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# Resilience profiles of young children in special education and poverty-related programs: The role of protective factors

Evelyn Reed-Victor
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# RESILIENCE PROFILES OF YOUNG CHILDREN

# IN SPECIAL EDUCATION

# AND POVERTY-RELATED PROGRAMS:

# THE ROLE OF PROTECTIVE FACTORS

A Dissertation

Presented to

The Faculty of the School of Education

The College of William and Mary in Virginia

In Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

by

Evelyn Reed-Victor

April, 1998

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# RESILIENCE PROFILES OF YOUNG CHILDREN
# IN SPECIAL EDUCATION AND POVERTY-RELATED PROGRAMS:
# THE ROLE OF PROTECTIVE FACTORS
# ABSTRACT

The major purpose of this study was to investigate child and environmental characteristics that contribute to resilience through teacher assessments of risk and protective factors regarding students eligible for special education, Title I, and/or homeless education. Resilience has been defined as a dynamic process of adaptation, "a function of the individual's unique strengths, capacities, vulnerabilities, and 'goodness of fit' with the demands and opportunities of the environment" (Felsman, 1989, p. 79).) Longitudinal studies of resilience have identified individual, family, school, and community factors that drive protective mechanisms for children and youth at risk for negative life outcomes (Masten, 1994; Zimmerman & Arunkumar, 1994). In the current study, a causal comparative design, using multiple measures of protective and risk factors, was employed with 51 teachers of 176 students, ages three to nine years, in the Hampton Roads Area of Virginia.

In the descriptive phase, teachers rated students' personality and temperament characteristics with Manageability and Openness emerging as the dominant factors. For overall environmental protective factors, teachers rated supports to their students as slightly less than adequate. Teachers also rated most of the environmental factors across home, school and community as "somewhat" to "very important." Overall, teachers assessed their students' total adjustment to school as above average, although the maximum range of ratings were employed by teachers in the study.
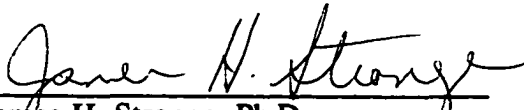
In comparisons of age and risk subgroups, there were no significant differences in student characteristics (Manageability and Openness). Regarding the adequacy and importance of environmental protective factors, ratings for the youngest group were

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by Evelyn Reed-Victor

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Approved April, 1998

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# DEDICATION

This dissertation is dedicated to those who have been my closest supporters, advocates and inspiration - my family. Chief among them has been my husband, Jim, who provided enthusiastic dialogue, insight and encouragement, literally, from dawn to midnight. I deeply appreciate the rare experience of sharing similar research pursuits and perspectives. My parents have provided encouragement throughout my life: my mother, Mary, with her unrelenting optimism and problem solving; my father, Dan, with his daily scientific pursuits of vocation and avocation, and his deep quest for knowledge. My sons, Frank and Dan, and my sisters, Jerri and Beth, have also contributed by showing me, close at hand, the unique paths that resilience may take, given their own talents and interests and willingness to accept challenges. As the family circle has widened - with Lucy and Gregory; Scot, Fran, Tina and Dan; and Carrie, Russell, Zachary and Hannah; as well as Kike, Malla, Alex and Gabi - these pathways and shared pursuits have become ever expanding and fascinating.

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Similar to many challenging and deeply satisfying experiences, this dissertation has been both solitary and shared. The members of my dissertation committee have asked questions, made suggestions, anticipated pitfalls and provided instruction in support of this research project. From her own temperament research, Dr. Lynn Pelco anticipated measurement issues that were important for the project's implementation. With her grant experience, Dr. Chriss Walther-Thomas supported the formative stages of this project and the pursuit of funding that were critical to the scope of the project. Dr. Tom Ward, with numerous demands for his research and statistical analysis expertise, was generous in his feedback, time, knowledge and good humor. Dr. James Stronge, who served as the chair of the committee, has been an ideal mentor: enthusiastic about core ideas as well as providing a working relationship that balanced independent work with well-timed guidance. In addition, his advocacy for expanded professional opportunities has enriched my vision of supporting the professional development of others.

This project has also been enriched by the expertise and collegiality of senior researchers in temperament, personality and social psychology - Dr. Charles Halverson, Dr. Valerie Havill and Dr. Roy Martin of the University of Georgia as well as Dr. William Graziano of Texas A & M University. Their generosity in providing research measures and analyses was very important in operationalizing resilience, specifically regarding child characteristics and teacher measures.

The educational resilience work of Dr. Margaret Wang, Temple University, was significant in shaping the conceptual framework for this study; her encouragement and expertise in identifying expert judges for the *Protective Factor Rating Scale*, was invaluable. The willingness of Dr. Stella Chess (New York University), Dr. Ann Masten

(University of Minnesota) and Dr. Ronald Taylor (Temple University) to serve as expert judges regarding environmental protective factors was another rewarding experience in scholarly community. In addition, the Graduate Research Seminar provided by the University Council for Educational Administration provided a forum for dialogue with long-term researchers and other doctoral students about the establishment of lines of inquiry - an encouragement to view this dissertation as a beginning rather than a culminating experience.

I am also grateful to the Office of Special Education Programs (U.S. Department of Education) for the Student-Initiated Research Grant, which has supported the implementation of this research project as well as the personnel preparation grant, which supported my studies. Both the competition format and the actual funds have contributed to the accomplishment of timelines and research activities. The grant also supported the involvement of Julie Hart as a graduate research assistant. Julie's interest in the conceptual basis for the research as well as her commitment to quality control are deeply appreciated.

Finally, I want to acknowledge two other groups who made substantial contributions. First, public school teachers provided their insights about children and protective factors. Their perspectives have been the core of this study and their daily work is central to fostering the resilience of young children. Second, our doctoral cohort group (Barbara Driver, Phoebe Gillespie, Karen Hudson, Jo Polk Mathews, and Pat Popp) as well as our grant directors (Dr. Brenda Williams and Dean Virginia McLaughlin) created wonderful opportunities for collaborative study and support that balanced and stimulated the more solitary aspects of this pursuit.

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significantly higher. Among risk groups, ratings reflected lower adequacy and greater importance of environmental protective factors for students eligible for homeless education. Teachers' knowledge of home and community factors was significantly greater for students with disabilities.

In predicting students' school adjustment, Manageability (49%) and Openness (21%) accounted for most of the outcome. Risk factors (age, program eligibility, developmental and family variables) explained 3% of School Adjustment, with environmental protective factors contributing another 1% of explained variance.

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PROGRAM IN EDUCATIONAL PLANNING, POLICY AND LEADERSHIP

THE COLLEGE OF WILLIAM AND MARY IN VIRGINIA

# RESILIENCE PROFILES OF YOUNG CHILDREN

# IN SPECIAL EDUCATION

# AND POVERTY-RELATED PROGRAMS:

# THE ROLE OF PROTECTIVE FACTORS

Chapter 1: The Problem

Educational leaders are faced with challenging circumstances as student poverty increases (Children's Defense Fund [CDF], 1995) and approximately 25% of students have needs for specialized services due to disabilities, poverty, and linguistic diversity. Current service delivery models appear inadequate to support student achievement that leads to desirable long-term outcomes, such as school completion and employment (Wang, Reynolds, & Walberg, 1995). This situation is aggravated by regulatory and funding policies that create barriers to more creative use of resources (Skrtic & Sailor, 1996). Current student and program concerns will be reviewed which have precipitated efforts to reform some of the compensatory educational programs.

Student Concerns

Poverty is growing at a rapid rate with far-reaching consequences for American families and their children. In her presidential address to the American Educational Research Association Annual Meeting, Jane Stallings (1995) described the growing challenges to "Ensuring Teaching and Learning in the 21st Century," including the rapid increase in child poverty, abuse, family homelessness, youth homicides, suicides, and drunk driving. In 1993, the U.S. Census Bureau reported that 23.7% of American children, the highest in 30 years, were living in poverty (CDF, 1995). As the high costs of poverty - illiteracy, adolescent pregnancy, juvenile crime, substance abuse, child abuse, family violence, and separation - are challenging growing numbers of families with children, their access to successful educational experiences has diminished concomitantly. "Every year spent in poverty reduces by 2 percentage points a child's chances of finishing school by age 19" (CDF, 1995, p. 92).

Program Concerns

Although many educators are active advocates for specialized services that target poverty, disabilities, limited-English proficiency and talent development, fragmented and inflexible service delivery systems have resulted from separate regulations, funding, and administrative policies. Programs intended to support students' successful participation in school have too frequently produced labeling and tracking practices, which become barriers to full opportunity and long term success (Pugach, 1995; Reschly, 1996; Reynolds, 1994; Wheelock, 1992). In addition to these policy and procedural barriers, many educational programs maintain deficit orientations ranging from identification procedures through instructional models. While specialized supports are critical for student success, limiting educational programs to remediation neglects the importance of building strengths indicative of long-term competence (Wang, Reynolds et al., 1995).

Because level of education achieved is the "single best predictor of later occupational attainment" (Entwisle, 1993, p. 199), improving educational experiences for children and youth is essential for accomplishing long-term independence and desirable outcomes. Nevertheless, effective educational services do not exist in isolation because "teachers cannot teach hungry children or cope with young people who are too distraught to learn" (Dryfoos, 1994, p. xv). Educational leaders are challenged, therefore, to provide appropriate individualized supports in collaboration with other disciplines, agencies, and stakeholders.

Theoretical Rationale

Resilience. In a report of significant behavioral science research contributions and suggestions for future directions, the National Advisory Mental Health Council Institute of Health raised the question that is central to resiliency research, "Why do some people collapse under pressure while others seem unscathed by traumatic circumstances such as severe illness, death of loved ones, and extreme poverty, or even by major catastrophes such as natural disasters and war?" (National Institute of Mental Health [NIMH], 1995,

p. 26). "Resiliency" is here defined as adaptation or the ability to spring back from adversity (Felsman, 1989; Garmezy & Masten, 1991). The resiliency literature is rich with longitudinal data regarding the individual, family, school, and community factors that drive protective mechanisms for children and youth at risk for negative life outcomes. The risks faced by various children in these studies include physiological, familial, external, and/or traumatic stressors (Masten, 1994), which are not necessarily fixed, but are often pervasive and interactive.

Factors have been identified within the developing child and family system as well as significant educational and social agencies that enhance the competence of children and youth challenged by a variety of risk factors. Individual competence is characterized by achievement orientation, school success, sociability, responsible and mature behavior as well as involvement in school and community life (Garmezy & Masten, 1991). Because these studies examine "pathways of success" (Liddle, 1994), they provide the basis for reframing intervention programs from deficit-driven to asset-focused.

Protective factor theory. Numerous authors have recommended that intervention programs use the findings of resiliency studies to enhance or support protective processes and thereby reduce students' exposure to risk (Battistich, Solomon, Kim, Watson, & Schaps, 1995; Hanson & Carta, 1995; Oxley, 1994; Zimmerman & Arunkumar, 1994). These factors are present in the individual, family, school, and community.

*Individual* protective factors include cognitive ability, sociability, autonomy, special interests, positive self-concept, and age-appropriate sensorimotor and perceptual skills (Kimchi & Schaffner, 1990). Supportive *family* factors include adults' roles in modeling behavior, creating access to knowledge, advocating for opportunities, teaching competence, and encouraging growth, as well as providing emotional nurture and support (Masten, 1994; Werner & Smith, 1982). *Schools* also provide support of resilience development through responsive, supportive relationships with adults and peers; teaching problem solving and strategies to access knowledge; and providing links to special services

and extracurricular activities for talent development (Masten, 1994). Finally, *community*

programs constitute another source of protective factors through access to mentors,

constructive peer relationships, positive value orientations, meaningful opportunities for

talent development, and multiple services.

Resilience conceptual models identify key protective factors within the child,

family, school, and community that support children's development of competence and

adaptability in high-risk circumstances (Masten, 1994; Werner & Smith, 1992). While the

application of this model to educational interventions is recommended by various

researchers (Hanson & Carta, 1995; NIMH, 1995; Wang & Gordon, 1994; Zimmerman &

Arunkumar, 1994), operationalizing these concepts for early educational programs requires

specific assessment strategies relevant to young students with diverse characteristics. In

this study, methods were selected and developed to assess diverse students that include key

protective factors across environments; these methods could provide useful strategies for

planning, evaluating, and improving program effectiveness over time.

Preliminary Study

A preliminary study (Reed-Victor & Stronge, 1997b; Victor, Dent, Reed-Victor, &

Wang, 1997) of students who were homeless demonstrated methods for applying the

protective factor model to educational programs. To assess individual protective factors, the

Five-Factor model of personality was employed by using the Natural Language Lexicon to

code free descriptions of students' characteristics (Halverson, Kohnstamm, & Martin,

1994). Recommended program interventions were analyzed by home, school, and

community protective factors (Masten, 1994; Werner & Smith, 1992). Staff with diverse

roles (i.e., coordinator, teacher, tutor, counselor, and family involvement specialist)

identified both protective and risk factors for 36 students, ages four through 16 years, who

were homeless.

Significant protective factors were identified including all aspects of extraversion as

well as helpfulness, organization, and curiosity. In addition, identified risk factors included

low self-confidence, slow learning, lower manageability and deceitfulness. Findings from the preliminary study were promising because they identified strengths that are important facets of children's resilience. Staff-recommended supports for these students were categorized by individual, family, school and community factors that contribute to resilience. Staff identified various interventions for each student, and their recommendations reflected aspects of their experience and settings. Overall, these findings indicated that staff identified interventions across protective factor categories; however, some did not specify sources for these interventions. Development of a rating scale based on protective factors was proposed as a better method for identifying the adequacy and importance of supports across environments. Based on these preliminary outcomes, the current study was developed to assess the protective factors of young students in various risk-based educational programs.

<div align="center">Statement of the Problem</div>

### Purpose of the Study

This research project extended the study of resilience factors to diverse young students who were exposed to various risk factors and eligible for specific risk-based school programs. The purposes of this study were (a) to employ individual difference measures to construct resilience-based student profiles, (b) to develop and employ an environmental support measure to construct resilience-based support profiles, (c) to investigate the resilience profiles of young students and supports across school programs and student developmental levels, and (d) to explore child and support factors that contribute to school adjustment. The study synthesized data collected from teachers in Hampton Roads, Virginia, about students, ages three to nine years, eligible for special education, Title I, and/or homeless education programs, in response to the following questions in three phases of the research project.

Research Questions

Phase I: Assessment of student and environmental protective factors. Phase I addressed the following research questions.

I.1 How do teachers characterize students in terms of individual protective factors?

I.2 How do teachers rate the adequacy of environmental (home, school and community) protective factors?

I.3 How do teachers rate the importance of environmental (home, school and community) protective factors?

I.4 How do teachers rate students' adjustment to school?

Phase II: Comparisons of student and environmental protective factors across risk groups and age levels. Phase II addressed the following questions.

II.5 Are there differences across age levels (3-4, 5-6 and 7-9 years) for student protective factor dimensions?

II.6 Are there differences across age levels (3-4, 5-6 and 7-9 years) for environmental protective factor adequacy ratings?

II.7 Are there differences across age levels (3-4, 5-6 and 7-9 years) for environmental protective factor importance ratings?

II.8 Are there differences across risk groups (i.e., special education, Title I, and homeless education) for student protective factor dimensions?

II.9 Are there differences across risk groups (i.e., special education, Title I, and homeless education) for environmental protective factor adequacy ratings?

II.10 Are there differences across risk groups (i.e., special education, Title I, and homeless education) for environmental protective factor importance ratings?

Phase III: Relations among school adjustment and age, risk group and protective factor dimensions. Phase III addressed the following question.

III.11 To what extent do age, risk group, student and environmental protective factor ratings predict school adjustment ratings?

## Significance of the Study

Within the last 30 years, numerous researchers have shifted their focus from studying the negative effects of stressors to the positive impact of protective factors in the development of individual resilience (Masten, Best, & Garmezy, 1991; Simeonsson, 1994; Wang & Gordon, 1994; Werner & Smith, 1992). Common elements among protective factors include broader support networks across environments, the importance of adult and peer relationships, and the development of self-determination. Resilience constructs are congruent with effective intervention programs, which have shifted from deficit to proactive orientations by providing support on two levels: (a) individualized, targeted supports and (b) comprehensive and integrated services (Dryfoos, 1994; Stallings, 1995; Wang, Haertel, & Walberg, 1995).

For individual students, future-oriented and comprehensive supports that build capacities and resilience are essential to long-term positive outcomes (Dryfoos, 1990; Hanson & Carta, 1996; Hoffman & Field, 1995; Morrison & Cosden, 1997; Pugach, 1995; Reiff, Gerber, & Ginsberg, 1996). These supports are achieved through highly integrated and accessible services, that are carefully timed and sustained (Mallory, 1995; Nunez, 1995; Repetto & Correa, 1996). Methods for planning and tracking students' resilience as well as these supports across environments, time, and programs are essential for documenting and reshaping the effectiveness of interventions.

Building intervention decisions on child, family, school and community factors that support resilience is a proactive approach to individual and systemwide planning (Hanson & Carta, 1996; Masten, 1994; Reynolds, 1994; Simeonsson, 1994) and provides a specific

framework for creating collaborative services across traditional program boundaries. To formulate resilience-based program planning, two aspects of resilience must be assessed: (a) individual child characteristics and (b) family, school and community supports. This study proposed to operationalize resilience for young students in school risk-oriented programs by (a) employing individual difference measures to understand child resilience development and (b) developing a protective factor rating scale for documenting and recommending strategies which are supportive of resilience.

## Theoretical Constructs and Operational Definitions

Central theoretical constructs for this study as well as corresponding operational definitions are defined in the following section. The broad concept of resilience includes several important components, including risk factors and protective factors. To further specify the model employed for the current study, school adjustment and developmental level also are defined.

### Resilience

Theoretical construct. Resilience is a dynamic process of adaptation, "a function of the individual's unique strengths, capacities, vulnerabilities, and 'goodness of fit' with the demands and opportunities of the environment" (Felsman, 1989, p. 79). Resilience is not equivalent to invulnerability but rather to "the self-righting tendencies within the human organism" (Werner & Smith, 1982, p.152). Studies have identified children's resilience as defying risk predictions, stress resistance, and/or recovery (Masten et al., 1991).

Operational definition. This study focused on evidence of resilience in the presence of various risk factors. Measurement of resilience was based on teacher assessments of individual protective factors (using individual difference measures); assessments of family, school and community protective factors (using an environmental protective factor rating scale); and evaluations of students' school adjustment. Risk-group assignment (program

eligibility and risk ratings) as well as developmental level were employed to evaluate other salient factors in the resilience model.

## Risk Factors

Theoretical construct. Risk factors are "characteristic of a group of people ... (and) associated with the possibility of undesirable outcomes" (Masten, 1994, p. 6). Masten summarized the primary sources of risk to healthy development as pre-/perinatal stressors such as poor nutrition, substance abuse; family circumstances such as separation, poor education, unstable mental health; environmental stressors such as high crime, low income and resources; and trauma including violence, and physical or mental illness.

Operational definition. The U.S. Department of Education regulates and funds categorical risk-related programs, including special education, Title I and homeless education. Definitions for program eligibility, as interpreted by Virginia Department of Education regulations and local education agencies' policies, were employed in determining risk groups by student disability, family poverty, and/or homelessness. Thus, program eligibility was used to identify student risk groups. In addition, a second measure of risk based on program eligibility, developmental and health status, family configuration, and residential status was constructed for use in the final analysis of contributors to school adjustment.

## Protective Factors

Theoretical construct. Figure 1 portrays protective mechanisms by individual, family, school and community factors that contribute to the resiliency process. This model has been constructed from factors identified across studies of resilience in children and adolescents with a wide variety of risk factors (Freiberg, 1994; Kimchi & Schaffner, 1990; Masten, 1994; Werner & Smith, 1992; Zimmerman & Arunkumar, 1994).

| Individual | Family | School | Community |
|---|---|---|---|
| cognitive ability | structure | problem-based instruction | values orientation |
| sociability | support | peer linkages | positive peer relations |
| autonomy | autonomy-granting | shared decisions | service access |
| special interests | advocacy | interest building | enrichment activities |
| positive self-concept | warmth | responsive | adult mentors |
| goal-orientation | high expectations | high expectations | |

Figure 1. Protective factors.

Operational definition: Individual protective factors. Two individual difference measures were used to identify behavior characteristics of individual children by assessing temperament and personality in a concurrent validity design. The Temperament Assessment Battery for Children-Revised (TABC-R; Martin, 1988), which has been used to identify teacher and parent judgments of young children's behavior, was as the established measure. The Inventory of Children's Individual Differences (ICID) based on the Five Factor Model (Halverson & Havill, 1997) was used to measure personality dimensions.

Operational definition: Family, school, and community protective factors. The Protective Factor Rating Scale was developed to measure these factors, based on teacher ratings of the importance of specific supports as well as the adequacy of those supports for individual students.

School Adjustment

Theoretical construct. Adjustment has been defined as the process by which an organism "attempts to adapt to the diverse demands placed on it by internal constraints and external requirements" (Graziano, Jensen-Campbell, & Finch, 1997, p. 393). The demands of the school environment include satisfactory participation in learning tasks and behavior regulation as well as peer and teacher interactions. The importance of school

adjustment is evident in short- and long-term outcomes. "Student engagement and participation in school and classroom life promote self-esteem, autonomy, positive social interactions, and mastery of tasks" (Wang, Haertel, & Walberg, 1994, p. 285) or aspects of individual qualities identified as protective factors which contribute to resilience. In addition, the long-term outcomes of positive school adjustment include school completion, employment and overall life satisfaction (Entwisle, 1993).

Operational definition. Graziano and Ward (1992) developed a measure of teachers' evaluations of students' adjustment, including the domains of academic adjustment, same-sex and other-sex peer relations, teacher relations and classroom behavior. The Student Adjustment Assessment was used as an outcome measure of students' adjustment in the school environment.

Developmental Levels

Theoretical construct. Developmental level is a salient concept for understanding child behavior and the demands of environments. In one study of parental-free descriptions of their children's behavior, for example, the percentage of descriptors related to Conscientiousness and Openness to Experience were significantly different ($p<.05$ and $p<.001$, respectively) between three- and 12-year-olds (Victor et al., 1997). Effective teachers and school environments also reflect different expectations based on students' developmental levels (Frede, 1995; Keogh, 1989). In a review of various resilience studies, Kimchi and Schaffner (1990) summarized the developmental manifestations of resilience-related behavior as they evolved from infancy through adolescence.

Operational definition. Chronological age was employed to define developmental levels. This study defined the specific age groups for investigation as 3-4 years, 5-6 years and 7-9 years.

## Limitations of the Study

1. Because "resilience" is defined as a dynamic and developmental process, a longitudinal research design would be more desirable. This study, however, employed a cross-sectional design to incorporate a developmental perspective.

2. The sample for this population was drawn from the Hampton Roads area of Virginia during the 1997-98 academic year; this sample may not represent broader populations.

3. Because one teacher rated a student, confounding variables of rater judgment and child behavior were not addressed; an attempt to distribute error was incorporated into the design by increasing the total number of teachers involved and having each teacher rate no more than four students.

4. Volunteer teacher raters (who may not be representative) could bias the results; however, stipends were provided as incentives for diverse teacher participation.

5. Specific items on various instruments could be interpreted differently across raters. To address this concern, an existing measure, the TABC-R, and a new measure, the ICID, were used for concurrent validity. The TABC-R has had broad use and has been revised in recent years. Items on the ICID were constructed from the free descriptions of large numbers of parents by children's age levels. In addition, the Protective Factor Rating Scale was field-tested with teachers representing different programs to improve the clarity of specific items, instructions and rating options.

## Major Assumptions

1. Teachers' judgments of children's characteristics and environmental supports are key contributors to decision-making for program planning and implementation in educational programs.

2. Teachers' evaluations of children's behavior accurately reflect events that have taken place in their classrooms.

3. Teacher judgments are based on normative comparisons based on their experiences with children.

4. Teacher professional assessments of children are typically fair.

5. The instruments used in this study are valid measures of the targeted variables.

## Chapter 2: Review of the Literature

### Overview

In this chapter, research regarding risks to children's healthy development and positive adaptation to school will be reviewed. These life hazards include health stressors, family circumstances, environmental stressors and trauma. In the presence of these stressors and risk factors, negative outcomes for children's development have been documented, including poor rates of school completion, employment, and general adaptation to adult tasks. The interactive nature and chronicity of stressors compound the predictions for poor life outcomes. In addition, the complex interactions of stressors have been documented when children's physiological and temperamental characteristics place higher demands on caregivers whose economic and social support resources are limited.

In spite of these challenges to healthy development, studies have documented the resilience of some children. Over the course of their lives, resilient individuals adapt successfully both to school expectations and the demands of adulthood. As they develop, adaptable individuals are described as "caring, confident and competent" (Werner & Smith, 1992, p. 2). In numerous studies, factors that served a protective function have been identified. Various protective factors appeared to have a buffering effect, thereby reducing the negative impact of stressors and promoting positive adaptation. Protective mechanisms include certain child, family, school and community characteristics associated with positive developmental outcomes. Increasingly, developmental, mental health and educational researchers have recommended the use of a resilience-based framework for school and community programs designed to offset or ameliorate developmental risks.

Educational responses to risk-related concerns also have been reviewed, including federal legislation and resulting intervention programs. Specifically, special education,

Title I and homeless education initiatives, their outcomes and current directions have been described. In addition, studies of various school community members' attitudes toward risk also were surveyed. Implications of resilience research for schools were then considered, specifically, those policies and practices which appear to incorporate protective mechanisms.

Finally, literature regarding specific measurement of protective factors have been summarized. Existing instruments to rate children's temperament and personality characteristics were described; in addition, the rationale for an environmental protective factor rating scale was posed. A preliminary study and its implications for the current research were reviewed as well as research about teachers' perspectives on risk, prevention and development.

## Children at Risk

Studies of children and developmental risks portray the interactive and pervasive nature of stressors that often leads to a compounding of negative effects. For example, Maughan (1988) described the "cumulative process ... [in which] children [are] falling progressively farther behind their peers from the time of school entry onwards" (p. 201). The primary sources of risk to healthy development include:

- health stressors, such as poor nutrition and health care, perinatal drug exposure;

- family circumstances, such as separation, poor education, unstable mental health;

- environmental stressors, such as high poverty, low resources; and

- trauma, such as accidents and violence. (Masten, 1994)

The complex interactions of stressful circumstances often result in multiplication of negative outcomes (Taylor, 1997), translating into daily confrontation with economic, physical, social and emotional instability. Pianta and Walsh (1996) identified three common

elements across studies of various hazards in children's development: "1) the interrelated nature of life hazards, 2) the organized, systemic nature of risk, and 3) the persistence of risk over time and the consequences for developmental decline" (p. 136). These life hazards are frequently overlapping and interactive. However, for a fuller understanding, it is important to examine them individually. The following discussion focuses on health stressors, family stressors, environmental stressors, and trauma.

## Health Stressors

Before and during birth, infants may be exposed to stressors related to their mothers' poor health, prenatal care, and nutrition. In addition, infants also are placed at risk by maternal substance abuse, including factors such as alcohol, illegal drugs and tobacco, and exposure to environmental toxins (Bearer, 1995; CDF, 1995). These risks have been linked to infant mortality, low birthweight, and developmental disabilities. In fact, the infant mortality rate in the United Sates is higher than that of 21 other developed countries; 8.5 of every 1,000 infants die before their first birthday (CDF, 1995). The incidence of infant mortality among African-American infants is double the rate for the larger population; lack of neonatal intensive care facilities in high-poverty areas is cited as one reason for this problem (CDF, 1995). Children who have been exposed to drugs prenatally show greater delays in cognitive and language skills, particularly if they also are living in poverty (McLoyd, 1998).

An increasing problem in this country, low-birthweight babies are often indicative of the declining health of mothers and inadequate early prenatal care (Annie Casey Foundation [ACF], 1997). In 1994, 7.3% of all babies were born below desirable weight, with consequent higher risk for developmental problems (ACF, 1997). In high-poverty urban areas, the proportion of low-birthweight babies is significantly higher (e.g., 14.2% in Washington, DC). In a review of developmental consequences of extremely low birthweight, McLoyd listed the increased risks for "birth asphyxia, apnea, cerebral palsy, seizure disorders, visual and motor coordination problems, mental retardation, and learning

disabilities" (1998, p. 191). To compound these concerns, premature births are more prevalent among adolescent mothers (McLoyd, 1998).

Preventive health care has been declining also. For example, child immunization rates are a concern, with only 67% of two-year-olds fully immunized in 1993 (CDF, 1995). Child health insurance coverage, an important support to maintaining children's health, has declined substantially in the last eight years (CDF, 1995). Environmental toxins pose another challenge to children's health, particularly for young children who are playing in homes with high incidence of lead paint and pesticides; biological vulnerabilities include brain and lung development (Bearer, 1995). "Elevated levels of lead in the blood are associated with cognitive deficits, lower school achievement, and long-term impairment of neurological functioning" (McLoyd, 1998, p. 191).

Malnutrition presents another life hazard for developing children. "Poor nutrition can retard physical growth, brain development and cognitive functioning permanently" (CDF, 1995, p. 46). Indicators of the growing need for nutritional support include the increase in children receiving food stamp, school meals, and emergency food from shelters.

Family Stressors

Increased stress from family circumstances may result from family discord, unstable parental/family mental health, isolation, and economic instability. These factors are often exacerbated when caregivers are very young and/or single. Highly stressful family interactions that include parental hostility and aggression are associated with greater adjustment problems for children (Johnson, 1994). In addition, separation of family members is likely in extreme family discord, via divorce, flight (in the case of domestic violence), and/or foster care placements (in the case of child abuse or neglect). Child outcomes may include "more behavioral problems, emotional difficulties and reduced social competence" (Johnson, 1994, p. 172). Single-parent households, which may result from domestic conflict, typically have fewer financial resources - another source of stress to a

new household. Some of the increases in child homelessness have been attributed to mothers' flight from abusive situations and the resultant decreases in family financial and social supports (Stronge, 1997). On the other hand, parents who remain in abusive situations typically feel helpless and frustrated. Witnessing or experiencing violence may "affect many areas of children's development, including their ability to concentrate, emotional stability, and social competence" (Hanson & Carta, 1996, p. 204).

Data regarding domestic violence, child abuse and neglect reveal a pattern of significant concerns for young children:

1. In 1993, more that 1 million cases of child abuse or neglect were confirmed (of 3 million reported cases);

2. Between 3.3 million and 10 million children are exposed to domestic violence each year;

3. 464,000 children were in foster family homes, group homes, and residential treatment centers on a single day;

4. 86% of child abuse victims were younger than five years old. (CDF, 1995, p. 72)

Other examples of stressful outcomes of parental mental include inconsistent or poor physical and emotional caregiving. "The severity of the illness and its effects on a child's development may have more of an impact than the particular kind of illness" (Masten, Best et al., 1991). Another impairment to caregiving results from parental substance abuse, including illegal and legal substances. In a review of adverse effects on children resulting from parental substance abuse, Hanson and Carta (1996) listed the following problems: lapses in caregiving and protection, physical or sexual abuse, and developmental problems from prenatal exposure. To compound these stressors, substance abuse is more prevalent among poorer, unemployed and less educated parents (Hanson & Carta, 1996).

Although there has been a slight drop in teenage pregnancy in recent years, the risk of adolescent parenting is still associated with low income and poor academic achievement as well as poor prenatal care and substance abuse (CDF, 1995). Reflecting the cumulative nature of some risk factors (CDF, 1995), teen mothers are more likely to have low-birthweight babies (1 in 10 births), limited education (triple the dropout rate for nonteen mothers) and low wages (average annual earning of $7,300 or less).

Interaction of effects among the special needs of children (including chronic or acute health problems, developmental disabilities and/or temperamental difficulties) and lower family resources (emotional, social and/or financial) has been noted in various studies. In a study of 190 children and families receiving early intervention services, researchers summarized that "most participating parents demonstrated relatively stable levels of personal and familial adaptation over the 1-year study period" (Shonkoff, Hauser-Cram, Krauss, & Upshur, 1992, p. 138). Some differences in stress levels were noted. For some families whose children had seizure disorders, additional financial, personal and familial strain were reported by parents. In addition, families who rated themselves as less adaptable and cohesive also rated their child as more difficult temperamentally; no differences in this group (in comparison to the larger sample) were found for child functioning and family socioeconomic status. In a study of the impact of divorce on child and family functioning, custodial parents with lower coping skills were more likely to be engaged in negative interaction patterns with their temperamentally difficult children (Heatherington, Stanley-Hogan, & Anderson, 1989).

## Environmental Stressors

Some environmental stressors have already been described in considering health and familial risk factors, particularly the correlate to many risk factors - poverty. Poverty is associated with most of the environmental stressors reviewed in this section. "In 1994, as many as 45 percent of young children - nearly half- were living in poverty or near poverty (i.e., in families with incomes at or below 185% of the federal poverty line"

National Center for Children in Poverty [NCCP], 1996-1997, p. 1). One in four young

children currently live in poverty, with increasing numbers of children living in poverty in

the suburbs (NCCP, 1996-1997). In many of the largest cities in the United States, young

child poverty occurs at more than double the national rate (e.g., 60% in Detroit and 44% in

New York).

In a comprehensive review of research regarding the impact of poverty on

children's development, McLoyd (1998) noted the following:

1. increased prevalence and persistence of poverty,

2. poorer health resources and outcomes,

3. limited educational and employment opportunities in isolated poor communities,

4. concerns about home-based cognitive stimulation,

5. lower predictions for academic achievement based on the chronicity of family

   poverty, and residence in a poor neighborhood.

In addition, McLoyd (1998) focused on the impact of family and community poverty

during the child's first five years of life which "attenuates completed years of schooling

more so than does poverty during middle childhood and adolescence" (p. 198). Poor

academic readiness and lower teacher expectations for poorer students' achievement also

contribute to reduced school success. "Teachers who hold such perceptions provided poor

children with less positive attention, fewer learning opportunities ... and less

reinforcement" (McLoyd, 1998, p. 194). Differences in school resources and instructional

practices also have been identified in schools based on economic differences in

communities.

Extreme poverty has been documented for increasing numbers of young mothers

with children who are homeless (Stronge, 1997). Homeless mothers have been

characterized as unmarried (91%), under age 25 (69%), and having children under age six

(80%). In addition, 36% of these young women have not graduated from high school

(Nunez, 1997). "Homeless mothers' overall youth and relative inexperience in managing

the day-to-day obligations of money, family, and home complicate their route to self-sufficiency even further than does their lack of work experience" (Nunez, 1997, p. 95). Children in homeless families are more likely to experience stress related to school and social disruption, and increased behavioral problems (Masten, Miliotis, Graham-Bermann, Ramirez, & Neeman, 1993).

Trauma

Other life hazards to children's healthy development include accidents and violence (domestic and community). These experiences threaten the lives of children and adolescents, particularly in high crime areas and in highly volatile domestic relationships (as previously reviewed). Advances in medical care are credited with the declining incidence of child mortality, for children ages one to 14 years (ACF, 1997); however, traumatic brain injury, severe emotional distress and other problems may result from traumatic episodes.

In 1992, gun violence resulted in the death of 5,379 children and youth (CDF, 1995). Victims of gun violence also include "many thousands of children who are physically injured and hundreds of thousands of children scarred emotionally by exposure to violence in their homes, neighborhoods and schools" (CDF, 1995, p. 54). While 19% of the increase in violent crime has been attributed to youth, 84% of all arrests for murder involve adults (CDF, 1995). A description by an eight-year-old named Gail paints a more vivid picture of the risks to children's healthy development:

> In my neighborhood there is a lot of shooting and three people got shot. On
> the next day when I was going to school I saw a little stream of blood on the
> ground. One day after school me and my mother had to dodge bullets.
> (CDF, 1995, p. 3)

Risk factors are variables that increase the probabilities of undesirable outcomes. The presence of any of the factors detailed above do not constitute child deficits or diagnoses (as the term "at risk child" might imply). Rather, the presence of these variables

for a group of children increases the likelihood of certain outcomes (e.g., developmental delay, school difficulty or underemployment). Some children with various risk factors demonstrate positive adaptation to school and long term life tasks in spite of these risks. This distinction is important for educators and other professionals to recognize. Otherwise, attitudes and expectations may become another risk factor; namely, low expectations for student outcomes and perhaps reduced opportunities for achievement (McLoyd, 1998; Pianta & Walsh, 1996).

## Risk and Predicted Outcomes

Increasingly, research efforts have considered the complexity of interactions among risk factors, employing contextual systems theory and ecological approaches to the study of children's development and the role of various influences (Masten, 1994; Pianta & Walsh, 1996; Simeonsson, 1994; Zimmerman & Arunkumar, 1994). Simple linear models (from risk to outcome) rarely explain the complex interaction of risk and other variables. In general, increased numbers of risk factors and sustained duration of stressors produce a compounded effect on developing children, families, and other systems such as communities and schools, particularly when counterbalancing or protective processes are absent.

The possibility of multiple factors was identified in the previous description of risk factors, including:

1. developmental disabilities and marital instability;
2. cultural diversity, poverty and isolation in deep poverty neighborhoods with few resources;
3. adolescent parents with low birthweight babies and insufficient health care;
4. poor school readiness and low teacher expectations;
5. family separation, caregiver emotional instability and low income.

For example, the incidence of developmental delays and disabilities is higher in children who are poor, resulting in a compounding of stressors for the child-family system (Brooks-Gunn & Duncan, 1997).

Poor long-term outcomes, which may include school failure, unemployment, economic instability, poor health, adolescent pregnancy, prenatal and perinatal stress, criminal activity, substance abuse, domestic violence, and oppositional attitudes become risk factors/stressors for subsequent children and families (Brooks-Gunn & Duncan, 1997; Corcoran & Chaudry, 1997; Egeland & Kreutzer, 1991; Entwisle, 1993; Lewitt, Terman, & Behrman, 1997; Taylor, 1997). This creates the proverbial "vicious cycle," which challenges proposals of single interventions or traditional institutional responses:

> For example, pregnant adolescents are more likely to receive inadequate
> prenatal care, deliver low birthweight babies, and raise children less ready
> for learning upon school entry. Children coming into school systems
> poorly prepared are more likely to fall behind and drop out. School
> dropouts, in turn are more likely to have problems with substance abuse and
> to become pregnant out of wedlock. (Chamberlin, 1994, p. 34)

While this cycle is vicious, it is not the only path that children and families travel. To consider alternative developmental courses, the following section reviews resilience research - the stories of children and youth who "defeat the odds" when certain protective mechanisms (provided by individual, family, school and community assets) are operating.

### Resilience: Dynamic Adaptation

Resilience has been defined as a dynamic process of adaptation, "a function of the individual's unique strengths, capacities, vulnerabilities, and 'goodness of fit' with the demands and opportunities of the environment" (Felsman, 1989, p. 79). Studying this complex process has engaged numerous researchers in longitudinal studies of the multiple influences on the pathways and contexts of development in children. These studies have extended well beyond childhood to identify the life course of individuals in varying

circumstances (Elder, 1998). Many researchers have shifted their focus from studying the negative effects and interactions of stressors to the study of resilience and adaptation (Masten, Best et al., 1991; Morrison & Cosden, 1997; Zimmerman & Arunkumar, 1994). As these studies have progressed, Rutter (1979) proposed that:

> [T]he explanation for [resiliency] will probably include the patterning of stresses, individual differences caused by both constitutional and experiential factors, compensating experiences outside the home, the development of self-esteem, the scope and range of available opportunities and appropriate degrees of environmental structure and control, the availability of personal bonds and intimate relationships, and the acquisition of coping skills (p. 408).

Adaptation has been studied by considering the developmental histories of individuals, the types of difficulties encountered, individual and environmental characteristics, and the contexts for adaptation (Masten, 1994). In a review of the major studies of resilience, Masten, Best et al., (1991) categorized these investigations by three concepts of resilience: (a) resilience as overcoming the odds, (b) resilience as stress-resistance, and (c) resilience as recovery from trauma. The following review of literature on resilience is organized by these three categories. Noteworthy among all of the studies has been the identification of positive outcomes and influences, as well as poor outcomes and risks.

Overcoming the Odds

In their longitudinal studies of all the pregnancies and births within the community of Kauai in a single year, Werner and Smith (1982, 1992) traced the developmental pathways of approximately 500 men and women across 32 years of life. "These individuals experienced moderate to severe degrees of perinatal stress, grew up in chronic poverty, were reared by parents with little formal education, and/or lived in disorganized family environments" (Werner & Smith, 1992, p. 2). Of the 201 identified as high risk due to four or more perinatal, economic, and/or familial stressors, 72 developed into

competent adults. Thus, one third developed into "competent, confident, and caring young adult[s] by age 18" (Werner & Smith, 1992, p. 2). These resilient men and women had several significant features in common, including individual qualities, caregiver/mentor characteristics and well-timed opportunities, that promoted their successful adaptation (Werner & Smith, 1992).

Other studies of resilience have been conducted in the context of historical events, such as the Great Depression and the farm crisis (Elder, 1998), in different types of communities (Baldwin, Baldwin, & Cole, 1990; Long & Valliant, 1984) and in different types of caregiving environments (Furstenberg, Brooks-Gunn, & Morgan, 1987; Garmezy & Masten, 1991; Rutter, 1987). Longitudinal studies conducted by Elder and colleagues (1998), for example, documented the impact of economic downturns on family functioning and child development. Fathers' irritability and parental harshness appeared to be exacerbated or buffered by child and maternal characteristics. Baldwin and colleagues (1990) compared the caregiving environments of high-achieving students in middle class and inner-city environments. Parents across both environments demonstrated common characteristics, including warmth and high expectations. Differences by community type were noted regarding the degree of monitoring and autonomy granting provided by parents.

In another investigation, Boston inner-city males with low socioeconomic backgrounds have been followed since 1940 in the Study of Adult Development. For participants in this study, "Boyhood competence was the best overall predictor of adult adjustment in middle age" (Masten, Best et al., 1991, p. 426). The results of studying competence (in spite of risk) were summed up by several of the primary researchers (Long & Valiant, 1984, as cited in Masten, Best et al., p. 427) as follows:

> The transmission of disorganization and alienation that seems inevitable
> when a disadvantaged cohort is studied retrospectively appears to be the
> exception rather than the norm in a prospective study that locates the
> successes as well as the failures. (p. 344)

In their study of adolescent mothers and their children, Furstenberg and colleagues (1987) documented the positive outcomes associated with parental educational attainment and smaller family size. This study documented the positive cycle created by these adaptable teenagers, as evidenced in the positive educational and behavioral outcomes for their children when reaching adolescence. Research about children with schizophrenic parents also has documented both poor outcomes and positive adaptation. Parental difficulty in providing consistent physical and emotional care as well as separation problems (during parental hospitalization) constituted significant risks for developing children. Nevertheless, good mental health outcomes (as judged by parents, psychologists and teachers) were observed in children when specific child and environmental protective factors were present (Masten, 1994).

These studies of risk and resilience have engendered more careful consideration of protective factors that appear to mitigate or interfere with a risk-based trajectory toward poor adaptation.

## Stress Resistance and Recovery

The following summary of resilience studies involving stress resistance and recovery from trauma addresses additional issues that may co-exist with risk factors (for example, divorce or violence). For example, Hetherington et al. (1989) studied the impact of divorce on children's development. In spite of initial stress surrounding separation, children adjusted to these circumstances, particularly if the custodial caregiver was emotionally stable. Child temperament and parental stability had transactional effects, in that child temperamental difficulties (e.g., irritability) were ameliorated or exacerbated by parental stability or instability. Further, children characterized as "easy" in terms of temperament were less affected by parental stability.

Trauma recovery has been studied in children exposed to violence, loss of family members and direct abuse. Perhaps no situation combines these elements as dramatically as the hostility of war. Even from the dire circumstances of the Holocaust, some youthful

survivors appeared ultimately to be resilient. Given the previous and/or subsequent nurture of supportive families, some of these children became adults with strong positive characteristics, including deep commitment to parenting, to their religious community and to broader social responsibility coupled with a "strong durability" (Moskovitz, as cited in Garmezy & Masten, 1991, p. 470).

Positive Outcomes

These diverse studies of resilience, in spite of various risks, stressors and trauma, have documented similar adaptive patterns in children's development. Resilient children and adolescents demonstrated competence in the face of adversity, and their competence serves as both "a powerful marker of resistance ... as well as a marker of development" (Garmezy & Masten, 1991, p. 151). Markers of competence identified across studies included achievement orientation, school success, sociability, responsible behavior, and active involvement in school and community (Kimchi & Schaffner, 1990; Werner & Smith 1982).

Studies of successful adults with disabilities have shown similar outcomes, including autonomy, goal-orientation, social support networks, persistence and adaptability (Gerber & Reiff, 1992). Short-term positive outcomes also have been identified in preschool outcomes for low-birthweight children living in poverty (Bradley et al., 1994). Positive caregivers and safe housing were correlated with good health and developmental outcomes for children at age three.

Ironically, stressful circumstances may hold the possibilities of promise as well as threat. For example, children whose families' low incomes required child care by extended family members benefited from the opportunity to develop close, supportive relationships with caring family members (Werner & Smith, 1982). While resilience studies have provided more information about alternative developmental pathways and possibilities, Liddle (1994) cautioned against romanticizing the concept of resilience. Identification of positive developmental outcomes and correlated factors has the potential to influence

constructive changes in policies and resulting interventions; however, resilience is a complex and contextualized process that may require comprehensive and differentiated supports. The need for further studies with "conceptual rigor, empirical connectedness and practical utility" was the research challenge posed by Liddle (1994, p. 174).

A former street child echoed this caution in practical terms with his vacillating predictions for numerous young Colombians abandoned to the street and known as gamins: "What becomes of any man? You're right, the gamins are smart and strong; they survive. But it all depends on where you go, what you find, who you meet" (Felsman, 1989, p. 78). In the following section, these specific variables, that is, the opportunities and supports that may be provided by important environments and key people will be more fully detailed.

### Protective Mechanisms: Supports to Resilience

In describing the relationships of individual characteristics and external factors that offset adversities, the protective factor model presents various child and environmental characteristics that function as moderators of negative impact and catalysts for adaptive responses (Zimmerman & Arunkumar, 1994), reducing the effects of negative risks in multiple, interactive ways (Masten, Best et al., 1991). For example, students with learning disabilities who understand and reframe their learning challenges build adaptive strategies to cope with difficult circumstances (Gerber, Reiff, & Ginsberg, 1996; Lopez-Reyna & Olufs, 1996; Morrison & Cosden, 1997; Werner, 1993). Similarly, children exposed to the risks of homelessness and low maternal self-esteem may be protected by their own problem-solving abilities and supportive teachers. This dynamic process has been described as complex because it occurs over time and within the context of varying influences (Rutter, 1987). In a recent report of the NIMH (1994), resilience research was described:

Studies to date suggest that there is no single source of resilience or

vulnerability. Rather, many interacting factors come into play. They

include not only individual genetic predispositions, which express

themselves in enduring aspects of temperament, personality and

intelligence, but also qualities such as social skills and self-esteem. These,

in turn, are shaped by a variety of environmental influences. (p. 25)

The following protective mechanisms, individual, family, school and community factors,

have been identified in various studies as contributors to positive adaptation and

developmental outcomes. Each will be examined in more detail below.

## Individual Factors

Across numerous studies, individual characteristics of children and youth that

appeared to serve a protective function have varied. In general, common factors have

included children's cognitive ability, sociability, autonomy, special interests, positive self-

concept, age-appropriate sensorimotor and perceptual skills. Other characteristics, such as

birth order, high endorphins, gender (depending on developmental level and stressor) and

physical attractiveness, have also been identified.

Temperament and personality. Child temperament and personality features have

been cited as important factors in adaptability or resilience. For example, Werner and

Smith (1992) identified the following protective factors among their resilient participants:

high activity level, affectionate disposition, free of irritating behaviors, positive social

orientation, ability to focus attention and control impulses, desire to improve and interests

in hobbies or special activities. These children were high in autonomy as well as responsive

to other people. In a review of 30 studies, Kimchi and Schaffner (1990) identified the

following additional individual protective factors: cheerfulness, flexibility, a sense of

humor, decreased discomfort, social perceptiveness, thrill seeking and touch seeking.

Resilient children were also described as self-confident, achievement oriented, responsible,

committed and good problem solvers.

<u>Developmental manifestations.</u> Kimchi and Schaffner (1990) summarized the manifestations of these individual resiliency factors at different developmental levels. Typically, infants are alert, responsive, cheerful, engaging, easily comforted and experience a close relationship with one caregiver during the first year of life. Preschoolers characteristically demonstrate mature social, language, motor, and self-help skills. They also are appropriately exploratory, confident, and tolerant of frustration. School-age children tend to interact positively with peers and teachers, succeed in school, and explore varied interests. These resilient children have developed coping skills, creativity and a sense of humor. In adolescence, resiliency is reflected in goal- and achievement-orientations, proactive social behavior and active involvement in community life. Internal locus of control is evident in self-confidence, belief in self-efficacy, responsible behavior and internalized values.

When adults who have successfully coped with various adversities were asked to describe their important qualities, many of the protective factors identified in other studies were mentioned. In Project Resilience, young men and women who had experienced hardship in childhood described themselves as having "insight, independence, relationships, initiative, creativity, humor, and morality" (Bickart & Wolin, 1997, p. 22). An ethnographic study of highly successful adults with learning disabilities gathered similar insights from the participants:

1. Adaptability is the key to success.

2. Success requires originality.

3. We all need the ability to self-advocate.

4. There is nothing wrong with failure as long as one keeps on trying.

5. Nothing whets the appetite for success like the taste of it. (Reiff et al., 1996, p. 10).

<u>Optimizing cycles.</u> While these individual characteristics have been described as protective mechanisms, some of them also may be viewed as desirable outcomes of

development or appropriate targets for intervention and support. In an additive or compounding process (comparable of the "vicious cycle" process of risk factors), individual protective factors promote an optimizing cycle, in which positive child characteristics enhance opportunities, reduce the impact of adversity and engender increased support. For example, children who come to school "ready to learn" usually experience school as a place that is "ready to teach."

Some individual characteristics have a biological or physiological basis that is stable, such as birth order, central nervous system integrity and genetic abnormalities. Although these characteristics may be associated with risk or protective factors, their interaction with various environmental characteristics appears to account for the variability in developmental outcomes. Scarr and McCartney (1983) used an interesting metaphor to illustrate the complexity of these influences as the "cooperative efforts of the nature-nurture team, directed by the genetic quarterback" (p. 433). The influences of the "nurture team" or the contexts for development consist primarily of family, school and community environmental features. Each of these factors will now be explored.

Family Factors

Significant adults play an important protective role through reliable nurture that supports the child's development of trust and acceptance of adults as resources. Adults also shape constructive paths through modeling behavior, creating access to knowledge, advocating for enlarged opportunities, teaching competency, and encouraging growth in facing challenges (Masten, 1994). The significance of adult support in buffering stress effects and reducing children's unnecessary exposure to risk has been highlighted in numerous resilience studies as illustrated in the following.

Caregiver warmth and support. The early establishment of warm caregiver-infant interaction is essential in the creation of a nurturing environment and a stable emotional foundation for the developing child (Werner & Smith, 1982). The importance of the caregiver's emotional support and affection has been established in buffering the adversities

of separation and divorce (Heatherington et al., 1989), extreme violence (Moskovitz, as cited in Garmezy & Masten, 1991), economic downturns or poverty (Bradley et al., 1994; Elder, 1998), and caregivers' mental instability (Masten, 1994).

Establishment of early close bonds appeared to be enhanced by having fewer children (in high-poverty circumstances), two years spacing between births, and increased parental/adult attention during the first year of life (Werner & Smith, 1992). Parent-child relationships were also enriched by a supportive network of extended family members and friends, especially when other family members helped with caregiving (Werner & Smith, 1992). In addition, economic stability, as reflected in parental employment, housing stability, and enriched learning environments, has also been identified as a protective factor for children's development (Furstenberg et al., 1987; Masten, 1994; Werner & Smith, 1992).

Cohesiveness and structure. The ability of families to provide an appropriate balance of high expectations, guidance, cohesiveness, and support for appropriate child or adolescent autonomy also was correlated to resiliency. Cohesiveness included shared values among adult family members, household rules, and positive family interactions (Werner & Smith, 1992). The ability of separating parents to cooperate in caregiving also was protective of children's adjustment in divorce situations (Johnson, 1994). During periods of high stress, boys appeared to benefit from greater structure than girls, who responded well to higher levels of positive support (Egeland & Kreutzer, 1991).

High expectations. Caregivers who fostered learning gains in their low-birthweight children were responsive to their children's interests, provided stimulating learning materials and created a safe, organized home environment (Bradley et al., 1994). In these high-poverty households, preschoolers showed gains in all areas of development, reaching age-appropriate levels by three years of age. In a study of academically successful Chapter I students, parents were found to encourage reading, express interest in school activities, and monitor their children's school progress (Yap & Enoki, 1995). Further, an analysis of

the National Education Longitudinal Study data identified positive academic outcomes for students whose parents supported their school participation (Peng, 1994). Parental support was more significant than school support, although the combined factors predicted the best outcomes for students.

Autonomy granting. Autonomy granting included nurturing children's independence in several ways: recognition and development of interests as well as increased opportunities for decision making and responsibility (Werner & Smith, 1992). Steinberg, Dornbusch, and Brown (1992) found positive, significant relations between family authoritativeness (warmth, control and autonomy granting) and students' school success (participation, performance, expectations and attitudes). Effective parents varied the degree of autonomy granted to their children, based on the larger context (specifically the safety) of their community. In a study comparing parenting in predominantly (a) Caucasian suburban neighborhoods with predominantly (b) African-American and Hispanic urban neighborhoods, parents of academically successful students were found to be warm and having high expectations for their children in all of these environments (Baldwin et al., 1990). The major difference in parenting practices revolved around the degree of autonomy granted and monitoring provided, based on the perceived safety of the neighborhood. In a similar study of successful students in varying communities, Lewis and Looney (1983) found that parents generally fostered their children's independence at age-appropriate levels and modeled shared leadership in parenting.

School Factors

Schools can provide student access to relationships with caring and competent adults, to positive peer relationships, to challenging and engaging learning experiences, to high expectations and opportunities for achievement and responsibility, and to increased opportunities for skill and interest development (Oxley, 1994). In their meta-analysis of school features that promote student learning, Wang, Haertel et al., (1994) identified the relative importance of proximal and distal factors. Classroom-based factors (i.e., classroom

management, metacognitive and cognitive processes, and student/teacher social interactions) appeared to exert greater influence on student learning than policy and demographic features, which were more removed from the student learning experience. In combination with family support, the direct influence of school factors in promoting children's resilience has substantial research support (Kimchi & Schaffner, 1990; Wang & Gordon, 1994; Werner & Smith, 1992; Zimmerman & Arunkumar, 1994).

Supportive relationships. In several studies of resilient adults, teachers were mentioned as the significant role models from childhood (Kimchi & Schaffner, 1990). Teacher factors that were fundamental to students' academic and socioemotional development included responsive, supportive relationships; skills in teaching problem-solving; and provision of access to knowledge (Oxley, 1994). In the Kauai study, teachers' availability to provide counsel and guidance to developing children was an important support to resilience (Werner & Smith, 1982).

Opportunities to develop positive relationships with peers also can be fostered in schools, particularly when adults provide guidance or coaching in group learning and conflict resolution strategies (Bickart & Wolin, 1997; Slavin, 1991; Wang, Haertel et al., 1997). In a study of 24 elementary schools, students' positive engagement in school was related to their perception of school as a caring community (Battistich et al., 1995). Positive outcomes for these students included their own sense of membership in the school community, decreased dropout rates, and reports of misbehavior, as well as higher academic interest and achievement.

Cohesiveness and structure. In a review of key factors that contributed to student achievement, Entwisle (1993) highlighted teachers' balanced approaches to establishing cohesiveness and structure within the classroom. Primarily, teachers established a balance of supportiveness and flexibility with a clear emphasis on academics. Their academic focus was evident in students' time on task, regular homework, consistent evaluation of assignments and progress, as well as curriculum coverage. Effective teachers also

maintained their emphasis on student involvement by promoting creativity and self-direction. Learning situations that are task-focused and foster problem-solving resulted in: (a) increased student effort and self-efficacy; (b) greater sense of belonging; (c) enhanced motivation and achievement; and (d) reduced substance abuse (Zimmerman & Arunkumar, 1994).

High expectations. The Perry Preschool Project, a benchmark of early intervention effectiveness, documented the importance of high-quality early childhood programs in the development of resilience (Schweinhart & Weikart, 1989). The specific curriculum model emphasized problem-solving, social competence and parental involvement. Although initial substantial cognitive gains appeared to diminish after several years, participating students were less likely to be retained or placed in special education. The students and their families also had higher expectations for students' achievement (Maughan, 1988). These expectations were fulfilled as higher numbers of students completed school, maintained employment and had significantly lower rates of teenage pregnancy and delinquency.

Strategies designed for high-ability students have been integrated into the curriculum to the benefit of all students, particularly students living in high poverty (Renzulli, Reis, Hebert, & Diaz, 1995). Enrichment clusters were organized around the interests of student and teachers with the participation of community resource persons for blocks of study time. Ames (1992) reviewed classroom goals and structures that supported students' long-term engagement in learning through their development of mastery goal orientation in contrast to performance orientation. Mastery orientation contributed to student persistence and the quality of student engagement in learning challenging tasks. Teachers created tasks, processes and evaluation procedures that encouraged student interests, diverse solutions and self-evaluation. Teachers who emphasized the importance of "learning well" (rather than external demonstrations of achievement in competition with their peers) helped students with low confidence focus on problem-solving and learning strategies.

Autonomy granting. Schools have provided avenues to further accomplishment through enrichment and extracurricular activities that incorporate students' interests and talents, structure for positive peer relationships and linkages to mentoring relationships (Masten, Best et al., 1991; Wang & Gordon, 1994). Within these experiences, students have increased opportunities to develop self-direction, goal orientation and social responsibility. One of the central themes in the study by Battistich and colleagues (1995) was student adoption of core values, including responsibility for helping each other. Students' prosocial behavior was related to their perception of opportunities to provide meaningful input into the school community. The positive impact of these experiences was significantly greater in the highest poverty schools.

Direct instruction in self-determination has been employed to develop the planning, self-advocacy and decision-making skills of students. These strategies also incorporate self-awareness, self-regulation and self-monitoring skills supportive of students' goal orientation and positive self-appraisal - protective factors associated with resilience, independence and life satisfaction (Reiff et al., 1996; Werner & Smith, 1992).

Community Factors

Protective influences in the broader community occur through increased opportunities for high-quality relationships with adults, such as religious leaders, coaches, counselors, and tutors; positive peer support; and access to special services (Kimchi & Schaffner, 1990; Masten, 1994; Werner & Smith, 1982). Within these contexts, students can further develop the autonomy, social competence, problem-solving, and future focus that underlie resilience (Freiberg, 1994; McLaughlin, Irby, & Langman, 1994).

Supportive relationships. Adults and peers in community organizations and neighborhoods served protective roles for children and youth facing adversity in numerous studies. Werner and Smith (1982) identified the supportive relationships and counsel of religious leaders as an effective support in the Kauai study. Masten (1994) summarized

findings about the effectiveness of mentors in providing protective relationships for developing children:

    (a) make person feel worthwhile,

    (b) engender trust in people as resources,

    (c) model and coach competent behavior,

    (d) provide information and access to knowledge,

    (e) help children avoid pitfalls,

    (f) support the undertaking of new challenges,

    (g) function as advocates, and

    (h) provide opportunities for competence- and confidence-building. (p. 14)

Peer friendships have been noted as important supports for children in poverty (Lewis & Looney, 1983), in stressful families (Kimchi & Schaffner, 1990), and for children with disabilities (Werner, 1993).

    <u>Cohesiveness and structure.</u> Community organizations also serve a protective role through increased resources for the child and family (infrastructure) as well as defined structure (through articulated values and organizational functions). The enhancement of family economic stability through work and educational and housing opportunities has played a significant role in promoting child resilience (McLoyd, 1998). In addition, adequate and accessible community services (police and fire protection, medical facilities, family support services) protect the safety, health and caregiving functions of families as well as children and adolescents' emotional well-being (Kimchi & Schaffner, 1990; Masten, 1994; Taylor, 1997; Werner & Smith, 1982).

    The importance of participation in religious or values-oriented organizations also has been noted in studies of resilient people (Baldwin et al., 1990; Werner & Smith, 1992). Thus, family participation as well as individual beliefs appear to "influence appraisals of stressful situations or fears of death, availability of social support resources or choices of coping behavior" (Masten, Best, et al., 1991, p. 430). Strong values orientations may

contribute also to the psychological process of reframing or transforming the meaning of stressors and promoting future-oriented or goal-based perspectives and behavior. For example, reframing has been identified as a key to positive adaptation for students with learning disabilities (Gerber et al., 1996).

High expectations. Community organizations and activities provide alternative supports to children's achievement through constructive activities, opportunities for talent development and social norms (Wang, Haertel et al., 1994). Werner and Smith (1982) documented the importance of interest or talent development in promoting children's self-efficacy and confidence. High expectations for behavior through cultural norms have been important in reducing nonadaptive behavior such as substance abuse (Dusenbury & Botvin, 1992; Zimmerman & Arunkumar, 1994). Tutoring and other cooperative projects with schools, community libraries, youth organizations and civic groups have supported student achievement in school (Freiberg, 1994; McLaughlin et al., 1994).

Autonomy granting. Community-based programs (e.g., Boys and Girls Clubs, Boy and Girl Scouts, athletic, religious or arts organizations) foster responsible behavior opportunities through service projects, recreational activities and art productions (Heath & McLaughlin, 1994). Children and youth become prime resources for planning, preparing, practicing and performing a wide range of activities (e.g., study groups, neighborhood clean-up and fundraising). For example, Bernard (1991) identified neighborhood literacy and elder care programs that promoted active youth involvement and contribution. Further, Freiberg (1994) detailed community organizations' protective role in supporting child and family agency through the establishment of community councils, neighborhood meeting centers and intergenerational centers.

## Educational Responses to Risk

Educational policies and programs have been developed in recent decades to address the needs of students who traditionally have not been included in the mainstream of

public education (Wirt & Kirst, 1997). For example, the principle of compensatory education developed following the Brown vs. Topeka Board of Education decision, based on the principle of equal access to differing resources for equal outcomes. Next, the principle of special education for students with disabilities was established with an emphasis on individualized educational programs or equal access to unequal resources with an expectation for unequal outcomes (Weintraub, 1997). In the following section, federal mandates, program outcomes and subsequent revisions to federal policies are reviewed.

Federal Legislation

These policies were codified by the Elementary and Secondary Education Act of 1965 (ESEA) and the Education of All Handicapped Children Act of 1975 (P.L. 94-142). The mandate for public special education programs outlined both substantive and procedural requirements (Rothstein, 1995). During recent decades, American public education has become more inclusive, with literally all students eligible, including those who are homebound, hospitalized or incarcerated. These mandates also have extended the age range for schooling, with special education addressing needs from birth to 21 years of age and Title I beginning as early as birth (with family literacy programs) through 21 years (with migrant programs).

Categorical programs. These federal mandates, although similar in broad intent, created separate systems with differing administrative, eligibility, staffing, monitoring and funding structures. Certain features were common across programs, including: funding was allocated to states for distribution to localities; these funds could not be commingled with other educational funds; and separate services were provided to individual students based on certain eligibility criteria. Monitoring for special education reinforced a categorical approach to programming by requiring documentation according to disability categories. Teachers, equipment, space and time were increasingly allocated by federally defined disabilities. Universities and states followed suit by preparing and licensing teachers according to categorical definitions. For example, Title I programs removed students who

were economically disadvantaged and demonstrating academic deficits from the general classroom for skills remediation, often with little connection to the ongoing classroom curriculum. This approach was typical for many students with disabilities as well.

Program concerns. While federal legislation has created an array of educational, health and social service programs to support children who encountered various stressors, increasing concerns have been raised about their effectiveness in ameliorating risks associated with disabilities, poverty and homelessness. Wirt and Kirst (1997) described the separate development of these programs:

> The major federal strategy to change local education has been to specify
>
> purposes for federal funds (e.g., categorical grants), and then monitor local
>
> compliance through federal auditors ... [the] 1964 to 1976 ... proliferation
>
> of programs led to a condition called "hardening of the categories," whereby
>
> each program operated largely in protective isolation. (p. 252)

General concerns about the proliferation of programs, as well as specific program-related concerns about educational outcomes, led to increased debate about the value and effectiveness of these separate federal initiatives (Wang, Reynolds et al., 1995; Wirt & Kirst, 1997).

Since the passage of these mandates for specialized educational programs, pressures to modify the underlying legislation and the resulting implementation of special and compensatory education have emerged for several reasons. First, students were not easily categorized by programs, particularly students with mild learning and behavior problems, who also were the most prevalent group of students requiring specialized educational services (Dunn, 1968; Wang, Reynolds et al., 1995). Second, the categorization or eligibility process as implemented was based on testing procedures with suspect outcomes. For example, African-American students been underrepresented as students with mental retardation (Reschly, 1996).

In comparison to other public school students, students with disabilities and those living in poverty have lower graduation rates, lower postsecondary education participation and poorer employment experiences (CDF, 1995; Wagner, 1995). Various explanations for these outcomes have been offered, with separation from the common educational experience emerging as one of the principal concerns. Both special education and Title I programs' employment of the "pull-out and remediate" instructional approach has served to reduce student access to the broader curriculum and peer relationships as well as lower classroom teachers' expectations for their achievement potential (Carlson & O'Reilly, 1996). Increased emphasis on higher educational standards for all students has added to the complexity of these controversies, bringing further attention to the separate and remedial emphases of these compensatory programs (McDonnell, McLaughlin & Morison, 1997; Pugach, 1995). Recent changes in the federal mandates reflect some of these issues, as illustrated in the following sections.

## Individuals with Disabilities Education Act of 1997

Disappointing special education outcomes, as documented by the National Longitudinal Transition Study (Wagner, 1995), have included poorer educational, vocational, and community participation attainment than expected. Recommendations for the reauthorization of Individuals with Disabilities Education Act (IDEA) included increased support and accountability for integrated services and long term outcomes (US Department of Education [USDE], 1994).

The subsequent Reauthorization of IDEA (1997) reflects these concerns for accountability and increased participation. New requirements emphasizes student participation in the regular curriculum as well as educational outcomes accountability through participation in statewide assessments (McDonnell et al., 1997). Specific requirements for participation in statewide and district level assessments were added to the law to increase accountabilty for student outcomes. The amended act also includes permission for "incidental benefit" to typical students without disabilities, which removes a

barrier to collaborative teaching in integrated service delivery models. In addition, greater emphasis has been placed on the participation of classroom teachers in the development of educational plans for students with disabilities (McDonnell et al., 1997; Weintraub, 1997). Finally, some acknowledgment of the interaction of poverty and disabilities is indicated in the new funding formula for special education (with 15% of new funds determined by state poverty levels).

## Title I

Reviews of Chapter I services and outcomes prompted recommendations by USDE staff to shift their program emphasis from individual remediation to schoolwide improvement (Wang, Haertel et al., 1995). An independent commission on Chapter I voiced concerns about program fragmentation and lack of coordination within schools (Wang, Haertel et al., 1995). As a result, funds were made available for the establishment of schoolwide projects to improve the educational programs of an entire school, if at least 75% of the students' families had low incomes. Although this had been permissible since 1978, this practice was rarely implemented, probably due to the requirement for local matching funds (Burnett, 1993). To provide guidance for less remedial approaches, federal recommendations for these schoolwide programs included: staff development, support services, family-oriented programs, innovative practices and enrichment programs.

With its incorporation in the Improving America's Schools Act of 1994, the re-named Title I program shifted policies to build schoolwide interventions with an emphasis on improved teaching and learning outcomes (LeTendre, 1996). Although the reauthorized program supports the concept of increased coordination with other educational initiatives, various concerns have been voiced about the actual implementation of these coordination options. "Past practices and historical traditions in how resources are used, as well as beliefs about compliance, may be the biggest barriers to the integration of services" (Carlson & O'Reilly, 1996, p. 21).

## Stewart B. McKinney Homeless Assistance Act

The original focus of the Stewart B. McKinney Homeless Assistance Act in 1987 (P.L. 100-77) was to increase access for students who are homeless to free appropriate public education through the reduction of state legal barriers, specifically residency requirements of school attendance laws, including related guardianship, immunization, and documentation requirements. "Almost immediately, however, educators and advocates realized that mere access alone was insufficient for these variously disadvantaged children to benefit from the school environment" (Helm, 1992, p. 26). PL 101-645 (1990) strengthened the requirements for states to reduce legal barriers to educational participation and included an emphasis on interagency cooperation and mainstreamed education. Stronge (1993) noted, "Although the issue of access to education remained prominent in the legislation, Congress acknowledged that the true challenge was not simply to enroll homeless students but, rather, to promote their success in school" (p. 342).

The most recent amendments to the McKinney Act incorporated in the Improving America's Schools Act (PL 103-382, 1994) included the following modifications which are germane to building responsive programs:

- emphasis on equitable educational access to meet higher state standards for student performance

- increased emphasis on reliable, valid and comprehensive evaluation of access, identification, and intervention efforts as well as student educational outcomes

- increased emphasis on provision of preschool services and requirement to collaborate with existing preschool programs (Head Start, Even Start)

- increased emphasis on parental decision making regarding school selection

- required collaboration/coordination with diverse programs for runaway and homeless youth as well as housing agencies

Although these legislative changes reflect higher expectations for students and collaborative approaches, concerns continue to be voiced about the significant lack of local awareness and provision of services to children who are homeless (Stronge, 1997).

Program Boundaries

Numerous educational researchers have expressed concern about the maintenance of boundaries among programs for students with varying needs for enhanced educational supports. Although the intent of these mandates was to compensate for learning problems or experiential deficits, separate programs often limited student and staff participation in the broader life of the schools. Skrtic (1995) described this approach as a typical method by which loosely coupled organizations respond to demands for change incrementally:

> From an organizational perspective the segregated special classroom served
>
> as a legitimating device, a means for schools to signal the public that they
>
> had complied with the demand to serve a broader range of students, while at
>
> the same time allowing them to maintain their traditional paradigm of
>
> practice. Once special classrooms were created, they simply were
>
> decoupled from the rest of the school organization, buffering schools from
>
> the need to change by buffering their teachers from the need to change the
>
> way they actually teach. (p. 761)

Special education added several unique requirements not found in the Title 1 legislation: (a) the principle of zero reject (i.e., all eligible children must receive services); and (b) parental involvement in decision-making. Procedural regulations required that parents grant permission for evaluation and placement of their children in special education. Parents also had the right to participate in defining the individualization and appropriateness of their child's educational program. Studies of these decision-making meetings documented, however, that most parents listened while staff members detailed the plan (Turnbull & Turnbull, 1986). Parents of students eligible for Title I services were not required to participate in individualized planning for students. In addition, "economically

disadvantaged students are not guaranteed services under Title I. In fact, due to limited funding, only a portion of the students eligible for Title 1 are served" (Carlson & O'Reilly, 1996, p. 23).

Considering the inherent difficulties in identifying the etiology of students' learning needs based on poverty or disability (as well as the problems with pull-out services), educators have recommended the use of Chapter I and special education resources to enhance student participation in the regular classroom (Pugach, 1995; Wang, Reynolds et al., 1995). Skritic and Sailor (1996) portrayed the dizzying array of barriers that have been created across multiple programs:

> Education, health, social welfare, juvenile justice, recreation - each human service
> system has its own gate-keeping functions (eligibility requirements), contact
> personnel ("case managers"), physical locations, programmatic policies,
> administrative bureaucracies, databases, confidentiality systems, state and federal
> parent agencies, professional associations, and separate, categorical funding
> sources, often originating in discrete federal statutes. (p. 276)

Considering the complexity of some students' challenges and their requirements for a wide array of services, these barriers become additional stressors rather than essential supports.

For example, families who want to be involved in their child's education are dismayed by the intricacies of special education procedures (Turnbull & Turnbull, 1986). Families who are homeless face considerable difficulty in simply registering their children for school, because of enrollment and residency policies (Stronge, 1993). High-ability students in urban schools rarely receive the educational experiences of their suburban counterparts because of property-based funding structures and narrow eligibility criteria (Renzulli et al., 1995). Further, for families and students who are culturally and linguisitically diverse, these frustrations can be multiplied by staff perceptions and attitudes towards diversity (Garcia, 1995; Harry, 1992).

Educational Programs as Protective Mechanisms

While resiliency offers a proactive framework for designing programs, Liddle (1994) cautioned that solutions need to take into account the complexity and contexts of resiliency. Masten (1994) outlined four overarching principles that provide a foundation for program development: (a) foster resilience through reduction of risks, (b) reduce child exposure to stress and decrease the number of stressors, (c) increase resources to the child and family, and (d) mobilize protective processes. Simeonsson (1994) described the dual purposes of a resilience-oriented approach, that is, promotion of adaptability serves as a prevention for maladaption. Given these broad approaches, several questions are relevant for educators who want to increase the responsiveness of schools to the needs and potential of students:

- What are the implications for school structure and organization?

- What classroom features are supportive of resilience?

- How can schools include and support families?

- How can schools provide better coordination within schools to build an internal safety net for students?

- What effective strategies can be employed across the broader community to build integrated services?

## Key Features of Resilience-Oriented Education

In a review of 100 programs, Dryfoos (1990) identified common design features of programs that effectively prevent school failure and high-risk behavior. Central to these programs were holistic goals to address the interrelatedness of risk factors. Institutional change, with schools as the locus of comprehensive support, was a key feature. Continuity of services for children and youth was reflected in the significant support at key transitions, particularly preschool and middle school. Linkages across programs also were constructed through follow-up services, staff supervision, and curricular approaches. Finally, the

comprehensiveness of these efforts was evident in the diverse solutions employed and the multiple program components and services provided.

These broad intervention concepts are consistent with the recommendations of various education advocates. For example, Sage and Burrello (1994) described the necessity for shifting paradigms in special education to build more integrated services that target student competence through collaborative programs. Whitman, Accardo, and Sprankel (1992) emphasized the importance of employing diverse strategies to meet the basic physical, psychosocial, developmental and educational needs of families who are homeless as social units. To meet these needs, programs must be accessible, responsive and continuous; staff must be trained to increase their sensitivity and effectiveness; and bureaucratic barriers must be reduced. Stronge (1993) recommended a continuum of service delivery models that addresses individual and family resource needs; development of interagency collaboration; integration of social, emotional and physical goals into educational services; support services to parents; and staff development for administrators, teachers and support staff regarding more responsive services.

School communities that build resilience weave responsive relational, curricular, and structural strategies into the school culture that acknowledge the uniqueness of individual students and families while constructing social contexts that support long-term growth. Creating student-focused solutions to family circumstances, developmental, and transition problems builds the supportive role of schools in reducing the stressors often associated with school involvement for the families who are experiencing stress (Reed-Victor & Stronge, 1997a). Henderson and Milstein (1996) applied the resilience model (i.e., mitigate risk and build resilience) to broader school reform efforts. They outlined planning and implementation strategies to reshape schools based on the following processes:

(a) increase prosocial bonding;

(b) establish consistent boundaries;

       (c) teach cooperation, problem solving, decision making and stress management;

       (d) provide encouragement and support;

       (e) communicate high expectations

       (f) create opportunities for meaningful participation.

Other models for building student competence have targeted specific risk concerns such as

substance abuse prevention. Nevertheless, targeted outcomes are shared across many

resilience-oriented programs (Dusenbury & Botvin, 1992).

<u>Early Intervention</u>

       The importance of early intervention is well established in the promotion of long-

term competence (Barnett, 1995; Gomby, Larner, Stevenson, Lewit, & Behrman, 1995;

Schweinhart & Weikart, 1989). Hanson and Carta (1996) identified a variety of stressors

that increasingly challenge the healthy development of young children, including changes in

family composition, unemployment, parental age, poverty, substance abuse and violence.

       The complexity of many children's circumstances and predicted developmental

outcomes requires more comprehensive and proactive services (CDF, 1995; Devaney,

Ellwood, & Love, 1997; Dryfoos, 1994; Pianta & Walsh, 1996; Simeonsson, 1994; Wang

& Gordon, 1994). While various early childhood public school programs (including

special education, Title I, homeless education) provide different services to young children

with special needs and their families, the complexity of those needs challenges traditional

program boundaries. Increasingly, policymakers and program coordinators seek child- and

family-focused approaches to allocating resources and services, rather than maintenance of

categorical programs (Nunez, 1994; Pugach, 1995).

       Professional organizations and policy bodies have renewed efforts to increase the

accessibility of early intervention services, promote higher standards for programs, and

monitor outcomes for young children. The National Education Goals Panel issued the

"Special Early Childhood Report 1997," which identified reforms needed in early

childhood programs (complete with child care, education and health options) through:

expanding traditional program services for young children, seeking new

ways to make them accessible and affordable, and developing mechanisms

to remove barriers and assure higher quality and more flexible and

comprehensive services for children and families at the local level. (p. 5)

National and state progress indicators have been identified for health (i.e., prenatal

care, birthweight, health index, immunizations); family-child activities (i.e., family-child

reading, family literacy, support for preschoolers' families); and preschool experiences

(i.e., preschool participation, quality preschools and quality home-based childcare). Task

forces representing professional groups (Council for Exceptional Children, Division for

Early Childhood and the National Association for the Education of Young Children) have

developed quality indicators for comprehensive early childhood programs as well as staff

competencies.

A continuing concern is poor access to these effective interventions for the neediest

students. "In 1990, 60% of children from relatively wealthy families ... attended preschool

programs, compared with only 35% from poor families" (Gomby et al., 1995, p. 12).

Likewise, although young children who are homeless need these opportunities to develop

essential skills, their access and participation is substantially less than their middle and

upper class peers (Nunez, 1994). Effective solutions have been created through school-

community partnerships and provision of these programs in community centers, shelters

and adult education facilities (Eddowes, 1993; Nunez, 1994; St. Pierre, Layzer, & Barnes,

1995; Stronge, 1993). Nurturing environments, built on routine and supportive contact,

provide young students with the opportunities to ventilate, gain information, explore

alternative solutions and develop skills which buffer stress (Barton & Zeanah, 1990).

## Responsive School Structures

Oxley (1994) identified the positive effects of school programs organized for

responsiveness to the challenges faced by students living in poverty. Central to this design

is the reduction of the "pedagogy of poverty," which Haberman (1991) described as

directive, decontextualized, and bureaucratic. Chafel (1997) extended these concerns to the hidden curriculum and underlying conceptions of poverty, that teachers and students hold. In contrast, responsive schools base their goals, structures and interactions on collaborative organizational and educational approaches. The shift from deficit orientations to proactive approaches (Hanson & Carta, 1995) is exemplified by the creation of responsive programs with an emphasis on caring and constructive environments as well as high expectations and engagement (Oxley, 1994). School organization features that support resilience include strategies to increase quality and continuity of relationships, facilitate student and family participation, increase comprehensiveness of services, and ease transitions.

Building relationships. Structural modifications that increase continuity of relationships act as a buffer against stressors. In a review of 100 programs focused on prevention of criminal behavior, substance abuse, adolescent pregnancy and/or school failure, "intensive individualized attention" was listed as the first lesson to be learned from effective programs (Dryfoos, 1990, p. 228). Schools have structured increased opportunities for sustained relationships among staff and peers by reducing class/school size, creating multiyear instructional teams and increasing staff role flexibility (Dryfoos, 1990; Oxley, 1994; Quint, 1994).

In addition, heterogeneous student groupings avoid some of the inherent problems of tracking, specifically the narrowing of opportunity for students in lower homogeneous tracks or separate programs. Oxley (1994) noted that these groupings also stimulate increased cognitive functioning. Expanding the comprehensiveness of services to include psychological, social, and health supports is particularly important for students facing diverse and chronic challenges (Nunez, 1994; Stronge, 1993). Development of a continuum of services responsive to student and family diversity provides transitional, mainstreamed and supplemental support program options (Stronge, 1997). Consolidating these services in schools or further enhances access and coordination.

Supporting transitions. Another consideration for schools is the timing and types of transition supports available to students and families as they move between classes, schools, educational levels and agencies (Mallory, 1995). Although Mallory's specific concern involved students with disabilities and their families, his policy considerations regarding reduction of agency-related stressors for families and increased attention to long-term student needs are germane to students challenged by various stressors. Transition services are mandated in IDEA for both school entry and school exit, requiring carefully planning, family involvement and follow-up (Repetto & Correa, 1996). Transition features are similar across these levels with an emphasis on developmentally appropriate services in natural environments and expanded definitions of education (Kleinhammer-Tramill, Rosekoetter, & Tramill, 1994).

Given the link between early school experience and long-term outcomes (Entwisle, 1993), smoothing children's initial entry into school should be a high priority. For children and families in highly stressful circumstances, "the effects of family stressors, lack of family support and availability, and limited resources make it difficult for the child to adapt to the demands of the school" (Egeland & Kreutzer, 1991, p. 69). One solution is to create transition programs and strategies (e.g., room or staff member) to facilitate a child's entry into the school environment and structure (Hanson & Carta, 1996; Quint, 1994).

Supportive Classrooms

Curricular features supportive of resilience build academic and social-emotional competence by incorporating developmentally appropriate practices, skill building in problem-solving and decision-making, enhancing student interests and talents, creating high expectations, and fostering positive peer relationships. Positive effects were noted in a study of students in elementary schools that promoted a sense of community through shared values of belonging, autonomy and competence (Battistich et al., 1995). These students' perceptions of staff support were positively related to their participation and performance as well as teacher morale. Based on these findings, Battistich and colleagues

(1995) suggested that caring schools became the referent group that nurtured engagement and adoption of social values (including academic achievement).

> [T]he support, commitment, and goal clarity provided in a caring
>
> school community may serve to compensate for the relative lack of
>
> such qualities in the lives of some students outside of school and
>
> thereby allow those students to develop the motivation and direction
>
> they otherwise might not have. (p. 650)

Teachers as mentors. The potentially positive influence of teachers in students' lives, particularly students those living in stressful circumstances, cannot be overstated. Teachers can play protective roles through sustained and caring relationships with students (Masten, 1994). First, teachers can enhance students' sense of worth, develop trust and establish adults as important resources. They can also model competent behavior and coach student competence through guidance and constructive feedback. Such coaching entails advising students about avoiding pitfalls and bolstering students' confidence in meeting challenges. In Vygotsky's model (cited in Berk & Winsler, 1995), teachers provide careful scaffolding to students' learning through balanced support, challenge and autonomy granting within teaching-learning exchanges. Given their knowledge of individual students' strengths and needs, teachers also play important roles in advocating for student access to opportunities and in creating access to knowledge.

Structure for participation. Effective curricula for school-age students are built on similar developmental concerns. As students enter school and progress across levels, their needs for academic and social support may vary according to their sense of worth and their relationships with adults and peers (NIMH, 1995). Classroom management and instructional practices that incorporate high degrees of student participation include "shared decision making, collaborative planning, active learning/inquiry, collaborative learning/mentoring and social learning/guidance" (Oxley, 1994, p. 185). Appropriate educational interventions can include team teaching, cooperative learning and community-

oriented experiences (Dryfoos, 1990). Teachers' attitudes and behaviors contribute to higher school performance when academics (homework assigned and monitored, course content covered, time on task) as well as student contributions (creativity, problem-solving, autonomy) are emphasized (Ames, 1992; Entwisle, 1993; Kimchi & Schaffner, 1990).

Enriching experiences. Student opportunities for development also are provided through extracurricular activities such as sports, arts, student government and service clubs (McLaughlin et al., 1994; Werner & Smith, 1992). Such opportunities serve as protective mechanisms by fostering talent development, mentor relationships, student planning, problem-solving and decision-making, as well as positive peer interactions (Kimchi & Schaffner, 1990; Oxley, 1994). Also, these experiences often provide important alternative strategies for self-expression and development for children and youth whose school involvement has been negatively affected by transience (Nunez, 1994). In addition, extracurricular activities provide alternative pathways to "develop artistic, musical, mechanical, and other talents ... which may give students the confidence to pursue more traditional subjects" (Oxley, 1994, p. 187).

Family Involvement

Hanson and Carta (1995) emphasized the importance of family-focused approaches to maximize the strengths of family support for children and youth. Wang, Haertel and colleagues (1995) described the importance of enhancing parent-child relationships by emphasizing the protective features of family structure, positive interaction, high behavioral and academic goals, as well as accurate developmental expectations. Fostering healthy family relationships has been the focus of numerous intervention programs, such as Healthy Start, Parents as Teachers, and Resource Mothers (Behrman, 1993). Family-focused models are employed by effective educational programs for students who are homeless (Nunez, 1994), early intervention programs for infants and toddlers with disabilities, and Head Start community based projects.

Building relationships. The effectiveness of family programs is based on both accessibility and supportiveness (Stronge, 1993). Staff attitudes play a significant role in establishing an atmosphere of availability and respect. Studies of professionals' attitudes and behavior towards ethnic minority families of students with disabilities demonstrate the importance of reforming current practices. Staff were less likely to contact minority parents during the evaluation process and offered a narrower range of services (Harry, 1992). In contrast, Quint's (1994) case study of an effective school program for homeless children, describes the school's welcoming atmosphere as experienced by a grandparent:

> The very first time I walked through the doors of this school, I knew
>
> something was different - I mean different. People actually smiled at
>
> you and asked if they could be of assistance ... I felt so relieved at the
>
> end of the first day at the school because I thought, "Finally, someone
>
> is there to help me get help." (Quint, 1994, p. 85).

In two recent studies of early intervention programs for children with disabilities, Trivette, Dunst, Boyd, and Hamby (1995) assessed family perceptions and preferences for various types of programs. Regardless of socioeconomic status, ethnicity or child risk status, families rated staff who promoted family capability as the most helpful. Building family strengths in using social networks, accessing services, advocating for their children and gaining economic stability is fundamental in the promotion of student resiliency.

School Climate

Building coordination within schools is a primary method of increasing student and family participation. For example, the responsiveness of office staff in the enrollment of homeless students communicates the receptivity of the school community (Stronge, 1997). Although the McKinney Act provides for the reduction of barriers to participation (enrollment procedures, transportation and access to services), implementation of those procedures requires coordination within and across schools.

Visionary leadership. Sustained and focused efforts required to promote effective change in the school climate are fueled by visionary, collaborative leadership (Sergiovanni, 1994). Such leadership is exemplified by Carole Williams, the principal of B.F. Day Elementary School in Seattle, who inspired her staff to collaborate within their community, creating a family school supportive of children and families who were homeless.

> Having first established herself as a genuinely sincere leader
>
> with a strong commitment to assume responsibility for homeless
>
> children and their families, Carole's second strategy was to empower
>
> her teachers via "problem ownership" by appealing to their sense of
>
> goodness, righteousness, and obligation. (Quint, 1994, pp. 25-26)

Benjamin Franklin Day Elementary School exemplifies a school-originated model, that transformed its mission and broadened its educational program by responding to the needs of children. Principal Williams described her response to the realities of students' lives:

> I could no longer think of the school as solely an educational agency.
>
> Nor could I continue to play the role of a bureaucratic administrator...
>
> If this school was going to change its course and assume more than
>
> academic responsibility for its students, it would require a collaboration
>
> of minds, hearts and hands. (Quint, 1994, p. 5)

Teacher leadership. As staff assessed the diverse needs of their students and assumed responsibility for those broader concerns, collaboration within the school and with community partners evolved. The B.F. Day program came to be characterized by the following features: (a) program goals were integrated to address academic, health, housing and employment issues; (b) the school-community council developed planning strategies for long-range issues and current operations; (c) the resulting activities were enhanced by active community partnerships with businesses, universities and agencies; (d) within the programs, role parity and support were established among staff, parents and community members; and (e) finally, the curricular focus centered on problem-solving and social-

emotional support provided in the context of heterogeneous groupings. The results of this program include increased student academic performance, decreased bureaucratic barriers, strengthened staff commitment, increased parental involvement, effective collaboration with the broader community, and enriched resources for the educational program.

Collaborative teaching arrangements can provide more supportive and flexible options for instructional arrangements (Carlson & O'Reilly, 1996). For example, Title I and special education teachers may collaborate to expedite curriculum-based assessments for incoming students who are homeless and lack educational records (Walther-Thomas, Korinek, McLaughlin, & Williams, 1996).

Because staff sensitivity and understanding is the first step in creating responsive schools (Harry, 1992; Stronge, 1997), effective personnel preparation and professional development are essential (Townsend, Thomas, Witty, & Lee, 1996). Staff study of resilience and its implications for effective programs has the potential for creating new frameworks for problem-solving and crafting program improvements (Hanson & Carta, 1996; Henderson & Milstein, 1996). Collaborative leadership for school climate based on cohesiveness, caring and high expectations builds an environment most supportive of student growth. As staff are involved in decision-making, planning, implementation, and evaluation, both school community and staff commitment can be enhanced (Oxley, 1994).

Links Across Environments

The creation of sufficiently comprehensive and responsive programs cannot be accomplished by one school or agency, however, one hallmark of effective prevention programs is "communitywide multiagency collaborative approaches," which include schools, community health and social agencies, businesses, media, religious groups, universities, police, courts, and youth groups (Dryfoos, 1990). Although different agencies and individuals make different contributions, these activities and perspectives form a "tapestry of programs" that meet the interests and needs of individual students and families (Freiberg, 1994, p. 159).

Co-locating services. Numerous community-school models illustrate the synergistic and responsive solutions that are possible when common goals are identified and resources are shared for the benefit of children and youth. Three community schools in the Washington Heights-Inwood area of New York City are planned, funded and administered through the cooperative efforts of the public schools and the Children's Aid Society (Carnegie Council, 1992). The curriculum incorporates high academic standards and an emphasis on community interaction, including service projects, internships, senior citizen partnerships, guest lecturers and family involvement. Health, child care, leadership training, drug and teen pregnancy prevention, fitness, arts, emergency shelter and adult education programs are provided in these facilities which operate year-round, six days per week and 12 hours per day.

Creating "full" services. The importance of creating a "tapestry" of services for students is underscored in the 1994 amendment of the McKinney Act, which requires collaboration with multiple agencies to increase the availability and accessibility of services (Stronge, 1997). Building family resources in the acquisition of basic food, shelter, and health care is the emphasis of many community programs serving families who are homeless. In addition, adult education and job training services are essential to supporting the whole family since heads of homeless families often lack high school diplomas and successful work experiences.

Homes for the Homeless Programs in New York recognized the central role of education as a long-term solution and provided programs for all family members (Nunez, 1995). The Residential Educational Training Center model emphasized individualized student and family education plans, early intervention, accelerated rather than remedial education programs, enrichment programs (recreation and cultural), and parental involvement. Intensive programs are provided for parents in life skills, education, employment training, and parenting. Another important feature is the follow-up support to children and families in the transition to independent living. As a result of this well-

designed program, 94% of families have "remained in their original permanent housing placement for at least two years" (Nunez, 1994, p. 121). Significant developmental gains for young students, academic gains for school-age students, increased parental involvement, and active student involvement in after-school programs have been documented.

Creating accessibility and linkages through school-based, shelter-based and wrap-around services builds the intensity and sustained supports that benefit students who are homeless (Stronge, 1993). Community interagency committees create opportunities for problem-solving regarding the needs, resources and collaborative solutions which can be developed. "Our neighborhoods are full of resourceful people ... they are part of a collaborative partnership that provides comprehensive care on a small-scale and extremely personalized basis" (Quint, 1994, p. 48). To accomplish these linkages, staff time must be allocated by agencies to ensure coordination across programs and to reduce bureaucratic stressors for families (Hanson & Carta, 1996).

Creating partnerships. Effective networks of support services that are responsive to student and family priorities can be crafted through collaboration among school and community agencies. Soderlund, Epstein, Quinn, Cumblad, & Petersen (1995) described a study of parental perceptions regarding current and desirable services as a model for the development of family-centered, coordinated interagency services for students with emotional and behavioral disorders. The multilevel assessment was undertaken by the Partnership for Family Preservation, composed of administrators of community social service agencies. The Survey of Parents' System of Care Experiences addressed four areas: parental judgments of current services, needs for services, system barriers and priorities for system changes. Families identified the following needs: increased staff knowledge of rights, available services and payment strategies; assistance with managing child's behavior, recreational activities and personal time; conveniently located services and central

information source; and increased school-based counseling, career training, therapy, transition services, alternative schools, and outreach services.

The Center on School, Family and Community Partnerships (Epstein, Coates, Salinas, Sanders, & Simon, 1997) created a model for school-based development of effective programs to bridge the gaps across home, school and community environments for students. The emphasis of this program includes action teams to develop and monitor the program as well as multiple options for partnership activities. This approach facilitates schools' responsiveness to the reality of families' lives. In addition, linkages among communities that employ the model have been encouraged to provide ongoing support for local plans.

## Operationalizing Resilience

Protective factors across individual, family, school and community were identified in studies employing different instruments and methods (Kimchi & Schaffner, 1990; Masten, Best et al., 1991; Werner & Smith, 1992). In a review of resilience studies and their relevance for schools and policy, Zimmerman and Arunkumar (1994) suggested that subsequent studies include:

- baseline measures including all relevant variables;

- samples large enough to test interaction of key variables;

- a minimum of three measurement points in a longitudinal design;

- and greater emphasis on protective than risk factors.

In the current study, two aspects of resilience were assessed: (a) individual child characteristics and (b) family, school, and community supports or interventions. To understand the development of child resilience, individual difference measures were employed. To document environmental protective factors, an assessment instrument to rate the adequacy and importance of interventions for individual students was needed.

## Individual Protective Factor Measures

In the Kauai longitudinal study, various child characteristics were important predictors of long-term outcomes. Werner & Smith (1992) found that resilient children were "more active, and socially responsive, viewed as good-natured (boys) and cuddly (girls) by their mothers" in infancy (Masten, Best et al., 1991, p. 428). To establish a profile of child resilience, two measures of child characteristics were employed, the TABC-R (Martin, 1988) and the ICID (Halverson & Havill, 1997).

Temperament and personality. In recent years, "behavioral scientists have come to believe that most variation in personality across individuals can be accounted for by differences in five broad factors" (NIMH, 1995, p. 27). The development of instruments to assess these temperament and personality dimensions across infant, child, and adolescent development is described in The Developing Structure of Temperament and Personality (Halverson et al., 1994).

Temperament is viewed as the early aspect of personality behavior (Graziano & Waschull, 1995) and temperament measures have been widely used in clinical, developmental and school research (Keogh, 1989; Martin, 1992; Thomas & Chess, 1984). The Five-Factor model of personality has been used to identify salient features of personality from natural language descriptors. These five factors, Extraversion, Agreeableness, Conscientiousness, Emotional Stability and Openness to Experience, are reflective of child protective factors identified in longitudinal studies of resilience. The dimensions of temperament and personality used in the current study are listed in Figure 2.

| Temperament Dimensions -TABC-R | Personality Dimensions - ICID |
|---|---|
| Inhibition | Extraversion |
| Activity Level | Agreeableness |
| Task Persistence | Conscientiousness |
| Negative Emotionality | Emotional Stability |
| | Openness to Experience |

Figure 2. Temperament and personality dimensions of the TABC-R and the ICID.

Personality measurement. Originally, the Five-Factor approach was developed to describe adult personality (Goldberg & Rosolack, 1994; John, 1990; McCrae & Costa, 1987). But Digman and his colleagues (Digman, 1990; Digman & Inouye, 1986; Digman & Takemoto-Chock, 1981) applied it to school-age children and found the approach to be stable and predictive of academic achievement. Similarly, in Victor's (1994) replication of Digman's study, the same five factors predicted standardized achievement and behavior problems in elementary-school children.

Over the past five years, the Child Natural Language Lexicon (based on the Five-Factor model) has been developed by gathering and coding free descriptions of child characteristics by parents and teachers through an international consortium of child development research programs (Havill, Allen, Halverson & Kohnstamm, 1994). This method fosters the expression of the participants' perspective in their natural language for children ages three to 12 years, and has been employed in various countries, cultures and languages (i.e., Belgium, China, Germany, Greece, Korea, Netherlands, Poland, and the United States of America [African-American and Euro-American]). The ICID (Halverson & Havill, 1997) was constructed based on these Five-Factor studies, providing an instrument for parental and teacher assessments of children's individual personality differences.

Temperament measurement. Temperament research has a long history in theoretical developmental psychology. For example, Goldsmith et al. (1987) provided an overview of four approaches to the study of temperament, including the major points of consensus and disagreement. Kohnstamm, Bates, and Rothbart (1989) also presented approaches to the study of temperament, as well as various applications. Educational applications of temperament stem largely from the pioneering work of Alexander Thomas and Stella Chess from the New York Longitudinal Study, which provided detailed clinical evaluations of all cases from infancy to adulthood (Chess & Thomas, 1984). More recently, Caspi and

colleagues (Caspi, Bem, & Elder, 1987, 1988, 1989; Caspi & Silva, 1995) demonstrated the link between temperament measures at age three and behavior at age 18.

Victor, Halverson and Wampler (1988); as well as Keogh (1989); and Martin (1989) have conducted temperament research in school-related issues. Various studies have identified relationships between achievement and temperament, behavior problems and temperament, as well as teaching behaviors or environments and child temperament (see Keogh, 1989, for a review). Keogh suggested that goodness-of-fit models (i.e., child characteristics and classroom environments) could be understood in the context of teacher decision-making. "Teachers obviously respond to individual differences among pupils in terms of cognitive competence and educational skills, modifying the level of difficulty of tasks and/or manipulating time demands" (Keogh, 1989, p. 443). In several earlier studies of preschool and elementary general and special education classes, Keogh (1982, 1983) examined children's temperamental characteristics and teachers' views of their teachability (as reported in Keogh, 1989). Children viewed as low in teachability had temperamental profiles that included low persistence, high distractibility, high reactivity, and low adaptability.

The TABC-R (Martin, 1988), based on temperament characteristics, has been used for family and teacher assessments of children's individual differences. The critical temperament characteristics identified in school settings were the Aggregate Manageability dimension (combined dimensions of Negative Emotionality, Task Persistence and Activity Level) as well as Inhibition (R. P. Martin, 1989, and personal communication, February 2, 1998).

Preliminary Study

In a preliminary resilience study (Reed-Victor & Stronge, 1997b; Victor et al., 1997), descriptive methods were employed to assess staff characterizations of children and desirable interventions for a group of children experiencing the multiple risks of homelessness. The primary research questions were: (a) whether staff would describe

protective as well as risk factors and (b) to what extent free description was an effective assessment method. Thirty-six students who were homeless, ranging in age from four to 16 years, were compared to 116 students who were not homeless. Both samples were comparable in age and gender distribution. Students who were not homeless represented diverse socioeconomic backgrounds. A two-page survey was effective in eliciting child descriptors from staff members as well as intervention descriptors reflective of the resilience paradigm.

Child descriptors were coded by a method used in several Five-Factor studies (Havill et al., 1994). Staff identified both protective and risk factors for all children who were homeless (see Table 1). Identified risk factors included low self-confidence, slow

Table 1. Staff Descriptions of Homeless Students: Frequencies of Descriptors by Five-Factor Dimensions

| Factor | High Dimension[a] | | Low Dimension[a] | |
|---|---|---|---|---|
| Extraversion | | | | |
| Total = 33.7% | Outgoing | 14.0% | Shy | 8.8% |
| | Assertive | 2.3% | Passive | 0.6% |
| | Active | 7.6% | Not Active | 0.3% |
| Agreeableness | | | | |
| Total = 22.4% | Helpful | 9.9% | Selfish | 1.0% |
| | Cooperative | 1.7% | Argumentative | 4.4% |
| | Trustworthy | 1.1% | Deceitful | 4.4% |
| Conscientiousness | | | | |
| Total = 9.3% | Organized | 1.2% | Disorganized | 1.2% |
| | Dependable | 0% | Passive | 0% |
| | Industrious | 4.1% | Lazy | 3.0% |
| Emotional Stability | | | | |
| Total = 12.4% | Resilient | 0.2% | Moody | 5.0% |
| | Self-assured | 0.5% | Insecure | 5.8% |
| | Fearless | 0.2% | Fearful | 0.7% |
| Openness to Experience | | | | |
| Total = 11.2% | Curious | 4.5% | Unconcerned | 0.4% |
| | Many interests | 1.3% | Few interests | 0.0% |
| | Bright | 3.7% | Slow to learn | 1.4% |
| Total Five Factor Descriptors = 89% | | | | |
| Other Descriptors = 11% | | | | |

[a] Factors include bipolar descriptors.

learning, lower manageability, and deceitfulness. These findings were similar to those of other studies of children who are homeless. In addition, significant protective factors were identified, including all aspects of extraversion as well as helpfulness, organization and curiosity. These findings were promising because they identified strengths that are important facets of resilience.

Staff-recommended supports ( Table 2) for students who were homeless were categorized by individual, family, school and community factors that contribute to resilience. Numerous descriptions (e.g., encouragement, maintain interests) were coded as child factors; however, intervention sources were unspecified. Staff identified various interventions for each student and their recommendations reflected aspects of their experience and settings. Across the combined recommendations across all staff, interventions were identified for all protective factor categories. Recommendations for individual students, however, were usually limited to one or two protective factor categories. The development of a rating scale based on supports or protective factors across environments was suggested by the preliminary study to yield a more comprehensive assessment of these factors.

Link to Current Study

Based on the preliminary findings, the current research project proposed to validate and extend the measurement of protective factors through the use of established and new individual difference measures of child characteristics. In addition, the development of a new protective factor rating scale was proposed to provide more specific assessments of the adequacy and importance of environmental supports for individual children. In combination, these measures would provide individual and environmental resilience profiles, including both protective and risk factors.

Table 2. Examples of Staff Recommendations by Protective Factors

| Protective Factors | Staff Recommendations for Intervention |
|---|---|
| **Child**<br><br>1. problem-solving<br>2. sociable<br>3. goal-oriented<br>4. interests<br>5. responsible | • encourage her love of learning & work orientation<br>• reduce violent outbursts; learn social skills<br>• ability to finish school & get a job; lacks goal orientation<br>• needs to be a child - not assume parenting role<br>• eagerness to learn; needs broader life experiences & long-term expectations<br>• needs hope for future<br>• allow her to be a child; reduce responsibility<br>• build self-esteem |
| **Family**<br><br>1. supportive<br>2. structure<br>3. appropriately high expectations<br>4. autonomy granting<br>5. economic stability<br>6. support networks | • foster care for protection from abuse<br>• removal of mother & child from abusive situation<br>• mother needs job skills, parenting skills, personal assertiveness<br>• protect child from abusive spouse<br>• removal from parent with psychological problems; placement with aunt<br>• support school attendance, access to health care<br>• develop advocacy skills for children<br>• needs structured family setting - parental control<br>• homework support; avoid chaos & abuse |
| **School**<br><br>1. supportive<br>2. problem-solving<br>3. high expectations<br>4. access to knowledge<br>5. peer support<br>6. enrichment<br>7. link to services | • facilitate enrollment<br>• school supplies<br>• school personnel awareness/sensitivity to situation<br>• secure academic supports & counseling<br>• extensive tutoring; mentor/counselor<br>• more academic supports for student who is failing<br>• counseling & school activities to reduce time in abusive situation<br>• reduce absences<br>• increased coordination between tutor & classroom teacher<br>• tap child's interests - provide field trips, peer interaction |
| **Community**<br><br>1. adult mentors<br>2. positive peers<br>3. access to services<br>4. values-related organizational involvement | • available housing<br>• counseling for sexual abuse<br>• age-appropriate activities for adolescents<br>• medical services<br>• assessment for depression; obesity<br>• increased life experiences - enrichment activities<br>• opportunity to develop interests |

Environmental Protective Factors

To develop items for a scale to rate the adequacy and importance of environmental protective factors, key variables were identified from the research literature. Specific family protective factors included:

1. Rules or behavior guidelines from family caregivers

2. Family advocacy for services or enrichment activities

3. Affection and warmth from family caregivers

4. High family expectations for student's achievement

5. Opportunities for child to demonstrate independence

6. Economic stability

School-based protective factors were as follows:

1. Instruction in problem-solving

2. Opportunities for positive peer interactions

3. Participation in decision-making about class activities

4. Student interests incorporated in learning activities

5. Adult sensitivity to emotional concerns

6. High expectations for classroom performance

7. Participation in talent development activities

8. Heterogeneous student groupings

9. Access to support services

Finally, protective factors in the community included:

1. Access to community services

2. Enrichment activities (sports, arts, etc.)

3. Mentoring by adult or older teenager

4. Values-oriented group activities (religious, scouting)

5. Positive peer relationships

6. Coordination or continuity across environments

## Educators' Perspectives

Because teacher perspectives play an important role in shaping students' school experiences, those perspectives were the focus of the current study. Teachers' roles as advocates, mentors, and instructors require multiple judgments about student behavior and effective support strategies. Good and Brophy (1994) noted:

> Teachers' behavior is goal directed and thus shaped by their beliefs and
>
> expectations about how to accomplish their goals. In planning for and
>
> interacting with students, teachers are guided by their beliefs about what
>
> students need and by their expectations about how students will respond if
>
> treated in particular ways. (p. 83)

Risk and prevention. In a survey of educators about their beliefs regarding risk and prevention, Pianta and Nimetz (1989) found that the participants used the concept of risk to describe child, family and environment characteristics. Child-based risks included disabilities, gender, ethnicity, health, achievement, attitude and behavior problems. Risks described as family-based were low education and low intellectual ability. Other risks referred primarily to home environment characteristics, namely, low socioeconomic status, poor health care, values, child abuse/neglect, family stress and disorganization, single parent, lack of daycare and working mother. Regarding beliefs about the school's role in preventing poor outcomes from risk factors, Pianta and Nimetz (1989) suggested,

> Educators tended to believe that the school could help ameliorate only those
>
> risk factors which resided within the child, whereas previously they
>
> reported the most important risk factors underlying early school failure were
>
> parent and family or environmental factors. (p. 121)

While more than half of the respondents in Pianta and Nimetz's survey used the term "at risk" to refer to groups of students, two-thirds of the educators believed that the term applied to individual children. These and other researchers have expressed concern about

the implications of these beliefs for educational practice, specifically the possibility of lowered expectations and opportunities (Cuban, 1989; Pianta & Walsh, 1996).

Developmental expectations. Teachers' expectations for developmental outcomes also have been studied. For example, Graziano et al. (1997) examined the relations between teacher assessments of temperament-based behavior of preschoolers and their expectations for the child's personality in adulthood. These researchers hypothesized that:

Temperament differences in young children may elicit expectations from adults about the developmental trajectory a child will follow, and the personality structure that the child will ultimately acquire. These expectancy-based reactions can enhance the developmental process, and may even help shape the final structural outcome (p. 6).

Teachers' assessments of children's temperament were related to their predictions for later adult personality. For example, teachers anticipated that preschoolers who had good peer relations and were not shy in childhood would be extraverted as adults. "[O]ur outcomes imply that personality development can be enhanced or inhibited by caregiver expectations and beliefs about the meaning of temperament-based behaviors and certain early life events" (Graziano et al., 1997, p. 22).

Based on the hypothesis that teachers' perspectives and judgments about students' risk and resilience are important, the purpose of the current resilience study was to survey teachers of young students (who met educational program definitions related to risk) in order to: (a) characterize students by protective as well as risk factors, (b) investigate teachers' beliefs about the adequacy and importance of environmental protective factors, and (c) explore the relations among risk, age, protective factors and student adjustment to school.

## Chapter 3: Methodology

The major purpose of this investigation was to extend the study of resilience factors to young students in need of early intervention due to disability and/or poverty. Specifically, this study: (a) assessed and compared student risk and protective factors across risk-based educational programs and across developmental levels; (b) assessed and compared family, school and community features that contribute to resilience; and (c) explored the relationship of student characteristics and environmental features to students' school adjustment. A causal comparative design using multiple measures was employed to collect data from teachers in special education, Title I, and homeless education programs. The sample included young students, ages three to nine years, in the Hampton Roads area of Virginia public schools.

### Research Questions and Hypotheses

The following section includes research questions for Phases I and III, as well as hypotheses for Phase II.

Phase I: Assessment of student and environmental protective factors. Phase I addressed the following research questions:

I.1　How do teachers characterize students in terms of individual protective factors?

I.2　How do teachers rate the adequacy of environmental (i.e., home, school and community) protective factors?

I.3　How do teachers rate the importance of environmental (i.e., home, school and community) protective factors?

I.4　How do teachers rate students' adjustment to school?

## Null Hypotheses

### Phase II: Comparisons of student and environmental protective factors across risk groups and age levels.

II.5   There are no significant differences ($p < .05$) across age groups (3-4, 5- 6, and 7-9 years) for student protective factor ratings.

II.6   There are no significant differences ($p < .05$) across age groups (3-4, 5- 6, and 7-9 years) for environmental protective factor adequacy ratings.

II.7   There are no significant differences ($p < .05$) across age groups (3-4, 5-6, and 7-9 years) for environmental protective factor importance ratings.

II.8   There are no significant differences ($p < .05$) across risk groups (special education, Title I, and homeless education) for student protective factor ratings.

II.9   There are no significant differences ($p < .05$) across risk groups (special education, Title I, and homeless education) for environmental protective factor adequacy ratings.

II.10  There are no significant differences ($p < .05$) across risk groups (special education, Title I, and homeless education) for environmental protective factor importance ratings.

### Phase III: Relations among school adjustment and age, risk group and protective factor dimensions. Phase III addressed the following question:

III.11  To what extent do age, risk group, student and environmental protective factor ratings predict school adjustment ratings?

### Research Design

In Phase I, teacher assessments of student and environmental protective factors as well as student adjustment were described. For Phase II of the research, protective factors were compared across risk groups and across age groups. Finally, relations among risk group, age, protective factors and school adjustment were investigated in Phase III. The

conceptual framework as well as corresponding instrumentation and variables are displayed

in Figure 2, followed by descriptions of the dependent and independent variables for

Phases II and III.

| Resilience Framework | Theoretical Constructs | Instruments | Variables |
|---|---|---|---|
| Student Risk & Age Groups | • Program criteria<br>• Demographics | • Student Information Form | • Risk Group<br>• Age Group |
| Student Protective Factors | • Personality<br>• Temperament | • Inventory of Children's Individual Differences<br>• Temperament Assessment Battery- Revised | • Student Protective Factor Ratings |
| Environment Protective Factors | • Adequacy and importance of supports | • Protective Factor Rating Scale | • Home, School & Community Protective Factor Ratings |
| School Adjustment | • Adjustment to tasks, peers & teachers | • School Adjustment Assessment | • Adjustment Rating |

Figure 3. Conceptual framework, instruments and variables.

Independent Variables

In Phase II, independent variables were risk group assignment, as determined by

public school program criteria, and age group, designated as 3-4, 5-6, and 7-9 years.

These groupings correspond to early phases of public school services, including preschool,

school entry and primary levels. Student and program data from the Student Information

Form were used to identify subgroups. In Phase III, the predictor or independent variables

were risk group and age group, as well as student and environmental protective factor

ratings.

Dependent Variables

In Phase II, two sets of data served as dependent variables to measure the resilience

characteristics of students in risk-based school programs. One dependent variable was

based on teacher ratings of individual student characteristics, specifically, temperament and

personality, as factors that contribute to student resilience. Environmental protective factors

rated for individual children, on the <u>Protective Factor Rating Scale</u>, constituted the second dependent variable. Teacher ratings of specific types of support, in terms of their adequacy and relative importance, provided a measure of the intensity and comprehensiveness of supports for each student, as well as teachers' perspectives about the relative value of supports for individual students. These ratings reflected teacher perceptions of protective factors in home, school and community environments which contribute to student resilience.

In Phase III, one set of data was used as the criterion or dependent variable to measure the adjustment of students to school. Teacher ratings of students' task or academic adjustment, peer relations, teacher relations and classroom behavior were used to assess components of school adjustment. Figure 4 displays the research phases, purpose, variables and statistical analyses.

| Phase | Purpose | Variables | Statistical Analyses |
|-------|---------|-----------|----------------------|
| I | Describe risk & protective factors, school adjustment | Demographics<br>Individual Factors:<br>   Personality & Temperament<br>Environmental Factors:<br>   Adequacy & Importance<br>Student Adjustment | Descriptive;<br>Factor Analysis -<br>Individual Factors |
| II | Compare risk & age groups | Individual Factors<br>Environmental Factors | MANOVAs and<br>Follow-up ANOVAs |
| III | Explore relations among risk & protective factors in predicting adjustment | Individual Factors<br>Risk Composite<br>Environmental Composite | Discriminant Analysis -<br>Composite Variables;<br>Multiple Regression |

<u>Figure 4.</u> Research phases: Purpose, variables and analyses.

## The Sample

The target population were young students, ages three to nine years, who were at risk for school and behavior problems, based on identified disabilities, poverty, and/or family homelessness. Public school eligibility criteria for enrollment in special education, Title I and homeless education were used to define these risk-related groups. Virginia Department of Education program coordinators for special education, Title I and Homeless

Education served in an advisory capacity regarding eligibility criteria for federally funded services and site selection within the Hampton Roads area of Virginia area.

Hampton Roads is a standard metropolitan statistical area of 1,395,107 residents. It includes 12 cities, towns, and rural areas (U.S. Census Bureau, 1990). The area is experiencing the most rapid growth rate in Virginia and provides an appropriate area to study special education and poverty-related programs. The local school districts in this study are located in urban areas with a total population of more than 300,000 and population density of 2,700 people per square mile (Galano, Nezlek, & Wood, 1997). The two cities are ranked high in fiscal stress; specifically, both are in the top 10% of Virginia communities based on fiscal stress (Galano et al., 1997). Across the school districts, approximately 43% of the children were eligible for free or reduced lunch in comparison to 32% for the state of Virginia.

Systematic sampling from class lists provided by public school programs meeting the target population criteria were used to identify students for this study. Original plans defined the sample size as approximately 110 students, with subgroups by program of approximately one-third of the total sample, matched by ethnicity, gender and age. Given additional funding, local site demographics and teacher volunteerism rates, the final sample for the study consisted of 176 students. Risk subgroups ranged in size from 39 to 72 and were comparable in gender but not in ethnicity. The majority of participating students eligible for Title I and homeless education programs were African-American; those eligible for special education included approximately 55% African-American students and 40% Caucasian students.

Age groups, of approximately one-third of the total sample, were proposed to be 3-4 years, 5-6 years, and 7-8 years. The ages of children selected for the sample were 3 years 6 months to 9 years one month. The upward extension in age range reflects the classrooms sampled, with some students older than predicted for grade level. Age subgroups ranged in size from 51 to 68 students Each of the students was assessed by

their teachers regarding individual resilience characteristics and school adjustment.

Teachers also rated the adequacy and importance of various supports for each student.

## Generalizability

It was anticipated that the results of this study may be generalized to three- to nine-year-old public school students in Virginia special education, Title I and homeless education programs within urban areas. As an indicator of the generalizability of results, the student resilience profiles were compared to studies by Halverson et al. (1994) on the developing structure of temperament and personality in children.

## Instrumentation

A number of instruments were employed to collect child data (i.e., demographic, personality and school adjustment assessments) as well as home, school and community data (i.e., adequacy and importance of supports) as shown in Figure 3. Each instrument is briefly described below.

Student Information Form. A form was developed to gather information regarding student demographic, developmental, health, and family data as well as program assignment and eligibility for services.

Teacher Information Form. The teacher form was designed to gain information about each teacher's educational preparation, certification, current assignment, and teaching experience.

Temperament Assessment Battery for Children-Revised (TABC-R). The TABC-R (Martin, 1988) has been used with teachers and parents to identify aspects of temperament for children. The TABC-R (see Appendix B) measures five factors that replicate consistently (i.e., negative emotionality, inhibition, activity level, task persistence, and adaptability). Internal consistencies with the Cronbach alpha have been reported in numerous studies from .70 to .85 across the five dimensions (Martin, 1989). The TABC-R has been shown to predict behavior problems across assessments by mothers, fathers and

teachers of children, ages three through six years (Victor et al. 1988). The TABC-R was employed in this study as one measure of individual protective factors.

Inventory of Children's Individual Differences. Based on the Five-Factor model of personality, individual difference measures have been developed for children, ages three through 12 years (Halverson & Havill, 1997). Data have been collected on large samples of children (i.e., 360-500 per age level). Validation studies conducted with the TABC-R have yielded significant correlations with all of the temperament variables. At age three years, for example, five consistent factors have replicated over three studies with Cronbach alphas ranging from .91 to .62. The ICID (see Appendix B) was employed in this study as another measure of individual protective factors.

Adjustment Assessment. Graziano and Ward (1992) developed a teacher measure of student adjustment, including ratings of academic adjustment, same-sex and other-sex peer relations, teacher relations and classroom behavior. Student adjustment scores were calculated by summation of these five dimension ratings. Graziano et al. (1997) employed this teacher measure in a study that also used student self-evaluations of social competence and personality (based on the Five-Factor model). For the present study, the wording for one item was modified slightly to incorporate a descriptor more appropriate for preschool level classrooms.

Protective Factor Rating Scale. A protective factor rating scale was developed in consultation with Dr. Margaret Wang, director of the Center for Education in the Inner Cities, and dissertation committee members. This rating scale consisted of specific supports across environments that correspond to family, school and community protective factors. On Form A, teachers rated the adequacy of each protective factor for a specific student; on Form B, they rated the importance of the same protective factors for supporting the student's development.

A pool of rating scale items, drawn from the literature, was submitted to three experts involved in risk and resilience research: Dr. Ann Masten, University of Minnesota,

Dr. Stella Chess, New York University, and Dr. Ronald Taylor, Temple University. These expert judges were asked to assign a priority rating for each item based on its appropriateness for inclusion in the rating scale. All items with high priority scores across two or more raters were included in a pilot instrument. Judges were asked to suggest additional items or modifications of items. Several item modifications as well as two additional items recommended by judges were included in the pilot instrument.

The pilot instrument was used by 10 early childhood teachers to rate 20 students (two students each). These teachers were representative of the targeted teacher participants, serving students in preschool through third grade in special education and poverty-related programs. Pilot study teacher participants provided feedback regarding item clarity, time and ease of completion. Based on their feedback, several items were modified and the rating scales were altered to include additional options. Based on feedback from the pilot test, the rating scale was revised for use in data collection. The instrument for data collection was labeled "Environment Rating Scale" rather than "Protective Factor Rating Scale" to reduce potential bias.

<div align="center">Data Collection Procedures</div>

Virginia Department of Education coordinators assisted in the site-selection process by identifying school systems that provide intervention services for diverse young students, particularly those that have co-located various programs in early childhood centers and elementary schools. Local public school coordinators were contacted to inform them about the research project. Initial contacts were followed by a letter of explanation and request for approval to conduct the study. Following school district administrative approval, the research project was described to principals and teachers in schools that serve students eligible for special education, Title I, and homeless education services.

Teachers completed all of the measurement instruments (i.e., Student Information Form, Educator Information Form, ICID, Adjustment Assessment and Protective Factor Rating Scale - Forms A & B) for selected students in their classes, during the first semester

of the 1997-98 year. With major funding secured from the Office of Special Education Programs (USDE), participating teachers were offered a stipend of $20 per student for completion of all instruments. Each teacher volunteer received a request for participation and consent letter, which outlined the purpose and methodology of the project as well as assurances of confidentiality and the voluntary nature of participation (see Appendix C). Teachers who chose to participate were given the option of rating one to four of their students. A summary of the project results in the form of an inservice presentation or report was offered to participants.

The sample was drawn using systematic sampling procedures to identify young students eligible for the three programs. The researcher was available for consultation regarding data collection procedures and traveled to the sites for orientation. One research graduate assistant also was involved in the collection of instruments. Follow-up efforts were conducted by the researcher and research assistant to retrieve missing data through mailings and visits to participating schools. All instruments were completed for each student within a two- to three- week time frame, after students had been in school for approximately two months, within the first semester of the 1997-98 school year.

## Data Analysis

Background information on the participating programs, teachers and students requested in the Information Forms was summarized as an introduction to the data analysis. Descriptive statistics were used to characterize student demographic, health, developmental and family information as well as teacher experience and certification.

Construction of student and environmental protective factor ratings. To address Question 1, "How do teachers characterize individual students in terms of protective factors?," scores were derived from temperament and personality assessments. First, dimension scores for individual students were calculated for each factor (total of all corresponding items) of the ICID based on the large sample factor analysis of teacher assessments conducted by Halverson. ICID factors identified were Manageability

(combination of Manageable, Agreeableness and Emotional Stability),
Intelligence/Conscientiousness, Extraversion and Activity Level.

In a similar fashion, scores were calculated for the dimensions of TABC-R based
on the factor structure provided by Martin. TABC-R dimensions included Manageability
(aggregate of Emotionality, Task Persistence and Activity Level) and Inhibition.
Correlations among the TABC-R dimensions and the ICID dimensions were calculated and
compared with the combined facets (TABC-R and ICID) provided by Halverson and Havill
(1997). Final dimensions for this study were formed based on review of these correlations
in consultation with members of the dissertation committee, Halverson, and Martin. The
resulting dimension scores were employed as student protective factor ratings. These
protective factor ratings were reported as means and standard deviations for each subgroup.

Question 2, "How do teachers rate the adequacy of environmental (home, school
and community) protective factors?," was addressed by calculating scores for protective
factors based on items reflecting home, school and community supports. Teacher ratings of
the adequacy of these interventions for individual students were used as one measure of
environmental protective factors. Two methods were used to develop adequacy scores:
exploratory factor analysis and mean scores for home, school and community subscales as
well as the mean for the total rating scale. Subgroup data were reported as means and
standard deviations for each environmental factor dimension.

Question 3, "How do teachers rate the importance of environmental (home, school
and community) protective factors?," was addressed by calculating scores for protective
factors based on items reflecting home, school and community supports. Teacher ratings of
the importance of these interventions for individual students served as another
environmental protective factor dimension. Again, two methods were used to develop
importance scores: exploratory factor analysis and mean scores for home, school and
community subscales as well as the mean for the total rating scale. Subgroup data were
reported as means and standard deviations for each environmental factor dimension.

Question 4, "How do teachers rate students' adjustment to school?," was rated on a
five-point Likert scale based on questions about academic adjustment, same-sex and other-
sex peer relations, teacher relations and classroom behavior. Student adjustment scores
were calculated by summation of these five dimension ratings as well as total scores for
each student. Means and standard deviations were used to report subgroup data. In
addition, adjustment groups were constructed by computing the frequency distribution of
scores. Adjustment groups were constructed based on the quartiles evident in the
distribution (lowest quartile = low adjustment, two middle quartiles = moderate adjustment,
highest quartile = high adjustment).

Comparison of protective factors across groups. Separate MANOVAs were
performed to test each set (age group and risk group) of null hypotheses. The first set of
hypotheses included: "There are no significant differences (p< .05) across risk groups for
student protective factor ratings;" "There are no significant differences (p< .05) across risk
groups for environmental protective factor adequacy ratings;" and "There are no significant
differences (p< .05) across risk groups for environmental protective factor importance
ratings." The second set of hypotheses included: "There are no significant differences (p<
.05) across age groups for student protective factor ratings;" "There are no significant
differences (p< .05) across age groups for environmental protective factor adequacy
ratings," and "There are no significant differences (p< .05) across age groups for
environmental protective factor importance ratings." MANOVAs were employed, rather
than separate ANOVAs for each hypotheses, to reduce potential error in the overall analysis
(Weinfurt, 1995).

Relations among school adjustment, age, program placement and protective
factors. Multiple regression analyses were used to analyze the data for Question 11, "To
what extent do age, risk group, student and environmental protective factor ratings predict
school adjustment ratings?" The criterion or dependent variable, teacher-rated school
adjustment, was a composite score of ratings regarding academic adjustment, same-sex and

other-sex peer relations, teacher relations and classroom behavior. The predictor or independent variables were age, risk group, student protective factor ratings, and environmental protective factor ratings. Risk and Environmental Composite scores were constructed from student-family information (Student Information Form) and Adequacy and Importance Ratings, respectively. These were employed to incorporate all of the student data in the final phase of analysis.

## Ethical Safeguards

The study was conducted in a manner that protected the anonymity of the programs, teachers, and students who participated. Specifically, the researcher assigned identification numbers to students to ensure confidentiality. In addition, codes were assigned to teacher participants for use on all of their protocols. These procedures were outlined in the orientation sessions for staff and the printed directions. In addition, teachers were assured of the voluntary nature of their participation (see letter of request and consent to participate in Appendix A).

To ensure its technical soundness and the ethical treatment of participants, the research proposal was submitted to the Human Subjects Review Committee in the School of Education (SOE-HSRC). The SOE-HSRC recommended no further review and granted approval for implementation of the study. Proposals to conduct research in the participating local school districts were submitted and approved by the school districts' research review committees. Once approved, the research was conducted according to acceptable research practices. Results of the study will be disseminated to all teacher participants through a written report or inservice.

## Chapter 4: Analysis of Results

The current study investigated protective factors for young students in need of early intervention due to disability and/or poverty. Specifically, this research employed teacher assessments of their students to: (a) describe and compare student risk and protective factors across risk-based educational programs and across developmental levels, (b) describe and compare family, school and community features which contribute to resilience, and (c) explore the relationship of student characteristics and environmental features to students' school adjustment. A causal comparative design using multiple measures was employed to collect data from teachers of young students, ages three to nine years. The sample included young students who were eligible for public school services through special education, Title I, and homeless education programs in the Hampton Roads area of Virginia.

The investigation was conducted in three phases. In Phase I, teacher assessments of student and environmental risk and protective factors as well as student adjustment were described for the total sample and subgroups. For Phase II of the research, risk and protective factors were compared across risk groups and across age groups. Finally, relations among risk factors, developmental level, protective factors and school adjustment were investigated in Phase III. The results are presented by addressing the research questions for each phase.

### Phase I: Descriptive

The overall purpose of the first research phase was to describe the sample population and the participants who provided the descriptions. Specifically, data were collected and analyzed to characterize the risk and protective factors influencing students' adaptation to school, based on their teachers' perspectives about salient influences and

outcomes. Teachers completed questionnaires and rating scales to describe the following: their own teaching experience and preparation; selected students' demographics, program eligibility, and developmental status; and students' family composition and residential status. Teachers also rated their students' personality and temperament (as measures of individual protective factors) as well as the adequacy and importance of various protective factors across home, school and community. In their final assessment, teachers rated their students' adjustment to school. Phase I of the study has been reported in the following sections which include: Participant and Sample Description, Demographic Information, Individual Protective Factors, Environmental Protective Factors and Student Adjustment

## Participant and Sample Description

A total of 51 teachers representing 13 schools and two school divisions participated in this study. Teachers rated a total of 176 students in their classes during the first semester of the 1997-98 academic year. All of the original teacher volunteers completed the assessment instruments (Student Information Form, Educator Information Form, ICID, TABC-R, Adjustment Assessment and Protective Factor Rating Scale - Forms A & B). Follow-up contacts were made to request missing information with a 97% response rate. The missing data (students' eligibility for special education) were obtained from the school office; thus, all protocols were completed for all of the students in the study. Data reported represent the total sample ($N = 176$), except when subgroups are noted in specific analyses.

## Demographic Information: Participating Teachers

The Educator Information Form consisted of six questions to provide information about teachers' educational preparation, certification, current teaching assignment, and teaching experience. Depending on the type of numerical data, means and standard deviations or frequency counts and percentages are summarized in Table 3.

Table 3

Teachers' Preparation, Certification, Current Assignment and Experience

| Variables | n | % |
|---|---|---|
| **Preparation** | | |
| BA in Early Childhood (EC) and/or Elementary Education | 11 | 21.6 |
| BA in Special Education | 4 | 7.8 |
| Other BA | 36 | 70.6 |
| MA in EC or Education | 6 | 11.8 |
| MA in Special Education | 4 | 7.8 |
| Other MA | 6 | 11.8 |
| **Teaching Certification** | | |
| Early Childhood | 1 | 2.0 |
| Elementary | 12 | 23.5 |
| Early Childhood & Elementary | 19 | 37.3 |
| Early Childhood Special Education | 6 | 11.8 |
| Special Education | 2 | 3.9 |
| General & Special Education | 2 | 3.9 |
| Unspecified | 9 | 17.6 |
| **Current Teaching Assignment** | | |
| Preschool | 12 | 23.5 |
| Preschool Special Education | 8 | 15.7 |
| Collaborative Preschool | 3 | 5.9 |
| Primary Education (K-3)[a] | 23 | 45.1 |
| Primary Special Education | 5 | 9.8 |

| | $\overline{X}$ | SD | Range |
|---|---|---|---|
| Years in Teaching | 7.82 | 6.62 | 1 - 25 years |

Note. N = 51.
[a] Classrooms included 17 students eligible for special education in this study.

Of the 51 preschool and elementary level teachers volunteering for this study, 50 were female and one was male. In describing their educational preparation, all of the teachers had bachelor's degrees and 31.4 % had master's degrees. The majority of the teachers had teaching certificates in early childhood and/or elementary education (62.7%, $n$ = 32), while the remaining teachers were certified in special education (15.3%, $n$ = 8) or a combination of general and special education (3.8%, $n$ = 2). All of the participants were classroom teachers with 45% ($n$ = 23) teaching at the preschool level and 55% ($n$ = 28) at the primary level. In the collaborative preschool teaching assignments, one early childhood special education teacher and one early childhood teacher were team teaching, with students in their combined class who were eligible for special education and/or Title I services. Participating teachers represented a wide range of years in teaching, with a mean of 7.82 years ($SD$ = 6.62) and a range of 1 to 25 years.

The 12 preschool classes as well as the collaborative preschool classes were located in regional early childhood centers, whereas the preschool special education classes were provided in four elementary schools. The primary classes were in six elementary schools, with four located in high poverty areas.

<u>Demographic Information: Students</u>

Participating teachers completed the Student Information Form to provide program eligibility, demographic, health and developmental status as well as family information about each student. This background information served two purposes: (a) identification of students by age group and risk group and (b) identification of additional risk/protective factors not described by age or risk group status.

<u>Student age, risk group, gender and ethnicity.</u> Students were identified primarily on the basis of age groups (3-4, 5-6, and 7-9 years) and risk groups (eligibility for special education, Title I or homeless education programs). In addition, systematic sampling to represent gender and ethnicity also was proposed. Table 4 provides a description of

demographic characteristics of the sample for this study, in frequency counts and

percentages.

Table 4

Student Demographics: Age Group, Risk Group, Gender and Ethnicity

| Variables | n | % |
|---|---|---|
| Age Groups | | |
| 41 to 59 months | 68 | 38.6 |
| 60 to 83 months | 57 | 32.4 |
| 84 to 110 months | 51 | 29.0 |
| Risk Groups | | |
| Homeless education | 39 | 22.2 |
| Title I | 72 | 40.9 |
| Special education | 65 | 36.9 |
| Gender | | |
| Female | 83 | 47.2 |
| Male | 93 | 52.8 |
| Ethnicity | | |
| African-American | 126 | 71.6 |
| Caucasian | 38 | 21.6 |
| Hispanic | 9 | 5.1 |
| Other | 3 | 1.7 |

Note. $N = 176$.

By age group, 38.6% ($n = 68$) of the students were between three and five years

old, 32.4% ($n = 57$) were between five and seven years old, and 29% ($n = 51$) were seven

to nine years old. Grade-level placements reflect another pattern, with 46% ($n = 81$) of the

students in preschool classes, 27% ($n = 47$) in kindergarten or first grade, and 27% ($n =$

48) in second or third grade. By risk groups, 40.9% ($n = 72$) of the students met the

eligibility criteria for Title I, 36.0% ($n = 65$) of the students for special education, and

22.2% ($n = 39$) of the students for homeless education. Overlap across risk groups was

anticipated, because all students eligible for homeless education are also eligible for Title I

programs. In addition, students in special education could be eligible for poverty-related

services based on attendance in Title I-zoned schools or eligibility for school meal subsidies.

For risk group analysis in Phase II, students were identified by their primary program eligibility status as reported in Table 4. Overlap in risk groups was addressed by building a Risk Composite Rating for use in Phase III of the study (Relations among Age, Risk Group, Protective Factors and School Adjustment). The Risk Composite Rating (described more fully in Phase III) takes into account all of the variables described on the Student Information Form.

Gender representation across the total sample was generally balanced, with 47.2% ($n$ = 83) female students and 52.8% ($n$ = 93) male students. The ethnicity of the majority of the students in this study was identified as African-American (71.6%, $n$ = 126), with the ethnic representation of the remaining students reported as Caucasian, 21.6% ($n$ = 38); Hispanic, 5.1% (9); and Other, 1.7% (3). To address potential concerns about ethnic representation in this study, an ANOVA comparing ethnic groups on the outcome measure, Total School Adjustment, was conducted. No significant differences ($p$ = .05) in Total School Adjustment were identified across ethnic groups.

Health and developmental status. To assess additional risk/protective factors, teachers also rated the general health and developmental status of their students, as reported in Table 5 in frequency counts and percentages. For developmental status, teachers were asked to rate students' current functioning based on developmental testing.

Most of the students (92.6%, $n$ = 163) were described as having typical health status with the remaining 7.4% ($n$ = 13) described as having chronic or acute health concerns. In cognitive development, most students were described as typical (59.1%, $n$ = 104), with 26.7% ($n$ = 47) of the students having mild delays and 14.2% ($n$ = 25) having cognitive disabilities.

Table 5

Student Health and Developmental Status

| | General Health Status n (percent) | |
|---|---|---|
| | Typical | Chronic or Acute Concerns |
| Health | 163 (92.6) | 13 (7.4) |

| | Developmental Status n (percent) | | |
|---|---|---|---|
| | Typical | Mild delay | Disabilities |
| Cognitive | 104 (59.1) | 47 (26.7) | 25 (14.2) |
| Language | 99 (56.3) | 46 (26.1) | 31 (17.6) |
| Motor | 130 (73.9) | 38 (21.6) | 8 (4.5) |
| Sensory | 143 (81.3) | 28 (15.9) | 5 (2.8) |
| Social/Emotional | 111 (63.1) | 48 (27.3) | 17 (9.7) |

Note. N = 176.

Language development assessments followed a similar pattern, with most students described as typical (56.3%, $n$ = 99), and the remaining students mild delays (26.1%, $n$ = 46) and language disabilities (17.6%, $n$ = 31). In motor development, the majority of students had typical development (73.9%, $n$ = 130); 21.6% ($n$ = 38) of the students had mild delays and only 4.5% ($n$ = 8) had disabilities in motor development. The lowest incidence of delays or disabilities was identified in sensory development, with 2.8% ($n$ = 5) of the students assessed as having a disability, 15.9% ($n$ = 28) as having a mild delay and 81.3% ($n$ = 143) as having typical sensory development. In social and emotional development, 63.1% ($n$ = 111) of the students were identified as developing typically, 27.3% ($n$ = 48) of the students as having a mild delay and 9.7% ($n$ = 17) as having significant delays or disabilities.

Family composition and residence status. Teachers provided information about students' families by identifying the child's primary caregivers, approximate ages of

caregivers, numbers of siblings and the residency status of families (as displayed in Table 6

in frequency counts and percentages).

Table 6

Students' Family Composition and Residence Status

| Variables | n | % |
|---|---|---|
| **Caregivers in the Home** | | |
| Father & mother | 69 | 39.2 |
| 1 Parent & 1 relative | 19 | 10.8 |
| Single parent or relative | 81 | 46.1 |
| Foster parents | 7 | 4.0 |
| **Caregiver(s) Age** | | |
| Under 20 years | 1 | 0.6 |
| 20 - 29 years | 109 | 61.9 |
| 30 - 39 years | 47 | 26.7 |
| 40 years & older | 19 | 10.8 |
| **Number of Siblings** | | |
| None | 45 | 25.6 |
| 1-2 | 90 | 51.1 |
| 3-4 | 30 | 17.0 |
| 5 or more | 11 | 6.3 |
| **Residence Status** | | |
| Apt./house | 137 | 77.8 |
| Doubled up | 12 | 6.8 |
| Highly transient[a] | 22 | 12.5 |
| Public or private shelter | 5 | 2.8 |

[a] due to poverty.

The largest category of caregivers for children in this study were single (46.1%, n

= 81), single caregivers being defined as one parent or one relative (e.g., grandparent).

Families with both mother and father present in the home represented another 39.2% (n =

69) of the sample. The remaining students received care from two caregivers; 10.8% lived

with one parent and another relative, and the remaining 4% ($n = 7$) with foster parents. Information about caregiver(s) current age(s) was requested based on broad categories. Most caregivers (61.9%, $n = 109$) were 20 to 29 years old, with an additional 26.7% ($n = 47$) in the 30- to 39-year range. Only one parent was identified as under 20 years old, while the remaining 10.8% ($n = 19$) were 40 years or older. One to two siblings were most frequently identified (51.1%, $n = 90$). Students with no siblings represented 25.6% ($n = 45$) of the sample, with the remaining students having three to four siblings (17%, $n = 30$), and 6.3% ($n = 11$) having five or more siblings.

Information reported by teachers about the residence status of families was used to identify the stability of students' living circumstances. Categories derived from the literature on homelessness (Stronge, 1997) included families who are temporarily doubled up with family or friends (6.8%, $n = 12$), families who are transient because of evictions or poor economic resources (12.5%, $n = 22$), and families who are living in shelters due to homelessness (2.8%, $n = 5$). The remaining family living arrangements (e.g., house, apartment, public housing, trailer park, etc.) were included in one category, indicating more stable living circumstances. According to their teachers, most of the students (77.8%, $n = 137$) were living in more stable housing.

Research Questions for Phase I - Assessment of Student and Environmental Protective

Factors

I.1     How do teachers characterize students in terms of individual protective factors?

Descriptive Information: Individual Protective Factors

Individual characteristics identified as protective factors in other resilience studies (Masten, 1994; Werner & Smith, 1992; Zimmerman & Arunkumar, 1994) were assessed by teachers' completion of two instruments for each student: the ICID and the TABC-R.

Both measures provided descriptions of children's behavior with instructions for teachers' ratings based on Likert-type scales.

The TABC-R (an established measure with relevant predictive validity) was employed as the criterion measure in a concurrent validity design with the ICID (a newer measure). For Phase I, descriptive statistics for the two measures are reported separately. Second, factor analyses of data from both measures are described. The resulting factor scores (based on the combined TABC-R and ICID dimensions) are employed in Phases II and III.

Personality dimensions. The ICID ratings were based on the extent to which various behavior items described the child (1 = "not at all like my student" through 5 = "very much like my student"). This personality measure includes 64 items describing behaviors typical of Agreeableness, Conscientiousness, Emotional Stability, Extraversion, and Openness to Experience. The factor loadings employed for the first phase of the current study were provided by the instrument developers (V. Havill, personal communication, February, 3, 1998). Initial factor scores were developed for the following personality dimensions for young children: Low Manageability (combining items from Agreeableness and Emotional Stability), Openness (including items from Conscientiousness), Extraversion, and Activity Level.

Two of the factors, Openness and Low Manageability, had strong bipolar dimensions (i.e., items loaded positively or negatively at >.40). For example, sample items for Low Manageability were: "gets upset easily about things" (.73) and "cooperates" (-.70). Openness/ Conscientiousness included "excited about learning" (.69) and "gives up easily" (-.54). Negative scores on Low Manageability were interpreted as Manageability, whereas positive scores indicated poor Manageability. In Table 7, students' ICID dimension ratings are summarized by subgroups and the total sample.

Table 7

Individual Protective Factors: ICID Factor Scores

| Group | | ICID Dimensions Means (SD) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Manageability | | Openness | | Extraversion | | Activity | |
| Age Group | | **M** | **SD** | **M** | **SD** | **M** | **SD** | **M** | **SD** |
| 41-59 mos. | (n = 68) | 19.3 | 21.57 | 56.1 | 15.40 | 40.5 | 12.00 | 13.7 | 4.21 |
| 60-83 mos. | (n = 57) | 12.9 | 19.78 | 54.7 | 17.23 | 41.6 | 11.57 | 13.1 | 4.50 |
| 84-110 mos. | (n = 51) | 20.0 | 22.82 | 52.1 | 15.49 | 40.1 | 12.02 | 12.9 | 4.98 |
| Risk Group | | | | | | | | | |
| Homeless ed. | (n = 39) | 21.7 | 23.05 | 52.1 | 13.70 | 39.1 | 10.43 | 13.9 | 4.75 |
| Title I | (n = 72) | 13.9 | 22.30 | 57.1 | 17.92 | 42.8 | 12.68 | 12.8 | 4.30 |
| Special ed. | (n = 65) | 18.9 | 19.20 | 53.0 | 14.90 | 39.4 | 11.42 | 13.4 | 4.64 |
| Total Sample | (N = 176) | 17.5 | 21.50 | 54.5 | 16.04 | 40.7 | 11.82 | 13.3 | 4.53 |

ANOVAs conducted with descriptive statistics for the ICID indicated no significant differences ($p > .05$) in personality dimensions across age or risk groups. Although students had different personality profiles, those profiles differed within the total sample rather than as a function of specific risk or age groups.

Temperament dimensions. The TABC-R was used for teacher assessments of students' temperament-related behavior. Likert-type ratings were based on the frequency of behaviors for individual children (1 = "hardly ever" through 7 = "almost always"). The TABC-R includes 28 items describing behaviors reflective of Activity Level, Inhibition, Negative Emotionality, and Task Persistence. These items also include bipolar aspects of temperament dimensions. Sample items by dimension include: Activity Level - "Child sits still when a story is being read;" Inhibition - "Child is bashful when meeting new children;" Negative Emotionality - "Child overreacts in a stressful situation;" and Task

Persistence - "If another child makes a noise, child remains attentive to the teacher"

(Martin, 1997). Temperament Dimension scores were developed for students based on the

most recent factor analyses provided by Martin (personal communication, February 6,

1998). In Table 8, students' TABC-R dimension ratings are summarized by subgroups and

the total sample.

Table 8

Individual Protective Factors: TABC-R Factor Scores

| Group | TAB Dimensions Means (SD) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Activity | | Inhibition | | Emotionality | | Persistence | |
| Age Group | M | SD | M | SD | M | SD | M | SD |
| 41-59 mos. (n = 68) | 11.7 | 4.32 | 33.3 | 11.91 | 26.6 | 12.47 | 32.8 | 11.10 |
| 60-83 mos. (n = 57) | 11.1 | 4.37 | 33.0 | 12.18 | 22.7 | 11.43 | 32.8 | 11.80 |
| 84-110 mos. (n = 51) | 10.8 | 4.42 | 31.9 | 10.66 | 24.8 | 13.97 | 33.2 | 12.78 |
| Risk Group | | | | | | | | |
| Homeless ed. (n = 39) | 11.7 | 4.38 | 34.8 | 10.14 | 24.9 | 12.70 | 31.0 | 11.78 |
| Title I (n = 72) | 11.0 | 4.56 | 31.0 | 12.61 | 22.6 | 13.35 | 35.0 | 11.74 |
| Special ed. (n = 65) | 11.3 | 4.15 | 33.6 | 11.12 | 27.2 | 11.48 | 31.7 | 11.58 |
| Total Sample (N = 176) | 11.3 | 4.36 | 32.8 | 11.60 | 24.8 | 12.64 | 32.9 | 11.76 |

In a pattern similar to the ICID ratings, no significant differences ($p > .05$) were

identified for temperament dimensions across age or risk groups. Students were assessed

as having varying temperament characteristics; however, those variations were evident in

the total sample rather than between risk or age groups.

Combined dimensions of personality and temperament. Correlations among the

ICID and TABC-R were conducted to determine whether factor analysis of these ratings

would be appropriate (see Appendix C, Table 24, Correlations of the ICID and TABC-R

Dimensions). Significant correlations among dimensions of the two scales supported

additional analysis for a common factor structure. Maximum likelihood factor analysis was employed with varimax rotation. Two factors emerged from this analysis: Low Manageability and Openness. Factor loadings from the analysis are displayed in Table 9.

Table 9

Factor Loadings for Combined ICID and the TABC-R Dimensions

| Variables | Factors | |
|---|---|---|
| | Low Manageability | Openness |
| Activity (TABC-R) | .69 | .02 |
| Activity (ICID) | .38 | .68 |
| Extraversion (ICID) | -.59 | .81 |
| Inhibition (TABC-R) | .08 | -.77 |
| Low Manageability (ICID) | .98 | -.07 |
| Negative Emotionality (TABC-R) | .86 | -.09 |
| Openness/Conscientiousness (ICID) | -.54 | .77 |
| Task Persistence (TABC-R) | -.61 | .26 |

Note. Maximum likelihood; $\chi^2$ = 182.7883, $df$ 13, $p$ <.0001.

Factor 1 was labeled as Low Manageability to reflect the dominant variables, Low Manageability (.98) and Negative Emotionality (.85). Factor 2 was labeled as Openness to reflect its key contributors, Extraversion (.81) as well as Openness to Experience (.77). Low Manageability accounted for 53.6% of the variance in this analysis, with Openness explaining another 26.6 % of the variance. In Table 10, items that exemplify children's behavior for the two dimensions are displayed. Factor scores based on these two dimensions, Manageability and Openness, were created for each student and employed in the remaining analyses for Phases II and III.

Table 10

Behavioral Descriptors of Manageability and Openness Dimensions

| High Manageability | High Openness |
|---|---|
| • gets along well with other children<br>• cooperative<br>• easy going<br>• takes it lightly when losing a game<br>• does not overreact in stressful situation<br>• continues at same activity for an hour<br>• very responsible | • smart<br>• motivated<br>• excited about learning<br>• likes to be around other children<br>• makes friends easily<br>• loves to play sports<br>• very active physically |
| Low Manageability | Low Openness |
| • talks too much; doesn't listen<br>• likes to argue<br>• aggressive towards others<br>• wants things his/her own way<br>• gets upset with other children<br>• angry or moody<br>• non-stop energy<br>• doesn't sit still during story<br>• easily sidetracked<br>• not good at problem solving | • could be more verbal<br>• has a hard time meeting other children<br>• gives up easily<br>• shy with adults<br>• avoids new games |

Descriptive Information: Environmental Protective Factors

Teacher ratings of environmental factors that contributed to student development were obtained through the Protective Factors Rating Scale. Form A requested that teachers rate the adequacy of various types of support (or protective factors) across home, school and community contexts for individual children. Two weeks later, teachers were asked to rate the same items based on their importance for each student's optimal development (Form B). A total of 66 items were included in the instrument, 20 address family supports, 33 school-based supports and 13 community supports. Teachers rated these items using a Likert-type scale. Examples of items included:

1. Family - "Caregiver describes child's strengths and interests."

2. School - "Classroom materials and activities reflect the student's culture."

3. Community - "Child has a community mentor."

Environmental protective factor ratings are reported based on a priori subscales for different environments (i.e., family, school and community), which were validated by expert judges. Internal consistencies for the total scale and subscales were acceptable. Cronbach's alpha for the Total scale was .94, and for subscales were: Family .89, School .89, and Community .90. In addition, exploratory factor analysis of the protective factor scales did not yield factor solutions which were satisfactory.

I.2     How do teachers rate the adequacy of environmental (home, school and community) protective factors?

The rating scale permitted teachers to indicate when they did not know enough about the factor to provide a rating (1 = don't know). In addition, an option was provided to identify items as not relevant (for example, counseling services at school might not be needed by a specific student; 2 = not relevant). The remaining options for rating environmental protective factors included: 3 = needs improvement, 4 = adequate, and 5 = optimal. Table 11 displays the adequacy ratings of teachers, by means and standard deviations, for the subgroups and total population.

Table 11

Environmental Protective Factors: Adequacy Ratings

| | Environmental Protective Factors Means (SD) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Group | Family | | School | | Community | | Total | |
| Range | 24 - 80 | | 84 - 128 | | 13 - 49 | | 139 - 250 | |
| Age Group | M | SD | M | SD | M | SD | M | SD |
| 41-59 mos. | 51.8 | 12.36 | 110.0 | 9.20 | 30.0 | 7.26 | 191.8 | 21.19 |
| 60-83 mos. | 50.9 | 13.46 | 106.4 | 9.75 | 29.3 | 7.16 | 186.6 | 25.78 |
| 84-110 mos. | 47.5 | 13.46 | 107.5 | 9.28 | 25.9 | 7.24 | 180.9 | 23.47 |
| Risk Group | | | | | | | | |
| Homeless | 42.6 | 11.64 | 106.5 | 8.87 | 26.1 | 6.77 | 175.2 | 20.42 |
| Title I | 51.0 | 13.08 | 108.1 | 8.81 | 28.2 | 7.59 | 187.3 | 23.99 |
| Special ed. | 54.1 | 12.14 | 109.1 | 10.51 | 30.5 | 7.10 | 193.7 | 22.79 |
| Total Sample (N = 176) | 50.3 | 13.10 | 108.1 | 9.48 | 28. 6 | 7.38 | 186.9 | 23.70 |

Note. Age 41-59 mos. (n = 68); Age 60-83 mos. (n = 57), Age 84-110 mos. (n = 51); Homeless (n = 39); Title I (n = 72); Special Ed. (n = 65).

I.3 How do teachers rate the importance of environmental (home, school and community) protective factors?

The Likert-type rating scale permitted teachers to indicate when they did not have an opinion about the factor (1 = no opinion). The remaining options for rating the importance of environmental protective factors included: 2 = not important, 3 = slightly important, 4 = somewhat important, and 5 = very important. Table 12 displays the importance ratings of teachers for the subgroups and total population.

Table 12

Environmental Protective Factors: Importance Ratings

| | Environmental Protective Factors Means (SD) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Group | Family | | School | | Community | | Total | |
| Range | 50 - 100 | | 69 - 165 | | 16 - 65 | | 155 - 330 | |
| Age Group | M | SD | M | SD | M | SD | M | SD |
| 41-59 mos. | 88.9 | 9.66 | 140.1 | 13.28 | 50.3 | 9.85 | 279.3 | 28.27 |
| 60-83 mos. | 87.1 | 9.15 | 130.5 | 15.97 | 45.3 | 11.30 | 262.9 | 31.37 |
| 84-110 mos. | 84.8 | 10.59 | 130.3 | 15.68 | 46.6 | 11.20 | 261.7 | 32.01 |
| Risk Group | | | | | | | | |
| Homeless | 88.7 | 9.85 | 136.6 | 13.85 | 52.5 | 8.26 | 277.9 | 27.63 |
| Title I | 88.4 | 8.89 | 135.7 | 15.78 | 48.6 | 9.75 | 272.7 | 29.89 |
| Special ed. | 84.8 | 10.58 | 130.9 | 15.91 | 43.5 | 12.09 | 259.2 | 32.87 |
| Total Sample | 87.1 | 9.87 | 134.2 | 15.54 | 47.6 | 10.89 | 268.9 | 31.34 |

Note. Age 41-59 mos. ($n$ = 68); Age 60-83 mos. ($n$ = 57); Age 84-110 mos. ($n$ = 51); Homeless ($n$ = 39); Title I ($n$ = 72); Special Ed. ($n$ = 65).

I.4    How do teachers rate students' adjustment to school?

Teachers rated each student's adjustment to school by completing the Student Adjustment Rating (adapted from Graziano & Ward, 1992). Using a five-point Likert-type scale (1 = strongly disagree to 5 = strongly agree), teachers rated how well adjusted students were based on school performance, relationships with peers (same sex and opposite sex), relationship with the teacher, and classroom behavior. Results of these ratings are reported in Table 13, with mean scores and standard deviations noted for specific items as well as the aggregated adjustment score.

Table 13

<u>School Adjustment Ratings</u>

| | School Performance (1-5) | | Same-sex Peer Relations (1-5) | | Adjustment Ratings Opposite-sex Peer Relations (1-5) | | Teacher Relations (1-5) | | Classroom Behavior (1-5) | | Total Adjustment (5-25) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Group | M | SD | M | SD | M | SD | M | SD | M | SD | M | SD |
| (Range) | | | | | | | | | | | | |
| **Age Group** | | | | | | | | | | | | |
| 41-59 mos. | 3.5 | 1.37 | 3.5 | 1.31 | 3.4 | 1.32 | 4.0 | 1.03 | 3.5 | 1.34 | 17.8 | 5.94 |
| 60-83 mos. | 3.3 | 1.22 | 3.8 | 1.12 | 3.7 | 1.13 | 3.8 | 1.18 | 3.4 | 1.29 | 17.9 | 5.35 |
| 84-110 mos. | 3.3 | 1.15 | 3.8 | 1.18 | 3.6 | 1.21 | 4.0 | 1.01 | 3.4 | 1.34 | 18.0 | 5.15 |
| **Risk Group** | | | | | | | | | | | | |
| Homeless | 3.3 | 1.20 | 3.6 | 1.31 | 3.4 | 1.39 | 3.8 | 1.00 | 3.3 | 1.34 | 17.4 | 5.60 |
| Title I | 3.5 | 1.26 | 3.8 | 1.09 | 3.7 | 1.09 | 4.0 | 1.07 | 3.6 | 1.28 | 18.7 | 5.28 |
| Special Ed. | 3.3 | 1.30 | 3.5 | 1.29 | 3.4 | 1.25 | 3.9 | 1.12 | 3.3 | 1.35 | 17.4 | 5.67 |
| **Total Sample** | | | | | | | | | | | | |
| N = 176 | 3.4 | 1.26 | 3.7 | 1.22 | 3.5 | 1.23 | 3.9 | 1.07 | 3.5 | 1.32 | 17.9 | 5.50 |

Overall, teacher ratings of student adjustment for the total sample were above the midpoint for the scale (15), with a total sample mean of 17.95 (SD 5.5), although the full range (5 to 25) was used to describe the sample. In addition, ANOVAs by subgroups (Age and Risk) showed no significant differences ($p$ = .05) for either the components or total adjustment scores. The Total Adjustment Rating was used for the final phase of the analyses in two ways: (a) to identify groups based on adjustment rating (by quartiles in frequency distribution) for use in two discriminant analyses (risk composite score and total environmental protective factor score), and (b) to serve as the outcome measure for the multiple regression analysis.

Phase II: Comparison of Protective Factors Across Groups

In the second phase, null hypotheses about group differences based on protective factors were tested. Multivariate analyses of variance (MANOVAs) were conducted for two sets of hypotheses: one MANOVA regarding the three age group hypotheses and one MANOVA for the three risk group hypotheses. This multivariate statistical procedure is appropriate for testing the influence of an independent variable on multiple dependent variables (Weinfurt, 1995). MANOVA was preferable to separate ANOVAs for each hypothesis because it reduces the experimentwise error, therefore, increasing the probability of rejecting the null hypotheses when they are false. This procedure permitted the consideration of child and environmental protective factors in the same analyses, providing a statistical method more congruent with the conceptual model of this study.

In the following section, the results of two MANOVAs are presented. In addition, the results of follow-up tests, which specified significant differences among groups, are presented.

Null Hypotheses: Comparisons of Student and Environmental Protective Factors Across Age Groups

II.5    There are no significant differences ($p$< .05) across age groups (3-4, 5- 6, and 7-9 years) for student protective factor ratings.

II.6    There are no significant differences ($p < .05$) across age groups for environmental protective factor adequacy ratings.

II.7    There are no significant differences ($p < .05$) across age groups for environmental protective factor importance ratings.

Protective factors across age groups. A multivariate analysis of variance for protective factors across age groups was conducted using the two child dimensions, Openness and Low Manageability, as well as the two environmental dimensions, Adequacy and Importance, as the dependent variables. Because significant differences were identified for the environmental dimensions, follow-up tests (ANOVAs and Tukey HSD) were conducted to further analyze the findings. The results of the MANOVA are reported in Table 14 and results of the follow-up tests are reported in Table 15.

Table 14

Multivariate Analysis of Variance for Age Groups by Protective Factors

| Effects | F | df | $p$ | $\eta^2$ |
|---|---|---|---|---|
| Individual Factors | | | | |
| Manageability | .02 | 2 | .98 | .00 |
| Openness | 2.14 | 2 | .12 | .02 |
| | | | | |
| Environmental Factors | | | | |
| Adequacy | 3.18 | 2 | .04* | .04 |
| Importance | 6.51 | 2 | .00** | .07 |

Note. Wilks' lambda = .002; $N$ = 176.

With an experimentwise alpha of .05, no significant differences across age groups were identified for the child protective factors, Openness and Low Manageability. Significant differences were identified for the environmental factors: Adequacy, F (2, 173) = 3.18, $p$ = .05; and Importance, F (2, 173) = 6.51, $p$ = .005. Follow-up tests, that identified the differences among groups for the environmental dimensions, are reported in Table 15.

Table 15

Follow-up Analysis for Adequacy and Importance of Environmental Factors by Age
Groups

| Group | Adequacy | Importance |
|---|---|---|
| A1 (3-4 yrs.) | 192 A | 279 B |
| A2 (5-6 yrs.) | 187 A, B | 263 A |
| A3 (7-9 yrs.) | 181 B | 262 A |

Note. Follow-up tests are Tukey HSD. Means with the same letter are not significantly
different.

Differences by age groups. Teacher assessments of the adequacy of environmental

protective factors were significantly higher for the youngest students than for the oldest

students. In addition, teachers' ratings of the importance of environmental protective

factors for the youngest group were significantly higher than their ratings for both of the

older groups.

Null Hypotheses: Comparisons of Student and Environmental Protective Factors Across

Risk Groups

II.8    There are no significant differences ($p < .05$) across risk groups (special

education, Title I, and homeless education) for student protective factor ratings.

II.9    There are no significant differences ($p < .05$) across risk groups for

environmental protective factor adequacy ratings.

II.10   There are no significant differences ($p < .05$) across risk groups for

environmental protective factor importance ratings.

Protective factors across risk groups. Using a similar model for analysis of

protective factors across risk groups, a MANOVA was conducted using the two child

dimensions, Openness and Low Manageability (combined factors from the ICID and

TABC-R), as well as the two environmental dimensions, Adequacy and Importance (Total

PFRS-A and Total PFRS-B). The results of this analysis are displayed in Table 16.

Follow-up tests (ANOVAs and Tukey HSD), conducted to further analyze significant findings are reported in Table 17.

Table 16

Multivariate Analysis of Variance for Risk Group by Protective Factors

| Effects | F | df | p | $\eta^2$ |
|---|---|---|---|---|
| Individual Factors | | | | |
| Manageability | 1.35 | 2 | .26 | .02 |
| Openness | 1.15 | 2 | .32 | .01 |
| Environmental Factors | | | | |
| Adequacy | 8.05 | 2 | .00*** | .09 |
| Importance | 5.51 | 2 | .01** | .06 |

Note. Wilks' lambda = .000; $\underline{N}$ = 176; *$\underline{p}$ < .05, **$\underline{p}$ < .01, ***$\underline{p}$ < .001.

With an experimentwise alpha of .05, no significant differences across risk groups were identified for the child dimensions, Openness and Low Manageability. Significant differences were identified again for the environmental factors: Adequacy, F (2, 173) = 8.05, $\underline{p}$ = .0005; and Importance, F (2, 173) = 5.50, $\underline{p}$ = .005. In follow-up ANOVAs for environmental factor outcomes, significant differences were specified among risk groups as displayed in Table 17.

Table 17

Follow-up Analysis for Adequacy and Importance of Environmental Factors by Risk Groups

| Group | Adequacy | Importance |
|---|---|---|
| R1 (Homeless) | 175 A | 278 A |
| R2 (Title I) | 187 B | 273 A |
| R3 (Special Ed.) | 194 B | 259 B |

Note. Follow-up tests were Tukey HSD. Means with the same letter are not significantly different.

Differences by risk group. Teacher assessments of the adequacy of environmental protective factors were significantly lower for students eligible for homeless education than for students who were eligible for either special education or Title I. In addition, teachers' ratings of the importance of environmental protective factors for both homeless education and Title I eligible-students were significantly higher than the ratings for students eligible for special education.

Research Question for Phase III: Relations Among Protective Factors, Risk and School Adjustment

III.11 To what extent do age, risk group, student and environmental protective factor ratings predict school adjustment ratings?

The purpose of Phase III was to explore the relations among various protective and risk factors in predicting one measure of children's resilience: successful adaptation to the school context. Multiple regression analysis was conducted to identify the relative contributions of child, family, school, and community factors to the desired outcome of School Adjustment. The criterion or dependent variable, teacher-rated School Adjustment, was an aggregate of ratings regarding academic adjustment, same-sex and other-sex peer relations, teacher relations as well as classroom behavior (as reported in Table 13, Phase I). Predictor or independent variables for Phase III were constructed from all of the student and environmental variables measured and reported in Phase I.

Several statistical methods were used to consolidate and weight groups of variables appropriately. Factor analysis of the personality and temperament data (previously described in Phase I) produced the two child dimensions, Low Manageability and Openness. To consolidate and weight environmental protective factors into a composite variable, Environmental Composite, discriminant analysis was employed. Likewise, child and family demographic factors were weighted and consolidated into one variable, Risk Composite, through discriminant analysis. Construction of these two composite variables are described in the following section and displayed in Table 18.

## Variable Construction

The Environmental Protective Factor Composite and the Risk Factor Composite were constructed by applying discriminant analysis to the Adequacy and Importance Ratings (from the Protective Factor Rating Scales) and the Student-Family variables (from the Student Information Form), respectively. Discriminant analysis is a multivariate statistical procedure that can be employed to determine which variables best discriminate

Table 18

Variables and Standardized Canonical Coefficients for Environmental Protective Factor Composite and Risk Factor Composite

| Composite | Variables | Source | Canonical Coefficient |
|---|---|---|---|
| Environmental | Family Adequacy | PFRS-A | .91 |
| | School Adequacy | PFRS-A | .59 |
| | Community Adequacy | PFRS-A | -.43 |
| | Family Importance | PFRS-B | -.26 |
| | School Importance | PFRS-B | .31 |
| | Community Importance | PFRS-B | .30 |
| Combined Risk | Gender | Student Info | .30 |
| | Age | Student Info | .03 |
| | Homeless Eligible | Student Info | -.67 |
| | Title I Eligible | Student Info | .83 |
| | Special Education Eligible | Student Info | -.10 |
| | Subsidized School Meals | Student Info | -.45 |
| | Health Status | Student Info | .10 |
| | Cognitive Development | Student Info | .14 |
| | Motor Development | Student Info | -.47 |
| | Language Development | Student Info | .51 |
| | Sensory Development | Student Info | -.18 |
| | Social/emotional Develop. | Student Info | 1.12 |
| | Caregivers in Home | Student Info | .01 |
| | Caregivers' Ages | Student Info | .15 |
| | # of Siblings | Student Info | .12 |
| | Housing Stability | Student Info | .53 |

Note. Eigenvalue for Environmental Composite function =.2324; Eigenvalue for Risk Composite = .8881; PFRS-A = Protective Factor Rating Scale - Adequacy, PFRS-B = Protective Factor Rating Scale - Importance; Student Info = Student Information Form.

members of two or more groups from each other (Silva & Stam, 1995). For discriminant analyses in this study, high and low adjustment groups were constructed (based on quartiles in the frequency distribution of Total Adjustment scores). Discriminant analyses were conducted to determine which variables could best predict group membership in the High or Low Adjustment group. In addition, these analyses produced mathematical functions for weighting and combining individual variables based on their effectiveness in discriminating high and low adjustment groups.

Each discriminant analysis provided statistically significant functions that discriminated high and low adjustment groups. The resulting mathematical functions were applied to each set of variables to construct two new variables, Risk Composite and Environmental Composite. These variables, with the child dimensions Manageability and Openness, were employed in the final multiple regression analysis. In Table 18, the new composite variables (Environmental Composite and Risk Composite) are displayed with their contributing variables and relative weights (canonical coefficients) as determined by the discriminant analyses.

For the Environmental Composite, adequacy ratings of Family, School and Community protective factors were most effective in predicting whether students were in the high or low adjustment group, with canonical coefficients greater than .40. The most heavily weighted variables in the Risk Composite function were developmental indicators (social/emotional, language and motor) and poverty indicators ( eligibility for poverty-related programs and residential status). Based on their statistical significance in discriminating adjustment groups, these new variables were employed in the final analysis.

Multiple-regression analysis of protective and risk factors. To consider the relative contributions of child and environmental factors to the outcome of school adjustment, a multiple regression analysis was conducted. School Adjustment was used as the criterion or dependent variable, with the child dimensions and composite variables used as the independent or predictor variables, as reported in Table 19.

Table 19

Summary of Hierarchical Regression for Variables Predicting Teachers' Assessments of School Adjustment for Students at Risk for School Difficulty (N = 176)

| Variable | B | SE B | β |
|---|---|---|---|
| **Step 1** | | | |
| Child Low Manageability | -3.91 | .30 | -.70*** |
| **Step 2** | | | |
| Child Low Manageability | -3.86 | .23 | -.69*** |
| Child Openness | 2.53 | .23 | .46*** |
| **Step 3** | | | |
| Child Low Manageability | -3.44 | .24 | -.62*** |
| Child Openness | 2.25 | .23 | .41*** |
| Risk Composite | -.75 | .18 | -.19*** |
| **Step 4** | | | |
| Child Low Manageability | -3.31 | .25 | -.59*** |
| Child Openness | 2.17 | .23 | .39*** |
| Risk Composite | -.74 | .18 | -.19*** |
| Environmental Composite | .55 | .22 | .10* |

Note. $R^2$ = .49157 for Step 1 ($ps$ <.0001); $\Delta R^2$ = .208 for Step 2 ($ps$ <.0001), $\Delta R^2$ = .028 for Step 3 ($ps$ <.0001), $\Delta R^2$ = .00953 for Step 4 ($ps$ <.01).
*$p$ < .05, **$p$ < .01, ***$p$ < .001.

Overall, the child protective factors, Low Manageability (49%) and Openness (21%), accounted for most of the variance (70%) in the outcome, School Adjustment, with Risk Composite accounting for another 2.8% and the Environmental Composite accounting for the final 1% of explained variance. Manageability explained most of the variance in School Adjustment, with a multiple correlation coefficient (R) of .70 (F = .0000). The coefficient of determination ($R^2$) was .49. Next, Openness provided additional explanation of the variance, with a multiple correlation coefficient (R) of .84 (F = .0000). The coefficient of determination ($R^2$) was .70. Openness explained another 21% of the variance.

The Risk Composite factor (which included age, risk group, developmental and family factors) accounted for another 3% of the variance, with a multiple correlation coefficient (R) of .85 (F = .0000). The coefficient of determination ($R^2$) was .73. The Environmental Composite (based on environmental adequacy and importance) entered the analyses in the last step, with a multiple correlation coefficient (R) of .86 (F = .0137). The coefficient of determination ($R^2$) was .74. To summarize the contributions of these risk and protective factors to the outcome, School Adjustment, Table 20 displays the composite factors and their relative impact on adjustment as well as the variables which contributed most to the composite factors.

The three phases of this research project have: (a) characterized risk and protective factors, (b) compared these factors across traditional school groupings (age and risk), and (c) considered the contributions of various risk and protective factors to the school adjustment of young children considered at risk for school difficulty.

Table 20

Summary of the Relative Impact of Risk and Protective Factors on School Adjustment

| Composite Factor | Factor Impact on Adjustment | Contributing Variables [a] |
|---|---|---|
| Manageability | .49 | Manageability Emotionality Activity Level Task Persistence Extraversion Openness/ Conscientiousness |
| Openness | .21 | Extraversion Openness/ Conscientiousness Manageability Activity Level |
| Composite Risk | .03 | Social/emotional Development Language Development Motor Development Title I Eligible Homeless Education Eligible Subsidized Meals Eligible Housing Status |
| Composite Environment | .01 | Family Adequacy School Adequacy Community Adequacy |

[a] Variables are listed in order of contribution to the factor. Factor loadings (for Manageability and Openness) are reported in Table 9 and canonical coefficients (for Risk and Environment Composites) are reported in Table 18.

Chapter 5: Summary, Discussion, and Recommendations

A summary of the research findings as well as a discussion of how these findings relate to other studies of protective factors in the lives of young students are presented in this chapter. In addition, the implications of the research findings for educational programs for students at risk are discussed and possible directions for future research are recommended.

Summary of Findings

To analyze the role of protective factors in promoting school adjustment of students with various risk factors, a systematic sample of 176 students in two Hampton Roads school districts were assessed by their teachers. Multiple measures were used to rate school adjustment, protective factors and risk factors of young children who were eligible for homeless education, special education and/or Title I programs. Outcomes of these assessments were used to describe and explore the relations among factors which may contribute to the resilience of young children at risk for school difficulty.

The study was conducted in three phases: Phase I involved descriptive analyses of demographic and protective factors; Phase II compared protective factors across age and risk groups; and Phase III investigated the relations among protective and risk factors with the outcome variable, School Adjustment. In the following section, findings from each of these phases will be summarized.

Phase I: Demographics

Demographic information was collected for all of the teacher participants ($N = 51$) and students in the study. Most of the teachers participating in the study had certification appropriate for their teaching assignment and had been teaching for at least seven years. Approximately one-third of the teachers had earned master's degrees. The public school

classrooms represented in the study were located in regional early childhood centers and neighborhood elementary schools.

Children in the study were between 3 1/2 and 9 years of age, with approximately the same proportion of girls and boys. In ethnic representation, the majority of the students were African-American, with most of the remaining students described as Caucasian and a few children identified as Hispanic. All of the students were eligible for homeless education, special education and/or Title I; however, many of the students who met the criteria for homeless education were not receiving specialized services. The most prevalent disabilities within the sample were in the areas of language, cognitive and social/emotional development. In addition, teachers rated about 40% of the students as having a mild delay in language, cognition, social/emotional, motor, and/or sensory development.

While almost half of the students were living with single parents, another 40% of them were living with two parents. Most of the parents were in their twenties or thirties and living in stable housing. Twenty-two percent of the families were living in unstable circumstances which would qualify their children for homeless education services.

### Phase I: Description of Protective Factors

Phase I addressed the assessment of student and environmental protective factors. Data for the four research questions were analyzed using descriptive statistics. The findings for each research question were summarized as follows:

<u>Research Questions for Phase I - Assessment of Student and Environmental Protective</u>
<u>Factors</u>

I.1     How did teachers characterize students in terms of individual protective factors?

Teachers rated students' personality and temperament characteristics, using the ICID and the TABC-R . The dominant factors in teachers' ratings of student characteristics were Manageability and Openness. Manageability included aspects of cooperativeness, positive interaction with peers, low reactivity to stress, task persistence and

conscientiousness. Students rated as low in Manageability were more argumentative, aggressive, moody, and inattentive as well as less effective in problem-solving. Openness was the second factor that characterized this sample, with the primary characteristics including excitement about learning, high motivation, intellect and friendliness. Low ratings in Openness were characterized by difficulty in meeting other children, shyness with adults, not talkative, avoidance of new activities and giving up easily. High activity levels were included in both high Openness (reflecting items about surgency or energy level) and low Manageability (reflecting items about impulsivity or inattention).

I.2     How did teachers rate the adequacy of environmental (home, school and community) protective factors?

Teachers rated the overall environmental protective factors for their students as slightly less than adequate. For the total sample, school-based supports were rated as somewhat better than adequate, whereas community and family supports were rated as lower than adequate. Teachers' lowest adequacy ratings for community factors included housing availability and co-location of community services with the school. The highest frequencies of optimal ratings for community factors were identified for fire and police protection; the highest rated family factors were related to physical care, encouragement and support for school success.

I.3     How do teachers rate the importance of environmental (home, school and community) protective factors?

For the total sample, teachers rated most of the environmental factors as "somewhat" to "very important." Family supports judged to be important most frequently were: consistent rules, appropriate autonomy granting, high expectations for school success and warm caregiving. Most school-based protective factors were rated as "very important" to "somewhat important," except two items: home visits by teachers and special transportation for students to school. In terms of community-based protective factors, greatest consensus was expressed on the importance of neighborhood safety.

I.4    How do teachers rate students' adjustment to school?

Overall, teachers assessed their students' total adjustment to school as above average, however, the maximum range of ratings (i.e., 5 - 25) were used by teachers in the study. For the total sample, school performance and classroom behavior were rated lower than peer relations. Students interactions with their teachers were the most positively rated aspect of school adjustment.

## Phase II: Comparisons across Groups

In Phase II of the research project, data from Phase I were analyzed using a MANOVA to compare protective factors across risk groups as well as a MANOVA to compare protective factors across age groups. For statistically significant findings, additional follow-up ANOVAs were used. The findings for each research question were summarized as follows:

Null Hypotheses for Phase II: Comparisons of Student and Environmental Protective Factors across Risk Groups and Age Levels.

II.5    There are no significant differences ($p< .05$) across age groups (3-4, 5- 6, and 7-9 years) for student protective factor ratings.

No significant differences were found across age groups for the student protective factor ratings by teachers on the TABC-R and the ICID.

II.6    There are no significant differences ($p< .05$) across age groups (3-4, 5-6, and 7-9 years) for environmental protective factor adequacy ratings.

Significant differences were identified among age groups for the adequacy of environmental protective factors. Specifically, adequacy ratings were higher for the youngest group of students than for the oldest group.

II.7    There are no significant differences ($p< .05$) across age groups (3 - 4, 5 - 6, and 7 - 9 years) for environmental protective factor importance ratings.

Significant differences were identified among age groups for the importance of environmental protective factors. Specifically, importance ratings were higher for the youngest students than for either of the older age groups.

II.8 There are no significant differences ($p < .05$) across risk groups (special education, Title I, and homeless education) for student protective factor ratings.

No significant differences were found across student risk groups for student protective factors, based on teacher ratings using TABC-R and the ICID.

II.9 There are no significant differences ($p < .05$) across risk groups (special education, Title I, and homeless education) for environmental protective factor adequacy ratings.

Significant differences were identified among risk groups for the adequacy of environmental protective factors. Specifically, adequacy ratings were higher for students who were eligible for special education or for Title I programs than for students eligible for homeless education.

II.10 There are no significant differences ($p < .05$) across risk groups (special education, Title I, and homeless education) for environmental protective factor importance ratings.

Significant differences were identified among risk groups for the importance of environmental protective factors. Specifically, importance ratings were higher for students eligible for homeless education or Title I than for students eligible for special education.

Phase III: Relations among School Adjustment and Risk and Protective Factors

The third phase of the research analyzed data using regression analyses to consider the relations among student and environmental factors in predicting School Adjustment. The findings for the research question were summarized as follows:

Research Questions for Phase III: Relations Among School Adjustment and Age, Risk and Protective Factor Dimensions.

III.11 To what extent do age, risk group, student and environmental protective factor ratings predict school adjustment ratings?

The individual protective factors, Manageability and Openness, explained most of the variance in the outcome measure, School Adjustment. Manageability accounted for almost half of the outcome, with Openness accounting for an additional 21%. The Risk Composite factor (which included age, risk group, developmental and family factors) explained about 3% of School Adjustment, with the Environmental Composite (environmental adequacy and importance) contributing the final 1% of explained variance.

## Discussion of Findings

The findings of this study were compared and contrasted with results of other research in the area of student risk, resilience, and protective factors to assess this study's reliability and identify related patterns. Because the resilience research base employs diverse measures and variables in longitudinal designs, comparisons with the current study must be viewed as working hypotheses.

The following discussion addresses key elements of the conceptual framework for the study, specifically: risk and age factors, individual protective factors, adequacy of environmental factors, importance of environmental factors, discrepancies between adequacy and importance ratings, and connections across environments. Each of these elements is considered in the context of the outcome variable, School Adjustment.

## Risk and Age Groups

In the current study, an institutional definition of risk was employed to identify the sample as well as subgroups for specific analyses. Educational program eligibility, based on federal legislation and state-local interpretations, was used to identify young children at risk for school difficulty. Specifically, the sample was drawn based on students' eligibility for special education, Title I or homeless education. Age levels across early childhood programs also were considered, with 40% of the sample in the three- to five-year range and the remaining 60% divided between five to six years and seven to nine years.

In this study, neither risk group nor age group membership alone was predictive of students' school adjustment. Based on other studies of risk and resilience (Kimchi & Schaffner, 1990; Masten, 1994; Werner & Smith, 1992; Zimmerman & Arunkumar, 1994), additional risk factors were assessed by analysis of Student Information Form data. This provided an alternative method (Risk Composite) for considering the interactive and compounding effects of various risk factors, including child demographics, developmental functioning, program eligibility, and family status. In fact, risk groups were not mutually exclusive, with approximately two-thirds of the students in special education receiving meal subsidies and all of the homeless students eligible for Title I services. In addition, 40% of the children in poverty-related programs had mild delays in one or more developmental areas. The Risk Composite variable, based on the broader consideration of diverse risk factors, did have modest (though significant) predictive validity, accounting for 3% of the variance in Student Adjustment. The primary components of this composite variable were developmental level (specifically, social-emotional, language and motor) as well as poverty indicators (eligibility for poverty-related school programs as well as family housing status). This suggests, for this sample, that multiple risk factors are more predictive of adjustment outcomes than single risk factors (i.e., developmental status or economic indicators).

Age group as a variable also was affected by other risk and protective factors. For example, although eligibility for public preschool education is based on the presence of developmental and/or poverty-related risk factors, actual participation in preschool programs suggested several protective factors. Thus, the availability of early intervention programs in a community as well as parental involvement in securing these services for their child may indicate important school and family assets that ameliorate risk.

Preschool children who were eligible for homeless education were the most difficult to identify. By way of explanation, administrators of the preschool programs suggested that preschool participation was highly dependent on family stability and agency (because participation requires parental involvement for initial enrollment). In the case of

nonmandated services (Title I preschool), enrollment may be limited to a first-come, first-served basis. In the case of entitlement services such as special education, parental involvement is still significant in the initial screening, evaluation and program planning process. This is reflective of other studies, which have documented higher preschool participation in economically advantaged groups (Gomby et al., 1995) and significantly lower participation rates for homeless preschoolers (Nunez, 1994).

The dominant risk factors in this sample mirror many of the issues raised in other studies of children's development. McLoyd (1998) reviewed the complex and interactive stressors inherent in long-term poverty that result in poor school achievement and socioemotional functioning of children. Stressors for children in "deep poverty" (family income 50% below the poverty level) included neighborhoods with poor resources and increased danger, exposure to health risks, young and inexperienced mothers, and reduced opportunities for exploration. In addition, McLoyd (1998) noted that more preschoolers live in deep poverty and that African-Americans in this group are more likely to live in concentrated high-poverty neighborhoods. In the current study, the issue of deep poverty was addressed by identifying children eligible for homeless education; however, no measure of duration or chronicity was used.

Almost half of the children in the study had single parents, which compounds family economic stress (Masten, 1994; McLoyd, 1998; Werner & Smith, 1992). Young parents also may have difficulty in providing caregiving, based on their own history of care, exposure to violence and limited resources (Egeland & Kreutzer, 1991). More specific information about parental age would have been desirable in considering additional risk factors. A few children in foster care were identified, but the stability and duration of their placements were not measured. Other salient family stressors (e.g., marital stress, education levels, criminality) were beyond the scope of this study. Quality of family support, structure and resources were addressed in teacher assessments using the Protective Factor Rating Scale.

The developmental status of children in the study was determined by eligibility for special education services and teacher reports (based on developmental testing). While 37% of the students qualified for special education services, another 40% demonstrated mild developmental delays. The most prevalent delays and disabilities were in cognitive, language and social/emotional development. This is similar to the pattern found in national prevalence data for school-age students, in which specific learning disabilities and mental retardation accounted for about 50% of student identifications, speech/language for another 36% and emotional disturbance for about 6% (U.S. Department of Education, 1996, as cited in McDonnell et al., 1997). As discussed previously, special education eligibility alone was not predictive of school adjustment; however, developmental status did contribute significantly to the multiple risk variable (Risk Composite) for the total sample. The lower socioeconomic status of students with disabilities has been documented in several studies. "Students with disabilities are more socioeconomically disadvantaged than the general population ... more likely to come from single-parent households, to have a head of household with lower educational attainment, and to have lower household incomes" (McDonnell et al., p. 90). Due to the increased prevalence of low birthweight, lead poisoning, perinatal stress and other health concerns associated with poverty, the interaction of developmental and poverty risks have been well established (Hanson & Carta, 1996).

Overall, a variety of risk factors reported in other studies of resilience were included in the current study. The consideration of developmental and economic factors together (through building the Risk Composite variable) explained significantly more of the variability in school adjustment than did either of the factors when considered individually. In identifying the interactive effects of these variables, numerous researchers (Bradley et al., 1994; Masten, Best et al, 1991; Werner, 1993; Wang, Reynolds et al., 1995) have focused on the next issue: the protective factors that offset or buffer these stressors and promote successful adaptation.

## Individual Protective Factors

In the current study, children's temperament and personality, as assessed by their teachers, explained most of the variability in school adjustment ($R^2=.70$). Specifically, two distinct factors, Manageability and Openness, resulted from factor analysis of the temperament and personality data. There were no differences across risk or age groups for Manageability and Openness, suggesting the importance of individual differences in understanding school adjustment. Manageability was the dominant factor, accounting for almost half of the variance. Low Manageability included aggressiveness, low persistence and irritability. Conversely, children rated as high in Manageability were cooperative, easy-going, and attentive. Openness consisted of high interest and creativity as well as extraversion. Children who were low in this dimension were less verbal, avoided new experiences and were shy with adults or peers.

Manageability has been linked to varied outcomes for children and youth in numerous longitudinal studies of risk and resilience. For example, boys with low-manageability characteristics were treated more harshly by their fathers during times of economic hardship (Elder, 1998). In studying the interaction of child characteristics and the impact of divorce, Heatherington et al.(1989) found that temperamentally difficult children and emotionally unstable mothers developed increasingly aversive interaction patterns, whereas temperamentally easy children did not. Werner and Smith (1992) identified the child's ability to focus attention and control impulses as predictive of long-term resilience. Eddowes (1992) noted the impact of temperament on the adjustment of children to the changes inherent in homelessness.

Openness defines another dimension of individual protective factors, including extraversion, which enhances links with other people, as well as curiosity and high interests, which foster increased learning opportunities. Frequently, high interests and cognitive ability have been identified as significant predictors of positive outcomes (Barton & Zeanah, 1990; Masten, Best et al., 1991; Werner & Smith, 1992). When queried about

their adaptive or coping strategies, successful adults with learning disabilities described their creativity and problem-solving abilities ( Reiff et al., 1996).

Both of these child dimensions of temperament and personality have been linked to important school issues: achievement and behavior problems (Keogh, 1989; Martin, 1989; Victor, 1994). In an analysis of multiple studies of temperament and achievement, Martin (1989) found that task persistence (as measured by the TABC) was correlated with standardized reading and math achievement (correlations ranged from .43 to .63). Similarly, in a study of middle school students' personality factors, school achievement and behavior problems (Victor, 1994), Openness was positively correlated (.63) with standardized achievement and negatively correlated with aggression (-.27), anxiety (-.27) and attention problems (-.32).

Teacher evaluations of these child dimensions have been explored in several studies. For example, Keogh (1989) noted that teachers respond differentially (in terms of monitoring and questioning) to variability in children's task persistence and activity level. Jensen-Campbell and colleagues (1997) studied relations among teacher assessments of preschoolers' temperament, activity levels and expectations for children's outcomes in adulthood. Assessments of children's temperament (TABC-R) were correlated with adult personality dimensions (based on the Big-Five model). The researchers concluded that "Preschool teachers not only observe temperament-related individual differences ... they also anticipate developmental consequences" (Jensen-Campbell et al., 1997, p. 22). These studies support the importance of understanding teachers' assessments of these characteristics and their implications for children's development and school adjustment.

## Adequacy of Environmental Protective Factors

In general, teachers rated children in this study as having slightly less than adequate environmental protective factors. Differences were evident in the subscale ratings of different environments; schools were rated as better than adequate, whereas home and community protective factors were rated lower. In considering differences across risk and

age groups for the total Protective Factor Rating Scale, teachers judged that the youngest children were benefiting from greater support than were the oldest students. In addition, environmental supports were rated as higher for students in either special education or Title I than for student eligible for homeless education.

Items for the Protective Factor Rating Scale were developed from various resilience studies that documented factors associated with the development of adaptability, in spite of risk (Kimchi & Schaffner, 1990; Masten, 1994; Wang & Gordon, 1994; Werner & Smith, 1992). These factors reflect assets in home, school and community contexts that buffer or ameliorate the effects of risk. These items also were validated by developmental researchers Dr. Stella Chess, Dr. Ann Masten, and Dr. Ronald Taylor.

Family items were constructed to reflect the following key ideas: behavioral guidelines, family advocacy for opportunities for the child, affection and warmth, high expectations for child's achievement, autonomy granting and economic stability. School protective factors included: instruction in problem-solving, positive peer interactions, participation in decision-making, learning built around student interests, adult responsiveness to student's concerns, high expectations, talent development, heterogeneous groupings and access to support services. The remaining items were community assets, including the following: access to community services, enrichment activities, mentoring, values-oriented group activities, positive peer relationships and coordination across environments. Table 21 displays protective factors that teachers rated as "optimal" or "needs improvement" for 20% or more of the students.

Table 21

Environmental Protective Factors Rated as Optimal or Inadequate [a]

| Environment | Optimal | Inadequate |
| --- | --- | --- |
| Community | Fire & police protection | Adequate housing |
| | | Co-location of services |
| Family | Interest in school progress | Interest in school progress |
| | Caregiver encourages child | Family volunteers at school |
| | Clothing & school supplies | |
| | Grooming needs met | |
| | Attend school conferences | |
| | Warm & supportive | |
| | Expects school success | |
| School | Arts activities | Coordination with agencies |
| | Materials & activity choices | Home visits |
| | Cooperative learning | Parenting classes |
| | Friendly classmates | Family support group |
| | Interests exploration | |
| | Materials and resources | |
| | Motor activities | |
| | Praise | |
| | Reports to family | |
| | Safe environment | |
| | Staff problem solve together | |
| | Varied instructional groupings | |

[a] Frequency of Optimal and Inadequate ratings ≥ 20%.

About one-third of the school and family items were judged to be Optimal for at least 20% of the children. Primarily, these items reflected positive support and interaction, provision of basic needs, school enrichment activities, family interaction with school issues, and school reporting to families. Most of the items rated as Inadequate related to links across environments (e.g., coordination, co-location, family volunteers). This issue as well as the low number of Optimal ratings for community assets prompted further analysis. Teacher knowledge of home and community environments could provide another perspective on the linkages across environments; therefore, percentages of items unknown were calculated and compared across groups. While there were no significant differences across age groups, teachers of students in special education rated significantly more home-related protective factors ($p$ = .0002) in comparison to teacher ratings for students eligible for Title I or homeless education. They also rated more of the community protective factors ($p$ = .03) for students eligible for special education than for those eligible for homeless education.

These differences across programs suggested several possible explanations. First, students who were homeless moved frequently, decreasing the opportunity for teachers to develop in-depth knowledge about their environmental contexts. In addition, families and children may not have revealed their difficult living circumstances to school personnel. This is a significant concern because important school supports may not be provided if teachers do not know that a student is living in a shelter or that a family is on the brink of eviction. Although other staff members (e.g., counselor or social worker) may be more involved in providing additional child and family supports, teachers are often the initiators of services or serve as advocates for resources to support their students; therefore, their knowledge is an important asset for children. Second, some service delivery models provided greater opportunities for interaction between teachers and families than others. For example, early childhood special education teachers made home visits, met at least annually with family members to develop an individualized educational plan, and had

smaller classes. These teachers also might have greater opportunities for sustained relationships with students and families because preschoolers can remain in the same class for two to three years. In terms of mean numbers of items completed, preschool special education teachers rated more family and community protective factors than other teachers. Table 22 illustrates the factors that were most frequently rated as unknown.

Table 22

Environmental Protective Factors Rated as Not Known by Teachers[a]

| Environment | Rated "Don't Know" |
|---|---|
| Community | Adequate housing is available |
| | Agencies coordinate with school |
| | Banks are accessible to families |
| | Child has a community mentor |
| | Child has neighborhood friends |
| | Child belongs to a community organization |
| | Transportation is available to community services |
| Family | Family uses community library and parks |
| | Caregiver is encouraging to child |
| | Family has a support network of friends and family |
| | Family provides clear rules for child's behavior |
| | Child has age-appropriate household chores |
| | Caregiver talks to child about school experiences |
| | Child has toys and books at home |
| | Child has positive sibling relations |
| School | Child receives help from a student or adult mentor |

[a] Frequency of ratings ≥ 20%.

Knowing enough to rate these environmental supports is an important step in understanding the assets and risks across environments for individual students. Lack of knowledge about these developmental contexts poses a challenge to constructing resilience-oriented programs. The 51 teachers who volunteered to participate in this study were highly conscientious (all of them completed six instruments for each child in a timely fashion). Their lack of knowledge about environmental supports and needs may result from service delivery models and other programmatic barriers. Knowledge of these barriers as well as effective strategies for bridging these gaps across environments is an important issue for further investigation.

## Importance of Protective Factors

Teachers rated the environmental factors a second time, based on their judgments of the importance of these protective factors for each student's development. Significant differences were observed across age and risk groups. Specifically, teachers rated environmental protective factors as more important for the youngest students than for the oldest, and for students in poverty (Title I and homeless education) rather than for students in special education. Overall, teachers rated most of the 66 environmental protective factors as "somewhat" to "very important." The items most frequently rated as "very important" are reported in Table 23. These items show high consensus among teachers about these factors (community = 45%; family = 70% and school = 65%).

Items that focus on student autonomy (input into decision making, self-evaluation, household chores) were not included in these ratings. Self-determination and responsibility are important aspects of resilience and warrant further emphasis in family-school contexts (Henderson & Milstein, 1996). Teacher ratings suggested greater emphasis on warm support, resources, high expectations, interest exploration and family-teacher interaction school conferences and progress reports. Rating the importance of these factors could be a helpful starting point for staff members, collaborative teams or stakeholder groups in clarifying the values which underlie specific initiatives, interventions or support programs.

Table 23

Environmental Protective Factors Rated as Most Important by Teachers

| Environment | "Very Important"[a] |
|---|---|
| Community | Police and fire protection readily available |
| | Neighborhood is safe |
| | Adequate housing is available in the student's neighborhood |
| Family | Caregiver is affectionate and warm with child |
| | Family provides clear rules for child's behavior |
| | Family expects the child to be successful in school |
| | Family member participates in school conferences |
| | One family member is very close and encouraging to the child |
| | Child has access to toys and books at home |
| | Caregiver encourages child's age appropriate independence |
| School | Student receives praise or recognition for accomplishments |
| | School environment is safe |
| | School has learning materials and resources for student |
| | Student is encouraged to keep trying difficult tasks |
| | Student has a choice of learning materials and activities |
| | Child participates in varied groupings (size & composition) |
| | Staff expect student will be as successful as peers this year |
| | Child has opportunities to explore new interests |
| | The school contacts the family about student progress |

[a] Frequency of ratings: Community ≥ 45%; Family ≥ 70%; School ≥ 65%; items listed in descending order by frequency counts.

## Environmental Factors: Adequacy and Importance

Both ratings were entered in the discriminant analysis of high and low adjustment groups. Adequacy ratings, particularly for family protective factors, were the most important in predicting adjustment groups; however, importance ratings also had a significant effect. The Environmental Composite, including both adequacy and importance ratings, served as the final factor in predicting School Adjustment and contributed 1% to the total 74%. Questions remain about the impact of teachers' knowledge on the adequacy ratings and, consequently, their low predictive value.

For individual students, examining the discrepancies between adequacy of environmental supports and their importance may be the first step in formulating resilience-oriented intervention strategies. This provides a broader context for understanding children's development and the role of the school in fostering long term competence. For example, teacher assistance teams (which focus on problem-solving regarding individual student concerns) may focus instead on identifying protective factors which can be strengthened and amassed across environments. This also may provide a more constructive way of increasing incentives to build links with families and community resources.

### Recommendations for Future Research

This study built on the rich and diverse body of literature about risk and resilience in an attempt to better understand the complex interaction of child and environmental factors that influence adaptability. The third phase of the study illustrated the utility of temperament and personality measures in understanding the behaviors teachers use to conceptualize adjustment. In particular, the personality measure added more information than traditional temperament measures about children's openness to experience, an important facet of school-related behavior. This construct adds an emphasis on creativity and enthusiasm for learning, which support resilience and should be sustained in learning environments.

Observing the development and environmental influences on these behaviors over time is an important focus for further studies.

These findings also need to be understood in broader contexts, namely, in relation to other groups of students at risk and the larger population. Additionally, this study of school adjustment is confined to multiple judgments by the same teacher. It will be important in future studies to broaden the adjustment criteria to other raters and additional independent criteria. The study of resilience is essentially the study of lives over time and in various contexts; thus, this cross-sectional view has significant limitations. Longitudinal follow-up of these students would add substantially to the understanding of protective processes. Masten (1994) suggested that "protective mechanism" or "process" is a better concept than protective factor because it suggests the ongoing interaction of assets that ameliorate risk in children's development.

While this study was designed to examine teachers' assessments of protective factors (and provided some insight into their values, knowledge and judgments about resilience), adding other perspectives would be instructive. For example, involving parents and community personnel (e.g., shelter providers or Boys and Girls Club counselors) in the next stage might illuminate issues that are currently unknown about home and community contexts. These ratings could be compared to teacher perspectives, for example, regarding the relative importance of Manageability and Openness. Parental ratings of home, school and community protective factors may provide important feedback to school leaders about families' judgments and knowledge of other environments. Multiple perspectives about child behavior and protective factors may illuminate some of the shared and divergent frameworks of parents and teachers, key influences in children's developmental pathways. The relationship of multiple perspectives to the School Adjustment outcomes could be helpful in formulating areas for increased dialogue among the various caregivers in children's lives.

The perspectives of principals, counselors, nurses and other staff members who are important in building resilience-oriented educational programs also need to be assessed. Sharing those perspectives through a common planning agenda with community agencies may be based on resilience-oriented approaches, such as Communities That Care (Catalano, Chappell, & Hawkins, 1993), which are increasingly evident in community prevention initiatives. Emphases on building common assets or protective factors across environments are needed, particularly for children in "deep poverty" and for families who are homeless and invisible.

Intervention-oriented studies are needed to identify the role of various service delivery models in supporting student resilience. For example:

1. How do programs with strong family components (e.g., home visits, family workshops, family councils) affect teacher and family agreement about the importance of protective factors and children's school adjustment?

2. Could use of the Protective Factor Rating Scale in child study teams increase the emphasis on building protective factors rather than on remediating deficits?

3. In professional development activities, what protective mechanisms do teachers identify in their current practices and what new strategies do they want to incorporate?

4. How can school psychologists and counselors assess important protective factors and collaborate with teachers and families to promote children's successful adaptation, particularly for students needing early intervention?

Finally, teachers' assessments of child characteristics in this study do not differ across groups, but the adequacy and importance of environmental supports do. This seems to add support to a fundamental policy issue raised by many researchers (e.g., Pianta & Walsh, 1996; Pugach, 1995; Skrtic & Sailor, 1996; Wang, Reynolds et al., 1995) and stated so memorably by Wirt and Kirst (1997): what is the antidote for "hardening of the categories"? Would the incorporation of a protective factor framework support the

reallocation and more creative use of categorical program resources, i.e., the promotion of more integrated and differentiated resources at the local school level?

The suggestions for further research include directions that broaden and apply alternative approaches to increase our understanding and influence regarding children's resilience. With the increasing numbers of young children in poverty and the related risks of developmental difficulties, educators across various disciplines and programs, including researchers and practitioners, would do well to build on the conceptual framework of resilience to activate and integrate protective mechanisms across the important contexts of children's lives.

<div align="center">Post Script</div>

This story, from **Other People's Children** (Delpit, 1995), issues a real challenge:

> [E]ducators must have knowledge of children's lives outside of school ... to
> recognize their strengths ... Howard was in the first grade when everyone
> thought that he would need to be placed in special education classes. Among
> his other academic problems, he seemed totally unable to do even the
> simplest mathematics worksheets ... I agreed with the general assessment of
> him until I got to know something about his outside life ... He had a
> younger sister who was four ... with cerebral palsy. His mother was
> suffering with a drug problem ... so Howard was the main caretaker ... he
> would get his sister up, dressed, and off to school. He also did the family
> laundry and much of the shopping ... he had become expert at counting
> money ... still he was unable to complete what looked to his teachers like
> the simplest worksheet. Without teachers' knowledge of his abilities
> outside of school he was destined to be labeled mentally incompetent (pp.
> 172-173).

Fundamental to activating protective mechanisms as developmental enhancements for children facing adversity are these efforts to strengthen the links across environments and

over time. Applications of a protective factor model to children's individual characteristics, school adjustment and environmental protective factors may provide the new perspectives needed to reshape traditional compensatory programs as effective supports to children's resilience.

# Appendix A:

## Correspondence with Participants

School of Education

P.O. Box 8795
Williamsburg, Virginia 23187-8795

November 15, 1997

Dear Early Childhood Educator,

I would like to request your participation in a study of young children and supports to their development. Your program was recommended for the quality of early childhood services provided and your participation is important in identifying effective interventions. As an early childhood educator, I believe the perceptions of staff who work closely with children are very important for understanding children's needs and strengths.

This research for my doctoral dissertation has been awarded a federal grant which supports small stipends for participating teachers. Teachers who volunteer will complete several questionnaires about 2 to 4 of their students; the total time required is approximately 60 minutes per student. Stipends are $20 per student, so teachers may receive from $40 to $80. We would like to have the questionnaires completed before the Winter break - the first packet by December 1st and the second packet by December 18th.

No instructional time is required to complete the questionnaires. All results will be summarized by groups and will remain confidential. I will be happy to share the results of this study with you. While your participation is very valuable, it is also strictly voluntary. If for any reason, you decide that you do not wish to continue to participate in this study, please just let me know. I can be reached at (757) 221-2406 and would be happy to talk with you further about any questions or concerns you might have.

If you would like to participate in this study, please check your preferences and return the attached form. Thank you.

Sincerely,

Evelyn Reed-Victor
Doctoral Candidate

---

I do❏  do not ❏  agree to participate in this research project as described above.

_____(signature)_____ (date)

_____(School)

If needed, I would complete questionnaires for a maximum of 2 ❏ 3 ❏ or 4 ❏ students.

# Appendix B

## Research Instruments

# Student Information Form

**Student ID #** _____ **Teacher's ID #** _____

**Student's birthdate** _____ **Student's grade** _____

**Student's gender:** Female ❑ Male ❑

**Student's ethnicity:** African-American ❑ Asian ❑ Caucasian ❑ Hispanic ❑
Other ❑ (please specify) _____

**Program enrollment** (please check all that apply):
Homeless Education ❑ Title 1 ❑ Free/reduced lunch ❑ Special Education ❑

**Student's current health status:**
Typical for age ❑ Chronic or acute health concern(s) ❑

**Student's current developmental status** (based on developmental testing, please
check all that apply):

| | | | |
|---|---|---|---|
| Motor: | Typical ❑ | Mild Delay ❑ | Significant delay or disability ❑ |
| Language: | Typical ❑ | Mild Delay ❑ | Significant delay or disability ❑ |
| Cognitive: | Typical ❑ | Mild Delay ❑ | Significant delay or disability ❑ |
| Social/emotional: | Typical ❑ | Mild Delay ❑ | Significant delay or disability ❑ |
| Sensory: | Typical ❑ | Mild Delay ❑ | Significant delay or disability ❑ |

**Student's family** (please check all that apply):

**Adult caregivers in the home:**
Father ❑ Mother ❑ Grandparent(s) or other relative(s) ❑ Foster parent(s) ❑

**Caregiver(s) approximate age(s):**
Under 20 yrs. ❑ 20-29 yrs. ❑ 30-39 yrs. ❑ 40 + yrs. ❑

**Sibling(s) at home:**
None ❑ 1-2 ❑ 3-4 ❑ 5 or more ❑

**Residence:**
Family apt. or house ❑ Temporarily with family or friends ❑ Shelter ❑
Other ❑ (please specify) _____

#_____

## Educator Information Form

Educator's Name_____

Gender: Female ☐     Male ☐

School _____

Current Program and Grade Assignment_____

Educational Background and Experience:

    Degree(s) _____

    Certification(s) _____

    # of years teaching _____ Grade levels _____

    Last three assignments/positions (for example, primary special education resource teacher, early childhood special education teacher, kindergarten teacher).

    _____

    _____

    _____

*The following information will be used for submitting the request for your stipend only:*

Address_____

City_____ State_____Zip Code_____

Social Security Number_____

# Inventory of Student's Individual Differences

*Project ID will be completed by research staff.*

| Project ID |
|---|

*Please blacken the answer that best describe your student. Work quickly, don't spend too much time on any one question. How much do the following words or phrases describe your student?*

Very much like my student

Much like my student

Somewhat like my student

Not much like my student

Not at all like my student

1. loves to play sports      1   2   3   4   5

2. has a hard time meeting other children      1   2   3   4   5

3. excited about learning      1   2   3   4   5

4. non-stop energy      1   2   3   4   5

5. very active physically      1   2   3   4   5

6. very rowdy      1   2   3   4   5

7. fascinated by the world      1   2   3   4   5

8. likes to play with his/her friends      1   2   3   4   5

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F-6-B-8-P-1

**Dr. Charles F. Halverson and Dr. Valerie L. Havill, Georgia Longitudinal Study, Department of Child and Family Studies, University of Georgia**

9. aggressive toward others ,1, ,2, ,3, ,4, ,5,

10. highly motivated ,1, ,2, ,3, ,4, ,5,

11. likes to have everything in its place ,1, ,2, ,3, ,4, ,5,

12. wants things his/her own way ,1, ,2, ,3, ,4, ,5,

13. manipulative ,1, ,2, ,3, ,4, ,5,

14. loves life ,1, ,2, ,3, ,4, ,5,

15. impulsive ,1, ,2, ,3, ,4, ,5,

16. cooperates ,1, ,2, ,3, ,4, ,5,

17. bossy ,1, ,2, ,3, ,4, ,5,

18. intelligent ,1, ,2, ,3, ,4, ,5,

19. loves books ,1, ,2, ,3, ,4, ,5,

20. outspoken ,1, ,2, ,3, ,4, ,5,

21. likes to be around children ,1, ,2, ,3, ,4, ,5,

22. quick temper ,1, ,2, ,3, ,4, ,5,

23. will follow through on a task ,1, ,2, ,3, ,4, ,5,

24. makes friends easily ,1, ,2, ,3, ,4, ,5,

25. determined ,1, ,2, ,3, ,4, ,5,

26. gets easily upset about things ,1, ,2, ,3, ,4, ,5,

27. good tempered ,1, ,2, ,3, ,4, ,5,

28. can get feelings hurt easily ,1, ,2, ,3, ,4, ,5,

**Page: 2**

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| | | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 29. | very athletic | .1 | .2 | .3 | .4 | .5 |
| 30. | good at leading groups | .1 | .2 | .3 | .4 | .5 |
| 31. | could be more verbal | .1 | .2 | .3 | .4 | .5 |
| 32. | likes to play | .1 | .2 | .3 | .4 | .5 |
| 33. | creative | .1 | .2 | .3 | .4 | .5 |
| 34. | whiny | .1 | .2 | .3 | .4 | .5 |
| 35. | likes arts and crafts | .1 | .2 | .3 | .4 | .5 |
| 36. | happy | .1 | .2 | .3 | .4 | .5 |
| 37. | able to tell you his feelings | .1 | .2 | .3 | .4 | .5 |
| 38. | doesn't do what he/she is told | .1 | .2 | .3 | .4 | .5 |
| 39. | smart | .1 | .2 | .3 | .4 | .5 |
| 40. | fun sense of humor | .1 | .2 | .3 | .4 | .5 |
| 41. | rarely loses temper | .1 | .2 | .3 | .4 | .5 |
| 42. | fun to be around | .1 | .2 | .3 | .4 | .5 |
| 43. | easy going | .1 | .2 | .3 | .4 | .5 |
| 44. | stubborn | .1 | .2 | .3 | .4 | .5 |
| 45. | gives up easily | .1 | .2 | .3 | .4 | .5 |
| 46. | lacks confidence | .1 | .2 | .3 | .4 | .5 |
| 47. | inquisitive | .1 | .2 | .3 | .4 | .5 |
| 48. | fast learner | .1 | .2 | .3 | .4 | .5 |

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| | | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 49. | rude | 1 | 2 | 3 | 4 | 5 |
| 50. | moody | 1 | 2 | 3 | 4 | 5 |
| 51. | wants to know everything | 1 | 2 | 3 | 4 | 5 |
| 52. | throws temper tantrums | 1 | 2 | 3 | 4 | 5 |
| 53. | selfish | 1 | 2 | 3 | 4 | 5 |
| 54. | very responsible | 1 | 2 | 3 | 4 | 5 |
| 55. | good at problem solving | 1 | 2 | 3 | 4 | 5 |
| 56. | gets along well with other children | 1 | 2 | 3 | 4 | 5 |
| 57. | can be deceiving | 1 | 2 | 3 | 4 | 5 |
| 58. | well-adjusted | 1 | 2 | 3 | 4 | 5 |
| 59. | has a lot of friends | 1 | 2 | 3 | 4 | 5 |
| 60. | talks too much and doesn't listen | 1 | 2 | 3 | 4 | 5 |
| 61. | impatient | 1 | 2 | 3 | 4 | 5 |
| 62. | large vocabulary | 1 | 2 | 3 | 4 | 5 |
| 63. | likes to argue | 1 | 2 | 3 | 4 | 5 |
| 64. | good at remembering | 1 | 2 | 3 | 4 | 5 |
| 65. | loves to hear stories | 1 | 2 | 3 | 4 | 5 |
| 66. | loves to explore | 1 | 2 | 3 | 4 | 5 |
| 67. | likes to draw | 1 | 2 | 3 | 4 | 5 |
| 68. | likes to take things apart to see how they work | 1 | 2 | 3 | 4 | 5 |

F-6-B-9-P-4

# Temperament Assessment Battery For Children
## Revised Teacher Form
### by Roy P. Martin,
### University of Georgia

*Project ID will be completed by research staff*

| Project ID |
| --- |

| | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

*This questionnaire is designed to gather information about the way in which children behave in the classroom or in a preschool setting. Each of the following statements asks you to judge whether that behavior occurs "hardly ever", infrequently", "once in a while", "sometimes", "often", "very often", or "almost always".*

*Please fill in box "1" if the behavior "hardly ever" occurs, box number "2" if the behavior occurs "infrequently", etc. Also, please make these judgements based on the child's behavior during the past few months.*

Scale headers: Hardly ever / Infrequently / Once in a while / Sometimes / Often / Very often / Almost always

1. Child is shy with adults he/she does not know.       1  2  3  4  5  6  7

2. If child's activity is interrupted, he/she tries to go back to it.       1  2  3  4  5  6  7

3. If another child has a toy he/she wants, this child will easily accept a substitute.       1  2  3  4  5  6  7

4. When telling a story, such as what happened on the weekend or during a vacation, the child talks about it loudly, with enthusiasm and excitement.       1  2  3  4  5  6  7

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| | | Hardly ever | Infrequently | Once in a while | Sometimes | Often | Very often | Almost always |
|---|---|---|---|---|---|---|---|---|
| 5. | Child is easily drawn away from his/her work by noises in classroom. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. | Child will initially avoid new games and activities. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. | Child gets upset by things that don't bother most other children. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. | Child gets involved immediately with new learning situation. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. | Child is the first to notice if a messenger comes into the room. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. | Child lets other children know when he/she does not like something by yelling and fighting. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. | Child is able to sit quietly for a reasonable amount of time. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. | Child will quickly adjust to games if others want to play in a different way. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. | During free play, child will stick to any activity for only a short time. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. | Child's attention to teacher reading stories is shorter than other children. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. | Child takes a long time to become comfortable in a new situation. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. | Child gets frustrated when having trouble learning a new skill. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. | Child plunges into new activities without hesitation. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. | Child can continue at the same activity for an hour. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19. | Child's responses are loud. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20. | It is difficult to tell what this child is feeling. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21. | Child cannot be distracted. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 22. | Child takes a long time to become comfortable in a new situation. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

23. Child will perform before the class with no hesitation.  1 2 3 4 5 6 7

24. When child loses a game, he/she takes it lightly.  1 2 3 4 5 6 7

25. If another child is talking or making a noise while teacher is explaining a lesson, this child remains attentive to the teacher.  1 2 3 4 5 6 7

26. Child is bashful when meeting new children.  1 2 3 4 5 6 7

27. Child starts an activity and does not finish it.  1 2 3 4 5 6 7

28. When behavior is corrected by the teacher, this child gets angry or upset.  1 2 3 4 5 6 7

29. This child is easily sidetracked.  1 2 3 4 5 6 7

30. Child overreacts in a stressful situation.  1 2 3 4 5 6 7

31. Child's movements are slow.  1 2 3 4 5 6 7

32. Child gets upset with other children.  1 2 3 4 5 6 7

33. During free play time, child prefers quiet activities.  1 2 3 4 5 6 7

34. Child prefers familiar toys and games to new play equipment.  1 2 3 4 5 6 7

35. When class is promised something in future (trip, party, etc.), this child keeps reminding the teacher of it.  1 2 3 4 5 6 7

36. Child sits still when a story is being told or read.  1 2 3 4 5 6 7

37. Child seems angry or moody.  1 2 3 4 5 6 7

38. Child wants to know everything.  1 2 3 4 5 6 7

*Thank You*

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F-1-8-1-P-3

# Environment Rating Scale: Form A

*Project ID will be completed by research staff*

**Project ID**

Please rate the adequacy of this student's current experiences and fill in the space for the corresponding number. Please work quickly and do not spend too long on any one item.

| | Don't know | Not Relevant | Needs improvement | Adequate | Optimal |
|---|---|---|---|---|---|
| 1. Family caregivers provide clear rules for child's behavior. | 1 | 2 | 3 | 4 | 5 |
| 2. Family member participates in school conferences. | 1 | 2 | 3 | 4 | 5 |
| 3. Family caregiver is affectionate and warm with this child. | 1 | 2 | 3 | 4 | 5 |
| 4. Caregiver describes child's strengths and interests. | 1 | 2 | 3 | 4 | 5 |
| 5. Family member asks about child's school progress. | 1 | 2 | 3 | 4 | 5 |
| 6. Caregiver expects students to be successful in school. | 1 | 2 | 3 | 4 | 5 |
| 7. Caregiver encourages child's age appropriate independence. | 1 | 2 | 3 | 4 | 5 |
| 8. Family has stable housing. | 1 | 2 | 3 | 4 | 5 |
| 9. Child has clothing and school supplies. | 1 | 2 | 3 | 4 | 5 |

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**Page: 1**

| | Don't know | Not Relevant | Needs improvement | Adequate | Optimal |
|---|---|---|---|---|---|
| 10. Child's grooming needs (e.g., bathing, brushing teeth) are met. | 1 | 2 | 3 | 4 | 5 |
| 11. Child has access to books and toys at home. | 1 | 2 | 3 | 4 | 5 |
| 12. Family has a support network of friends and family. | 1 | 2 | 3 | 4 | 5 |
| 13. At least one caregiver is employed. | 1 | 2 | 3 | 4 | 5 |
| 14. Child has positive interaction with siblings. | 1 | 2 | 3 | 4 | 5 |
| 15. One family member is very close and encouraging to this child. | 1 | 2 | 3 | 4 | 5 |
| 16. The child helps with household chores appropriate for his/her age. | 1 | 2 | 3 | 4 | 5 |
| 17. Caregiver talks with child about school experiences. | 1 | 2 | 3 | 4 | 5 |
| 18. Caregiver requests additional services for the child. | 1 | 2 | 3 | 4 | 5 |
| 19. Family visits libraries, parks, or other community sites. | 1 | 2 | 3 | 4 | 5 |
| 20. Family member volunteers at school. | 1 | 2 | 3 | 4 | 5 |
| 21. Child is coached by staff in resolving conflicts with peers. | 1 | 2 | 3 | 4 | 5 |
| 22. Student receives special transportation to attend school. | 1 | 2 | 3 | 4 | 5 |
| 23. Staff expect this student will be as successful as classmates this year. | 1 | 2 | 3 | 4 | 5 |
| 24. Music, art, or drama activities are available for student at school. | 1 | 2 | 3 | 4 | 5 |
| 25. School routine includes gross motor or sports activities for student. | 1 | 2 | 3 | 4 | 5 |
| 26. Child has opportunities to explore new interests in school. | 1 | 2 | 3 | 4 | 5 |
| 27. The school contacts the family about student progress. | 1 | 2 | 3 | 4 | 5 |
| 28. Suggestions are provided for home learning activities. | 1 | 2 | 3 | 4 | 5 |
| 29. Effective parenting classes are available at school. | 1 | 2 | 3 | 4 | 5 |
| 30. The teacher visits the student's family at home. | 1 | 2 | 3 | 4 | 5 |

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| # | Item | Don't know | Not Relevant | Needs improvement | Adequate | Optimal |
|---|------|:---:|:---:|:---:|:---:|:---:|
| 31. | This student receives counseling services at school. | 1 | 2 | 3 | 4 | 5 |
| 32. | This student is encouraged to keep trying difficult tasks in school. | 1 | 2 | 3 | 4 | 5 |
| 33. | Emergency clothing or school supplies are available at school. | 1 | 2 | 3 | 4 | 5 |
| 34. | School coordinates with community agencies about student's needs. | 1 | 2 | 3 | 4 | 5 |
| 35. | Family support groups are available at school. | 1 | 2 | 3 | 4 | 5 |
| 36. | Student receives praises or recognition for learning accomplishments. | 1 | 2 | 3 | 4 | 5 |
| 37. | Student or adult mentor helps this child with school work. | 1 | 2 | 3 | 4 | 5 |
| 38. | Student is provided with choices of learning activities and materials. | 1 | 2 | 3 | 4 | 5 |
| 39. | Teacher consults with other staff about this student. | 1 | 2 | 3 | 4 | 5 |
| 40. | Staff work as a team to solve instructional or behavioral problems. | 1 | 2 | 3 | 4 | 5 |
| 41. | School has learning materials and resources for student. | 1 | 2 | 3 | 4 | 5 |
| 42. | The school environment is safe. | 1 | 2 | 3 | 4 | 5 |
| 43. | Other students are friendly towards this student. | 1 | 2 | 3 | 4 | 5 |
| 44. | Cooperative learning activities are available for student. | 1 | 2 | 3 | 4 | 5 |
| 45. | Class routines or physical arrangements are modified for this child. | 1 | 2 | 3 | 4 | 5 |
| 46. | Teacher or other staff member talks with child about child's concerns. | 1 | 2 | 3 | 4 | 5 |
| 47. | This student has been promoted to the next level or grade each year. | 1 | 2 | 3 | 4 | 5 |
| 48. | Individual instruction is provided for this student. | 1 | 2 | 3 | 4 | 5 |
| 49. | Child participates in instructional groups of varied size & composition. | 1 | 2 | 3 | 4 | 5 |
| 50. | Child has age appropriate opportunities to set goals & monitor progress. | 1 | 2 | 3 | 4 | 5 |
| 51. | Classroom materials and activities reflect the student's culture. | 1 | 2 | 3 | 4 | 5 |

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52. Student receives specific instruction in problem solving. .1 .2 .3 .4 .5

53. Student has the opportunity to help define classroom rules. .1 .2 .3 .4 .5

54. Adequate housing is available in the child's neighborhood. .1 .2 .3 .4 .5

55. Before-and after-school care is available in the community. .1 .2 .3 .4 .5

56. The child's neighborhood is safe. .1 .2 .3 .4 .5

57. Child belongs to an organization (e.g., religious, scouting, recreation). .1 .2 .3 .4 .5

58. Child has positive peer interactions in the neighborhood. .1 .2 .3 .4 .5

59. Community health and mental health services are accessible. .1 .2 .3 .4 .5

60. Child has a community mentor (e.g., coach, Big Sister, music teacher). .1 .2 .3 .4 .5

61. Transportation is available to community activities or services. .1 .2 .3 .4 .5

62. Agencies which serve the student coordinate with the school. .1 .2 .3 .4 .5

63. Community services are provided near or in the school building. .1 .2 .3 .4 .5

64. Family support services are available in the community. .1 .2 .3 .4 .5

65. Families have access to community financial institutions. .1 .2 .3 .4 .5

66. Police and fire protection is readily available in the community. .1 .2 .3 .4 .5

*Thank you!*

# Environment Rating Scale:  Form B

*Project ID will be completed by research staff*

Project ID

1 1 1 1 1 1 1 1 1 1
2 2 2 2 2 2 2 2 2 2
3 3 3 3 3 3 3 3 3 3
4 4 4 4 4 4 4 4 4 4
5 5 5 5 5 5 5 5 5 5
6 6 6 6 6 6 6 6 6 6
7 7 7 7 7 7 7 7 7 7
8 8 8 8 8 8 8 8 8 8
9 9 9 9 9 9 9 9 9 9
0 0 0 0 0 0 0 0 0 0

*Please rate the importance of the following factors as supports to this student's development.  Fill in the space which corresponds to your rating.*

|  | No opinion | Not important | Slightly important | Somewhat important | Very important |
|---|---|---|---|---|---|
| 1. Family caregivers provide clear rules for child's behavior. | 1 | 2 | 3 | 4 | 5 |
| 2. Family member participates in school conferences. | 1 | 2 | 3 | 4 | 5 |
| 3. Family caregiver is affectionate and warm with this child. | 1 | 2 | 3 | 4 | 5 |
| 4. Caregiver describes child's strengths and interests. | 1 | 2 | 3 | 4 | 5 |
| 5. Family member asks about child's school progress. | 1 | 2 | 3 | 4 | 5 |
| 6. Caregiver expects students to be successful in school. | 1 | 2 | 3 | 4 | 5 |
| 7. Caregiver encourages child's age appropriate independence. | 1 | 2 | 3 | 4 | 5 |
| 8. Family has stable housing. | 1 | 2 | 3 | 4 | 5 |
| 9. Child has clothing and school supplies. | 1 | 2 | 3 | 4 | 5 |
| 10. Child's grooming needs (e.g., bathing, brushing teeth) are met. | 1 | 2 | 3 | 4 | 5 |

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**Page:  1**

| | | No opinion | Not important | Slightly important | Somewhat important | Very important |
|---|---|---|---|---|---|---|
| 11. | Child has access to books and toys at home. | 1 | 2 | 3 | 4 | 5 |
| 12. | Family has a support network of friends and family. | 1 | 2 | 3 | 4 | 5 |
| 13. | At least one caregiver is employed. | 1 | 2 | 3 | 4 | 5 |
| 14. | Child has positive interaction with siblings. | 1 | 2 | 3 | 4 | 5 |
| 15. | One family member is very close and encouraging to this child. | 1 | 2 | 3 | 4 | 5 |
| 16. | The child helps with household chores appropriate for his/her age. | 1 | 2 | 3 | 4 | 5 |
| 17. | Caregiver talks with child about school experiences. | 1 | 2 | 3 | 4 | 5 |
| 18. | Caregiver requests additional services for the child. | 1 | 2 | 3 | 4 | 5 |
| 19. | Family visits libraries, parks, or other community sites. | 1 | 2 | 3 | 4 | 5 |
| 20. | Family member volunteers at school. | 1 | 2 | 3 | 4 | 5 |
| 21. | Child is coached by staff in resolving conflicts with peers. | 1 | 2 | 3 | 4 | 5 |
| 22. | Student receives special transportation to attend school. | 1 | 2 | 3 | 4 | 5 |
| 23. | Staff expect this student will be as successful as classmates this year. | 1 | 2 | 3 | 4 | 5 |
| 24. | Music, art, or drama activities are available for student at school. | 1 | 2 | 3 | 4 | 5 |
| 25. | School routine includes gross motor or sports activities for student. | 1 | 2 | 3 | 4 | 5 |
| 26. | Child has opportunities to explore new interests in school. | 1 | 2 | 3 | 4 | 5 |
| 27. | The school contacts the family about student progress. | 1 | 2 | 3 | 4 | 5 |
| 28. | Suggestions are provided for home learning activities. | 1 | 2 | 3 | 4 | 5 |
| 29. | Effective parenting classes are available at school. | 1 | 2 | 3 | 4 | 5 |
| 30. | The teacher visits the student's family at home. | 1 | 2 | 3 | 4 | 5 |
| 31. | This student receives counseling services at school. | 1 | 2 | 3 | 4 | 5 |

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**Page: 2**

32. This student is encouraged to keep trying difficult tasks in school.    .1 .2 .3 .4 .5

33. Emergency clothing or school supplies are available at school.    .1 .2 .3 .4 .5

34. School coordinates with community agencies about student's needs.    .1 .2 .3 .4 .5

35. Family support groups are available at school.    .1 .2 .3 .4 .5

36. Student receives praises or recognition for learning accomplishments.    .1 .2 .3 .4 .5

37. Student or adult mentor helps this child with school work.    .1 .2 .3 .4 .5

38. Student is provided with choices of learning activities and materials.    .1 .2 .3 .4 .5

39. Teacher consults with other staff about this student.    .1 .2 .3 .4 .5

40. Staff work as a team to solve instructional or behavioral problems.    .1 .2 .3 .4 .5

41. School has learning materials and resources for student.    .1 .2 .3 .4 .5

42. The school environment is safe.    .1 .2 .3 .4 .5

43. Other students are friendly towards this student.    .1 .2 .3 .4 .5

44. Cooperative learning activities are available for student.    .1 .2 .3 .4 .5

45. Class routines or physical arrangements are modified for this child.    .1 .2 .3 .4 .5

46. Teacher or other staff member talks with child about child's concerns.    .1 .2 .3 .4 .5

47. This student has been promoted to the next level or grade each year.    .1 .2 .3 .4 .5

48. Individual instruction is provided for this student.    .1 .2 .3 .4 .5

49. Child participates in instructional groups of varied size & composition.    .1 .2 .3 .4 .5

50. Child has age appropriate opportunities to set goals & monitor progress.    .1 .2 .3 .4 .5

51. Classroom materials and activities reflect the student's culture.    .1 .2 .3 .4 .5

52. Student receives specific instruction in problem solving.    .1 .2 .3 .4 .5

---

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|     |                                                                                      | No opinion | Not important | Slightly important | Somewhat important | Very important |
|-----|--------------------------------------------------------------------------------------|:---:|:---:|:---:|:---:|:---:|
| 53. | Student has the opportunity to help define classroom rules.                          | 1 | 2 | 3 | 4 | 5 |
| 54. | Adequate housing is available in the child's neighborhood.                           | 1 | 2 | 3 | 4 | 5 |
| 55. | Before-and after-school care is available in the community.                          | 1 | 2 | 3 | 4 | 5 |
| 56. | The child's neighborhood is safe.                                                    | 1 | 2 | 3 | 4 | 5 |
| 57. | Child belongs to an organization (e.g., religious, scouting, recreation).            | 1 | 2 | 3 | 4 | 5 |
| 58. | Child has positive peer interactions in the neighborhood.                            | 1 | 2 | 3 | 4 | 5 |
| 59. | Community health and mental health services are accessible.                          | 1 | 2 | 3 | 4 | 5 |
| 60. | Child has a community mentor (e.g., coach, Big Sister, music teacher).               | 1 | 2 | 3 | 4 | 5 |
| 61. | Transportation is available to community activities or services.                     | 1 | 2 | 3 | 4 | 5 |
| 62. | Agencies which serve the student coordinate with the school.                         | 1 | 2 | 3 | 4 | 5 |
| 63. | Community services are provided near or in the school building.                      | 1 | 2 | 3 | 4 | 5 |
| 64. | Family support services are available in the community.                              | 1 | 2 | 3 | 4 | 5 |
| 65. | Families have access to community financial institutions.                            | 1 | 2 | 3 | 4 | 5 |
| 66. | Police and fire protection is readily available in the community.                    | 1 | 2 | 3 | 4 | 5 |

*Thank you!*

## Student Adjustment Rating
(adapted from Graziano & Ward, 1992)

Student ID # _____          Date _____

**Please check the number corresponding to your assessment of this student's adjustment to different aspects of her/his school experience.**

|  | 1<br>Strongly<br>Disagree | 2 | 3 | 4 | 5<br>Strongly<br>Agree |
|---|---|---|---|---|---|
| During this school year, this student is... | 1 | 2 | 3 | 4 | 5 |
| 1. **well-adjusted** in overall school performance. | ❏ | ❏ | ❏ | ❏ | ❏ |
| 2. **well-adjusted** in relationships with peers of the same sex. | ❏ | ❏ | ❏ | ❏ | ❏ |
| 3. **well-adjusted** in relationships with peers of the opposite sex. | ❏ | ❏ | ❏ | ❏ | ❏ |
| 4. **well-adjusted** in relationships with the teacher. | ❏ | ❏ | ❏ | ❏ | ❏ |
| 5. **well-adjusted** in classroom behavior. | ❏ | ❏ | ❏ | ❏ | ❏ |

Thank you!

# Appendix C

## ICID & TABC-R Correlation Table

Table 24

Correlations of TABC-R and ICID Dimensions

| | ICID Openness Experience | ICID Manageability | ICID Extraversion | ICID Activity |
|---|---|---|---|---|
| TABC-R Inhibition | | | | |
| Pearson Correlations | -.613** | .130 | -.672** | -.549** |
| Sig. (2-tailed) | .000 | .086 | .000 | .000 |
| N | 176 | 176 | 176 | 176 |
| TABC-R Task Persistence | | | | |
| Pearson Correlations | .635** | -.604** | .565** | -.104 |
| Sig. (2-tailed) | .000 | .000 | .000 | .170 |
| N | 176 | 176 | 176 | 176 |
| TABC-R Negative Emotionality | | | | |
| Pearson Correlations | -.481** | .859** | -.577** | .196** |
| Sig. (2-tailed) | .000 | .000 | .000 | .009 |
| N | 176 | 176 | 176 | 176 |
| TABC-R Activity | | | | |
| Pearson Correlations | -.448** | .663** | -.390** | .380** |
| Sig. (2-tailed) | .000 | .000 | .000 | .000 |
| N | 176 | 176 | 176 | 176 |

Note. **. Correlation is significant at the 0.01 level (2-tailed).

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<u>Vita</u>

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| | |
|---|---|
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| 1972-1973 | Salem State College<br>Salem, Massachusetts<br>M.Ed. in Counseling |
| 1967-1970 | University of Florida<br>Gainesville, Florida<br>B.A. in Language Arts Education |
| 1965-1967 | Orlando College<br>Orlando, Florida |

# IMAGE EVALUATION
## TEST TARGET (QA-3)

1.0

1.1

1.25   1.4   1.6

2.8   2.5

3.2   2.2

3.6

4.0   2.0

1.8

← 150mm →

← 6" →
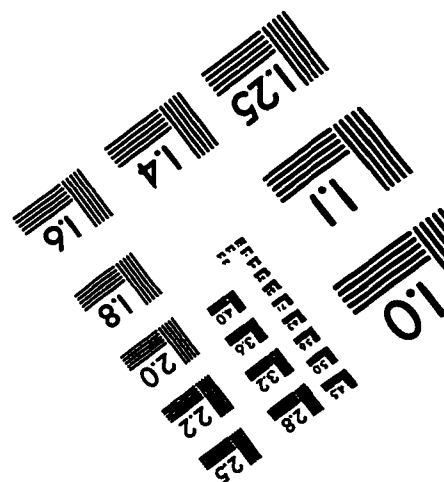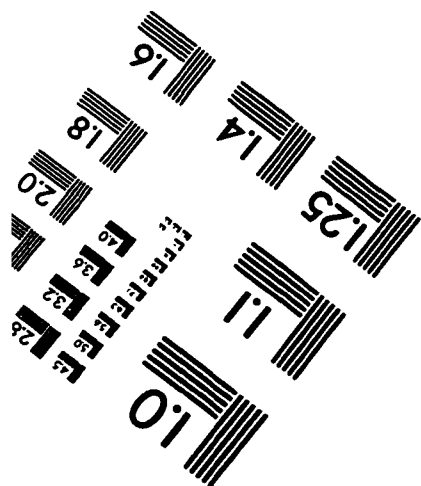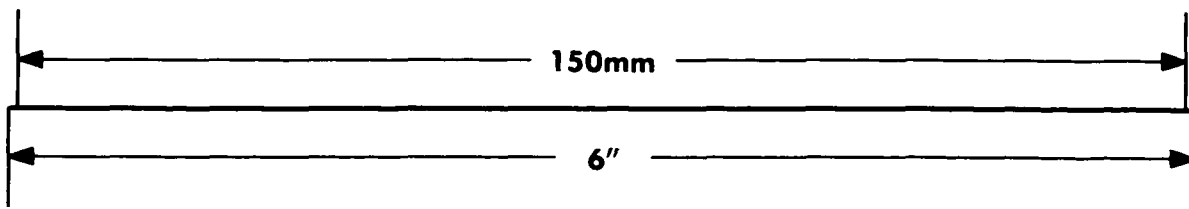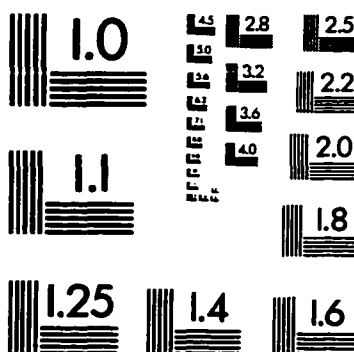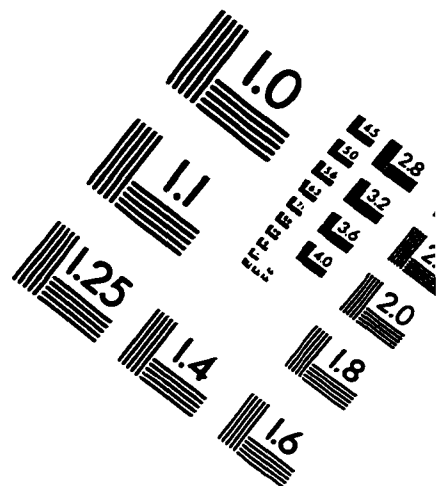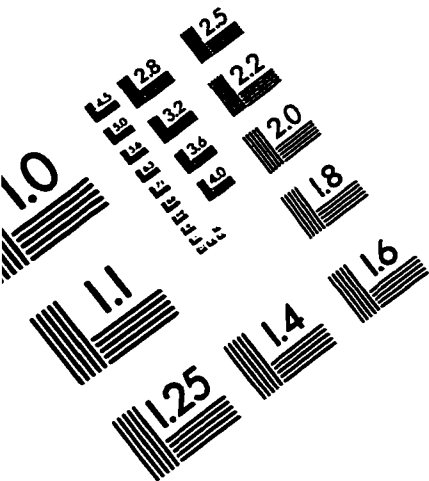
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