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# Resilience Applied in School

## Strengthening Classroom Environments for Learning

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**Abstract:** Despite the widespread acceptance of ecological models of child development, the tools and strategies underlying school psychological practice emphasize individual characteristics of children. This article describes ClassMaps Consultation, a consultation strategy that assesses the availability of protective factors and risk in school classrooms and supports interventions to strengthen these so that more students in the classroom are successful. Three underpinnings of ClassMaps Consultation are described: (a) a conceptual framework, (b) a strategy for describing and measuring the ecological characteristics of classrooms, and (c) intervention strategies that target the classroom in lieu of individual students. Then, a case example is provided to illustrate the use of ClassMaps Consultation in two classrooms. Finally, implications for school psychological practice that promotes children's resilience and psychological wellness are presented.

**Résumé:** Bien que les modèles écologiques de développement de l'enfant soient largement acceptés, les outils et les stratégies sous-jacents aux pratiques en psychologie scolaire mettent toujours l'accent sur les caractéristiques individuelles des enfants. Cet article décrit la *ClassMaps Consultation*, une stratégie de consultation pour évaluer le niveau de risque et la présence de facteurs de protection dans les classes, et pour appuyer les interventions qui renforcent ces facteurs afin qu'un plus grand nombre d'étudiants réussissent. Nous discutons ici trois assises principales de la *ClassMaps Consultation*, soit a) le contexte conceptuel, b) une stratégie pour décrire et mesurer les caractéristiques écologiques des classes, et c) des stratégies d'intervention qui ciblent la classe et non les étudiants en tant qu'individus. Nous y présentons également un exemple pour illustrer l'utilisation de la *ClassMaps Consultation* dans deux classes. Enfin, l'article propose des implications pour une pratique en psychologie scolaire qui favorise la résilience et le bien-être psychologique chez les enfants.

**Keywords:** *consultation; classroom learning environments; resilience; psychological wellness*

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**Authors' Note:** Both authors contributed equally to this article.

Bronfenbrenner's (2005) ecological model of child development is widely endorsed, as is its emphasis on the contributions of families, peers, communities, and schools to children's developmental competence. Almost every child development textbook includes an illustration of Bronfenbrenner's familiar figure: concentric circles with the child in the center, surrounded by circles representing the micro system, other larger circles representing the meso system, and still larger circles representing the macro system. Moreover, the ecological model has been validated by research in developmental resilience (Coie et al., 1993; Doll & Lyon, 1998; Werner, 2005). In particular, independent longitudinal studies of resilience have repeatedly demonstrated that much of the variance in children's socioemotional well-being and school success can be predicted by key characteristics of their social environments such as their family income, the adequacy of the parenting that they receive, their parents' mental and physical health, their access to other adult caretakers, the availability of youth mentoring organizations in the community, and the quality of their schools (Werner, 2005). In other research, interventions that systematically alter and strengthen their social contexts have been shown to shift children's developmental trajectories toward success and away from failure (Doll, LeClair, & Kurien, in press; Kellam, Ling, Merisca, Brown, & Ialongo, 1998).

Despite the widespread acceptance of ecological models of child development, the tools and strategies underlying psychological practice in schools still emphasize individual characteristics of children. For example, most commercially published psychoeducational measures assess individual children, such as measures of intelligence (Kaufman & Kaufman, 2004a; Wechsler, 2003), psychosocial adjustment (Achenbach & Rescorla, 2001; Reynolds & Kamphaus, 2004), and academic achievement (Kaufman & Kaufman, 2004b; Wechsler, 2001). The *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision; *DSM-IV-TR*; American Psychiatric Association, 2000) establishes diagnostic criteria for mental disorders of individual children, and these diagnoses frequently determine whether children have access to mental health services. Similarly, the Individuals with Education Improvement Act, together with state regulations governing its implementation in local educational agencies, requires comprehensive assessment of individual students. Even when provided within groups, the stated purpose of most prominent psychotherapies is to decrease psychopathology or increase psychosocial competence in individuals. It is as if Bronfenbrenner's familiar concentric circles represent a target and attention focuses too quickly and exclusively on the children in its center.

This ongoing targeting of children is particularly harmful to school psychological practice in that it reinforces a one-child-at-a-time framework for thinking about children's mental health needs. Such a framework is impossible to sustain when the typical school psychologist in the United States serves 1,653 children (Charvat, 2005). The mismatch between school mental health resources and needs can be paralyzing when one fifth of those children meet the criteria for one or more *DSM-IV-TR* disorders and only one fourth of the children with mental disorders are receiving

mental health services through community agencies (Doll, 1996; Strein, Hoagwood, & Cohn, 2003; U.S. Department of Health and Human Services, 1999).

Population-based mental health services have been proposed as one alternative framework to address this mismatch by planning and delivering services based on the full enrollment of a school (Doll & Cummings, 2008) and by using models of risk reduction and wellness promotion inherent in the developmental research on resilience. Within a population-based model, patterns that emerge in the incidence of mental health needs are understood to represent systemic phenomenon that can sometimes be addressed with systemic responses. Moreover, and consistent with the developmental resilience research, population-based models recognize that the promotion of psychological wellness in children is an important strategy for reducing the need for child-targeted mental health services. Population-based models are difficult to reconcile with the third-party reimbursement mechanisms that underlie community mental health services in the United States but are eminently suitable for schools because U.S. schools are already responsible for educating all children in a community. In essence, population-based models require that some school mental health work be accomplished at the circles and not the center of Bronfenbrenner's figure.

Transforming the conceptual foundations of school mental health must necessarily occur in many different ways. For example, transformation must occur in educational and mental health policy revisions, refined language that refers to mental health needs and services in ways inclusive of ecological analyses and interventions, and reconfigured funding mechanisms that allow for reimbursements for prevention and early intervention services. This article addresses another small aspect of this transformation: the development of strategies for strengthening schools' ecological support for children's psychological wellness and developmental competence. Ultimately, the purpose of this line of research is to develop ClassMaps Consultation, a strategy that assesses and intervenes at the concentric circle that represents a school classroom. The development of such an intervention requires (a) a conceptual framework, (b) a strategy for describing and measuring the ecological characteristics of classrooms, and (c) intervention strategies that target the classroom in lieu of individual students. In the remainder of this article, we describe these three underpinnings of ClassMaps Consultation, along with an example of its use in one small-*N* case study. Implications are drawn for interventions that reduce psychosocial risk and strengthen the protective factors that classrooms provide for children's resilience and psychological wellness.

### **Conceptual Framework for ClassMaps Consultation**

Adelman and Taylor (2008) argued that when classrooms lack supportive infrastructures, students are more likely to disengage from instruction by not paying

attention, not completing their work, and not participating in the work of the curriculum. They called these “barriers to learning” and pointed out that the national interest in strengthening U.S. schools’ instructional curriculum and teaching staff has not been accompanied by a parallel commitment to overcoming these barriers. Their case is compelling: The quality of a classroom’s instructional practices is irrelevant for students who are mentally or physically absent from the room. ClassMaps Consultation is a strategy for identifying classroom barriers to learning and reducing their impact on student success.

Fortunately, several decades of educational and developmental research provides ample evidence of the classroom characteristics that are essential to students’ academic engagement (Doll, LeClair, et al., in press; Doll, Zucker, & Brehm, 2004). The conceptual framework for ClassMaps Consultation is organized around six of these, including classroom practices that

- Foster students’ academic efficacy, defined as their efficacious self-identities as competent and effective learners (Doll, LeClair, & et al., in press; Pintrich & DeGroot, 1990). Students who expect to be successful in their learning are more likely to attempt difficult work, to persist long enough to prevail, to ask for the help that they need to succeed, and to recognize and take credit for their own success. In classrooms, students’ efficacy can be contagious, such that a preponderance of students with very low efficacy can lower the expectations of their classmates and a preponderance of students with high efficacy can pull up their classmates’ expectations for success. Not surprising, academic efficacy has been repeatedly found to be a powerful predictor of students’ academic competence.
- Foster caring and authentic relationships between teachers and their students (Elias et al., 1997; Pianta, 1999). The warmth of teacher–student relationships strengthens students’ attachment to their school, whereas trust makes it possible for students to take the risks needed to learn and practice new skills and knowledge. Teacher–student relationships are unique in that teachers are simultaneously relating to all students in their classes, and interactions with any one student contribute to the expectations and trust of all other students. A positive moment witnessed by 20 other students can build the collective trust within the classroom, whereas negative interactions can poison teachers’ subsequent interactions with any student in the class. Together with academic efficacy, teacher–student relationships are important predictors of student success in classrooms. Fortunately, our own work has suggested that these relationships are also the strongest protective factor operating in most school classrooms (Doll, Kurien, et al., in press).
- Promote appropriate and self-controlled student behavior (Bear, 2008). Schools have long recognized that the disciplinary environment of a classroom affects students’ abilities to stay actively engaged in learning. Although it is not necessarily important that a classroom be quiet, it is important that the classroom stay calm and that the students stay attentive, stay on task, and listen to each other and the teacher as appropriate. These kinds of environments make it possible for students to move into a cognitive “flow” in which the excitement of learning becomes self-perpetuating and

enjoyable. The discipline and engagement of all students can be particularly challenged when a class includes one or more highly disturbing students whose over-activity or emotional outbursts interrupt the focus of classmates. Still, many of the most common strategies for maintaining classroom discipline are teacher-directed strategies, and these may not build the self-regulatory skills that students will need to acquire as mature learners. Bear (2008) very effectively argued that a combination of student-centered and teacher-directed discipline is necessary to foster ideal climates that promote self-discipline among all students while also making it possible for students with behavioral challenges to contribute to and be successful in the classroom.

- Maximize opportunities for supportive and rewarding friendships with peers (Doll, 1996). The friendships that flourish among classmates support learning in direct and indirect ways. Directly, friends “tutor” each other, explaining concepts and directions in language that is cognitively similar and often easier to understand than the adult-provided instruction of the teacher. Indirectly, it is students’ classmates who emotionally “connect” them to their schools and provide them with a sense of belonging. Friendships also are a source of distress for students when classroom conflicts interrupt peer play or threaten the stability of friendships. Frequent and distressing peer conflicts can interrupt learning if they occur too frequently or if students are unable to repair them. Conflicts with nonfriends are less common but are even more distressing, especially if these occur with students who are older or stronger and cycle into a bullying relationship that leaves students feeling powerless, unprotected, and victimized. Strategies that promote highly effective peer interactions can be instrumental in creating a soothing and supportive social environment that makes it possible for students to stay engaged in academic learning.
- Support students’ self-determination by providing ample opportunities for them to set and work toward learning goals that are important and relevant to them (Masten, 2001). Social conventions operating in the United States frequently presume that important decisions about the daily lives of children and adolescents should be made by adults acting on their behalf. However, emerging research has applied principles of adult goal setting and decision making to children and adolescents, with good effect. In fact, students who own their learning and believe that it is important for personal goals that they want to achieve are more likely to be persistent and motivated learners. In classrooms that incorporate student choices into daily routines and that demonstrate consistent respect for student decisions, students work harder, work longer, become more diligent in overcoming challenges, and feel personally responsible for their achievements.
- Strengthen home–school communication (Christenson, Whitehouse, & VanGetson, 2008; Finn, 1998; Hoover-Dempsey & Sandler, 1995). Students are simultaneously being raised by families and schools, and communication between these caretakers is critically important. Good communication ensures that academic and personal values and expectations are clear to students, and their importance is unquestioned. Although traditional models of parental involvement have emphasized parents’ activities in the schools (volunteering, attending teacher conferences, being present at concerts and curriculum days), newer models give equal weight to parents’ activities in the home (supervising homework, monitoring before- and after-school activities),

and the most current models emphasize parents' values and beliefs that schooling is important and relevant for children's lives. Within the ClassMaps framework, emphasis is given to the students' perceptions of their parents' involvement with their classroom.

For each of these six characteristics, an existing empirical knowledge base has identified plausible interventions that lower student drop-out rates, enhance their engagement in scholastic and nonacademic activities of schools and communities, enhance their vocational and prevocational success, improve their academic performance, or enhance their inclusion in regular education programs of schools (Doll, Kurien, et al., in press; Doll, LeClair, et al., in press).

### **A Strategy for Measuring the Characteristics**

The relevance of the six classroom characteristics to everyday events in schools is easy to describe in anecdotes and incidental observations. However, clearly demonstrating their status in any single classroom is difficult to accomplish with the current psychoeducational assessment tools. How efficacious are a classroom's students? To what degree is conflict marring their peer relationships? Most important, how is it possible to tell when efforts to strengthen these characteristics have been effective in a classroom? Ecological interventions depend on the availability of ecological measures that make the essential classroom characteristics visible so that they become accessible to change. In particular, useful contextual measures should be brief to administer and easy to code and analyze, so that they would be easy to repeatedly administer without serious disruptions of learning and would not require a disproportionate share of the schools' mental health resources. Optimal measures should be easily converted to a graphic display so that it would be simple to visualize and plan from trends in their data. The measures' items should represent commonsense reflections of the characteristics so that teachers and students pay attention to their results.

Originally, we anticipated using mixed measurement methods to evaluate classroom learning environments: direct observation of some characteristics, teacher reports of others, and student reports of still other characteristics. Then, the data from these measures would be fed back to teachers in the form of graphs and figures to guide their planning for classroom improvements. However, direct observations of students' behavioral self-control and peer conflicts proved to be impractical. Not only were these very time-consuming, eating into the time that consultants could better spend on intervention services, but also it was very difficult to attain adequate interobserver agreement, even after long hours of observer training. Teacher reports were also impractical, but for a different reason; teachers derived little benefit from data summarizing impressions that they, themselves, had provided. However, aggregated

peer ratings proved to be highly efficient to collect and analyze and quite valuable for providing teachers with alternative perspectives on classroom environments.

Consequently, we developed the ClassMaps Survey,<sup>1</sup> an anonymous student-completed measure that assesses the six characteristics of effective classrooms by aggregating student responses across an entire class (Doll et al., 2004). Items were developed from basic research on children's resilience and developmental competence, effective instructional practices, and academic engagement (Doll, Kurien, et al., in press). Item content and wording were repeatedly piloted and refined from teacher and student recommendations. In some cases, these comments were actively solicited. For example, middle school students were invited to join a "pizza advisory group" that met monthly with the researchers over the lunch hour and commented on the survey and the ways that data were used in classrooms. During one of these meetings, a seventh grade student explained, "I get it now! This is all about trying to fix our school. I think if you told us that before we answered the questions, I think we'd tell the truth!" Subsequently, we strengthened the instructions to students and provided an example of a graph that teachers would see, so that they better understood how their answers would be used. In other cases, teachers or students spontaneously offered their suggestions. For example, teachers in one school immediately took the data that we provided and showed them to their students the next morning. This practice proved to be so valuable that the classroom meeting became part of the recommended ClassMaps Consultation routine.

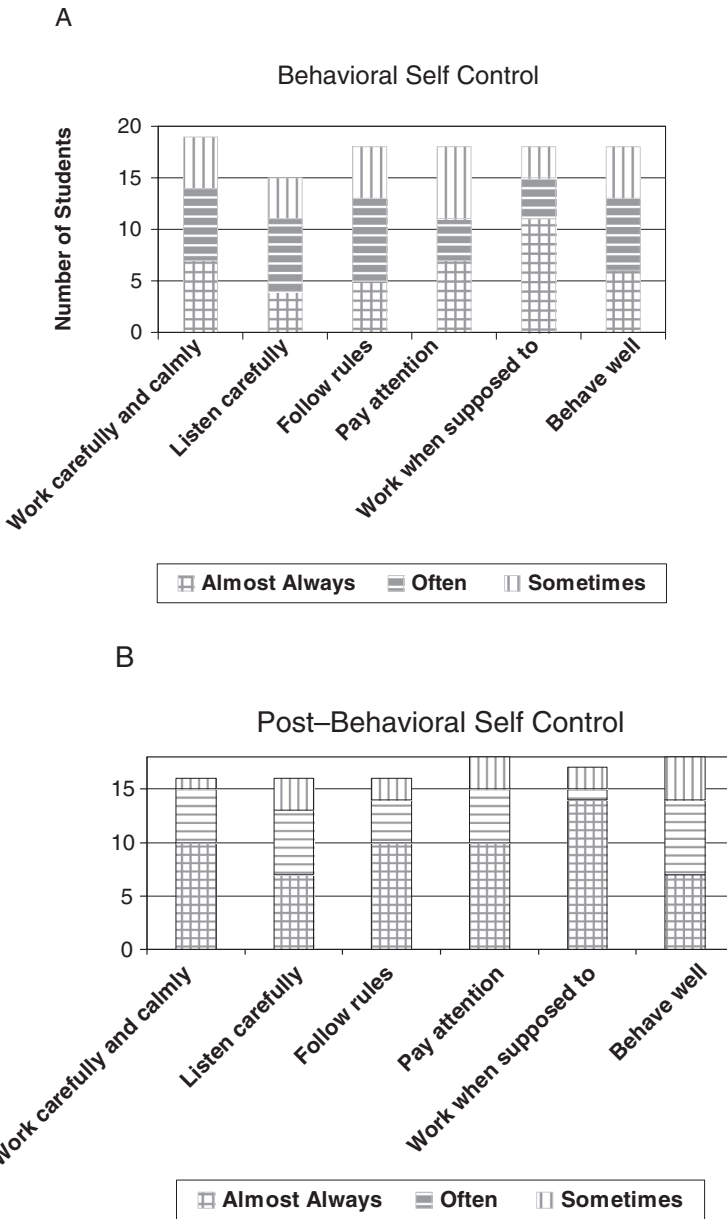
Teacher and student refinements, and those of the research team, were empirically tested through repeated administrations in school classrooms, followed by classroom meetings to talk with students about the results. Data from these pilot studies confirmed that the ClassMaps Survey was internally consistent and demonstrated the predicted factor structure and provided preliminary evidence of concurrent validity for several of the subscales (Doll, Kurien, et al., in press). Internal consistency for each subscale is sufficient for the subscales to be used as stand-alone measures.

The 2007 version of the ClassMaps Survey includes 55 items organized into eight subscales:<sup>2</sup> three peer-relationship subscales (Friendship, Conflict, and Worry About Bullying) and one subscale for each of the remaining five classroom characteristics (Academic Efficacy, Academic Self-Determination, Behavioral Self-Control, Teacher-Student Relationships, and Home-School Relationships). Items use a 4-point Likert-type format, and students complete them by circling *never*, *sometimes*, *often*, or *almost always*. Six of the eight subscales are worded in the positive such that *almost always* represents the optimal response, whereas two subscales describing inappropriate behavior are worded in the negative (Peer Conflict and Bully Worry) and *never* represents the optimal response for these subscales. To collect the survey, items are typically read aloud to students by someone who is not their teacher.

Results of the survey are represented by eight bar graphs (one for each subscale), and the graphs are then returned to the classroom teacher for review. Repeated trials with students and teachers have taught us how to construct easy-to-understand



**Figure 1**  
**Example of a ClassMaps Graph for the Academic Efficacy Subscale**



graphs that do not require substantial explanation to interpret. Graphs are constructed from stacked bars, with the lowest section of the stack representing the most positive rating, the middle section representing the second most positive rating, and the top section of the stack representing the second most negative rating. The most negative ratings are represented by the space between the top of the bar and the top of the graph. To enhance the readability of the graph, bars are labeled with a brief phrase descriptive of the item. Because the graphs are frequently shown to students, the bars represent graphed frequency data and not percentage data. (Even in middle school classrooms, students are not uniformly conversant in percentages.) Figure 1 provides an example of two typical graphs, one representing a ClassMaps Behavioral Self-Control subscale before a teacher implemented an intervention plan and the second representing the same subscale after the intervention was in place.

Decisions about the classroom's strengths and weaknesses are criterion based: Weaknesses are identified when at least one fourth of the students give the most negative ratings to an item or when fewer than half of the students give the top two ratings to an item (i.e., *often* and *almost always* for most items). Strengths are identified when at least half of the students give the highest rating to an item (i.e., *almost always* for most items) or when three fourths of the students give the highest two ratings to an item (i.e., *often* and *almost always* for most items).

### **An Intervention: ClassMaps Consultation**

ClassMaps Consultation is a classwide consultation strategy that makes the social and emotional elements of classrooms "visible" so that educators can assess the impact of affective supports they provide and demonstrate the relationships between these and core academic tasks of schooling. The model is built on six time-tested problem-solving steps: (a) collect and analyze student survey data describing elements of effective classrooms; (b) assemble this information into a graphic description of the classroom, a "ClassMap"; (c) examine the significance of the ClassMaps Survey results with the classroom teacher and identify a goal for change; (d) share selected ClassMaps Survey data with students in a classroom meeting and solicit their perspectives on the causes and remedies for the classroom weaknesses; (e) with the classroom teacher, collaboratively plan strategies to strengthen the classroom learning environment; (f) implement the strategies; and (g) re-collect the ClassMaps Survey to assess consequent changes classroom learning environment.

The consultative procedures that underlie ClassMaps Consultation are derived from the extensive research on team consultation. Team consultation uses a data-based problem-solving procedure in which problems are identified, analyzed through systematic data collection, and addressed with systematic behavioral interventions and the intervention is evaluated and modified as needed based on the intervention data (Bahr, Whitten, Dieker, Kocarek, & Manson, 1999; Flugum & Reschly,

1994; Telzrow, McNamara, & Hollinger, 2000). The success of systematic team consultation has been directly related to the presence of eight quality indicators: precise definition of the problem, baseline data, clearly identified goal, hypothesized reason for the problem, systematic intervention plan, evidence of treatment integrity, data describing the student response to treatment, and comparison of student performance with baseline. Teams whose practices satisfy more of these quality indicators have greater impact on students' academic and behavioral success. ClassMaps Consultation differs from team consultation principally in that its target is general classroom learning supports rather than individual student behavior and that needs assessment data are used to define the goal for consultation.

Frequently, students recognize aspects of the classroom routines that adults do not. Consequently, the classroom meeting provides an invaluable opportunity to collect student interpretation of the ClassMaps Survey data. Our work has provided us with several examples of student interpretations that were not anticipated by classroom teachers. For example, several classes explained that their conflict was frequently high because they were bored and did not have enough playground games to keep them occupied. One class explained that bullying was occurring because they had not been very accepting of new students that joined the class midyear, and those students bullied and irritated their classmates when they were left out. Other students explained that they lacked confidence in their class work because it was difficult to tell whether their answers had been correct or incorrect. Explanations such as these easily led to minor modifications that made large differences in one or more of the six classroom characteristics.

We begin classroom meetings by showing students two of the eight classroom graphs: one showing one strength of the classroom and a second showing the weakness that the teacher has decided to target for change. Then, four questions to structure the classroom meetings are presented: Are these data true? What do you think caused the problem? What could the teacher do to fix the problem? And what could students in this class do to fix the problem? Particular attention is paid to the final question because, collectively, students have more time that could be spent on classroom changes than the teacher might.

The national press for empirically supported treatments suggests that classroom teachers ought to be prompted to select from an array of evidence-based treatments when deciding how to strengthen the classroom environment for learning. However, experience has taught us that very simple changes in routine might be all that is needed to address some classroom weaknesses. For example, simple "fixes" have included adding more games to the playground, providing scripts for students to follow when resolving conflicts with classmates, changing grading routines that provide students prompt and immediate feedback about their work, and giving warnings or signals to students that classroom behavior needs to change. In some cases, however, more substantial interventions are required. Several resources are available for identifying evidence-based interventions that might promote psychological wellness in a

classroom, including interventions listed on the Web sites of the Collaborative for Academic, Social and Emotional Learning (<http://www.casel.org>) and the University of California, Los Angeles Center for Mental Health in the Schools (<Http://smhp.psych.ucla.edu>). In addition, references describing evidence-based interventions for children can be found in Christophersen and Mortweet (2001) and Kazdin and Weisz (2003).

An essential final step is recollecting the ClassMap Survey to verify that positive changes in the classroom learning environment have occurred. A visual inspection of the before and after graphs in Figure 1 provided the teacher with the information that students believed they were listening more carefully, paying better attention, and behaving better. When survey results and other classroom data demonstrate that the interventions have been effective, then the changes in classroom practices are generally “routinized,” or incorporated into the daily procedures used in the classroom. In some cases, teachers will then select a new goal for improvement from the ClassMaps Survey data and repeat the consultation process. When interventions are not successful, the dosage (length of time, intensity) may need to be increased, or a different intervention might be required. In some cases, a more comprehensive evidence-based intervention is necessary.

## One Example of ClassMaps Consultation

The following case describes an example of ClassMaps Consultation conducted in one rural elementary school. It illustrates the strategies that might be implemented to promote the resilience of the classroom and the evidence that teachers and consultants might have to support their decision making.

### Participants

Participants were 4 third-grade teachers from a rural elementary school. All teachers were female and Caucasian, and 3 of the 4 had a master’s degree in education. They had an average of 15 years of experience in teaching, with a range from 8 to 22 years of experience. Once the teachers agreed to participate in the study and signed an informed consent form, notices were sent to parents of all students enrolled in their classes informing them of the teacher’s plan to use ClassMaps Consultation and giving them the option of asking that their child not participate. All students were allowed to participate.

Between 19 and 21 students participated from each classroom, representing a total of 80 third grade students. This rural community had experienced a rapid influx of immigrant and refugee families subsequent to the construction of a large meat-packing plant; consequently, participating students were predominantly Hispanic (72%) in ethnic origin, with 25% Caucasian students. Of the students, 53% qualified

for free or reduced-price lunch based on family income, 10% were receiving services as English language learners, and 6% had been identified as students with disabilities.

## Measures

*ClassMaps Survey.* The 2004 edition of the ClassMaps Survey (Doll et al., 2004), used in this case study, was a 40-item, anonymous student survey that asked students about six characteristics of effective classrooms: peer relationships, home–school relationships, student–teacher relationships, academic efficacy, self-determination, and self-control. Students respond to each item by circling *yes*, *sometimes*, or *no*. Responses were coded with 2 for *yes*, 1 for *sometimes*, and 0 for *no*, and means were aggregated across all students in a class to yield an average score for each subscale. Evidence that the 2004 ClassMaps Survey items factored cleanly into the six subscales and had strong internal consistency reliabilities (.71 to .93) was available from a middle school study with 466 students (Doll et al., 2004; Doll, Zucker, & Brehm, 1999; Zucker, Brehm, & Doll, 2000) and an elementary school study with 1,615 students (Doll, Siemers, & Love, 2003).

*Problem-solving worksheets.* The elementary school used a schoolwide monitoring system to promote five schoolwide behavioral goals: arriving to class prepared, using work time appropriately, completing assigned tasks on time, demonstrating respect for people and property, and responding appropriately to teacher directives. Students who violated a schoolwide goal were required to complete a problem-solving worksheet with their teacher. A record of the number of goal violations was used as additional data to describe the classroom learning environment.

## Procedures

Once consent forms were signed by teachers and consent notices were sent to parents, two classroom teachers were selected to participate in the ClassMaps Consultation intervention. The remaining two classrooms served as nonintervention control participants. The intervention teachers decided to meet jointly for all ClassMaps meetings, so that they could act as each other's peer coaches and share their ideas and insights.

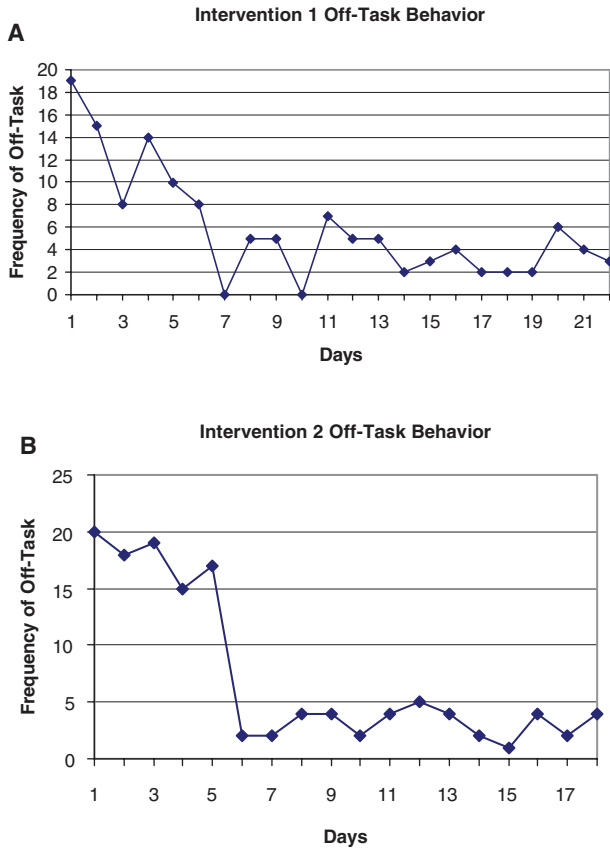
The ClassMaps Survey was then completed by students in all classrooms. The survey was read aloud to each class by the first author while the classroom teacher worked quietly at her desk. To reinforce students' anonymity, the surveys were collected by having students insert them into the slot of a sealed ballot box. Next, data from the surveys were collated, analyzed, and assembled into simple graphs. Simultaneously, problem-solving worksheets from the schoolwide monitoring system were counted for each of the classrooms.

In the intervention classrooms, the graphed ClassMaps Survey data were immediately shared with the two classroom teachers (who acted as each other's peer consultants), and they reflected on the survey information. In both classes, their students' lowest subscale ratings were given for the classrooms' behavioral self-control and peer relationships (and particularly for peer conflict). In addition, in the first intervention classroom, students reported relatively low levels of academic self-efficacy. After reflecting on these ratings and comparing the data with their own perceptions of the class, both teachers set the goal of improving their students' behavioral self-control. In particular, they decided to target students' listening and on-task behaviors during their social studies class period, when their students' rule-following behaviors were most difficult. They immediately began collecting additional baseline information about their students' rule-following behaviors during social studies, keeping count of the number of times students needed to be prompted to pay attention.

Next, in each intervention classroom, the first author and each teacher convened a classroom meeting in which they presented some of the data from the classroom's ClassMaps Behavioral Self-Control subscale and asked the students if the data were accurate, what was causing the problem, and what might be done to improve the classroom. Notes from the classroom meetings showed that students agreed that the classrooms were too noisy and disruptive, and they suggested a variety of harsh sanctions to discourage talking out. However, as the discussion progressed, a few students pointed out that they wanted to follow the class rules but did not always notice when the room was becoming too noisy. Perhaps, they suggested, it would help if they had some sort of warning when the classroom had become disruptive. The teachers paid special attention to this suggestion because it suggested strategies for strengthening students' capacities for self-control by prompting rule-following behaviors.

Following the class meetings, the teachers and first author met a second time and developed a plan to enhance the listening and attention in the social studies period, based on the suggestions of the students and the team. The team teachers decided that the plan should build on their current classroom reward systems: They were giving students tickets for good behavior that could be turned in for rewards at the end of the week. To strengthen this reward system, they decided that they would first review the steps of good listening with the students each day before social studies class. Then, a laminated card with a green, yellow, and red circle was placed on the corner of each student's desk. These were used to cue students when they were off task. The first time a student was off task, the teacher would cross off the green circle on the card. This would be a friendly reminder that the student should get back on task. Although it held no immediate consequences for the student, the crossing off was a prompt for students to use their self-control strategies. If the student was off task a second time, the yellow circle was crossed off and two tickets were taken away. If a student received a third reminder for being off task, the red circle was crossed off and four tickets were taken away. With four or more reminders, students were removed from the classroom and placed in a 10-minute time out in a neighboring classroom.

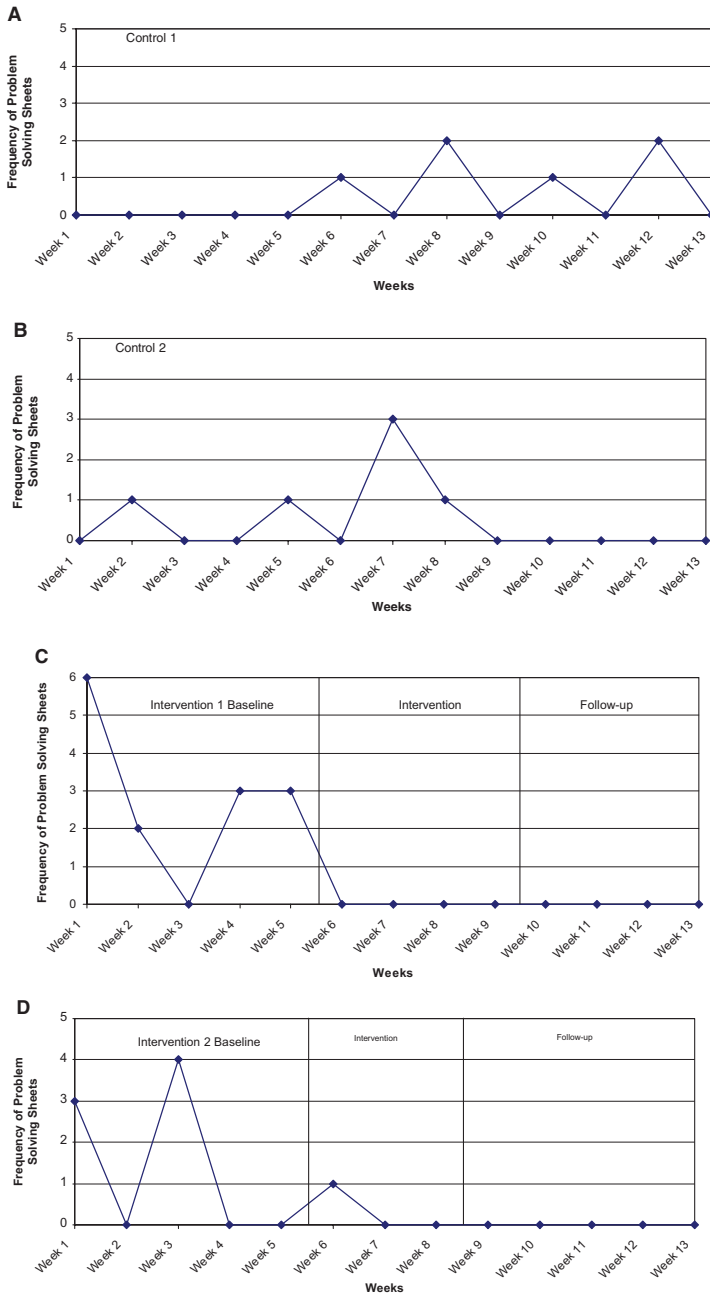
**Figure 2**  
Reminders to Pay Attention



Students who remained on task during the class period and did not receive any marks on their card earned two tickets. By counting the crossed-off circles at the end of the period, teachers could keep a record of the total number of off-task reminders that they delivered during the week.

Four weeks later, both the count of prompts for attention and the teachers' judgment suggested that the classrooms had met their intervention goals. As shown in Figure 2, the teachers' off-task reminders had dropped to approximately 10 per week from an average of 55 per week in one intervention classroom and 75 per week in the other. This suggested that in many cases students were maintaining their attention to task without any reminders, whereas in other cases a single friendly reminder

**Figure 3**  
**Number of Problem-Solving Sheets Completed**





was sufficient to prompt students to exert more self-control. As further evidence that the plan was working, Figure 3 shows that in the intervention classrooms there was also a decline in the number of problem solving sheets students completed each week for the schoolwide monitoring system. Results show that the completed problem-solving sheets dropped to near zero once the interventions were begun, whereas there was no similar drop in the control classrooms. Changes were also reflected in the ClassMaps Survey results. As shown in Table 1, simple *t* tests showed that average ClassMaps Survey ratings increased in the two intervention classrooms. In the second intervention classroom, changes occurred in the Behavioral Self-Control subscale, corresponding to the intervention goal targeted by the teachers. In the first intervention classroom, the changes in student ratings of Behavioral Self-Control were not significant, although significant improvements were noted in students' ratings of the classrooms' Academic Efficacy (which is related to teachers' goals for improved attention to task but less so than the Behavioral Self-Control subscale). In both intervention classrooms, changes were observed in Peer Relationships, although this domain had not been directly targeted by the teachers' intervention.

In the two control classrooms, students also completed the anonymous ClassMaps surveys at the beginning and ending of the study. Like the intervention classrooms, data from the surveys were also collated, analyzed, and assembled into simple graphs, as were data describing problem-solving worksheets. However, the control classrooms graphs were not shown to the classroom teacher or shared with the classroom's students until the end of the study, and no intervention plans were implemented in control classrooms in response to the ClassMaps Survey data. Unlike the intervention classrooms, ClassMaps Survey results for the control classrooms showed no changes.

## Summary

The case example shows the utility of the ClassMaps Survey in prioritizing goals for improving classrooms' environmental supports for learning. In this case, the data helped teachers recognize that their existing classroom reward system was not sufficient to create the calm learning environment that they needed during their social studies period. ClassMaps Survey data also suggested an alternative goal that could have been targeted by the teachers but was not—that of improving the students' peer relationships. Perhaps just as important, data identified the classroom strengths: the very strong teacher–student relationships and good communications with families. When readministered the second time, data from the ClassMaps Survey captured some changes that had occurred in the classrooms. If their plan for intervention had not worked, the teachers could have supplemented or replaced their plan with other procedures: providing direct instruction in “paying attention behavior,” altering the length of the instructional period, or displaying immediate and ongoing feedback to the students about their attention behaviors. Alternatively, the teachers could have implemented an evidence-based intervention to improve attention.

**Table 1**  
**ClassMaps Survey Means and Standard Deviations,**  
**Before and After Consultation**

ClassMaps Subscale and Title	Intervention 1		Intervention 2		Control 1		Control 2	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Academic Efficacy (Believing in Me)	1.32	1.61**	1.51	1.50	1.31	1.44	1.56	1.56
Academic Self-Determination (Taking Charge)	1.51	1.61	1.52	1.52	1.57	1.66	1.64	1.66
Behavioral Self-Control (Following Class Rules)	1.48	1.65	1.41	1.61*	1.53	1.6	1.58	1.61
Teacher-Student Relationships (My Teacher)	1.93	1.94	1.79	1.78	1.81	1.9	1.92	1.9
Home-School Relationships (Talking With Parents)	1.58	1.69	1.48	1.53	1.6	1.65	1.7	1.68
Peer Relationships (My Classmates)	1.46	1.7*	1.25	1.5*	1.46	1.37	1.56	1.66

\**t* tests showed that improvements post-ClassMaps were significant at  $p \leq .05$ . \*\**t* tests showed that improvements post-ClassMaps were significant at  $p \leq .01$ .

To further minimize the time required for effective classroom assessments, we are now developing a computerized administration of the ClassMaps Survey that reads items to students over headphones and immediately prints out graphed results for the classroom teacher. Alternatively, teachers and consultants can save time by readministering only the subscale that was targeted in the classroom intervention. (Because the subscale reliabilities are sufficient for use as stand-alone scales, the computer program allows for the selective administration of any combination or all of the ClassMaps subscales.)

It is important that the ClassMaps Survey provides a systematic assessment of those classroom characteristics that have been identified as most critical to support students' psychological wellness and healthy development. In this way, the survey makes it easier to link classroom assessments and interventions to basic research on developmental resilience and effective instruction. Similarly, it is important that the subscales represent both strengths and weaknesses in the classroom, corresponding roughly to protective and risk factors that operate within development. Thus, embedded within the assessment system are reminders for teachers and consultants to attend to effective characteristics of the classroom.

Clearly, classroom-level interventions, by themselves, will not be effective in addressing all of the socioemotional and behavioral needs in a classroom, but they represent an important first step. When the classroom supports for learning are ample, the additional difficulties that students are experiencing might be attributable to elements outside of classroom control, and individualized accommodations might be necessary to ensure those students' success. However, when classroom supports

for learning are lacking, the number and severity of difficulties that students are experiencing could easily outweigh the mental health resources of the school, and it might be highly inefficient to address these needs one student at a time.

## Notes

1. The ClassMaps Survey is available from the second author.
2. The consultation example included later in this article used the 2004 version of the ClassMaps survey. Items on this version overlap 73% with the 2007 version with minor rewording but used a 3-point Likert-type response scale and had slightly lower internal consistency reliabilities.

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