JOURNAL OF EDUCATION FOR STUDENTS PLACED AT RISK, *5*(1&2), 47–60

Understanding Resilience: The Role of Social Resources

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Using the resilience literature as a theoretical framework, this article discusses research on the influence of social resources such as parent, teacher, and school support on the resilient outcomes of children and adolescents. Findings from several projects conducted at the Center for Research on the Education of Students Placed At Risk indicate that access to social resources such as caring parents who have high expectations for their children and are involved in their children's schooling, participation in extracurricular activities (e.g., after-school sports), and supportive relationships with teachers have positive benefits for students' academic performance. This article also reports results that show children's perceived exposure to violence has significant negative effects on their mathematics and reading performance on a standardized exam. The findings demonstrate the importance of social resources and highlight the need for effective programs of intervention.

Research on resilience in students placed at risk focuses on children and youth who show academic, emotional, and social competence despite adversity and stress. Much research has been devoted to identifying factors that protect students against risk (Connell, Spencer, & Aber, 1994; Nettles & Pleck, 1994; Spencer, Dupree, Swanson, & Cunningham, 1996; Wang & Gordon, 1994; Winfield, 1991; Zimmerman & Arunkumar, 1994). These studies suggest several intervention and prevention approaches to fostering beneficial outcomes (Haggerty, Sherrod, Garmezy, & Rutter, 1994; Padrón, Waxman, & Huang, 1999). For example, Masten and Coatsworth (1998) suggested three strategies. First, program designs can focus on preventing or eliminating risk factors. Second, interventions can in-

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crease resources once the risk has occurred. Third, prevention and intervention can build on processes, such as self-efficacy, attachment, and social support, which promote school adjustment and other forms of competence.

The Center for Research on the Education of Students Placed At Risk's (CRESPAR) research on resilience was designed to increase our understanding of the factors and mechanisms associated with these strategies and to assess the effectiveness of applications based on resilience research. This article presents an overview of the contributions of CRESPAR research and presents findings from one of the projects that explores processes of resilience associated with academic competence. Specifically, we examined the impact on reading and mathematics achievement of elementary-age students' perceptions of violence, stressful life events, and social support. We conclude with implications of the findings from that study and the larger body of CRESPAR resilience research.

CONTRIBUTIONS FROM CRESPAR PROJECTS

CRESPAR resilience activities address varied themes and use different methodologies. For example, the Student Life In High Schools project (SLP)[1] was designed as an intensive examination of the transition of students in Chicago Public Schools (CPS) from eighth grade, the last grade in CPS elementary schools, to high school. This change is particularly risky as students go from the relatively small, protected environment of elementary schools to a high school context that is larger, less personal, and offers more opportunities for student autonomy. The study design had two major components: (a) quantitative, multiple-cohort analyses of school records of ninth graders entering high school in 1995–1996, 1996–1997, and 1997–1998 and (b) a 3-year, qualitative longitudinal study of 98 students who were eighth graders during the 1994–1995 school year. The eighth graders, selected from three elementary schools, had chosen to attend one of three high schools in the SLP. The project chose these schools to represent different geographic locales and demographic characteristics. The eighth graders were selected to be representative of the students from each feeder elementary school (Roderick et al., 1997).

By contrast, the Fostering Student Investments project used the National Educational Longitudinal Study (NELS:88) to examine students' out-of-school activities and their relation to resilience factors. Another secondary-school activity examined the classroom processes and impact of Promoting Achievement in School Through Sport (PASS), an elective, year-long program created by the American Sports Institute to facilitate student attainment of valued academic and

[1]In addition to support from CRESPAR, this project received funding from the Annie E. Casey Foundation, Spencer Foundation, McDougal Family Foundation, Steans Family Foundation, and Chicago Public Schools.

social competencies through the application of principles learned in sports. Finally, Exposure to Violence and School Functioning considered the impact of perceptions of violence and other stressors on school adjustment in elementary-age children.

One of the themes that unify these programs of research is the importance of supportive relationships and contexts in the academic experiences of students placed at risk. As reviewed by Sandler, Wolchik, MacKinnon, Ayers, and Roosa (1997), there are many social resources that are beneficial to students regardless of current risk and levels of stress. For example, family and parental support is associated with good academic performance and other positive social and emotional outcomes. Family and parental support also protects students at risk from the effects of stressful events and circumstances. Other beneficial social resources include school and community contexts and support from significant nonparental adults, such as teachers (Skinner & Belmont, 1993) and mentors (Nettles, 1991). The remainder of this section discusses how CRESPAR projects in the resilience cluster address these resources.

Parental Support of Adolescents

Among the characteristics of resilient children and adolescents are close relationships with caring parental figures who have high expectations (Garmezy, 1985; Masten, Best, & Garmezy, 1990; Masten & Coatsworth, 1998). How do parents express their expectations through supportive actions amid ever-increasing pressures on students to achieve? Discovering what parents needed to better support their children was one aspect of the multifaceted Chicago SLP. Parents of students in the longitudinal sample were interviewed about their children's experience of the transition from elementary to high school, perceptions of the parent's role during adolescence, parental knowledge of the student's progress, and parent–school relations. Students in the sample came from three elementary schools whose populations were characterized by risk factors including low income, limited English proficiency, and poor reading and math performance. Principal Investigator Roderick and colleagues (1998) found that the majority of the parents of these students received information from the schools on rules and regulations, their children's schedules, when their children are doing poorly in class, and whom to contact about problems. A minority of parents reported that they were informed about what their children were doing in class and when their child had homework; less than a third reported that they were given information from the school on support, such as tutors, that their child needed. The investigators noted that "parents want more interaction around academic concerns, but high schools focus their communication on rules and problems" (p. 2). By contrast, the investigators' analysis of teachers' surveys in Chicago and nationwide revealed declines between the 8th and

10th grades in the extent to which teachers talk to parents about homework and what goes on in the classroom.

Parents' desire to provide more support for their children's achievement was reflected in the types of programs they most wanted. Virtually all of the African American parents (96%) and a large majority (78%) of Hispanic families wanted programs to help them plan how to pay for college; 89% of African American and 86% of Hispanic families wanted programs to help them get their child ready for college. Less than half (46%) of African American parents wanted programs about how to rear their children, but 67% of Hispanic parents were very interested in such programs. Larger percentages of Hispanic parents than African American parents expressed an interest in programs that helped them to understand their child's work and programs that introduce parents to the educational system. The investigators concluded that "parents appreciate concrete programs that address problems they struggle with: how to help their child with homework, how to get help when their child needs it. And where to get help to understand the work their child is doing" (p. 29).

Opportunities for Support From Parents and Other Adults

A neglected area of resilience research is the influence of extracurricular activities and participation of activities outside of school on the development of competence and other correlates of resilience such as optimism and school engagement (Masten & Coatsworth, 1998). The Fostering Student Investments project was designed to explore causal linkages between time spent in activities outside of school, involvement and achievement in school, and optimism about the future. The database was the NELS:88, sponsored by the U.S. Department of Education. NELS:88 is a longitudinal survey of 25,000 students in 1,000 schools; student data are currently available for Grades 8, 10, 12, and 2 years after high school.

Using Nettles' (1991) conceptualization of community involvement, co-investigators Jordan and Nettles (1999) examined the effects on Grade 12 outcomes (e.g., engagement, perception of life chances, and math and science achievement) of participation in six general categories of after-school activities in Grade 10: structured activities (such as community service learning projects), "hanging out" with peers, individual activities in time spent alone, activities with adults, religious activities, and employment. Controls were introduced for school context variables, such as locale and poverty, and for student background characteristics, such as race, prior achievement, and self-concept.

The analysis showed that students who spent time during Grade 10 in structured activities and in religious activities were, at Grade 12, most optimistic about their life chances, participated most often in extracurricular activities, and were most prepared for class. Time spent alone, time spent interacting with adults, and partic-

ipation in structured activities in Grade 10 predicted math and science achievement in Grade 12. "Hanging out" with peers had consistently negative effects, and working for pay and time spent alone had inconsistent effects throughout the analysis. Overall, these findings suggest that participation in activities that offer the most frequent opportunities for developing supportive ties with parents and other adults are beneficial.

Supportive Classroom Environments

Research has shown that school environments can protect or buffer the effects of adverse conditions and thereby contribute to competence in students placed at risk. Schools that protect against adverse conditions establish high expectations for student achievement, provide opportunities for participation in the classroom and the school, and provide caring and support for the students (Comer, 1985; Edmonds, 1979; Perry & College, 1993; Rutter, Maughan, Mortimore, & Ouston, 1979). In the study of PASS, McClendon, Nettles, and Wigfield (in press)[2] presented qualitative findings that extend this characterization of the school's role to the classroom as an environment where "protection" can be manifest. The study examined classrooms structured according to the guidelines of the program. The curriculum integrates sport with social studies, language arts, and philosophy, and is designed to assist learners in transferring to the academic arena skills learned through playing sports. Although the program's target population is that of athletes who have failed to meet academic eligibility requirements for participation in sports, other students who want to meet academic or physical goals can enroll in PASS classes. Analyses of grades for PASS and non-PASS students revealed that PASS students had significantly higher grades at the end of the year than comparison students; the grades for both groups were equivalent at the start of the school year.

To illuminate the processes underlying the effects of the PASS program, detailed field notes were made on the main classroom activities, student interactions, and classroom atmosphere in eight PASS and three non-PASS classrooms in the San Francisco Bay Area and in Chicago. Classrooms were selected to represent geographic differences, demographic diversity, and similarities in types of instructional practices among program and regular classes. Non-PASS classes were in the same schools as PASS classes. The observations were scored according to six dimensions specified in the Madison framework for authentic instruction (Newmann, Secada, & Wehlage, 1995): (a) higher order thinking, (b) depth of knowledge and student understanding, (c) connectedness to the world beyond the classroom, (d) substantive conversation, (e) social support for student achieve-

[2]This article is based on a thesis by Crystal McClendon under the direction of Allan Wigfield and Saundra Murray Nettles.

ment, and (f) academic engagement. Results indicated that PASS classrooms scored an average of 1.3 points higher than non-PASS classrooms for the six dimensions combined. PASS classrooms received the highest score on the social support dimension, which was significantly higher than the social support score for the non-PASS classrooms. The investigators suggested that PASS classrooms incorporate features that other studies associate with beneficial academic outcomes. Among these features, social support is critical.

Teacher Support and Academic Achievement in Children Exposed to Violence

Chronic community violence has serious, negative consequences to children and adolescents, whether they are victims or witnesses of violent acts (Osofsky, 1995). Studies by CRESPAR co-investigator Hope Hill, for example, showed that witnessing violence was associated with children's willingness to retaliate (Hill & Madhere, 1996) and anxiety (Hill, Levermore, Twaite, & Jones, 1996). Other researchers report sleep disorders, low motivation, and lack of concentration among school-age children exposed to violence (Pynoos, 1993). Richters and Martinez (1993) found that exposure to violence was significantly related to intrafamily conflict. In a longitudinal study of sixth grade urban students, higher levels of exposure to violence were related to greater increases in violent behavior among girls, but not boys; but exposure to violence was not related to changes in emotional distress for either boys or girls (Farrell & Bruce, 1997).

Few studies have examined the impact of exposure to violence on school achievement. The purpose of the Exposure to Violence project was to extend findings on the deleterious effects of community violence to school-related adjustment in elementary-age children in three Washington, DC schools. The project includes a study of Stanton Elementary School (Nettles & Robinson, 1998), which has been applying the resilience construct to integrate and extend diverse school improvement approaches, such as the Comer process (Comer, 1985) and the priorities of Title I/Chapter 1.

The following study is based on data analyses from the Stanton sample. The analysis examines the role of social support in protecting, or buffering, students from the negative effects of exposure to violence on their school achievement. Specifically, we expected that student perceptions of environmental violence would have a negative impact on achievement in reading and mathematics, but that students who perceived high levels of environmental violence and high social support would have higher achievement than students who perceived high levels of environmental exposure and low social support.

We also examined the relations between social support, stressful life events (SLE–s), and school achievement. Cross-sectional studies have established that

stressful life events as well as continuing stressful conditions are associated with poor school and social adjustment (Garmezy, Masten, & Tellegen, 1984), but that social support can serve a protective role (Pryor-Brown & Cowen, 1989). However, longitudinal studies have found that SLE–s do not contribute to the prediction of achievement test scores (Dubow, Tisak, Causey, Hryshko, & Reid, 1991), or that significant predictions depend on the model of risk used (Pungello, Kupersmidt, Burchinal, & Patterson, 1996). We therefore made no specific predictions regarding the relation of stressful life events to other variables.

METHOD

School Site and Participants

Stanton Elementary School is located in southeast Washington, DC, in a highly commercialized area bordered by three major thoroughfares. The school is located in the quadrant of the city that consistently has the highest incidence of crime. As of February 1998, there were 620 students enrolled. All of the students were African American, and the median household income for the school catchment area was $12,000. Approximately 98% of the students were in the free or reduced-price lunch program.

Stanton Elementary School has a history of engagement in two concurrent efforts toward creating a caring, supportive environment with high expectations for student success. First, since 1995, the school has undertaken activities that are components in the Comer process (Comer, 1985). The school is still designated a Comer school, and many of the outcomes that the Comer process is intended to achieve overlap with outcomes observed in studies of resilient children. Second, the school has been identified since the 1996–1997 school year as a targeted assistance school (i.e., as one needing program improvement to increase student achievement). Title I funds provide programmatic activities to improve student learning. The District of Columbia Public Schools (SEA, equivalent to the state education agency) requires that the school consult with parents and submit a Title I improvement plan. The plan that was approved for the 1996–1997 school year outlined activities toward goals for increased basic and advanced reading and mathematics competence; improved skills in writing, problem solving, and higher order thinking; heightened parent and community involvement; and enhanced professional staff development to reflect emerging reform issues. With the introduction of district-wide emphasis on improved reading and mathematics performance, Stanton's subsequent plans have identified literacy as the number one priority. The school has a number of school–community partnerships that sponsor a variety of programs to increase the school's resources and to give students opportunities to expand their repertoire of social skills (Nettles & Robinson, 1998).

The participants were 35 students in Grade 4 and 39 students in Grade 5. Parents were notified of the assessment according to guidelines in the December 8, 1995, District of Columbia Public Schools memorandum, "Collaborative Partnership with the Center for Research on the Education of Students Placed At Risk." All students in attendance on the day of the assessment were included.

Procedure

Students completed paper-and-pencil measures that were administered in their classrooms by three female research assistants. One research assistant read each of the measures aloud to minimize any problems related to reading. While one research assistant read to the children, the other assistants walked around the classroom checking to make sure that the students were following directions, not skipping ahead, or checking more than one response. The teachers were asked to leave the classroom during the questionnaire session to protect the students' confidentiality. Data were collected in February of 1998.

Measures

The Social Support Appraisal Scale–Revised (Dubow & Ullman, 1989) is a 41-item, pencil-and-paper instrument that assesses the child's appraisals of peer, family, and teacher support. Items were developed to reflect an individual's conceptualization of social support—information indicating to the individual that he or she is valued and esteemed by others. Sample items illustrating the content of the three major subscales include: peer items (e.g., whether the child feels left out by his or her friends), family items (e.g., whether the child is an important member of his or her family), and teacher items (e.g., whether the child feels his or her teachers are a good source to ask for advice or help with problems). The following sample item illustrates the format of each item: "Some kids feel left out by their friends, but other kids don't. Do you feel left out by your friends?" The child responds to each item on a 5-point continuum ranging from 1 (*always*) to 5 (*never*). Dubow and Ullman (1989) reported an internal consistency reliability (Cronbach's alpha) of .88 and 3- to 4-week test–retest reliability of .75.

The Life Events and Circumstances Scale (Pryor-Brown & Cowen, 1989) is a 22-item instrument that assesses stressful life events that have occurred in the child's life within the past year (e.g., child changed schools, best friend moved out of town, loss of job by parent). The following sample items illustrate the format of each item: "I had to change to a new school," "My best friend moved out of town." The child responds by checking either *yes* or *no*. Nineteen of the items represent events over which the child has very little or no control (e.g., parents separated,

parent lost a job). These items are thus less likely to be confounded with the resiliency outcomes as compared to the three events such as "a bad mark on a test."

Two additional measures were administered. One was the Exposure subscale of the Perceptions of Environmental Violence Scale (Hill, 1991). The full scale is a set of 40 items that measure the child's perception of violence in the home, school, and neighborhood. The exposure subscale, extracted from principal components factor analysis followed by varimax rotation, consists of 15 items that tap the ubiquity of violence in the child's world. The second measure was an achievement measure, the ninth edition of the Stanford Achievement Test Series (Stanford 9). The Stanford 9 is the standardized instrument used in the District of Columbia Public Schools. The source of data for this measure was the school's archival records. Reading and mathematics total scores were used.

RESULTS AND DISCUSSION

Zero-order correlations were computed for all study variables, as shown in Table 1. As expected, perceived exposure to violence is negatively related to reading and math scores.

The table also shows that the correlation between exposure to violence and SLE–s is significant and positive. However, SLE–s are unrelated to the school achievement measures and to social support from family, peers, and teachers. Exposure to violence was unrelated to family and peer support, but the relation between teacher support and scores in math achievement was significant at the trend level. To assess the relative contribution of SLE–s, social support and exposure to violence to performance on the Stanford 9, a regression analysis was conducted on achievement scores. As shown in Table 2, social support from teachers contributed

TABLE 1
Correlations Among Exposure to Violence, Stressful Life Events, Social Support, and Achievement (n = 75)

Variables	*1*	*2*	*3*	*4*	*5*	*6*	*7*
Exposure	—	.29*	.07	.03	.12	–.24*	–.27*
Stressful life events		—	–.04	–.09	–.12	–.10	–.02
Teacher social support			—	.41**	.51**	.14	.19+
Family social support				—	.62**	.12	.09
Peer social support					—	–.05	.11
Total reading score						—	.76**
Total mathematics score							—

+p = .10. *p < .05. **p < .001.

TABLE 2
Standardized Regression Coefficients for Regression Models Predicting Mathematics and Reading Achievement on the Stanford 9 (n = 75)

	Models	
Predictors	*Reading Total*	*Mathematics Total*
Exposure	–.25**	–.31**
Stressful life events	–.02	.07
Teacher social support	.16	.21*
R^2	.08	.12
df	2, 72	2, 72

*p = .06. **p < .05.

to math achievement at the trend level, and exposure to violence had a significant, negative influence on both math and reading achievement.

Adding the interaction term for social support and exposure to violence did not add significant additional variance to the prediction of achievement scores. This finding suggests that teacher support does not serve as a buffer to protect students from the negative effects of high exposure to violence, but that teacher support is beneficial for students regardless of level of exposure to violence. Future studies might consider the type of teacher support, as well as types of support from family and peers, that are most conducive to good academic outcomes in the presence of exposure to violence. Perhaps the actual support resources given to students are more important predictors than their perceived support as measured in this study.

Past research has produced inconsistent findings regarding SLE–s and measures of school adjustment, so the fact that the analyses failed to show that stressful life events were unrelated to either reading or math achievement was not unexpected. Given that both SLE–s and exposure to violence are stress-related constructs, the significant positive correlation between measures of these constructs is not surprising. Despite the small size of the sample, the study does extend the findings of previous research regarding the negative impact perceived exposure to violence has on children whose poverty status already puts them at risk for negative developmental outcomes. The negative effect of exposure to violence remains after other stressful school and family circumstances and social support are controlled statistically.

CONCLUSION

In all, CRESPAR research supports and extends knowledge about approaches to fostering resilience in students placed at risk due to such factors as poverty, ethnicity, or limited English proficiency. Using a variety of measures in diverse

populations, the four projects discussed in this article illuminate in particular the role of social resources in implementing two of the strategies suggested by Masten and Coatsworth (1998): (a) increasing resources and (b) building on adaptive processes.

Resource-focused strategies seek to reduce the negative consequences of exposure to risk by increasing the level of resources or improving access to resources (Masten, 1994). However, an important step in program design is the precise specification of the problem. Comparing data from teacher and school surveys on school–parent relations, the investigators in the SLP discovered a discrepancy in what parents needed most and what the schools offered. By identifying the parents' need for information that would help them support their children's efforts to succeed in high school and attend college, the project provided a more realistic rationale for building family–school relationships for adolescent populations.

Not only is support from parents important in adolescents' lives but, as results from the Fostering Student Investments study show, opportunities for interaction with nonparental significant adults in community settings is related to a sense of optimism, participation in extracurricular activities, and academic performance. Why should investments in structured community programs, religious activities, and simply doing things and talking with parents and other adults have an impact on school involvement? One explanation is that these out-of-school activities provide opportunities to practice social and academic skills learned in school; another is that these activities strengthen students' positive ties to their communities, thereby giving them a personal stake in the community's institutions, including schools. Adolescent students who have little adult guidance for large amounts of their time are at further risk for engaging in activities that weaken their commitment to school and community.

The results from the Stanton project show that children's perceived exposure to violence has a significant negative impact on their mathematics and reading performance. These findings demonstrate the need for interventions that are aimed at reducing the impact of exposure to violence and/or increasing the social support resources available to the children and their families. Additionally, building on the existing strategies that enhance adaptation in such environments is equally important.

These findings and the evidence of authentic instruction in the PASS program highlight process-focused strategies that build on systems associated with adaptation. These studies contribute to our understanding of the role of social support from teachers, but other CRESPAR work is devoted to effective instruction, a focal strategy that is often overlooked in discussions about resilience. Effective instruction can contribute to self-efficacy, another important adaptive system associated with mastery experiences in schools. As resilience investigators point out, these and other processes are crucial for normal intellectual and socioemotional development of all students. For students placed at risk, these systems must function powerfully, reliably, and well.

ACKNOWLEDGMENTS

This research was supported by a grant from the Office of Educational Research and Improvement (OERI), U.S. Department of Education (OERI–R–117–D40005).

The investigators in the Resilience and Cultural Integrity Program gratefully acknowledge the advice and support of Sandra Steed, OERI monitor for the program, and program advisors Margaret Beale Spencer and Edmund W. Gordon.

Any opinions expressed are those of the authors, and do not represent the positions or policies of our funders.

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