges that if negotiated unsuccessfully may negatively impact
their school adjustment and constrain their future educational goals and
outcomes (Roeser, Eccles, & Sameroff, 2000). For at-risk students, these
challenges are further exacerbated by alterations in the ecological context
that are associated with the transition from elementary to middle school
(Eccles, 1999; Seidman, Allen, Aber, Mitchell, & Feinman, 1994). To promote
youths' adaptation during this period of developmental vulnerability, there
is a need for intervention programs that are designed to foster instructional
and social contexts to enhance and sustain students' academic engagement
and behavioral adaptation through the middle school years (Farrell et al.,
2007; Midgley & Edelin, 1998; Wentzel, Barry, & Caldwell, 2004).

Consistent with the Institute of Medicine's prevention framework (Mrazek
& Haggerty, 1994), intervention programs may be designed to address one
or more of three levels of need: universal, selective, and indicated. Universal
prevention refers to interventions that are desirable for everyone and are
aimed toward the general public, selective prevention refers to programs
that are aimed at individuals whose risk for developing problems is above
average, and indicated prevention refers to interventions for youth who
manifest problems that are symptomatic of the development of disorder.
Although there is a need for all three levels of intervention to address a
spectrum of developmental risk during early adolescence, we propose that
it is critical to first develop universal middle school programs that promote a
supportive context for all early adolescents and that can serve as a foundation
for selective and indicated interventions.

To meet this general need, Supporting Early Adolescent Learning and
Social Success (SEALS) has been developed as a universal intervention model
as a first step within a broader program of research aimed at establishing
interventions across all three prevention levels. The SEALS model involves
training teachers in universal intervention strategies designed to promote a
general context that enhances students' development of new competencies
and relationships that are associated with productive early adolescent out-
comes. Teachers are taught classroom management and instructional strate-
gies that are intended to be responsive to the learning needs of all students.
This involves using approaches that synergistically address students' aca-

demic engagement, their use of constructive classroom interpersonal behaviors, and their involvement in positive social relationships with peers who support their productive engagement in school.

The goal of this article is to provide an overview of the SEALS model and to describe its use in schools. The specific aims are to review the conceptual foundations of the SEALS model, to summarize the intervention components and delivery framework that comprise this program, to provide preliminary evidence of this use of the SEALS model to support early adolescent students in rural schools, and to briefly outline next steps and research needs.

CONCEPTUAL FOUNDATIONS OF THE SEALS MODEL

The SEALS model builds from three complementary perspectives pertaining to early adolescents' adjustment. The *person-environment fit hypothesis* centers on the developmental challenges youth experience as they transition to middle school. *Developmental science* centers on how key developmental domains coalesce to contribute to adaptation. *Ecological intervention* emphasizes strategies that systematically organize and structure the environment in ways that correspond with the developmental capacities and needs of individuals. This section summarizes key aspects of each framework and outlines how they are integrated in the SEALS model.

Person-Environment Mismatch Hypothesis

For decades, the transition to middle school has been associated with problems in educational achievement, academic motivation, and behavioral and social adjustment (Anderman & Maehr, 1994; Blyth, Simmons, & Bush, 1978). Although some early adolescents successfully navigate this transition, many youth experience difficulties in middle school because there is a poor fit between their developmental needs and the demands of the school context (Eccles et al., 1993). The person-environment mismatch hypothesis posits that when students' needs and goals are congruent with opportunities afforded by the environment, they will experience positive affective, behavioral, and motivational outcomes (Midgley & Edelin, 1998). However, when students' abilities, characteristics, and aims are not consistent with the resources and demands of the ecology, they are more likely to experience difficulties (Eccles et al., 1993).

The person-environment mismatch hypothesis reflects a variety of contextual changes from elementary to middle school, including a shift from mastery goals in elementary classrooms where instruction focuses on the development of abilities to the emergence of performance goals in middle school where there is an increasing emphasis on the demonstration of abilities (Urdan & Midgley, 2003). This shift is associated with students'

increasing perceptions of school as an unfriendly and competitive place in which negative social comparisons and self-evaluations are common as teachers frequently engage in whole-class or ability-group instructional practices and use less flexible grading standards while imposing a greater emphasis on teacher control and discipline (Eccles et al., 1993; Roeser et al., 2000). Within this context, many students tend to view middle school teachers as being unsupportive and generally unavailable to provide them with the types of personal assistance and guidance that that they were accustomed to receiving in elementary school (Eccles, 1999; Eccles, Wigfield, et al., 1993).

In addition to having a negative impact on students' instructional engagement and educational achievement, the academic stress that students experience as they begin middle school is often accompanied by behavioral, emotional, and social difficulties (Estell et al., 2007; Roeser et al., 2000). As students begin middle school, the social structure is often in flux as youth from multiple feeder schools are aggregated together. In this context, students jockey for position within the social hierarchy and may become involved in bullying and social aggression as perpetrator, victim, or both (Merten, 1997; Pellegrini & Bartini, 2000). For some youth, social difficulties and social pressures further contribute to general disengagement in academic instruction and school activities (Evans & Eder, 1993; Hamm & Faircloth, 2005; Nansel, Haynie, & Simons-Morton, 2007). Collectively, academic, behavioral, and social difficulties may contribute to school failure, problematic peer affiliations, and antisocial behavior patterns (Estell et al., 2007; Farrell et al., 2007; Seidman et al., 1994). In turn, such problems may support more long-term deleterious outcomes including school dropout (Archambault, Janosz, Morizot, & Pagani, 2009; Cairns & Cairns, 1994).

To address the difficulties associated with the transition to middle school, a variety of organizational changes have been proposed (see Carnegie Task Force on the Education of Young Adolescents, 1989). Specific changes that may enhance the transition to middle school include (a) maintaining small class sizes in which groups of students are kept together for the majority of their courses across the middle school years (Eccles, 1999), (b) developing middle school teacher teams (Crow & Pounder, 2000), (c) creating a shared sense of community among students and teachers while avoiding the use of ability groups (Eccles, 1999; Lipsitz & West, 2006), and (d) delaying the developmental timing of the transition and avoiding contact with older students (Cook, MacCoun, Muschkin, & Vigdor, 2008). Although organizational and structural changes can positively influence the school context, there is also a need for interventions that focus on what actually takes place in the classroom and on how teachers' instructional and behavioral management strategies impact both individual students and the broader social context, including general peer norms and peer support for academic effort (Hamm & Faircloth, 2005; Midgley & Edelin, 1998; Wentzel, 2002, 2003).

Developmental Science

Developmental science is an integrative discipline of the social and biological sciences that is centered on clarifying processes of development across the life course (Cairns, Elder, & Costello, 1996). According to this perspective, individuals develop and grow as an integrated whole as multiple developmental domains (e.g., behavioral, biophysical, cognitive, cultural, ecological, psychological, sociological) work together as a coactive system with each domain bidirectionally impacting the contributions of other domains and collectively contributing to the growth and adaptation of the individual (Gottlieb, 1992).

From this perspective, youth who develop adjustment difficulties in school tend not to have problems in a single domain but rather develop *correlated constraints* or configurations of risk across multiple domains of school functioning (Cairns & Cairns, 1994; Farmer & Farmer, 2001). This is supported by longitudinal research which shows that configurations of correlated and sustained academic, behavioral, and social problems in late childhood and early adolescence predict school failure, school dropout, and truncated educational attainment (Cairns & Cairns, 1994; Estell et al., 2007; Walker & Sprague, 1999). The concepts of correlated constraints and risk configurations have important implications for the prevention and treatment of chronic school adjustment difficulties and suggest that interventions to address such problems should focus on academic, behavioral, and social factors as a correlated system.

One key aspect of a developmental science perspective for the prevention and treatment of school adjustment problems is the role of behavior in adaptation and functioning. Building from both animal research and longitudinal studies of human development from childhood to adulthood, Cairns posited that behavior operates as a leading edge in development by linking internal (i.e., biophysical, cognitive, emotional, genetic, psychological) and external (i.e., cultural, ecological, sociological) subsystems in a manner that aligns or coordinates their functioning with each other (Cairns, 1991; Cairns & Cairns, 1994). On this score, behavior is highly malleable and open to rapid reorganization in response to changes in other subsystems (e.g., proximal environment, biophysical maturation at puberty; Cairns, 2000). This means behavior operates as a conduit to link various subsystems of development and to foster adaptation in the broader developmental system (Farmer & Xie, 2007).

Whether such change results in sustained adaptation depends on whether new patterns of behavior are established and evoke the reorganization of other subsystems. This means that change in behavior is necessary but insufficient in the intervention process (Farmer & Farmer, 2001). Depending on the construct of interest, it is necessary to promote the reorganization of other key subsystems such as individual academic competencies, beliefs

and values, social cognitions, the regulation of biophysical components of emotional and behavioral expression, social roles and interactional patterns, and social networks and organizational structures. Thus, intervention should involve a coordinated focus on students' individual attributes and on naturally occurring contexts in which they are embedded (Bradshaw, Schaeffer, Petras, & Ialongo, 2010; Sutherland, Conroy, Abrams, & Vo, 2010).

Ecological Intervention

From an ecological perspective, development involves a continual process of exchange between the individual and her or his social ecology. This includes proximal contexts such as the peer group, the family, or the classroom that the child interacts with in a direct and frequent manner or more distal contexts such as formal and informal neighborhood, community, and societal groups, organizations, and institutions (Bronfenbrenner, 1979). Based on ecological theory, Nicholas Hobbs (1966) developed a pioneering model of ecological intervention known as reeducation. Although Hobbs focused on youth with serious emotional disturbance, his model is applicable for students who are at risk for chronic school adjustment problems. A central tenet of reeducation is that adjustment problems do not rest within the child or the ecology but rather reflect problems in the interaction between the child and the ecology (Hobbs, 1982).

Reeducation provides a core foundation for ecological interventions by positing that the daily activities of living provide a continual intervention opportunity where individual strengths can be fostered and new relationships can be established to promote the adaptation and capacities of struggling youth (Cantrell & Cantrell, 2007; Hobbs, 1966). This model has three implications for promoting the adjustment of youth during the transition to middle school (Farmer, Farmer, & Brooks, 2010). First, adjustment problems can be ameliorated by bringing the needs and capabilities of the student into alignment with the demands and resources of the social system in which he or she is embedded. Second, it is necessary to identify the student's strengths and the corresponding resources in the social system that can reinforce and maintain these strengths. Third, it is also necessary to foster new competencies in the student to help her or him adapt to middle school while simultaneously promoting new capacities and relationships within the new environment.

Implications for the Development of SEALS

As suggested by the work reviewed earlier, the transition to middle school is often a difficult period in which the demands of the context do not correspond with the competencies and developmental needs of students. Yet, rather than viewing the 1st year of this transition as a foundational

period that parallels the transition into elementary school in terms of the need to teach students new abilities and provide them with supportive contexts that foster new roles and relationships, it often seems as if students are expected to begin middle school with the skills that they need to be successful. However, for many students, the context and demands are as novel, the stresses are as great, and the developmental stakes are as high as when they began elementary school. Whereas teaching children how to be productive students is built into the role of elementary teachers, the need to foster new competencies in beginning middle school students often seems to be overlooked as an essential part of the duties of middle school teachers.

Nonetheless, research on adolescent adaptation and youth's adjustment problems during the transition to middle school strongly calls for creating classroom contexts that are designed to help early adolescents learn to be successful middle school students. This means that students need to be taught how to effectively negotiate new academic, behavioral, and social demands as they develop new identities, relationships, interests, and abilities. Thus, the person-environment mismatch hypothesis, developmental science, and ecological intervention perspectives were integrated to guide the development of the SEALS model to foster middle school adjustment.

First, in accordance with the person-environment mismatch hypothesis, a central focus of SEALS is to help teachers to develop instructional and classroom management strategies that are responsive to the needs of all students and that focus on structuring the classroom context in ways that teach youth how to be effective middle school students (i.e., autonomous, self-directed learners). From this perspective, it is necessary to create an environment that bridges the familiar environment of elementary school and the new middle school ecology. This does not mean that middle school teachers should replicate the elementary context. Instead, teachers need to be able to scaffold students' individual capacities to fit with changing ecological demands.

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. As depicted in Figure 1, SEALS 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, synchronized manner. Thus, the components of SEALS (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 ecological intervention, SEALS is designed to address daily activities of learning and to structure the context to align
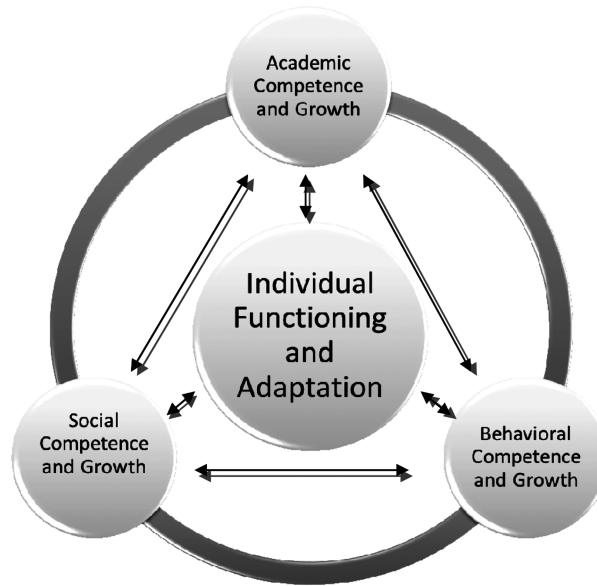
FIGURE 1 Holistic model of development.

with students' characteristics and developmental needs. Rather than trying to "fix the student," teachers are taught to approach intervention in ways that use 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, SEALS builds from research which shows that students' academic growth is linked to their social adjustment and from corresponding 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 behaviors/relationships among classmates.

INTERVENTION COMPONENTS

As indicated earlier, the SEALS model consists of three distinct intervention components designed to create, collectively, a context that fosters students' productive engagement and that facilitates adaptation to a new and more demanding instructional and social context. Although these components address distinct developmental domains, they have been developed for use in a coordinated manner and each is necessary to guide and support critical

aspects of the other. Thus, like the holistic developmental systems they are designed to support (see Figure 1), these components should be viewed as different subsystems of an integrated multifactored program.

Social Dynamics Management (SDM)

The SDM component is designed to enhance teachers' awareness of classroom social dynamics and to teach them how to use this knowledge to foster natural social supports for academic engagement and positive classroom behavior (Farmer, 2000). This model has been generated from years of research on the social dynamics of both productive and problem behavior in school (e.g., Cairns & Cairns, 1994; Kindermann, 2007; Xie, Farmer, & Cairns, 2003). This research suggests that students' academic and social behaviors in the classroom both support and are supported by their peer affiliations and positions in the social structure.

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. Other key social dynamics constructs are featured, such as social synchrony (i.e., patterns of supportive interchanges among two or more individuals), processes of peer group selection and socialization, characteristics of youth involved in bullying and victimization, the teacher as an *invisible hand* who directs classroom social dynamics, classroom grouping practices, using natural leaders to support productive engagement, when to use and not use the power of the peer group to manage classroom behavior, and addressing peer rejection and social isolation. The core of the training centers on clarifying *why* and *how* social dynamics matter for classroom instruction and behavior management. An emphasis is placed on understanding and preventing social dynamics that support disruptive behavior, bullying, and social and physical aggression while using peer group processes to create a general classroom climate that evokes and reinforces productive academic engagement. Teachers are taught how this information can be used in daily instructional and behavior management activities including grouping practices, peer tutoring strategies, and strategies to use peers to model and reinforce desired classroom behavior (Farmer, Hamm et al., 2010; Hamm, Farmer, Dadisman, Gravelle, & Murray, 2011; Hamm, Farmer, Robertson, et al., 2010; Lane, Menzies, Bruhn, & Crnobori, 2011; Lee, 2006).

Academic Engagement Enhancement (AEE)

Academic Engagement Enhancement involves providing middle school teachers with a structured format for organizing instructional activities in ways that maintain the attention and involvement of all students including those with learning problems (Lee, 2006; Sutherland & Farmer, 2009). Teachers are

taught a variety of strategies for structuring instruction so that all students can participate and be successful. The goal is to provide an instructional structure and format that maximizes the capabilities of teachers to be responsive to diverse learning needs and that promotes the engagement of students who have difficulty in large class and didactic settings.

The AEE training content centers on core strategies that teachers can use to begin class, differentiate instruction, and sequence instruction to maintain students' involvement and success. Specific topics include routines to start class, individualized routines for struggling or off-task learners, preteaching and structured engagement for struggling students, using peer models to support engagement and instruction, monitoring struggling students' engagement in instruction, using opportunities to respond strategies to foster engagement, and using behavior momentum strategies to extend and reinforce engagement. These strategies come directly from the "best practice" literature for promoting academic success for students with learning and behavioral difficulties (e.g., Bos & Vaughn, 1998; Fuchs, Fuchs, & Burish, 2000; Gut et al., 2004; Lane et al., 2011; Sutherland & Farmer, 2009).

Competence Enhancement Behavior Management (CEBM)

The CEBM component (Farmer, Goforth, Leung, Clemmer, & Thompson, 2004; Sutherland & Farmer, 2009) centers on proactive classroom management strategies. Teachers learn to teach and reinforce appropriate classroom behavior while providing constructive consequences to reduce problem behavior. Specifically, teachers learn to replace reactive and punitive approaches with individual- and classroom-level behavior management techniques that support students' positive instructional engagement and strengthen their use of prosocial interactions with teachers and peers. The general approach of the CEBM model is to manage the classroom in ways that minimize behavior problems while using the occurrence of problem behavior as an opportunity to teach new skills and more appropriate replacement behaviors.

The CEBM model centers on core strategies that involve using rules and expectations to promote positive engagement, techniques for redirecting problem behavior at the classroom level and avoiding public strategies for redirecting individual behavior, managing classroom behaviors to teach new skills and foster new capacities in all students, intervening at the individual level to teach new behaviors to at-risk students, and shaping (i.e., behavior) and structuring (i.e., context) the productive engagement of students who have frequent behavior problems. This model was developed from best practices for promoting positive classroom behavior (e.g., Nelson, 1996; Sutherland & Farmer, 2009; White, Algozzine, Audette, Marr, & Ellis, 2001).

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 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 others. 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 three boxes in the perimeter of Figure 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, although the SEALS model is designed to be a manualized intervention with a structured protocol, the fact that it targets 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.

THE DIRECTED CONSULTATION APPROACH TO INTERVENTION TRAINING AND DELIVERY

A fundamental concern in education centers on the disconnect between evidence-based practices developed by researchers and strategies that are actually used by teachers in daily practice (Odom et al., 2005; Truscott et al., 2012). In some respects, this disconnect reflects difficulties in the dissemination, translation, and implementation of evidenced-based practices (Hoagwood & Johnson, 2003; Reinke, Herman, Stormont, Brooks, & Darney, 2010). However, it also reflects the realities of the differences between the context of rigorous educational research and the context of daily educational practice. Whereas experimental research focuses on limiting or statistically controlling for ecological factors, the practice of teaching requires being responsive to *real-world* conditions, constraints, and values that shape the activities of the classroom and the outcomes of students.

As suggested in Figure 2, teachers operate within an environment where they must balance the resources, expectations, policies, and practices embraced by the school and community with the characteristics, competencies, and challenges presented by both individual students and by the broader mix of students within any given class. Further, teachers' own characteristics and competencies impact what they can effectively do in the classroom. In some cases, teachers may use techniques that are consistent with evidence-based practices. In other situations, they may use strategies that in some way build from their experiences or that are guided by the policies and practices
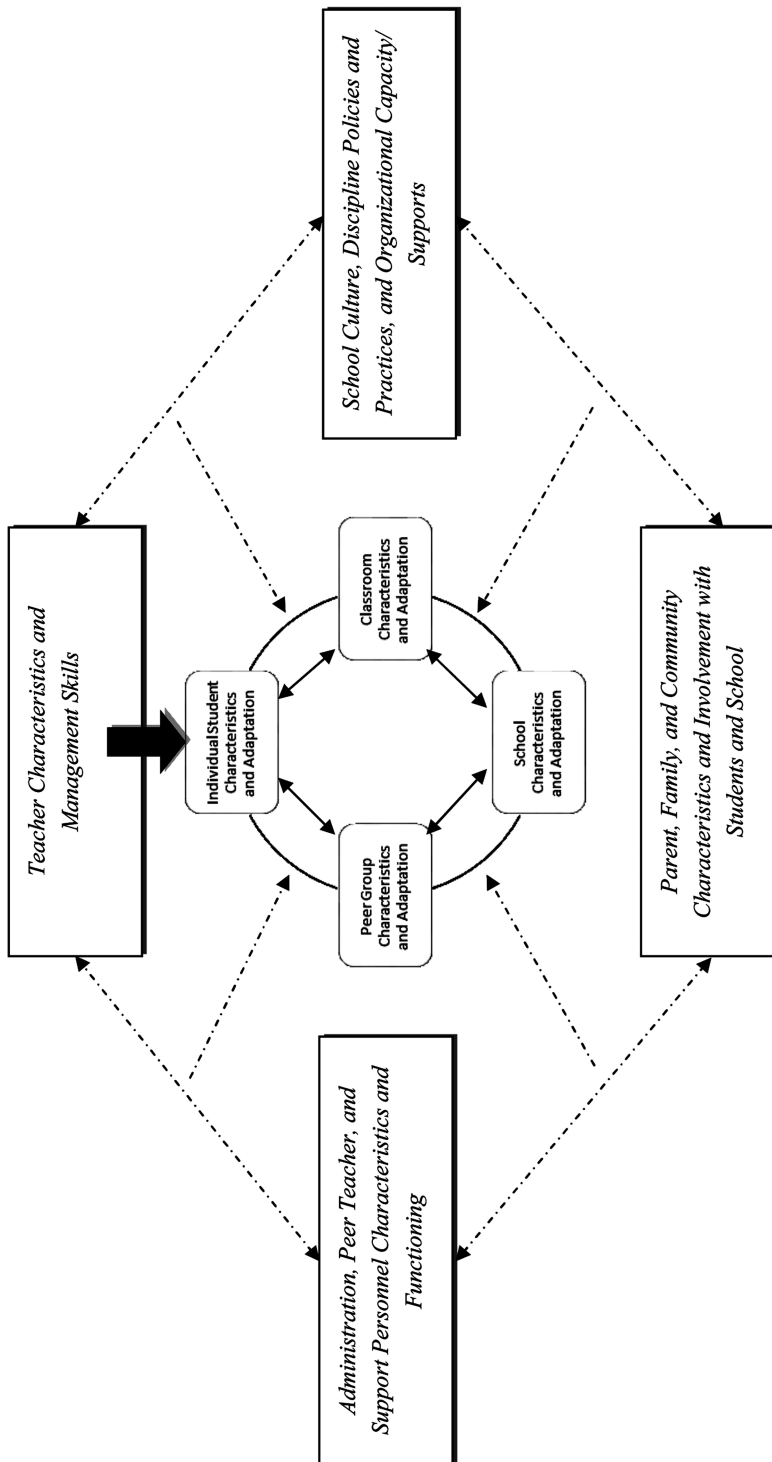
FIGURE 2 The ecology of classroom management.

Individual Student Characteristics and Adaptation

Classroom Characteristics and Adaptation

School Characteristics and Adaptation

Peer Group Characteristics and Adaptation

Teacher Characteristics and Management Skills

School Culture, Discipline Policies and Practices, and Organizational Capacity/ Supports

Parent, Family, and Community Characteristics and Involvement with Students and School

Administration, Peer Teacher, and Support Personnel Characteristics and Functioning

espoused by the school administration and other primary stakeholders. Thus, to facilitate effective practices in schools, it is necessary for researchers to acknowledge the context in which teachers operate and to promote the development of strategies that are guided by reciprocal exchanges between researchers and practitioners; foster the use of natural resources and the insights of key stakeholders including teachers and administrators; and blend a focus on students' learning and their behavioral, emotional, and social adjustment (Cappella, Frazier, Atkins, Schoenwald, & Glisson, 2008; Domitrovich et al., 2010; Truscott et al., 2012).

Consistent with this perspective, directed consultation was established as an approach to integrate a standardized intervention into the daily activities and culture of the school (Farmer, Hamm, et al., 2010). Directed consultation is a service-delivery process that begins in the year prior to the SEALS professional development training, extends across the following school year, and involves moving from general to more advanced and intensive training and support (see Figure 3). An integral component of this process is the intervention specialist. For the SEALS program, the intervention specialist is a master's-level educational professional with expertise in providing academic and behavioral consultation to teachers and related professionals. For each school that participates in the SEALS training, an intervention specialist is assigned who works closely with the school administration, teachers, and related services professionals to identify how the SEALS model fits with the school's current practices and to determine how to build from the school's strengths while simultaneously addressing their needs and concerns.

Across the various SEALS training activities (i.e., summer institutes, web-based modules, directed consultation meetings), the overarching goal is to create a training context in which teachers assume a partnership role with the intervention specialist. Thus, the efforts of the intervention specialist are
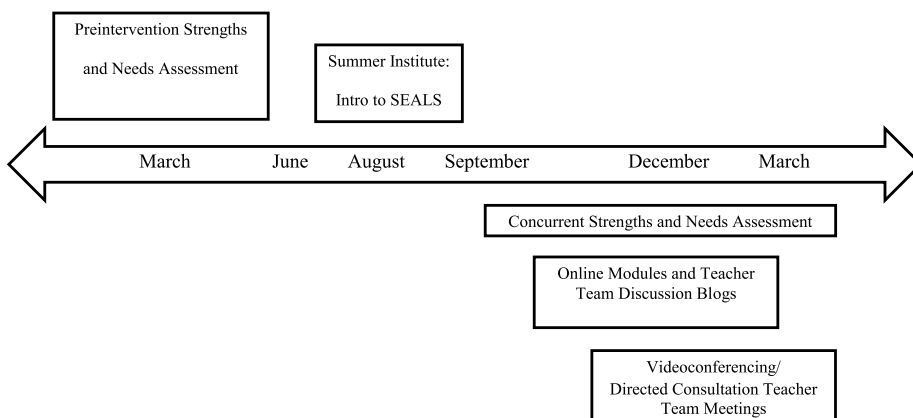

FIGURE 3 The directed consultation process.

guided by the aim of fostering a training context in which teachers become active participants who bring *real-world* examples and issues to the training activities. Further, over the course of the training, teachers are encouraged to become collaborative consultants with each other. By the completion of the training, teachers are presented with the SEALS components in an iterative fashion that involves multiple modalities and the application of the model to issues they experience on a daily basis. However, rather than following a lockstep protocol, they are taught how to incorporate the SEALS model naturally into their daily practice with the goal of infusing SEALS strategies into the school's general instructional and behavior management culture.

To accomplish this, SEALS professional development activities consist of four distinct components: strengths and needs observations and assessments, SEALS summer institute, SEALS online training modules and discussion blogs, and directed consultation teacher team meetings. The SEALS delivery components are not designed to stand alone. They have been carefully developed to build one upon the other, moving from general and universal approaches to more intensive and individualized strategies and training activities.

The first SEALS training component, the strengths and needs assessments, involve school observations and interviews with teachers, teacher teams, school administrators, and student support personnel (i.e., school psychologists, school counselors, special education and behavioral support staff). This work is conducted in two phases: *preintervention* and *training concurrent*. The *preintervention* phase occurs in the spring of the year immediately prior to the SEALS professional development and intervention implementation school year. The *training concurrent* phase begins at the start of the school year right after the completion of the summer institute and continues throughout the intervention year. Both the *preintervention* and *training concurrent* assessments make it possible to identify and monitor teachers' standard practices, to determine how the school generally operates, and to establish and sustain productive relationships with teachers. Observations are conducted in classrooms to identify strengths and needs related to instructional and classroom management strategies (i.e., use of rules and routines, consistency across teachers and classes, strategies to promote instructional engagement, strategies to manage behavior and peer dynamics, examples of good practices and common problems). Observations are also conducted in the general school context to identify existing strategies to monitor students during noninstructional times, areas where problem behaviors occur, and schoolwide behavior management practices (including proactive and reactive components). In addition to observations, interviews are conducted with teacher teams to determine how often they meet, whether they operate as a resource to each other for instruction and behavior management, and how they share information and support. Further, formal and informal leaders of the teacher teams are identified. Interviews

with administrators and support personnel are also conducted to identify specific concerns and issues, general school discipline policies and practices, and ways in which the administration supports instruction and classroom management.

The second SEALS training component is a summer institute that occurs immediately prior to the beginning of school. This institute consists of two days of face-to-face meetings with teachers and SEALS intervention staff. The purpose is an overview of and introduction to the SEALS program as well as relationship building among teachers and SEALS intervention staff to build a foundation for the directed consultation meetings that occur during the first few months of the school year. The content of the summer institute includes conceptual and empirical foundations of the SEALS program, training objectives, overview of SEALS training components and activities, and overview of SEALS intervention components and goals.

The third SEALS training component involves online training modules that begin a few weeks after the start of school and continue across the fall and winter of the school year. Each teacher completes a series of online activities in a sequence that is established in consultation with the teachers and that builds from both the preintervention and intervention concurrent strengths and needs assessments. Specific units include social structures and peer group processes, bullying, academic engagement enhancement—starting class, academic engagement enhancement—opportunities to respond, academic engagement enhancement—behavior momentum, social dynamics management—general management strategies, social dynamics management—intervening with specific social problems, competence enhancement behavior management—classwide strategies, competence enhancement behavior management—managing individual students, and a synthesis module that brings it all together. As teachers complete these modules they answer module-specific questions in relation to issues they are addressing in their classes. In turn, the intervention specialist provides general feedback on these responses to a secure SEALS intervention blog that is accessible only to the participating team members. The blog becomes a discussion forum for team members to express their collective needs, approaches to the use of SEALS strategies, and general views prior to the directed consultation meetings.

The fourth training component consists of directed consultation meetings. In conjunction with the completion of online modules, teacher teams take part in directed consultation sessions with SEALS intervention staff. These meetings involve the application of the summer institute and online module content and training to real-world issues experienced by teachers. Directed consultation sessions occur through videoconferencing or through face-to-face meetings between teachers and the intervention specialist. Once formal directed consultation activities are completed, individualized or small-group consultation can be established on an as-needed basis.

PRELIMINARY EVIDENCE OF THE IMPACT OF SEALS

The SEALS model has been used in Project REAL (Rural Early Adolescent Learning), a series of studies conducted as part of the National Research Center on Rural Education Support, to promote the academic, social, and behavioral adjustment of early adolescents in rural districts across the Unites States that include schools that have a building transition from elementary to middle school and those that do not (i.e., K–8, K–12). This work has been conducted primarily in low-income and/or geographically remote districts that have relatively few resources in terms of teacher training and professional development opportunities. To evaluate the impact of the SEALS model in such contexts, a series of randomized control trials (RCT) with 2–4 schools as well as a cluster randomized trial (CRT) with 28 schools (14 intervention, 14 control) from seven states was conducted. The research evaluation of Project REAL involved a broad array of well-established self-, teacher-, and peer-rated academic, social, and behavioral outcomes as well as observations of classrooms by trained observers; data were collected at the end of fifth grade (preintervention); during the fall and spring of sixth grade (mid- and postintervention); and in many sites, during the fall and spring of seventh grade (postintervention). A number of studies published from the Project REAL RCT studies demonstrate the potential for the SEALS program to help teachers to create school environments that support early adolescent students' successful social, behavioral, and academic adjustment. Additional details about instrumentation, study design, and analyses can be found in the articles referenced later.

SEALS Program Effects on Students' Academic and Social Adjustment

Findings from two matched pairs of schools in a Northern Plains state involved tests of intervention effects at the end of the sixth grade (intervention) year on White and Native American early adolescents, net of student demographic, and baseline and midintervention controls (Hamm, Farmer, Robertson, et al., 2010). Hierarchical linear regression analyses indicated that students in intervention schools made greater achievement gains than did students in control schools. Native American students in particular benefited from the intervention in terms of state-level standardized achievement scores, evidencing a significant reduction in the "achievement gap" between White and Native American students in intervention schools that was not evident in control schools. In this same study, students in intervention schools reported significantly greater valuation of school than did students in control schools; compared with all other groups, Native American students in intervention schools also reported the greatest sense of school belonging at the end of the school year.

SEALS Program Effects on Students' Experience of the Peer and School Context

REAL RCT studies have also focused on the impact of the SEALS program on students' experiences of the peer and school context. Collectively, this work indicates that students in REAL intervention schools experienced a more positive and supportive social-affective school and peer context than did their counterparts in control schools. In the study of the Northern Plains schools (Hamm, Farmer, Robertson, et al., 2010), students, especially Native American, in intervention versus control schools reported improved perceptions of peer norms for acceptance of academic effort and achievement among their peers. Students' ratings of the school bullying context also indicated that they perceived less encouragement of and greater peer protection against bullying in intervention versus control schools. Finally, Native American students in intervention schools, more so than Native American students in control schools or White students in general, rated their schools as less emotionally risky for academic participation.

In a study of Appalachian schools, findings indicated sustained effects of the SEALS intervention on students' experience of the school context (Farmer, Hamm, et al., 2010). Perceptions of peer norms for effort and achievement remained supportive across the middle school transition year and into the fall of seventh grade for all students in intervention schools, whereas for students in control schools, the peer norms trajectory declined across the transition year and into the seventh grade.

Findings from this same study of Appalachian schools demonstrated the potential for the SEALS intervention to alter the peer group affiliation patterns of students classified as at risk for behavioral problems (i.e., elevated levels of teacher-assessed aggression) based on fifth-grade teacher ratings prior to the transition to middle school (Farmer, Hamm, et al., 2010). Students' peer group affiliations were assessed in the fall of the sixth grade following the transition from elementary school; the characteristics of each student's peer group associates (i.e., teacher-rated effort and achievement and social adaptation) was calculated as the peer group average with the target child's score excluded. In comparison with at-risk students in matched control schools, at-risk students in intervention schools associated with more academically productive peers and peers who were less likely to be rated by teachers as bullies or victims.

SEALS Program Effects on Teacher Capacity

In addition to findings of better academic and social adaptation and an improved peer and school social-affective context among students in REAL versus control schools of the impact of the SEALS intervention on indicators of student adjustment, results from additional RCT studies demonstrate

the potential for participation in the SEALS program to enhance teacher capacity to create school environments that promote student adjustment. In two separate RCT studies, one involving pairs of schools in the Midwest and Southwest, and the other involving the Appalachian schools, teachers' accuracy in identifying sixth-grade student peer groups was calculated by comparing teacher-generated with student-generated peer group affiliations. In both studies, results indicated that teachers in intervention, compared with control schools, possessed greater accuracy in identifying peer group affiliations at the beginning of the school year (Farmer, Hall et al., 2010; Hamm et al., 2011). In one study, teachers in intervention versus control schools evidenced significantly greater accuracy in identifying the peer group composition of students identified as bullies (Farmer, Hall, Petrin, Hamm, & Dadisman, 2010). In the other, teachers' greater accuracy in identifying peer group affiliations in general was associated with improvements to student experiences of the school social-affective context during the middle school transition year (i.e., sense of belonging, perceptions of the bullying ecology; Hamm et al., 2011). These findings suggest that teacher accuracy, which is enhanced through participation in SEALS, promotes better middle school transition experiences for students. Also, teachers in intervention schools were rated by trained observers blind to intervention condition on a classroom observation instrument developed for the REAL project as significantly better managers of classroom social dynamics compared with ratings for control school teachers at the end of the school year.

Collectively, the preliminary studies from Project REAL RCT studies suggest the potential of the SEALS program to help teachers promote school environments that support positive academic, behavioral, and social adaptation for students. Students may benefit directly from having their teachers participate in SEALS as evidenced by their more positive experiences of the school social-affective context, greater sense of belonging to and valuing of school, and enhanced academic performance. Participation in the SEALS professional development program appears to build teacher capacity through helping teachers develop an accurate understanding of peer affiliations early in the school year as well as by enabling them to manage the classroom social environment more effectively. The greater capacity to identify students' peer groups early in the school year is associated with improved students' experiences during sixth grade.

FUTURE RESEARCH NEEDS

The findings published thus far are limited to a relatively small sample of low-resource, rural pairs of schools. However, a number of features of these studies, including a randomized design used to minimize selection effects, representation of multiple and diverse geographic regions of the

United States, and students and teachers of diverse ethnic backgrounds, strengthens the credibility of the findings. The current findings of the impact of SEALS are promising, but much more work is needed. Ongoing analyses with the REAL data involve the full CRT sample and will establish direct intervention effects on desired student outcomes as well as identify factors that mediate or moderate the impact of SEALS on students' academic outcomes (i.e., grades, standardized test scores) and behavioral adaptation (i.e., aggression, bullying involvement) and aspects of teacher capacity that enhance students' experiences of the school environment and their adaptation. However, work with the Project REAL sample is constrained to rural settings. The SEALS model may have a differential impact on teacher practices and the corresponding school adjustment of youth from suburban, urban, and metropolitan communities. Consequently, there is a need for replication studies that evaluate outcomes of the SEALS model with diverse samples from metropolitan communities.

In addition, the current SEALS model is designed as a universal intervention. Although the preliminary findings from Project REAL indicate that this model promotes an instructional and social context that enhances the adaptation of at-risk youth, students with significant school difficulties and multiple adjustment problems are likely to need more intensive supports that go beyond the general interventions that are supported by the SEALS training (see also Dunlap, Iovannone, Wilson, Kincaid, & Strain, 2010; Sprague & Perkins, 2009). Following a response to intervention design consistent with the increasingly implemented three-tiered models of prevention, the SEALS conceptual framework and intervention components are well suited for being integrated with small-group (i.e., selected or Tier 2) and individualized (i.e., indicated or Tier 3) intervention components (Farmer, Farmer et al., 2010). Accordingly, there is a need for additional intervention development work that combines the SEALS model with selected interventions aimed to prevent the negative reorganization of the developmental systems of moderate-risk youth and indicated interventions that focus on promoting the positive reorganization of the developmental systems of youth who experience multiple and sustained risks across the academic, behavioral, and social domains (Bradshaw et al., 2010; Farmer, Farmer, et al., 2010; Sutherland & Farmer, 2009). Further, with the strong focus on the role of middle school social dynamics in the universal SEALS model, there is a particular need for additional selected and indicated interventions that are aimed at the social functions of problem behavior during the middle school years (Farmer & Xie, 2007; Pellegrini & Bartini, 2000). Such work may be especially relevant for multirisk youth who are not responsive to universal and selected interventions and who need interventions aimed to directly identify and modify contextual factors that elicit and maintain their problem behaviors (see Lane, Kalberg, & Shepcaro, 2009; Lane et al., 2007).

In conclusion, the transition to middle school is a time of developmental vulnerability for many early adolescents as they are exposed to new experiences and challenges that have the potential to adversely impact their school adjustment. However, this transition 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. 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. Although 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 to provide more intensive interventions for youth who are not responsive to the general SEALS model. When this is accomplished, it may be possible to utilize the transition to middle school as an intervention opportunity to promote the positive youth development of all students including those at high risk for significant school adjustment problems.

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