Classroom Resilience: Practical Assessment for Intervention

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Resilience research has proven to be helpful to those committed to improving academic and psychosocial outcomes for students within schools. Empirical descriptions of children who succeed despite growing up in very adverse living conditions have been used as an undergirding foundation to applied practice in schools (Doll & Cummings, 2008; Doll et al., 2009; Werner, 2006). However, a major challenge has been the translation of diverse resilience constructs and research (described in detail in Chap. 1) into practical assessments of resilience that are meaningful in schools. School practitioners require assessment strategies that capture the foundations of developmental resilience research, while also relating in important ways to the empirical precursors to school success and using procedures that are resource efficient and highly beneficial for educational planning.

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Applied practice in schools includes two groups of mental health professionals: *community professionals* (e.g., psychiatrists who provide monthly medication consultations) who work primarily outside the school system but collaborate with schools in a consultative manner; and *school professionals* (e.g., school psychologists or school counselors) who are employees of the school system and are credentialed by state education departments. Applied practices to strengthen resilience in schools may look quite different depending on whether practitioners are community professionals or school professionals. Community professionals are often focused on assessing resilience "within the person" because much of the funding for community agencies is tied to third-party reimbursements that target a single student (Doll, 2010). School professionals on the other hand are more likely to assess resilience "within the context" as long as they can demonstrate that these strategies yield meaningful improvements in students' school success. School professionals must frequently negotiate complex factors within the school system to influence their districts' commitment to the promotion of resilience within an educational climate that emphasizes academic learning. Whereas community professionals typically reside within agencies that recognize social, emotional, and psychological wellness to be core to their missions.

Until recently, resilience-promoting assessment and intervention strategies have emphasized

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"within the person" frameworks (Knitzer, 2005), which may be a significant reason why previous assessment tools have often been impractical for widespread use in the schools (Prince-Embury & Saklofske, 2011). This chapter will describe the early steps in an effort to bridge this research-to-school-practice gap by developing an assessment and school change strategy that is sensitive to the needs of school professionals.

The *ClassMaps Consultation (CMC)* framework (Doll et al., 2009; Doll, Zucker, & Brehm, 2004) is a pioneering effort to translate resilience research into applied practice in schools by teachers and school mental health professionals. First, characteristics of school contexts were identified that have been empirically associated with the social, emotional, and academic success of chronically underprivileged students. Then, the ClassMaps Survey (CMS) was developed and field tested, with subscales that assess each of the identified characteristics. Subsequently, the CMS is being used within a data-based problem-solving cycle to prompt classrooms and schools to strengthen their resilience-promoting characteristics. Within the CMC framework, allowance was always made for the possibility that additional resilience-promoting characteristics would be identified, and these could easily be integrated into the data-based problem-solving cycle. The Protective Peer Ecology Scale (PPEcoS; Song, 2004, 2006) is a prime example. The PPEcoS assesses an aspect of schools' peer culture that was not part of the original ClassMaps Framework but is nevertheless highly related to schools' promotion of developmental resilience. To enhance the scales' relevance to school practice, both the CMS and the PPEcoS assess resilience as a characteristic of the school context (rather than as a "within the person" construct) and both emphasize positive characteristics that promote resilience in preference to assessing the absence of pathology. In the remainder of this chapter, we will first describe the ClassMaps Framework, then describe the development and technical soundness of the CMS and the PPEcoS, and finally describe the place of these assessment tools within the larger task of promoting students' resilience in schools.

Resilience Framework

The ClassMaps Framework is based on developmental resilience research and an ecological framework and has the goal of being useful for school practitioners. Within this broad theoretical framework, an empirical approach was first employed to identify characteristics that were consistent with the framework. Multiple longitudinal studies have identified very similar family and community characteristics that predict school success in vulnerable children growing up with multiple adversities (Doll & Lyon, 1998; Werner, 2006). These characteristics include nurturing by adults, forming a close bond with at least one caretaker, finding friendships with peers, holding expectations of efficacy and competence, developing an internal locus of control or sense of self-determination, and expanding their capacity for self-control. Similarly in the educational literature, there is substantial consensus that three key features of schools and classrooms influence academic engagement in students: (a) relatedness in which teachers and classmates contribute to a caring and supportive social community; (b) perceived competence in which students expect to be successful in school and so behave in ways that predispose them to experience success; and (c) autonomy in which students act as executive directors of their own learning experiences (Fredricks, Blumenfeld, & Paris, 2004; Furrer & Skinner, 2003; National Research Council [NRC], 2004). Thus, high quality relationships and supports for students' developing autonomy and perceived competence are characteristics of success-promoting tiers of influence within students' ecosystems.

Resilience is conceptualized then as a set of environmental characteristics that make up the ecology of school classrooms, which can be assessed and enhanced through intervention strategies. Accordingly, these factors found in the empirical literature were then operationalized in the CMS to provide an assessment tool that could serve as a first step towards strengthening classroom learning ecologies and supporting students' academic engagement (Doll et al., 2009; Doll,

Zucker, et al., 2004). The CMS emphasizes three aspects of relatedness (students' relationships with their teachers, students' relationships with their classmates, and families' involvement in students' schooling), and three aspects supporting student autonomy (students' efficacy for their own academic success, students' self-determination for goals and decisions related to their schooling, and their self-control of their own goal-directed behaviors). The six ecological factors emphasized in the CMS have also been demonstrated in educational and psychological research to be critical to students' achievement in classrooms and influence student's motivational response to school (Bandura, 1997; Brophy, 2004; Deci & Ryan, 2000; Masten et al., 1999; Masten & Powell, 2003; NRC/IOM, 2004).

Relational Characteristics of Resilient Classrooms

Social relationships have long been recognized as essential building blocks of resilience and psychological wellness. Learning is essentially a social activity that emerges out of interpersonal interactions between and among adults and children. However, the relationships in classrooms are unique because they are necessarily constructed among a very few adult teachers and many students. Relationships among students are also unique because school settings almost always represent the earliest opportunity for children to interact with each other outside of the close monitoring of their families. Both adult–child and child–child relationships can be characterized by either positive (prosocial) or negative (conflictual) features, and it is increasingly apparent that these are isomorphic features. Conflict does not always signify the absence of caring, and prosocial interactions are not necessarily conflict free.

Teachers' Relationships with Students. A strikingly consistent finding of developmental resilience researchers has been that effective relationships with caring adults are critically important protective factors for children growing up in disadvantaged homes and communities (Werner, 2006). In schools, the most important adult relationships are those that students form with their teachers. Teachers are an enduring presence in the lives of children, represent the most familiar adult outside of their parents for many students, and act as important "secure bases" that allow children to explore and take risks intellectually, socially, and emotionally (Kesner, 2000; Pianta, 1999). Effective teacher–student relationships are caring, trusting, respectful, and fair. The support that students receive from their teachers contributes to their behavioral competence (Hamre & Pianta, 2005), academic progress (Murray & Malmgren, 2005), and social success (Pianta & Stuhlman, 2004). Particularly when they are struggling with family and community disadvantages, students who feel valued and respected by their teachers are more committed to learning and better able to cope with adversity (National Research Council/Institute of Medicine, 2004).

Like students' relationships with parents, students can be taught strategies to strengthen their relationships with teachers by sustaining interactions over time and demonstrating respect for teachers' expectations and requests (Consortium on the School-Based Promotion of Social Competence, 1994). Alternatively, teachers strengthen these relationships by being warm, caring, fair, and helpful and by modeling responsible behavior (Brophy, 2004; Wentzel, 2002). Effective teachers use humor and encouragement to empower students' independence and autonomy. The challenge for teachers is that these relationships are asymmetrical (adults retain more responsibility for and power over the relationship than students) and simultaneous (with teachers interacting with all students in a classroom at any single moment) (Consortium on the School-Based Promotion of Social Competence, 1994). Thus, teachers must master the very difficult art of interacting personally and effectively with large groups of individual students. The CMS assesses student perceptions of teacher–student relationships with the My Teacher subscale described in detail later.

Peer Relationships. Developmental resilience researchers have also demonstrated the significance of peer relationships in children's development (Werner, 2006). Peer relationships refer to students' interactions with their classmates in all forms such as friendships, acquaintances, and enemies. Friendships form when two students mutually prefer one another's company and provide important sources of support for one another such as companionship, assistance, comfort, and fun (Johnson, Johnson, Buckman, & Richards, 1998). Peer friendships have been significantly correlated with academic achievement (Pellegrini, 2005; Wentzel & Caldwell, 1997), as students who have friends at school are more engaged in academic and school activities (Pellegrini, 2005; Wentzel & Watkins, 2002). Therefore, the CMS's My Classmates subscale assesses the degree to which students' believe that their friendships at school are rewarding.

Peer conflict is a normative experience within peer relationships, as even friends may tease one another and have arguments that need to be problem solved. Indeed, one study found that most students reported that their classmates teased them (60%) or argued with them (67%; Doll, 2006). Still, when peer conflict is unresolved, this can lead to a decline in classroom student involvement (Ladd, Birch, & Buhs, 1999). Intense peer conflict has been shown to lead to academically disengagement and school dropout (Barclay & Doll, 2001). The Kids In This Class subscale of the CMS measures peer conflict perceived by students within classrooms.

While peer conflict is common among friends, bullying often occurs between non-friends and within peer groups. Bullying is when peer aggression becomes a pattern between more powerful students against weaker students who cannot make the bullying stop (Aluede, Adeleke, Omoike, & Afen-Akapida, 2008; Olweus, 1993). Bullying occurs among students at a regular rate of 10–20% (Nansel, Overpeck, & Pilla, 2001). The negative consequences of bullying are clear and include academic challenges, e.g., absenteeism, difficulty concentrating on learning, school drop out, and psychological challenges such as social skills deficits, higher rates of depression, and anxiety (Aluede et al., 2008; Paul & Cillessen, 2003). Peer bullying may be measured by the degree to which students worry about peers becoming aggressive towards them such as in the I Worry That subscale of the CMS.

Protective Peer Ecology. A recent extension of the peer relationships dimension of resilient classrooms focuses on how peers protect one another from bullying and provide social support for one another. This aspect of peer relationships has been argued to be the most influential context for bullying prevention (Song, 2006; Song, Doll, Swearer, Johnsen, & Siegel, under review; Song & Stoiber, 2008), and as such may be the best target for bullying prevention. Peers can effectively help correct the inherent power imbalance between bullies and victims and address school environments that encourage bullying (i.e., inaction of school personnel). For example, because peers are typically present during the majority of bullying interactions, they can detect even the covert occurrences of bullying and, therefore, intervene on bullying more effectively than adult school personnel (e.g., Craig & Pepler, 1997). Peers may also be preferred over adults when victims of bullying are deciding to whom to come for help. This aspect of peer relationships, protective peers, is measured by the PPEcoS (Song, 2006).

Home–School Relationships. A final resilience-promoting relationship occurs between home and school. Home–school relationships refer to all types of interactions between a student's family and the school contexts, e.g., direct in-person and indirect communication. A number of studies have shown the positive effects that come from a strong home–school relationship. For example, student outcomes have been demonstrated for higher rates of work completion (Epstein & Van Voorhis, 2001), higher grades and test scores (Fan, 2001; Hill et al., 2004), better attendance, fewer suspensions, and likelihood to complete school (Anguiano, 2004; Fan, 2001; Hill et al., 2004). Key school practices that encourage this relationship are implementing parent-centered practices that promote involvement, inviting parents to participate, and expecting parents to do so

(Hoover-Dempsey et al., 2005). The Talking With My Parents subscale from the CMS describes the home–school relationship from the students' perspective.

Autonomy-Promoting Characteristics of Resilient Classrooms

Academic Self-Efficacy. Developmental resilience research has supported that a student's confidence in succeeding on a task is a critically important protective factor for children growing up in disadvantaged homes and communities (Werner, 2006). Success in school is also strongly influenced by self-efficacy beliefs (Bandura, 1997; Pajares & Schunk, 2001; Schunk & Pajares, 2005). Self-efficacy is shaped in school classrooms by regular and prompt feedback on student work, direct and indirect experiences of success and failure, and encouragement from their teachers and peers (Brophy, 2004; Pastorelli et al., 2001). Students' academic efficacy is measured by The Believing In Me subscale of the CMS.

Self-Determination. The second autonomy-promoting resilience factor is self-determination, the ability to manage one's learning productively. Students who are self-determined can set productive goals for their learning, behave according to these goals, and allot the appropriate amount of effort to achieve them (Masten et al., 1999). Responsible learning, taking credit for achievements, developing reasonable plans to address academic failures, and intrinsic motivation to succeed also characterize self-determined students (Assor, Kaplan, & Roth, 2002; Masten, 2001). Self-determination may be promoted in classrooms that value skill competency using specific and attainable mastery goals instead of competitive performance goals (Pajares & Schunk, 2001). The CMS assesses students' self-determination with the Taking Charge subscale.

Behavioral Self-Control. Resilience in classrooms also includes behavioral self-control. Behavioral self-control incorporates autonomy in that students' learn to management themselves in terms of appropriate, rule-governed, and goal-directed actions (Bandura, 1997; Bear, 2005). Behavioral choices, expectations set for behavior, and the degree to which students meet their self-imposed expectations all influence behavioral self-control in students. Empirical work has substantiated the interaction between behavioral conduct and academic success (Hawkins et al., 2003; Osher, Bear, Sprague, & Doyle, 2010), academic underachievement (Lane, Pierson, & Givner, 2003), and students' grades (McDermott, Mordell, & Stoltzfus, 2001; Osher et al., 2010). Behavioral self-control is also linked to key relationship factors in classrooms such as weakened relationships with their teachers and peers. Many prominent evidence-based interventions have been designed to improve behavioral self-control in classrooms (Bear, 2005; Mitchem, Young, West, & Benyo, 2001; Osher et al., 2010). These management strategies fall into types that are more adult imposed or student centered (Bear, 2005). Strategies that are more likely to strengthen students' self-regulated discipline and control are student-centered approaches. Students' class wide behavioral control is assessed on the Following Class Rules subscale of the CMS.

Resilience Operationalized for Assessment

The ClassMaps Survey

Efforts to strengthen the resilience-promoting characteristics of classrooms depend on the availability of a technically sound and eminently practical measure of classroom resilience that can guide and evaluate classroom change efforts. With this ultimate purpose in mind, the CMS (Doll, Spies, Champion, et al., 2010; Doll, Spies, LeClair, Kurien, & Foley, 2010) has been developed through an ambitious program of research extending through the past 14 years. As a first step, a careful research review was conducted to identify the characteristics of classrooms that were strongly related to the success of students who learned there (Doll, Zucker, et al., 2004). Three relational characteristics (teacher–student

relationships, peer relationships, home–school relationships) and three autonomy-promoting characteristics (academic efficacy, academic self-determination, and behavioral self-control) were identified through this research review. Next, student survey items were developed to describe each characteristic, resulting in a pilot survey with six subscales. Items were field tested across elementary and middle school students; quantitative data was used to describe the technical properties of the CMS while qualitative data was gathered to examine teachers and students' perceptions of the items' clarity, relevance, and acceptability. Results were used to refine the survey through three successive forms: the CMS 2004; CMS 2005; and CMS 2007. Refinements resulted in an eight-subscale CMS 2007 that closely matched the six classroom characteristics identified initially. The eight CMS 2007 subscales include: My Teacher (teacher–student relationships), My Classmates (peer friendships), Talking With My Parents (home–school relationships), Believing In Me (academic self-efficacy), Taking Charge (academic self-determination), Following Class Rules (behavioral self-control), Kids In This Class (peer conflict), and I Worry That (worries about peer aggression). The technical properties (reliability, factor structure, and validity) of the CMS 2007 were then examined in two comprehensive studies: one with elementary students (Doll, Spies, LeClair, et al., 2010) and the second with middle school science students (Doll, Spies, Champion, et al., 2010).

Item Development and Field Testing. The item development phase of the CMS research was intended to yield a survey with separate subscales for each of the six classroom characteristics. Ideally, each subscale could then be used independent of the others, depending upon the focus and content of classroom intervention efforts. Consequently, each subscale's internal consistency needed to be adequate to support its independent use. Between 6 and 8 items were written for each characteristic, resulting in a 40-item version of the survey. This pilot version was administered to 400 middle school students (Doll et al., 1999). Results showed that the pilot survey had six factors (as predicted) but the subscales' internal consistency was inadequate for the peer relationships subscale (0.56). Feedback from both students and teachers was used to refine the items' wording, format, and practical utility.

Next, with the assistance of elementary school teachers, the 40 items were simplified so that elementary students could easily understand them. Each item used a uniform 3-point Likert-type response format: "Yes," "Sometimes," or "No." The 40-item CMS 2004 was then administered in 82 classrooms in rural and urban Midwestern communities (Doll & Siemers, 2004; Doll, Song, & Siemers, 2004). Results showed that CMS 2004 had seven factors: two peer relationships factors (peer friendships and peer conflict) and one factor for each of the remaining five classroom characteristics. Most items loaded on their predicted factor. However, the internal consistency of both the Believing In Me and the Taking Charge subscales fell below 0.70 (0.64 and 0.55, respectively) and so was insufficient to support the use of these subscales as stand-alone measures.

Subscale Refinement. The CMS was further revised and strengthened over a 2-year span. The CMS 2005 version included rewritten items using a 4-point Likert-type scale: Never, Sometimes, Often, and Almost Always. Several items were dropped from the Following Class Rules subscale, because they contributed little to the subscale's internal consistency. Also, and at the request of a school partner, an additional peer relationships subscale describing students' worries about peer aggression was added (I Worry That). The CMS 2007 version separated the peer relationships subscale into two subscales: My Classmates (peer friendships) and Kids In This Class (peer conflict) because these had consistently factored into two parts across previous analyses. Additional revisions simplified the language and eliminated all double negatives from item wording, and the peer conflict items were rewritten as negative items (e.g., "Kids in this class argue a lot with each other").

Negative items on the Kids In This Class subscale and the I Worry That subscale were reverse scored so that higher scores still represented more positive perceptions of the classroom. Finally, items were refined to better represent empirical findings for the Believing In Me subscale and the Taking Charge subscale.

These revisions successfully raised the internal consistency reliability of the subscales from an average of 0.66 to an average of 0.74 (Doll & Spies, 2007). The dimensionality of the CMS 2007 demonstrated an eight-factor solution in which all items loaded on their predicted subscale. Subsequently, using a sample of 1,056 science students (Grades 5–8), a factor analysis of seven of the eight CMS 2007 subscales (absent the I Worry That subscale) supported a seven factor solution with coefficient alphas ranging from 0.80 to 0.91 (Doll, Champion, & Kurien, 2008).

Concurrent Validity of the CMS. As additional evidence of the CMS' technical soundness, several studies compared the CMS subscales with other well-established and theoretically similar measures. Using a high school sample, significant correlations ranging from 0.47 to 0.80 were found for parallel scales of CMS 2004 and the Yale School Development Program School Climate Survey (Paul, 2005). With an elementary sample, and as predicted, the Friendship Features Scale correlated significantly with the My Classmates subscale of the CMS 2005 ($r=0.81$) and did not correlate with the Kids in This Class subscale ($r=0.28$). In a middle school sample, all subscales of the CMS 2007 correlated with middle school students' positive ratings of the science instruction that they received in the class (Doll et al., 2008). Its utility as a measure of classroom learning environments was supported in two intervention studies that used the CMS to evaluate interventions to strengthen classroom resilience characteristics (Murphy, 2002; Nickolite & Doll, 2008). A third study used the CMS 2007 to examine differences in English Language learner students' perceptions of their classrooms (LeClair, Doll, Osborn, & Jones, 2009).

Construct Validity of the CMS. Most recently, two studies have examined the factor structure of the CMS 2007. Using a sample of 345 third through fifth grade students, the first study demonstrated that most CMS items (53 of the 55) loaded strongly onto their theoretically predicted subscale, the internal consistency of all subscales was strong (α equal to or greater than 0.75), and the subscale means were consistent across grade and gender (Doll, Spies, LeClair, et al., 2010). The second study, conducted with 1,019 fifth- through eighth-grade science students (Doll, Spies, Champion, et al., 2010), used a confirmatory factor analysis to reaffirm that the survey factored into the predicted subscales and demonstrate that subscales correlated as predicted with four additional scales. In the second study, internal consistency for the CMS subscales was somewhat stronger (α equal to or greater than 0.82).

The CM Survey was developed to provide a practical yet psychometrically sound assessment of the six characteristics of classroom resilience. Because resilience research using sociometrics has demonstrated that the aggregation of student judgments across all students in a class provides an appropriate description of classmates' social behaviors (Barclay, 1992; Gresham, 1986), it was expected that aggregated student judgments could also be useful to describe classroom resilience. The CMS is part of a larger intervention model in schools called ClassMaps Consultation (CMC), which requires quick and efficient administration methods of the surveys such as through simple computer technology, which also prints out data files immediately for data graphs or data reports. In practice, the student survey data had other benefits that were not anticipated. One of the most important benefits was that the surveys added a new tier of influence (peer ecology) to the intervention planning process, which most teachers had not accessed, due to the discussions with classroom students. These new insights into the peer ecology were often important keys to intervention, as students' perceptions of their own classroom were related in important ways to their behaviors in the same classrooms.

The Protective Peer Ecology Scale

Following a similar conceptual rationale for development as the CMS, the PPEcoS (Song, 2004, 2006) was developed more specifically to address school bullying by assessing a key resilience factor within the peer ecology. The original elementary school version of the PPEcoS (Song, 2004, 2006) was developed from a comprehensive review of developmental research, focus group interviews with school personnel and children, and expert review. It demonstrated strong psychometric properties in preliminary studies (Song, 2006; Song & Siegel, 2006a; Song, Siegel, & Doll, 2009; Song & Sogo, 2010). Peer protection measures perceptions of the peer context regarding classmates' protection from bullying. Ratings are obtained through students' responses on a 5-point scale (never to always) to the prompt, "If I'm being bullied, my peers would try to stop the bullying." All items loaded strongly on a single factor accounting for a cumulative total of 50.5% of the variance explained by the factor. Internal consistency using coefficient alpha was 0.86 indicating adequate reliability, and the subscales related both significantly and in the expected directions with known correlates (i.e., positive relations with positive peer relationship variables and negative relations with being bullied variables).

The middle school version of the PPEcoS (Song, 2005) was also developed to measure four critical variables of the protective peer ecology: peer protection, peer encouragement of bullying, peer protector, and peer encourager of bullying. The middle school version was developed through a series of focus group interviews consisting of relevant school personnel, i.e., school administrator, teachers, school counselors, and school psychologists. Peer protection and peer encouragement of bullying subscales measure perceptions of the peer context regarding classmates' protection from bullying and classmates' encouragement of bullying. Ratings are obtained through students' responses on a 5-point scale (never to always) to the prompt, "If I'm being bullied…" Peer protection from bullying is a subscale comprising eight items (e.g., my peers would try to stop the bullying) that measures students' perceptions that peers would intervene if they were bullied. The peer encouragement of bullying subscale is a 5-item subscale that includes items such as "my peers would laugh." The third subscale peer protector includes eight items designed to assess a student's inclination to protect others from bullying (e.g., I would try to make the others stop bullying) that students rate on a 5-point scale (never to always) in response to the prompt, "If I know that someone in my school is being bullied…" Finally, the peer encourager of bullying subscale is five items with the same prompt and format, but the items assess a student's inclination to encourage bullying in the peer context (e.g., I would laugh).

All four subscales of the first draft of the PPEcoS-Middle School Version had adequate dimensionality and reliability (Hamm et al., 2010; Song & Sogo, 2010). Preliminary analyses of the dimensionality of the scale have provided strong support for the four factors based on exploratory factor analysis using principal axis factoring (Hamm et al., 2010; Song & Sogo, 2010). Using a sample of 428 sixth through eighth graders from the Northeastern USA, all items loaded strongly on their respective factors (ranged between 0.50 and 0.90) and independently, explaining a total of 67.4% of the variance, coefficient alphas all strong indicating adequate reliability, and bivariate correlations were significant and in the expected direction with known correlates.

A second study using a rural middle school sample across multiple sites further supported the preliminary findings indicating strong psychometric properties for the PPEcoS (Hamm et al., 2010). Following a randomized control trial design, Native American and White students' ($N=165$) social, behavioral, and academic adjustment was assessed in intervention compared with control schools. More so than White students, Native American students evidenced particular gains in achievement and perceptions of the school social/affective context, which included the PPEcoS. In this study, the PPEcoS demonstrated comparable Cronbach's α across Native American ($\alpha=0.91$) and White ($\alpha=0.89$) participants, as well as by gender ($\alpha=0.87$ for female participants; $\alpha=0.91$ for male participants).

Next Steps

This chapter has provided an illustration of how developmental resilience research can be translated into survey assessments that describe the degree to which essential resilience-promoting characteristics are present within schools and classrooms. It described ClassMaps' resilient classroom framework of ClassMaps and two operationalizations of the framework: the ClassMaps Surveys and the PPEcoS. Results of both surveys can be aggregated across all students in a class or a school, providing a useful index of the degree to which these characteristics are present or absent. The resulting data can be a foundation for subsequent interventions using a simple data-based problem-solving cycle (Doll, Zucker, et al., 2004). Schools might change key routines and practices in response to the data, or they might engage teachers, parents, or students in problem-solving discussions to evaluate the accuracy of the data and suggest modifications that might be responsive to the data. For example, in response to data showing frequent playground fights over playground rules, one school created a common booklet of "school rules" for several popular recess games (e.g., tetherball, four-square, one-goal basketball), carefully explained the rules to all teachers and recess supervisors, and explicitly taught the rules during each class's physical education period. The frequency of playground fights fell as a result. When simple modifications of routines are not sufficient, schools might use data for ambitious data-based problem-solving meetings in the school and community (Osher & Kendziora, 2010). If problem-solving meetings are insufficient, evidence-based curricula might be implemented in response to identified weaknesses captured by data. The ultimate test of the utility of the ClassMaps Framework is its translation into school learning environments that contribute to the resilience of students who learn there.

Even though the ClassMaps Framework is essentially a population-based model that emphasizes interventions that strengthen school environments (Doll & Cummings, 2008), we are not arguing that the framework can be used instead of "within the person" practices. Indeed, even within the strongest classroom environments, there will be students who continue to struggle with autonomy or interpersonal relationships. These struggling students will benefit from individualized assessment and intervention to strengthen their personal coping skills. However, school-based efforts to build more and stronger natural supports for students social, emotional, and academic competence ought to limit the number of struggling students in any one school or classroom. The long-term goal of ClassMaps school resilience research is to identify the most useful blend of "within the person" and contextual strategies to maximize students' success given available community resources.

Translating resilience research to clinical practice is challenging, which is why the foundation laid for this chapter focused on a pioneering model of doing that well (Doll et al., 2009; Doll, Zucker, et al., 2004). Continued efforts in expanding and extending this model as well as adaptations of it are crucial for resilience research to continue to be helpful to all children despite the obstacles that face them daily.

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