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ABSTRACT

Research on academic achievement and high risk students over the past 30 years indicates that the home, the school, or the community can be the source of insufficient educational experiences that contribute to educational disadvantage. About 30 percent of the present school population is estimated to be at risk of failure, and demographic projections predict a dramatic increase in the poor and minority school-age populations that largely comprise this group. This document comprises a review of the demographic factors associated with educational disadvantage and school failure, the scope and nature of problem behaviors associated with school failure, and educational programs and practices that appear to be effective in increasing the cognitive development of high risk students. The following predictors of school failure are discussed: (1) poverty status; (2) race and ethnicity; (3) family and household characteristics; (4) parent education; and (5) language minority status. The following problem behaviors of high risk youth are discussed: (1) truancy; (2) grade retention; (3) school suspension; (4) dropping out; (5) drug and alcohol abuse; (6) teenage pregnancy; and (7) teenage childbearing. The following effective educational strategies for high risk students are discussed: (1) types of school-based compensatory education programs and extended day/year programs; (2) some examples of school-wide reform and community-based approaches; (3) parent participation; and (4) instructional techniques. Further research would benefit from attention to definition and measurement of risk factors, and from the use of ethnographic research methods. A list of 178 references is appended. (FMW)

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Janine Bempechat
Harvard University

Herbert P. Ginsburg
Teachers College, Columbia University

ERIC

ERIC Clearinghouse on Urban Education
Institute for Urban and Minority Education
Box 40, Teachers College, Columbia University
New York, New York 10027

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Director: Erwin Flaxman
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Managing Editor: Wendy Schwartz

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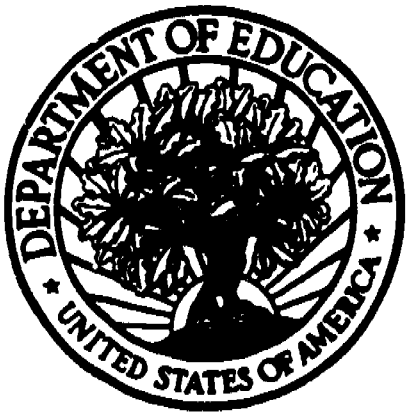

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INTRODUCTION

Our understanding of what it means to be educationally disadvantaged has become increasingly sophisticated over the past 30 years. We no longer view underachievement as resulting solely from deficient homes or inefficient schools. Researchers are acknowledging that education is the province of not just the school or the home, but also the community. Thus, educational disadvantage means that children are exposed to insufficient educational experiences in any or all of these domains (Pallas, Natriello, & McDill, 1989), and they are "at-risk" for school failure. This definition of educational disadvantage implies that families may be educationally deficient without being socially deficient. That is, as Pallas et al. point out, an otherwise strong family may be unable to provide its children with positive educational experiences.

Children who are at risk of school failure are "in danger of failing to complete their education with an adequate level of skills" (Slavin & Madden, 1989a, p. 4). In terms of any single demographic indication of educational difficulties—poverty, racial/ethnic identity, family composition, mother's education, non-English language background—between 10 percent to 30 percent of elementary and secondary school children between ages 0 and 17 may be classified as educationally disadvantaged (Pallas et al., 1989; Levin, 1985). Under this definition, high school completion does not necessarily place a student out of risk (see Slavin, Karweit, & Madden, 1989).

The estimated magnitude of the *overall* population at risk is about 30 percent of all students in kindergarten through twelfth grade (H. Levin, personal communication, August 1989). The proportion of at-risk children aged 0-5 is larger than is the proportion aged 5-18. This is because of higher birthrates in at-risk populations—younger parents and greater numbers of children. Also, the proportion of at-risk 5-18 year olds is higher than the proportion of enrollments because of the greater numbers of at-risk youth who drop out of school (H. Levin, personal communication, August 1989).

The purpose of this monograph is threefold. First, we describe the demographic factors that predict school failure, examine the five factors most associated with educational disadvantage: poverty status, race and ethnicity, family composition, mother's education, and language background (Pallas et al., 1989). Because isolating these demographic characteristics tends to obscure the fact that they are

intercorrelated, we also explore the ways in which these variables interact to create an educationally disadvantaged environment for many children. It is important to note that while certain indicators are reliable predictors of populations at risk, they do not define these populations. That is, there are large numbers of minority children who are at risk for school failure and other problems, but minority status itself is not a definition of "at-riskness." Furthermore, the indicators themselves should become decreasingly correlated with "at-riskness" as the success of compensatory education programs increases (H. Levin, personal communication, August 1989).

Second, we explore the scope and nature of problem behaviors that are associated with at-risk status, including precursors to school failure (truancy, grade retention, and discipline problems), dropping out of school, drug and alcohol abuse, and teenage pregnancy. As we show, problems of truancy, grade retention, and antisocial behavior are addressed only in passing in the larger literature on school dropouts. There is a paucity of research devoted exclusively to these issues.

Finally, we examine educational programs and practices that appear to be effective in increasing the cognitive development of at-risk students.

DEMOGRAPHIC FACTORS THAT PREDICT SCHOOL FAILURE

The Nature of Current Research

Much of the current demographic research on school failure is conducted by educational sociologists and psychologists. These researchers often make use of existing large data sets, such as data from the High School and Beyond (HSB) study, begun in 1980, or the Study of Academic Prediction and Growth, conducted by the Educational Testing Service from 1961-1969. The primary advantage of such data sets is that the studies are longitudinal and the subject pool sufficiently large (over 10,000 children) to allow for sophisticated structural equation modeling.

To illustrate, the HSB study is administered by the National Center for Education Statistics, at the U.S. Department of Education (Peng, Fetters, & Kolstad, 1981). It consists of longitudinal survey data on a national sample of high school sophomores and seniors. There have been follow-up surveys in 1982, 1984, and 1986. The surveys consist of (1) student questionnaires, including personal and family background, school and extracurricular activities, attitudes, plans, and aspirations; (2) vocabulary, reading, and math tests; (3) second-language information for students who report not speaking English at home; (4) twin data; (5) friend data; (6) a school administrator questionnaire, including questions about school programs, practices, and policies; (7) a teacher questionnaire, including teacher characteristics, evaluations of students, and background information on classes taught; and (8) parent information, focused on the finances of higher education.

Students are classified according to seven variables: sex, race/ethnicity, high school curricular program, socioeconomic status (SES), general achievement, geographic region, and school type (public, private, private/religious). The base-year survey in 1980 included a stratified sample of 1,015 public and private high schools, with over 30,000 sophomores and 28,000 seniors. The overall response rate was 91 percent for schools and 84 percent for students.

Poverty Status

The latest available data from the U.S. Bureau of the Census indicate that 20.6 percent of all children live in poverty (U.S. Bureau of the Census, 1987). These children are more likely to be black and Hispanic than white. The rate of poverty for white children is 15.6 percent, for black children 45.8 percent, and for Hispanic children 39.8 percent. Black and Hispanic children account for one quarter of the population 0-17 years of age, yet they comprise more than half of the children in

poverty (Natriello, McDill, & Pallas, 1987). A recent Office of Educational Research and Improvement (OERI) study showed that academic achievement is negatively correlated with long-term poverty and with living in areas that have high concentrations of poverty (Kennedy, Jung, & Orland, 1986).

Socioeconomic status accounts for anywhere from 6 percent to 25 percent of the variance in IQ and achievement scores (Henderson, 1981). SES operates to influence both cognitive socialization—how parents influence the basic intellectual development of their children, and academic socialization—how parents influence the development of attitudes and motives that are essential for school learning (Baker & Stevenson, 1986; Epstein, in press; Stevenson & Baker, 1987; Milne, Myers, Rosenthal, & Ginsburg, 1986).

Cognitive Socialization. When efforts at compensatory education began in earnest in the 1960s, the prevailing attitude was that lower-class parents failed to provide their children with adequate stimulation and training, thus stunting their basic cognitive development. This was deemed to be the cause of school failure (Ginsburg, Bempechat, & Chung, 1989). This "deficit model" focused not on children's motivation or on their school learning, but on basic cognitive deficiencies that were presumed to produce school failure. It was felt that intervention on a mass scale could raise children's mental abilities (Henderson, 1981).

The deficit model has fallen into disfavor as research has revealed that most poor children do not suffer deficits in basic cognitive function. For example, there are no differences between middle- and lower-class children in early mathematical thinking (Ginsburg & Russell, 1981). There are differences, however, in the ways in which lower- and middle-class parents foster their children's cognitive skills. Empirical studies of middle- and working-class mothers have shown that middle-class mothers exhibit higher levels of questioning in a problem-solving task, and that middle-class children show higher levels of representational thinking than do working-class children (Bee, Barnard, Eyres, Gray, Hammond, Spietz, Snyder, & Clark, 1982; Sigel, 1982; Sigel & Olmstead, 1971). Middle-class mothers are more likely to foster an active and assertive approach to learning, while lower-class mothers foster a passive and compliant approach (Hess & Shipman, 1965). The evidence suggests that middle-class mothers may be more likely than lower-class mothers to structure instruction, or "scaffold" their children's learning, in a more challenging way by integrating explanation and demonstration while emphasizing the children's active participation (see Rogoff & Gardner, 1984).

Academic Socialization. In many ways, academic socialization is as important as cognitive socialization in children's school learning. How do parents influence the development of attitudes and beliefs that are helpful in responding to instruction in school? A considerable amount of research evidence is converging to show that parents' attitudes, expectancies, and beliefs about schooling and learning guide their behavior with their children, and have a causal influence on the development of children's achievement attitudes and behaviors (Eccles, 1983; Entwisle, Alexander, Pallas & Cadigan, 1987; Entwisle & Hayduk, 1988; McGillicuddy-DeLisi, 1985; Marjoribanks, 1979; Miller, 1986; Phillips, 1987; Sigel, 1985). Furthermore, relative to lower-class parents, middle-class parents' academic socialization practices may better help children adapt their learning skills, attitudes, and motives to the demands of the school (Ginsburg, et al., 1989; Henderson, 1981).

For example, Baker and Stevenson (1986) found no differences between high and low SES mothers with regard to the strategies they developed for fostering their children's achievement. However, high SES mothers were more likely to implement these strategies than were low SES mothers. That is, they were more likely to monitor closely their children's school progress and to initiate contact with the school in response to their child's academic difficulties.

Middle-class parents also tend to have higher expectations for their children's academic performance and higher career aspirations (Baker & Entwisle, 1987; Lareau, 1987; Rosen & D'Andrade, 1959; Toby, 1957). Whereas earlier work in this area focused on deficient parenting in low SES families, more current research is showing that lower-class parents care very deeply about and value their children's education. However, relative to middle-class parents, they tend to feel less empowered in dealing with their children's teachers and the demands of the school. For example, in a recent ethnographic study, Lareau (1987) showed that, contrary to teacher beliefs, lower-class parents were as concerned about their children's education as were middle-class parents. The difference between them lay in differential beliefs about their role versus the school's role in educating children, as well as differential self-perceptions regarding their efficacy in helping their children. Middle-class parents viewed their children's education as very much a mutual concern between home and school, whereas lower-class parents believed that their child's education was very much the responsibility of the teacher and the school. Thus, they read to their children, initiated interactions with teachers and attended school events much less frequently than did middle-class parents. Lower-class

parents also reported feeling reluctant to help their children, for fear that they might mislead them academically. This lack of confidence on the part of lower-class parents has also been reported in other investigations (see Heath, reported in Sternberg & Sutton, 1989; Ogbu, 1989).

Lareau suggests that lower-class parents' inferior education and lower prestige jobs make them more dependent on teachers to know what is best for their children. "Middle-class culture provides parents with more information about schooling and promotes social ties among parents in the school community. This furthers the interdependence between home and school. Working-class culture, on the other hand, emphasizes kinship and promotes independence between the spheres of family life and schooling" (Lareau, 1987, p. 82).

School Variables. James Coleman's recent research on academic outcomes of teenagers in Catholic, other private, and public high schools challenges the view that low SES necessarily predicts poor academic achievement (Coleman, Hoffer, & Kilgore, 1982a; Coleman & Hoffer, 1987). Using data from the HSB study, he demonstrated that, relative to high SES students in each type of school, low SES students achieve greater gains in math and reading in Catholic than in other private and public schools. In addition, dropout rates in each SES quartile are lower in Catholic than in the other two sectors. Coleman argues that the combination of close supervision, high expectations, and sense of community in Catholic schools provides a positive learning environment for at-risk children.

It should be noted that Coleman's research fueled a controversy over the validity of his findings in the educational sociology community. The primary issue is that of sampling and self-selection into private Catholic schools. There is always the possibility that low-income and minority parents who choose to send their children to private schools differ in fundamental ways from their counterparts who choose public schools. Critics have argued that the positive findings associated with Catholic school attendance are attributable to the student population, rather than to the school itself (Goldberger & Cain, 1982; McPartland & McDill, 1982; Salganik & Karweit, 1982). For example, McPartland and McDill (1982) note that disadvantaged students are not equally distributed among Catholic and public schools. Catholic schools may be more academically oriented because they have greater numbers of students who are advantaged. Similarly, Salganik and Karweit (1982) argue that Coleman's call for greater discipline and higher standards in public schools is too simplistic because, unlike private schools, public schools are not able

to admit only motivated students, nor are they able to dismiss students who will not learn.

Nonetheless, two important points remain. First, there is face validity in Coleman's findings. That is, they coincide with what we generally know to be the differences between parochial and public schools. Second, a data set as large and complex as the HSB invites multiple ways to analyze findings. It is inevitable that researchers should disagree on issues such as which background variables to include in a regression analysis. As Coleman and his colleagues have noted, future research should test the validity and reliability of their findings on new populations of children (Coleman, Hoffer, & Kilgore, 1982b).

Race and Ethnicity

In a recent review, Ascher (1987a) noted that, compared to white children, black children are twice as likely to die before their first birthday, live in sub-standard housing, and have parents who are unemployed; three times as likely to live in a female-headed home or be in foster care; four times as likely to be murdered in their first year of life or during their adolescence, and to be imprisoned between 15-19 years of age; and five times as likely to live on welfare. Currently, black children in homes headed by young females are the poorest children in the country.

With respect to academic achievement, black and Hispanic students lag behind white students. Although there have been some gains in recent years, the math achievement of black and Hispanic students is well below that of white students. And, the gains that have been made are mostly in the area of low-level skills (Dossey, Mullis, Lindquist, & Chambers, 1988). There is a significant difference in science proficiency between racial/ethnic groups. According to a recent assessment, the average science proficiency of blacks and Hispanics is four years behind that of white students (Mullis & Jenkins, 1988). Among 17 year olds, 15 percent of black and Hispanics were able to analyze scientific procedures and data, compared to 50 percent of their white peers.

Moreover, black and Hispanic children are overrepresented in vocational and general tracks, as well as in compensatory education programs (Oakes, 1985). For example, among Hispanics in high school, 52 percent report being registered in vocational tracks, as compared to 51 percent of black and 34 percent of white students. Finally, with respect to dropout rates, Hispanics drop out of school at a

greater rate than either whites or blacks, and blacks drop out at greater rates than whites (Ascher, 1987a). As Ascher reports, within the broad ethnic categorization of Hispanics, however, there are differences in the academic achievement of subgroups. Achievement is highest among Cuban-Americans and lowest among Mexican-Americans. Puerto Ricans have the highest dropout rate, followed by Mexican-Americans and Cuban-Americans. Relative to other ethnic groups, Hispanic parents have the lowest levels of education.

Interestingly, Coleman's recent work, described above, demonstrated that the academic achievement of black and Hispanic students benefits from enrollment in Catholic schools. Black and Hispanic students have higher levels of math and reading achievement in Catholic as compared to other private and public schools. Dropout figures are very compelling. The general dropout rate is 3.4 percent for Catholic schools, 11.9 percent in other private schools, and 14.3 percent in public schools. The rate for blacks in Catholic schools is 4.6 percent, as compared to 14.4 percent for blacks in other private schools, and 17.2 percent for blacks in public schools. The comparable rate for Hispanics is 9.3 percent (Catholic), 22.9 percent (other private), and 19.1 percent (public). Clearly, Catholic schools are operating to offset the educational disadvantage associated with minority status.

Achievement Motivation in "Unsuccessful Minorities." The statistics demonstrating the generally poor academic performance of black and Hispanic students do not reveal the distinct motivational difficulties that many minority students experience. In some ways, the inferior academic achievement of black and Hispanic students is as intriguing as is the exemplary performance of Asian Americans. There are no differences in the basic cognitive skills of black, Hispanic, and white students (Ginsburg, 1986), yet the gap in academic achievement between majority and minority students begins to widen as early as the end of first grade (Alexander & Entwisle, 1988; Baratz-Snowdon, 1987). Why might this happen?

John Ogbu has distinguished between immigrant minorities such as Jews and other European groups, and caste-like minorities, such as blacks, Puerto Ricans and Native Americans (Ogbu, 1981; 1986). While the former exercised free choice in opting to immigrate to this country, the latter were forcefully removed from their native homes or taken over by conquest. According to Ogbu, the racial discrimination and exploitation experienced by blacks has led them to believe that it is more difficult for blacks than whites to get ahead. The reality of externally imposed job ceilings fosters the view that efforts at self-betterment will not

necessarily prove fruitful. This attitude, when communicated to children, does not encourage an orientation toward learning that is conducive to academic success.

Recent research has revealed that a rather disturbing "anti-academic achievement ethic" may be burgeoning among black and Hispanic children. It appears that many students are pressured by peers to sabotage their own education by deliberately performing badly and not attending classes. Fordham and Ogbu (1986) suggest that black students do poorly in school because they experience "inordinate ambivalence and affective dissonance" regarding academic effort and success (p. 176). According to these authors, because whites historically refused to acknowledge black intellectual ability, blacks began to doubt their abilities and view achievement as the province of whites only. They then began to discourage peers from academic success, viewing this behavior as "acting white."

Fordham and Ogbu argue that blacks have developed an "oppositional frame of reference" that includes strategies to protect their ethnic identity. In interviews with black high school students in a predominantly black school, they found that underachievers knowingly undermined their own achievement by not studying and cutting classes. High achievers were committed to doing well in school, but reported that they had developed strategies for coping with academic success that included acting out, being the class clown, keeping their efforts a secret, and generally maintaining a low profile. They were very concerned about being labeled the derogatory "brainiacs," and being accused of "acting white." Similar findings of an anti-achievement ethic have been reported for Hispanics (Fordham, 1988; Matute-Bianchi, 1986). Fordham (1988) recently suggested that successful black students gradually take on a persona of "racelessness," feeling attached to neither their own culture nor any other.

These findings raise cause for concern, because they suggest that there are important community forces that mitigate against the efforts of black and Hispanic students to do well in school. Therefore, successful intervention must be carried out at the peer, parent, and community level.

Family and Household Characteristics

James Coleman (1987) argues that at all socioeconomic levels, families are becoming increasingly ill-equipped to provide a home environment that is conducive to academic achievement. He notes that while the "human capital" of many families is growing (as evidenced by increased levels of parent education), the "social

capital" of families is diminishing. Here, social capital refers to "the norms, social networks and relationships between adults and children that are valuable for the child's growing up" (p.36). Coleman suggests that today's parents are increasingly abdicating responsibility for their children and are turning the task of socialization over to the schools, as in the case for sex education. The ever-rising demand for afterschool and summer activities reflect the fact that parents are no longer supervising their children's unstructured activities to the extent that they used to. According to Coleman, the epidemic of adolescent psychosocial problems—teen pregnancy, drug abuse, and suicide—can be attributed, in part, to parental inattention.

Family Composition. Our society has undergone considerable social change in the past 25 years. In general, the extended family has given way to the nuclear and the single parent family. In 1955, 60 percent of the households in the U.S. consisted of a working father, a mother not employed outside of the home, and two or more schoolage children. In 1988, the latest year for which figures are available, that family unit accounted for only 8.8 percent of all U.S. households (U.S. Bureau of the Census, 1988). Of all children born after 1980, at least half will live with only one parent for at least three years before their eighteenth birthday. In addition, most of these children will live in poor, female-headed households (Furstenburg, Nord, Peterson, & Zill, 1983; Dornbusch, Carlsmith, Merrill, Bushwall, Ritter, Leiderman, Hastorf, & Gross, 1985). Demographic projections are that fully one quarter of all children under 18 years of age will be living in a single parent home by 1990 (Hernandez, 1988).

Researchers and educators are understandably concerned about the effects that these changes in family structure might have on children's academic achievement and susceptibility to problem behavior, such as substance abuse and precocious sexuality. Much of this concern is centered on the developmental outcomes of children raised in single parent homes, particularly if these homes result from divorce or from teenage motherhood.

There are striking racial and ethnic differences in family composition. According to the 1980 U.S. census, 42 percent of black and 20 percent of Hispanic families with children under 18 years of age were headed by a woman with no husband present, as compared to 12 percent of white families (U.S. Bureau of the Census, reported in Laosa, 1988). The latest available figures indicate that 54.7 percent of such families live in poverty (U.S. Bureau of the Census, 1988). Ethnic

and racial differences are in evidence here as well. Specifically, 45.8 percent of such children are white, 68.3 percent are black, and 70.1 percent are Hispanic. In 1985, 14.5 percent of white children, 60 percent of black children, and 54 percent of other non-white children were born to unmarried mothers (National Center for Health Statistics, reported in Hernandez, 1988).

Low parent education and low income are disproportionately represented among single parent families (Epstein, in press; Milne et al., 1986). Of children living with a never married mother, 50 percent of whites and 40 percent of blacks have mothers who never finished high school (Hernandez, 1988). In 1983, half the children in female headed households lived in poverty, compared to 12 percent in male-present households (Pallas, et al., 1989). And, the evidence suggests that living in a single parent family negatively affects achievement and behavior for elementary and high school aged black and white students (Milne et al., 1986; Myers, Milne, Baker, & Ginsburg, 1987). However, Coleman and Hoffer (1987) have shown that Catholic schools tend to equalize the effects of family "deficiency," such that verbal and math achievement of children from single parent homes are similar to those of children from intact families. This is not the case in other private and public schools, where children from single parent homes have inferior academic outcomes relative to children from intact families. Furthermore, coming from a single parent home greatly increases the likelihood that a public, but not a Catholic school student will drop out of high school.

Parent Education

Recent research indicates that mother's education, which has traditionally been used as a measure of family SES, is also an indicator of less direct family influences on achievement, such as degree of parent participation in children's schooling (Baker & Stevenson, 1986; Epstein, in press; Stevenson & Baker, 1987; Milne et al., 1986). The evidence suggests that children's academic outcomes are negatively affected by low levels of parent education. In 1983, 13.6 million children lived with mothers who had not completed high school (Pallas et al., 1989). More than two thirds of black mothers have not completed high school and almost 60 percent of Hispanic mothers are high school dropouts. In contrast, only 15 percent of white mothers are high school dropouts (Natriello et al., 1987). When data on children living with both parents are considered, white children are more likely to have parents who were graduated from college, and least likely to be living with parents who are high school dropouts. In contrast, black children living with

two parents are half as likely as their white counterparts to have parents who were graduated from college (Hernandez, 1988).

Relative to children of well-educated mothers, children of poorly educated mothers have lower grade point averages and lower achievement test scores. As a result, they are more likely to drop out of high school (Baker & Stevenson, 1986). As mentioned above, mothers with a college education tend to know more about their children's academic performance, have more contact with teachers, and are more likely to take action regarding their children's school achievement. Yet, the evidence suggests that parent participation mediates children's academic achievement, independent of social class. That is, involved and concerned parents manage to communicate their concern about their children's school progress, whether or not they are highly educated themselves (Stevenson & Baker, 1987). The value of parental participation in children's learning will be discussed below.

Language Minority Status

Hispanic students currently lag behind both white and black students in academic achievement and high school completion (Carter, 1970; Carter & Segura, 1979; Dossey et al., 1988; Mullis & Jenkins, 1988; Neilsen et al., 1981). A study of sophomores and seniors from the first wave of the HSB study showed that Mexican-American and Puerto Rican seniors had the highest rates of delay in their schooling, relative to whites and blacks. More specifically, 10 percent of Mexican-American and 13 percent of Puerto Ricans were two or more years above the national modal age of graduation (17 years), compared to 2.5 percent of whites and 7 percent of blacks. Mexican-Americans and Puerto Ricans also had the lowest aspirations for their educational future. For example, 19 percent of Mexican-American and 16 percent of Puerto Rican seniors expected to complete college, compared to 24 percent of black and 24 percent of white seniors.

Results of much of the available literature on the impact of language on achievement are difficult to interpret, primarily because many researchers do not distinguish between Hispanic English speaking children and Hispanic non-English/limited English proficient children. Our understanding of the generally poor academic performance of Hispanic children is further complicated by the difficulty of untangling effects due to ethnicity, language deficiency, and social class.

Of course, definitional issues are paramount in interpreting the literature. In a recent study, Steinberg, Blinde, and Chan (1984) noted that language minority status

is defined differently in different studies, sometimes on the basis of language spoken at home, sometimes on the basis of whether the child speaks English, and other times on the child's degree of English language proficiency. Furthermore, classification into language proficiency categories also varies, depending on whether researchers use standardized tests or self-report measures. Clearly, researchers must work toward common definitions so that different studies can be readily compared.

Using data from the 1976 Survey of Income and Education (SIE), Steinberg and his colleagues (1984) identified language minority adolescents as a separate population. They found that when language minority status was held constant, the Hispanic dropout rate was 1.5 to 2 times as great as that of other groups. When SES was held constant, Hispanics also dropped out at 1.5 to 2 times the rate as that of non-Hispanics. The most illustrative statistic is that when similarly disadvantaged students were compared, Hispanic non-English background students who spoke no English dropped out at 1.5 times the rate of other non-English background students who spoke no English (e.g., Asian Americans). It appears, then, that the combination of being from a disadvantaged family, not speaking English, and being Hispanic *all* increase the likelihood of school failure and dropping out.

These results complement those of Veltman (1976) who, using data from the SIE (1976), found that while Spanish speaking 6-17 year olds had the lowest mean educational attainment of six groups (white, black, Spanish speaking Hispanics, English speaking Hispanics, non-English language minority and English language minority), other minorities who were non-English speaking were among the highest achieving children. Thus, language minority background, in and of itself, does not account for poor academic performance.

Attempts at intervention with Hispanic students are more likely to be successful if attention is paid to the issue of ethnic identity. There is evidence that speaking English at home and parental pressure to learn English promotes academic achievement (Marjoribanks, 1979). However, as discussed earlier, there is a way in which speaking standard English and succeeding in school is a subtractive process, such that many black and Hispanic students equate academic attainment with a gradual chipping away of their ethnic identity (Fordham, 1988; Fordham & Ogbu, 1986; Matute-Bianchi, 1986). When such beliefs begin to negatively affect achievement motivation, as it apparently has begun to do with some children, their intellectual potential and future economic success are threatened.

While the five demographic factors discussed above are strongly associated with educational disadvantage, their association is by no means limited to the educational domain. Unfortunately, children at risk of school failure are also at risk of multiple problem behaviors. In the next section, we take up a discussion of these problem behaviors and their implication for educators, community leaders, and public policy makers.

PROBLEM BEHAVIORS OF AT-RISK YOUTH

TRUANCY

A review of the literature reveals that, in and of itself, truancy is an issue that no longer receives the research attention it once garnered. Research exclusively devoted to the issue predates the late 1970s. Current research touches on truancy in the context of its relation to dropping out of school. This change in focus may be due to the fact the problem behaviors of adolescents—dropping out, substance abuse, teen pregnancy (see below)—are more severe now than ever before. The problem of unexcused absences, by comparison, may appear to be less urgent.

Researchers have noted that accurate data on truancy rates are generally not kept (Quay & Allen, 1982). This is partly due to the difficulties inherent in determining whether an unexcited absence is legitimate or not. As a result, truancy estimates vary considerably, from 11.9 per cent in New York, 47 per cent in Illinois, 25 per cent in Connecticut, to 6 per cent across the nation (American Federation of Teachers, in McPartland & McDill, 1977; Quay & Allen, 1982; Sherraden, 1986).

Evidence suggests that low SES is associated with truancy. According to Niell (1979, in Quay & Allen, 1982), high schools in which greater than 50 per cent of the student population are minorities have a truancy rate of 21.7 per cent. In contrast, high schools that have a less than 50 per cent minority population have a truancy rate of 13.4 per cent.

The data suggest rather strongly that truancy is associated with dropping out of school. A variety of studies have shown that, as a group, dropouts they have significantly higher rates of absenteeism and truancy than non-dropouts (Catterall, 1987; Eckstrom, Goertz, Pollack & Rock, 1986; Kaplan & Luck, 1977; Mann, 1986; McDill, et. al, 1986; Stroup & Robins, 1972; Stringer, 1973; Wehlage, Rutter, Smith, Lesko, & Fernandez, 1989; Wehlage & Rutter, 1986; Wheelock, 1986). For example, in a follow-up study of over 200 black males who had been enrolled in the St. Louis Public Schools 30 years previously, Stroup and Robins (1972) found truancy to be a major predictor of subsequent dropping out. More recently, Wehlage and Rutter (1986), using the 1982 follow-up of the HSB 1980 sophomore cohort, found that truancy was one factor that significantly discriminated between those who eventually did and did not drop out. Not surprisingly, truancy is related to other problem behaviors, such as vandalism (Greenberg, Friedlund, Smyser & Fitzsimmons, in Casserly, Bass, & Garrett, 1980).

Grade Retention

The literature on grade retention tends to be focused on its success in improving children's academic achievement (see, for example, Holmes, 1983). With respect to its relationship to problem behavior, researchers do not study it in isolation, but rather as it relates to dropping out of school. Not surprisingly, being held back one or more grades is predictive of eventual school dropping out (Stroup & Robins, 1972; Wehlage et al., 1989). For example, Stroup & Robins's (1972) follow-up study, discussed above, found grade retention to be a significant predictor of school dropout among a group of black men. Nowakowski (in Casserly, et al., 1980) demonstrated a positive association between grade retention and vandalism.

School Suspension

School suspension has serious consequences for students, not only because of lost instructional time, but also because of increased feelings of isolation and rejection and the greater likelihood of delinquency and crime. Evidence suggests that poor and minority students are suspended at rates greater than their proportion in the general population. Students whose fathers are not employed full-time (an indication of low SES) are more likely to be suspended than their peers with full-time working fathers (Wu, Pink, Crane, & Moles, 1982). Also, students who receive free school lunches (another indication of low SES) are more likely to be suspended than those who do not (Wu et al., 1982).

Black students are suspended at a rate 11 percent higher than their percentage in the base population, and three times as often as white students (Ascher, 1987; Rossow, 1984; Wheelock, 1984; Wu et al., 1982). The evidence suggests that suspension leads to dropping out. Being retained in grade once increases a student's chance of dropping out of school by 40 to 50 percent; being held back twice increases the chance by 90 percent (Wheelock, 1986). A total of 44 percent of black dropouts, 31 percent of Hispanic dropouts, and 26 percent of white dropouts have been suspended or have experienced probation. The comparable rates for non-dropouts is 19 percent for blacks, 17 percent for Hispanics, and 11 percent for whites (Wheelock, 1986).

Dropping Out

High school dropouts are of particular concern to educators and public policy makers because leaving high school before graduation results in educational deficiencies that will most likely limit an individual's economic and social

opportunities. In general, dropouts are marginally literate and marginally employable. With the advent of the electronic age, the world marketplace is becoming increasingly smaller and competitive. The concomitant reliance on technology in the workplace now requires workers to have more high-level skills than were necessary in the past (Rumberger, 1987). There are currently too many high school dropouts in the slowest growing sector of the economy—low-skill, minimum wage jobs—and too few in the fastest growing sector of the economy—high-skill technical jobs. The realities of the changing structure of the workplace heighten concern over those students who do not complete their education.

There is also a general concern over the failings of American education and the poor performance of American elementary and high school students relative to those in other industrialized nations (e.g., Boyer, 1987; McKnight, Crosswhite, Dossey, Kifer, Swafford, Travers, & Cooney, 1987). The current wave of school reform has emphasized raising academic standards as a means to address these problems (see McDill, Natriello, & Pallas, 1986). However, such changes may heighten the dropout rate by making academic success even less attainable for already at-risk youth, particularly in the absence of organizational and instructional changes that may benefit potential dropouts (Hamilton, 1986; McDill et al., 1986).

Estimates of the national dropout rate in the United States range from 25 percent to 29 percent (The Center for the Study of Social Policy, 1986; Rumberger, 1987). The national dropout rate has been relatively stable since the late 1960s (McDill et al., 1986). Across the nation, dropout rates tend to be higher in the South than in the Northeast, and notably lowest in the Midwest (e.g., 43 percent in Louisiana, 11 percent in Minnesota). Large urban centers are characterized by higher rates of attrition than the national average. For example, in Boston the dropout rate is as high as 45 to 50 percent (Hargroves, 1987); in Chicago the rate is 43 percent (Finn, 1987).

Attempts at accurately estimating dropout rates are hampered by the fact that there is no single method of determining if an individual is a high school dropout (Cooke, Ginsburg, & Smith, 1985). Estimates vary as a function of the degree to which such factors as marriage, transfer to another school district, entering college early, obtaining a General Equivalency Degree diploma, and interrupting one's education for an extended period of time are taken into account. The Bureau of the

Census defines high school dropouts as "the percentage of adults aged 18-24 with three years or less of high school" (Center for the Study of Social Policy, 1986).

Demographic Variables Associated with School Dropouts. Dropout rates are high for poor and minority students (Dryfoos, 1987; Peng, 1983). Low SES students are approximately 2.5 times as likely as higher SES students to drop out of school (9 percent of high SES students versus 22 percent of low SES students) (Kolstad & Owings, in Rumberger, 1987). Among 19 year olds, the dropout rate is 16 percent for whites, 27 percent for blacks, and 42 percent for Hispanics (Center for the Study of Social Policy, 1986). Asian Americans have the lowest dropout rates, at 3.1 percent (Peng, 1983). Among whites and Hispanics, males are more likely to drop out than females, but black females are more likely to drop out than black males (Ekstrom, Goertz, Pollack, & Rock, 1986). Using data from the first and second waves of the High School and Beyond study, Ekstrom and her colleagues (1986) found that, relative to "stayers," dropouts were more likely to be older than peers in the same grade and to have less educated mothers.

As mentioned earlier, some research suggests that students who come from homes in which a language other than English is spoken have a higher incidence of dropping out. Confirming the findings of Steinberg et al. (1984), Ascher (1986) reports that Hispanics from non-English language backgrounds are more than three times as likely to drop out of school as Hispanics from English language backgrounds. They are also four times as likely to be behind a grade level.

Students from intact two parent families tend to have lower dropout rates than students from single parent families (Ekstrom et al., 1986). This is not the case for black students (Dornbusch et al., 1985; Milne et al., 1986).

Behaviors Associated with School Dropouts. Students with low grades as well as low achievement test scores tend to drop out of high school. Grade retention (i.e., being held back in school) is also positively associated with dropping out (Ekstrom et al., 1986; Rumberger, 1987; Wehlage & Rutter, 1986). Interestingly, there is evidence that students who drop out of school have above average academic ability (Fine & Rosenberg, 1983). School behavior problems associated with dropping out include early instances of cutting classes, suspension, low participation in extracurricular activities, truancy, and trouble with the police (Ekstrom et al., 1986; Rumberger, 1987; Wehlage & Rutter, 1988). Students who drop out tend to have few educational resources in the home and less support for academic achievement,

and they spend less time doing homework (Ascher, 1986; Ekstrom et al., 1986). For example, 46 percent of Asian American students spend more than five hours per week doing homework, compared to 29 percent of white, 25 percent of black, and 16 percent of Hispanic students (Ascher, 1986).

High risk behavior, such as cigarette, drug, and alcohol use, is associated with the decision to drop out of school (Mensch & Kandel, 1988). Other factors, such as poor attendance, suspension, boredom, inability to get along with classmates and teachers, and feeling alienated from school, are all also related to the decision to drop out (Gadwa & Griggs, 1985; Mahan & Johnson, 1983).

High school dropouts are more likely to have had discipline problems in school and experienced difficulty with the law (Catterall, 1987; Dunham & Alpert, 1987; Eckstrom et al., 1986; Elliott & Voss, in Thornberry, Moore & Christenson, 1985; Wehlage & Rutter, 1986). For example, in a study of juvenile delinquents detained in Youth Hall, Dunham and Alpert (1987) found that the number of times a students was expelled from school and was high on drugs while in school were the best predictors of dropping out. Using the 1980 and 1982 waves of the HSB study, Eckstrom and her colleagues found that, relative to graduates, dropouts reported more disciplinary problems at school and were more likely to be put on probation and be in trouble with the law.

A recent study of the dropout and criminal records of 10 per cent of the Philadelphia birth cohort of 1945 found that the general downward age trend in criminality observed in the general population does not occur among dropouts (Thornberry et al., 1985). Regardless of social class, race, and post-secondary school experiences (i.e., marriage, employment), dropouts had higher rates of criminal behavior (i.e., arrests) than did graduates, both before and after dropping out of school.

Individual characteristics that predict dropping out of school include low educational and professional aspirations, lower levels of self-esteem, and poor attitudes about school in general (Mahan & Johnson, 1983; Rumberger, 1983; Wehlage & Rutter, 1986).

School Factors Associated with Dropping Out. Negative school experiences are the primary reasons why students drop out of school (Fine, 1986; McDill et al., 1986; Natriello, Pallas, McDill, McPartland, & Royster, 1988). Predictive variables

include low grades, truancy, and delinquent behavior in school. Indeed, self-report data from the 1982 wave of the HSB study indicate that students' reasons for dropping out of school include: not liking school, 33 percent; poor grades 33 percent; and school expulsion, 10 percent (Ekstrom et al., 1986). It should also be noted that economic need and family considerations, such as pregnancy and/or marriage, are also causes of school dropout (Ekstrom et al., 1986; McDill et al., 1986).

Drug and Alcohol Abuse

In this section, we consider the antecedents and correlates of drug and alcohol abuse among adolescents. While the focus of the discussion will be on substance use and abuse, it is important to note that the latter often occurs in syndrome "clusters," along with other problem behaviors. The behavioral and phenomenological links between adolescent substance use and other problem behaviors are well-supported (Dryfoos, 1987; Jessor, 1987); therefore, any discussion of substance use and abuse per se must be viewed contextually (Newcomb & Bentler, 1989).

It is important to note that "use" and "abuse" of drugs and alcohol cannot always be viewed as synonymous. Their distinction, while ambiguous at times, remains critical to an understanding of the phenomenon (Donovan & Jessor, 1985). This is because use may precede but may not necessarily lead to abuse. Due to variations in individual levels of tolerance, determining quantity or even frequency of use alone cannot adequately measure this distinction. More useful criteria may include age of onset, physiological responses, levels of dependence, attitudes about substance use, and its effects on other areas of functioning (Newcomb & Bentler, 1989). Substance use and abuse may have different etiologies and may therefore require different strategies for prevention (Hawkins, Lishner, Catalano, & Howard, 1986).

In a comprehensive review, Hawkins et al. (1986) examined numerous childhood predictors of drug and alcohol experimentation, use, and abuse. We structure the following overview around a discussion of these predictors, which include family factors, early antisocial behavior, school factors, and peer factors, as well as attitudes, beliefs, and personality traits. We also examine substance abuse as a response to stress.

Family Factors Parental drug use is correlated with initiation of use of many substances (including cigarettes, alcohol, marijuana, and other drugs), as is parental use of alcohol and other legal drugs (Hawkins et al., 1986). The relative roles of environmental and genetic influences on substance use are difficult to assess, although it is probable that genetic factors contribute more to abuse than to use of drugs (Newcomb & Bentler, 1989). Family risk factors associated with drug use include parental absence, inconsistent discipline, hypocritical morality, poor communication, parental conflicts, and family breakup (Jurich, Polson, Jurich, & Bates, 1985). However, Newcomb & Bentler (1988) found that family disruption per se may not directly lead to drug use; rather, family problems may lead to disenchantment with traditional values and the development of deviant attitudes, which may in turn lay the foundation for substance use. These findings are consistent with Jessor and Jessor's problem behavior theory (1978), which links the family environment to the establishment of values and the nature of learned values to later behaviors.

Early Antisocial Behavior. The seminal work of Jessor and Jessor (1978) explained drug use as one outcome of "proneness to problem behavior" and as part of a larger syndrome of deviance in which a wide range of "problem behavior" shared common precipitants. Evidence has now converged to support the link between early antisocial behavior and later substance abuse (contrasted with occasional use) (Hawkins et al., 1986). According to Patterson, DeBaryshe, & Ramsey (1989), adults who exhibited antisocial behavior as children contribute disproportionately to the incidence of alcoholism, as well as to a range of other psychosocial difficulties.

School Factors. The relationship between school experiences and drug use is complex but significant. A range of school problems—reflected in failure, poor performance, truancy, placement in a special class, early dropping out, and a lack of commitment to education—have been viewed as common antecedents of initiation, use, and abuse of drugs (Jessor & Jessor, 1978; Robins, 1980; Holmberg, 1985). Drug use also causes school problems as much as it is caused by them (Kleinman, Wish, Deren, and Rainone, 1988).

Controversy exists in the literature about the time at which school performance can be viewed as a viable predictor of drug use (Hawkins et al., 1986). Perspectives also differ on the degree to which school problems per se predict substance use. Kandel (1982) suggests that school problems themselves may not

lead to drug use; rather, social factors which lead to poor school performance may be linked to drug involvement. This notion is supported by evidence of syndrome "clusters," which link school problems with a range of other problem behaviors (Dryfoos, 1987).

Peer Factors. Association with drug-using peers is perhaps the most strongly supported predictor of adolescent substance use (Hawkins et al., 1986). Newcomb & Bentler (1989) suggest that modeling drug use, providing substances, and encouraging use are the salient components of peer influence. Jessor & Jessor (1978) found a relationship between substance use and perceived use by peers, as well as a greater orientation towards peers than parents. Other researchers have suggested that peer relationships alone cannot influence adolescent substance use; rather, the influence of parents and peers is varied and situational. For example, Glynn (1981) argues that parents and peers have near equal influence upon the onset of drinking, while peers have greater influence on the onset of marijuana smoking. And Varenhorst (1982) suggests that the persuasive power of the peer g not indelible; rather, styles of parenting are importantly related to an adolesce... susceptibility to the influences of his peers.

Attitudes, Beliefs, and Personality Traits. The attitudes, beliefs, and personality traits which have been most closely linked with substance use include attenuated attachment to parents, lack of commitment to education, low religiosity, and alienation from dominant societal norms and values (Hawkins et al., 1986). According to Jessor (1987), these factors—which he views as exemplars of "low-conventionality"—are associated with involvement in a range of "problem behaviors," including precocious sexual involvement and school problems, as well as substance use. From this perspective, risk varies with individual differences in levels of conform... independence. A predisposition to "sensation-seeking" is another personality variable which might explain substance use (Satinder & Black, 1984).

Substance Use as a Response to Stress. Newcomb & Harlow (1986) studied substance abuse in adolescents as a response to a perceived loss of control, a sense of meaninglessness, and a lack of direction in life. Their findings suggest that teenagers may use alcohol, marijuana and other drugs as a means of temporarily alleviating discomfort connected to life events which they perceive as being out of their control. These results can be seen as contributing significantly to an understanding of the higher incidence of drug use among low SES teenagers and those from disrupted families (Newcomb & Bentler, 1989). The vicissitudes of

living in poverty or in a dysfunctional family environment may epitomize stressful life events which are correctly perceived by adolescents as being out of their control. Alcohol and drug use has also been connected to intrapsychic factors, such as anxiety and depression, which are understandable concomitants of living in stressful situations, although not confined to those who do so.

Interactional Models. Jessor & Jessor's model of "problem behavior proneness," as well as the work of scholars such as Dryfoos (1987), lend support to the theory that substance use and abuse often comprise one facet of a larger syndrome. The etiology of drug and alcohol use, at all stages of severity, should also be viewed as multifaceted. As noted by Stein, Newcomb, & Bentler (1987), "drug use is one aspect of a lifestyle that is multiply determined by many diverse forces impinging on the individual." The authors' longitudinal study of multiple influences on drug use is one which supports both the interaction between various factors associated with drug use and their variation over time. The same philosophy might be applied to understanding why adolescent substance use may represent transitional behavior for some individuals but not for others, and may have consequences on other areas of functioning ranging from little to severe.

Teenage Pregnancy

Teen pregnancy has become a national epidemic, in part because more and more teenagers who give birth decide to keep and raise their children. There is a great cost to individuals, families, and society when children have children of their own. In this section, we consider the scope of the problem, the reasons why teenagers become pregnant, and the consequences of their action for themselves personally and for society as a whole.

In the United States today about 12 million teenagers are sexually active. The average age of initiating sexual activity is 16 years (Black and DeBlassie, 1985), although in some cities, such as New York, the average age of first intercourse is 11.6 years for black youth, 14.5 for white youth and 12.8 for Hispanic youth (Finkel & Finkel, 1983). Forty-percent of all teen pregnancies end in abortion (Alan Guttmacher Institute, 1981). Almost half a million teens give birth in the United States each year (Edelman, 1988). Of this number, 30,000 are under 15 years of age (Morrison & Jensen, 1982 cited in Black & DeBlassie, 1985). The latest available data indicate that, in 1987, teenage girls under 19 years of age accounted for 12.4 percent of all births in the nation—472,623 out of 3,809,000 (Current Population Survey, U.S. Census Bureau, 1987).

While teenage pregnancy touches all races and socioeconomic groups, the evidence suggests that low-income and minority teens have the highest rates of pregnancy (Robinson, 1988). In actual numbers, more white than minority teenagers become pregnant, but disadvantaged minority youth account for a disproportionate number of teen pregnancies and births in the United States. While 27 percent of the teenage population is composed of minorities, they account for 40 percent of adolescent pregnancies and births (Edelman, 1988). Birth rates among black teenagers may be higher than white teens because fewer blacks have abortions (Schorr, 1988). The number of births per 1,000 unmarried teenagers age 15 to 19 is more than six times greater among non-whites than whites. Disadvantaged youth are three to four times more likely to give birth out of wedlock than are more advantaged teens (Robinson, 1988). However, the rate of sexual activity among white teenagers has increased faster than that among black teenagers, and the overall increase in births to unmarried teens is entirely attributable to white teenagers (National Research Council, 1987). Edelman (1988) argues that birth rates for minority and white teens are similar if one controls for income and basic skills deficit. Below we discuss the major factors associated with teen pregnancy.

Expectations for the Future. The National Research Council (1987) argues that the likelihood that a teenager will become pregnant has less to do with SES than with the teen's values, goals, and aspirations in life. Teenagers who see a future for themselves are more likely to delay pregnancy and childbirth than those who lack hope for the future. Teenagers who think they lack adequate "life options" often fail to delay pregnancy because they believe they do not have compelling reasons to do so (Edelman, 1988).

Poor Academic Achievement. There is a strong association between poor school achievement and pregnancy, and poor academic ability may influence the onset of sexual activity and early parenthood (Children's Defense Fund, 1986). A recent study of white, black, and Hispanic sophomores revealed that, regardless of racial background, those with low academic ability were twice as likely as those with high academic ability to become unwed parents by their senior year (Dryfoos, 1987). A study conducted by Northeastern University revealed that females 16 years of age or older with poor basic skills are 2.5 times more likely to be mothers than their peers with average basic skills. Males with poor academic skills who were 16 years and older were three times more likely to be fathers than their peers with average academic skills. Females who are under 16 and who have poor academic skills are

five times more likely to become pregnant as those with average skills (Kenney, 1987).

According to Schorr (1988), teenage girls who become pregnant "usually have long histories of school difficulties, beginning in elementary school, and are below average in academic performance for a substantial period before they become pregnant" (p. 61).

High educational aspirations, internal locus of control, and high SES are positively related to contraceptive use (Morrison, 1985). Teenagers who have lower educational expectations are less likely than those with higher expectations to use contraceptives (Morrison, 1985). Teens with better than average grades are more likely to use contraception consistently (Furstenberg Shea, Herceg-Baron, & Webb, 1983), and less likely to become pregnant than those with poorer grades (Gispert & Falk, 1976).

Ignorance About Reproduction. Misunderstandings and ignorance surrounding reproduction play a large role in teen pregnancy (Darabi, Jones, Varga, & House, 1982). Surveys conducted by Zabin and Clark (1981) and Cvetkovich and Grote (1983) have revealed that a large percentage of those surveyed (25 percent in the former and 10 percent in the latter study) did not believe that they could become pregnant the first time they had sexual intercourse. Other false assumptions concerning reproduction include beliefs such as "I thought you had to be older" or "If a girl has intercourse for a month or so without getting pregnant this means she probably isn't likely to get pregnant for awhile" (Oskamp & Mindick, 1983, cited in Morrison, 1985). Misconceptions such as these exist among both white and black high school students (Freeman et al., 1980, cited in Morrison, 1985).

Family Influences. Teen pregnancy is associated with low parent education (Shah, Zelnik, & Kanner, 1975). Not surprisingly, girls who get pregnant often have mothers who gave birth in their teens (Black & DeBlassie, 1985). Parents of teen mothers and fathers are often considered by their teens to have "permissive attitudes" regarding premarital sex and pregnancy (Robinson, 1988). Many families who have pregnant teenagers are more accepting of the fact than other families, in part because they were teenage parents themselves (Robinson, 1988).

There is some evidence that there are cultural differences in the value placed on having children. These differences may influence not only the level of acceptance of

teenage childbearing but also the extent to which teenagers have children. Thompson (1980) found that among 300 adolescents (150 white and 150 black), blacks expressed stronger beliefs than whites that children promote greater personal security, marital success, and approval of others.

Teenage Childbearing

Although some researchers report that the consequences of adolescent pregnancy may not necessarily be dire (e.g., Jaffee & Dryfoos, 1980), evidence of the negative consequences of teenage pregnancy is sufficient enough to warrant concern about its rate of occurrence.

Health. One well documented outcome of early childbearing is its negative effect on the health of both young mothers and their infants. Girls under 16 are five times more likely to die during or immediately after pregnancy than women 20 to 24 (Black & DeBlassie, 1985). Among infants of teenagers there is a higher incidence of toxemia, anemia, nutritional deficiencies, low birthweight, and retardation than among infants of older women (Black & DeBlassie, 1985; Schorr, 1988).

Education. Teenagers who have babies pay a high price in terms of their education: they are less likely than their peers to graduate from high school (Kenney, 1987). More than one fifth of all girls who drop out of school do so because they are pregnant (Schorr, 1988). No more than 50 percent of teenage parents eventually graduate from high school (Black & DeBlassie, 1985). "Even when socioeconomic background, academic ability, and motivational factors are taken into account, early childbearers are less likely to graduate from school" (Kenney, 1987, p. 728). In an interview study, Mott and Marsiglio (1985) reported that of women between the ages of 20 and 26, only 49 percent of those who had given birth at 16 and 53 percent of those who had given birth at 17 had completed high school by their twentieth birthday. Pregnant blacks and whites drop out at similar rates (45 percent), but pregnant Hispanics drop out at much higher rates by comparison (67 percent) (Schorr, 1988). Young mothers who do return to school later in life usually do not catch up with their peers who delayed having children (Kenney, 1987).

Employment. Teen parents are also more likely to have difficulties getting appropriately paying jobs. Teen parents are disproportionately likely to find themselves in low paying jobs and/or dependent on welfare for support (Kenney,

1987). Teen mothers receive an income which is one-half that of mothers who give birth later in life (Black & DeBlassie, 1985; Schorr, 1988). More than one half of the money invested in Aid to Families with Dependent Children goes to families with a mother who first gave birth when she was a teenager (Black & DeBlassie, 1985).

Having examined the factors that place children at risk for school failure, and the concomitant problem behaviors that tend to be associated with school failure, we turn now to the strategies and programs that have been successful in establishing and maintaining school success.

EFFECTIVE INSTRUCTIONAL STRATEGIES FOR AT-RISK STUDENTS

Programs in compensatory education began in earnest with the passage of the Elementary and Secondary Education Act (ESEA) in 1965. Title I of ESEA outlined the government's policy to provide aid to local education agencies in areas with a large proportion of low-income families (Passow, 1988). In 1981, the Education Consolidation and Improvement Act (ECIA), Chapter 1, replaced Title I. Other than effecting some changes in funding requirements, Chapter 1 has functioned in much the same way as Title I. In 1987, Chapter 1 programs received funds amounting to $3.9 billion (see Passow, 1988, for further treatment of the history of Title I/Chapter 1 programs).

With compensatory education programs firmly in place, much research attention continues to be devoted to determining how at-risk students can best be taught. In this section, we examine the ways in which compensatory education services are delivered and review findings regarding instructional strategies that seem to optimize children's learning. As we show, in their concern over the acquisition of cognitive skills, researchers have neglected to examine thoroughly motivational factors in learning. Further, some conclusions drawn from the research are actually inconsistent with strategies that foster adaptive achievement motivation. Thus, the picture of how best to promote learning by at-risk children is not as complete as it could be. In the final section of this monograph, we propose ways in which future research can focus more attention on motivational influences in learning.

School-Based Programs for Teaching At-Risk Students

There are three primary programs that deliver compensatory education services to children: (1) pullout programs, in which children are taken out of their regular classrooms daily for 30–40 minutes of remedial math and reading instruction; (2) in-class programs, in which additional instruction is offered in the child's regular classroom; and (3) add-on programs, in which instruction occurs outside of the regular school day or year, i.e., before/after school, summer programs (Ascher, 1987).

Pullout Programs. These programs are by far the most popular means of supplementing regular classroom instruction. According to a recent study, 84 percent of reading instruction and 76 percent of math instruction are delivered through pullout programs (Slavin, 1989). While these programs have the advantage of offering individualized instruction, they are highly criticized for a variety of

reasons. Pullout programs are characterized by a lack of coordination between what is taught in the regular class and in the Chapter 1 class (Archambault, 1989; Carter, 1984; Passow, 1988; Slavin, Karweit, & Madden, 1989; Stein, Leinhardt, & Bickel, 1989). Further, it is not uncommon for some lessons to be duplicated while others are omitted altogether. Pullout programs are difficult for regular classroom teachers, whose classes are interrupted at various times of the day for student arrivals and departures. Perhaps most importantly, these programs are difficult for students, who must endure the stigma and labeling that accompanies attendance in Chapter 1 classes. Further, there is evidence that pullout programs decrease actual instructional time, both because of transition time from the regular to the Chapter 1 class, and because time in Chapter 1 classes is spent on non-academic material, such as social skills (Stein et al., 1989).

These criticisms notwithstanding, Madden and Slavin (1989) recently evaluated the effectiveness of pullout programs for students at risk. In a very thorough review, they examined published studies, as well as technical and government reports. They included in their analysis those programs that (1) could be replicated in other schools; (2) had been evaluated for at least one semester and compared to a control group, or had shown evidence of year to year gains; and (3) had effect sizes of at least .25 in math and/or reading. The results revealed that the more common pullout programs—diagnostic and prescriptive in nature—showed small degrees of effectiveness. These programs evaluate students and then provide remedial instruction (individually or in small groups) outside of the Chapter 1 classroom. Typically, the Chapter 1 teacher instructs one child while others keep busy with seatwork. If small group instruction occurs in Chapter 1 classrooms, it is often with mixed ability peers. According to Madden and Slavin, the result is that children's individual instructional needs go unmet.

In contrast, tutoring and computer assisted instruction (CAI) programs under Chapter 1 are successful because trained instructors (teachers, volunteers, older low achieving students) or the computer tailor instruction to each child's needs. This type of one-to-one intervention has a greater impact on children's learning.

In-Class Programs. The benefits of in-class programs are that less instructional time is lost because students are not traveling to other classrooms and there is less stigma attached to being tutored within one's regular classroom (Passow, 1987). In an evaluation of in-class programs, Slavin and Madden (1989b), using the same inclusion criteria as cited above for their selection of programs, found that

continuous progress and cooperative learning programs were effective in improving the performance of at-risk children. In a continuous progress model, students progress through a clearly defined hierarchy of skills, and are tested prior to advancement to the next level. A variety of strategies are employed for students who fail, including tutoring and provision of additional instructional materials. Complete records of each student's progress are maintained. Instruction is conducted by teachers in small homogeneous groups, and students are assigned and reassigned according to their needs. Slavin and Madden report effect sizes as high as .95 in some programs.

In cooperative learning programs, small groups of mixed ability peers work toward a common goal, and the group's, rather than the individual's, efforts are rewarded. Instruction of like-ability students is provided by the teacher in small groups, but assistance in mastering skills is provided by peers. Slavin and Madden report effect sizes in some programs as high as .38 in math computation and .71 in reading comprehension.

In characterizing effective in-class programs, the authors conclude that "consistently effective classroom programs accommodate instruction to individual needs while maximizing direct instruction, and they frequently assess student progress through a structured hierarchy of skills" (Slavin & Madden, 1989b, p. 45).

Add-On Programs. As Passow (1988) reports, early childhood, kindergarten, and summer school programs are the most common forms of add-on programs available. Much research has been generated in an attempt to assess the effectiveness of preschool compensatory education programs. The consensus is that while there are benefits to such programs (Karweit, 1989), they tend to be short-term rather than long-term. For example, some researchers have noted substantial improvements in cognitive functioning, including increased IQ scores and improved language skills (e.g., Becker & Gersten, 1982; Lazar & Darlington, 1982). Carter's Sustaining Effects Study (1984) indicated that the children who benefited the most from Title I programs were "moderately disadvantaged," or near average in school performance. The most disadvantaged did not make gains in their academic performance. In her review of Kennedy, Young and Orland's National Assessment (1988), Ascher (1987) notes that (1) standardized achievement test scores of students receiving Chapter 1 services are higher than those not receiving Chapter 1 services; (2) students receiving Chapter 1 services made greater gains in math than reading;

and (3) children receiving Chapter 1 services in early elementary school made greater gains than those receiving services in the later grades.

With respect to long-term benefits, there is limited evidence suggesting that children who are enrolled in preschool programs are less frequently referred to special education, and have a greater rate of high school graduation, a lower rate of crime, a lower rate of welfare dependency, and a greater earning potential than those not enrolled in preschool programs (Barnett, 1985; Lazar & Darlington, 1982). Most researchers agree, however, that all compensatory education programs seem to suffer from a "fade-out" phenomenon (Ascher, 1987b; Slavin, 1989). Carter's extensive Sustaining Effects Study (1984) showed that gains in reading and math were not sustained through junior high school. Becker and Gersten (1982) found that although a group of students in a Follow Through (FT) program (designed to bolster gains made in Head Start) made significant gains relative to non-FT comparison children in reading (decoding), math problem solving, and spelling, the FT children lost ground three years later and failed to develop more complex math and reading skills at the same level as more advantaged students.

Summer Programs and Extended Day/Year Proposals. Educators have expressed interest in summer learning programs for a variety of reasons. Most commonly, the thinking has been that such programs could provide remediation for those who need it, enrichment for those who want it, and otherwise help stem or even prevent the loss of cognitive skills during the summer vacation (Cammarota, Stoops, & Johnson, 1961; Dougherty, 1981; Heyns, 1986; Merino, 1983). Attempts at evaluation are hampered by the fact that summer programs vary widely along such dimensions as content, duration, population of students served, and quality of teaching staff (Heyns, 1986; Merino, 1983). According to Heyns (1986), these difficulties are compounded by the fact that there is no federal monitoring of programs and no national guidelines for data collection. Regrettably, there is no research available on the effects of summer programs that have been offered through Head Start and Chapter 1 (Heyns, 1986).

In general, most children tend to learn at a slower rate in summer school than during the regular academic year. However, as Ascher (1988) has noted, disadvantaged students tend to lose more ground during the summer months. With respect to effectiveness, the available research indicates that school performance is not significantly enhanced by summer school attendance (Heyns, 1986). For example, results of the only national study of summer learning—the Sustaining

Effects Study—demonstrated that compensatory education students who attended summer school did not show any greater gains in learning than those who did not attend (Carter, 1984).

The extended school day and the extended school year have also been viewed as opportunities to enhance academic achievement. The notion is that more time in school will result in greater achievement gains, for both advantaged and disadvantaged students. However, many researchers have recognized that more time in school does not necessarily guarantee higher achievement, and that a more appropriate focus should be on the quality, rather than the quantity, of instruction (Blai, 1986; Levin, 1983; Mazzarella, 1984; Merino, 1983).

A recent cross-national study of high school math achievement across 20 industrialized nations (i.e., Belgium, Canada, England, Wales, France Finland, and Japan) underscores this point. McKnight et al., (1987) found no relationship between length of school year and math achievement or between yearly hours of math instruction and math achievement. For example, the Japanese have the longest school year (243 days) and the highest math achievement, but the Israelis, whose school year is just 17 days shorter, are in the bottom third in math achievement. At the other end of the spectrum, the U.S. school year is 180 days long and U.S. math achievement ranks in the bottom third of nations. However, the Belgian school year is even shorter by 20 days, and its children rank among the top five nations in math achievement.

As Ascher (1988) points out, the discouraging evidence thus far about the impact of summer school and extended day/year programs should not prevent educators and researchers from seeking ways in which to improve them for disadvantaged children. The programs that exist can be strengthened to emphasize high achievement and high expectations. They should also be closely monitored and evaluated for insights into ways to further improve instruction and programs.

Schoolwide Reform and Community-Based Approaches

Over the past several years, there has been a growing realization that the problems associated with at-risk behavior cannot be addressed solely by improving instruction within existing schools and classrooms. Increasingly, educational researchers are arguing for school reform programs that involve extensive parental and community input. In this section, we present examples of some of the more innovative and promising approaches to early intervention around the nation.

The New Haven Schools Project. James Comer initiated this project in 1968, in the belief that problems facing inner city schools could only be solved through the collaborative efforts of school teachers and administrators, parents, and community mental health workers (Comer, 1980). The two target schools chosen (Baldwin and King) were among the lowest achieving public schools in New Haven and were composed primarily of low-income, minority students. The goals of this project were to improve the school and psychological atmosphere to facilitate learning, to improve academic and motivational skills, to foster a shared sense of responsibility between parents and school staff members, and to develop a relationship between the schools and the Yale Child Study Center.

The intervention project was an intensive effort, consisting of an administrative team of teachers, principals, and support personnel; school committees on curriculum, personnel, and evaluation; a mental health team from Yale; a pupil personnel team (psychiatrists, social workers, principal, nurse, community relations worker, special education teachers and aides); a parent program (in which parents worked as teacher aides); a focus program to bring students who were one or more years behind in math or reading up to grade level; workshops to bring parents and teachers together; and an extended day program.

Over time, the New Haven Schools Project resulted in significant improvements in children's behavior and learning. For example, students enrolled in the Baldwin/King schools had higher math and reading scores relative to children in other New Haven Title I schools. Within these schools, when children who had been enrolled for more than two years were compared with those enrolled for under two years, those with a longer stay averaged eight months higher in reading and five months higher in math. At the end of five years, there were no differences between these groups.

Success for All. In the Baltimore Public Schools, the Success For All (SFA) program of Robert Slavin and his colleagues includes elements similar to the New Haven project (Madden, Slavin, Karweit, Livermon, & Dolan, 1989). The SFA program is a collaborative effort of the Baltimore Public Schools and Johns Hopkins University. It is focused on the pre-kindergarten through third grades, and aims to ensure that all children arrive in third grade with adequate skills in reading, math, and language. The SFA initiative includes one-on-one tutoring, assessments of pupil progress every eight weeks, a half-day preschool and full-day kindergarten, a family

support team (two social workers and one parent) that provides parent education and encourages parent participation in their children's schooling, ongoing teacher training, special education for those previously assigned to it, and an advisory committee composed of the school principal, a program facilitator, teacher representative, social worker, and the Hopkins staff.

Evaluation of the first of five years showed that SFA participants outscored matched controls in reading by an average effect size of +.50. Also, referral and placement into special education was much reduced relative to the previous year.

Stanford Accelerated Schools Project. Henry Levin (1987; 1988) argues that the basic premise of compensatory education programs—that disadvantaged children who have fallen behind need less demanding instruction with no specific timetable—may actually do children more of a disservice by assigning low status and communicating low expectations to students as well as teachers. He asserts instead that disadvantaged children must be held to exacting standards and specific deadlines in order to close achievement gap between themselves and other students. In his Stanford Accelerated Schools Project (SASP), in which disadvantaged children are brought up to grade level by the end of sixth grade, Levin advocates fast-paced curricula that engage students' interests and foster motivation. The "whole school" approach of this program is similar to Comer's New Haven project in that the intervention emphasis is not on any individual curriculum or grade.

The SASP advocates school-based governance in which decisions are made by the school principal, teachers, and parent representatives. The elements of the program include clear goals for students, parents, and staff; regular student and school assessments; monitoring of nutrition and health; instructional strategies that include cooperative learning and peer tutoring; use of community resources (i.e., local businesses and social service agencies); parent participation and training; and an extended day component, during which senior citizens and college students provide one-on-one assistance with schoolwork. Because the program is relatively new, objective evaluation measures of children's academic skills are unavailable.

Program for Disadvantaged Youth. Funded by the Edna McConnell Clark Foundation, this program is a five-year initiative focused on disadvantaged sixth through ninth graders (students who score below the fortieth percentile on a standardized reading test and/or who are eligible for the federally funded school lunch program). The overall goal of this initiative is to implement system-wide

educational reform to improve the quality of education for disadvantaged youth. The Foundation has funded five urban school systems (Baltimore, Louisville, Milwaukee, Oakland, and San Diego) that are committed to providing a challenging education based on high expectations, high content, and high support (Mizell, Fleming, & Washington, 1989). In addition, the Foundation has created a network of 20 other urban school systems in order to foster similar goals.

Elements of the schoolwide reform advocated by the Foundation include active participation of teachers and principals, clear leadership and vision for the future on the part of superintendents and central office staff, and participation of the community—parents, human service workers, and business leaders—in supporting educational reform programs. Several strategies have been adopted in order to foster the Foundation's goals—retention in and on-time completion of middle school, mastery of higher order cognitive skills, enhanced self-esteem/self-efficacy and improved attitudes towards school, and planning for future school and career options. Efforts include funding Henry Levin's Accelerated Schools Project at several sites, grants to community organizations in each of the five target cities, and funding to facilitate communication between grantees and evaluation of implemented programs. Each system's efforts will be evaluated by the schools as well as by an independent organization, and all schools will design replications of their successful initiatives for other schools.

The Beethoven Project. An innovative and ambitious intervention project is currently underway at the Chicago Center for Successful Child Development, also known as the Beethoven Project, after a nearby elementary school. Funded initially by philanthropist Irving Harris, the project is housed in the Robert Taylor Homes, the largest public housing project in the nation. The development houses 20,000 primarily black and low-income residents. Residents serve on the advisory council, and some staff members are recruited from the Homes. The Beethoven Project provides prenatal health care and education to mothers and follows children's development after birth. Staff members continue to provide mothers with health and nutrition care, as well as information and advice on child development. The first infants enrolled in the project will begin kindergarten in the Fall of 1992.

Parent Participation

It is apparent that intensive intervention programs such as those just described have a heavy parent education/participation component. In fact, research has shown that parent involvement makes a great difference in children's learning (Epstein, 1987a, b; 1989). For example, evidence suggests that children who are actively prepared for preschool by their parents show greater school readiness and early positive attitudes toward learning, and experience fewer grade retentions (Epstein, 1989).

Researchers are increasingly realizing that the role of the family and the role of the school overlap in children's school performance. They argue that schools must be at the forefront in helping parents to learn how best to foster academic achievement (de Kanter, Ginsburg, & Milne, 1986; Epstein, 1988; McLaughlin & Shields, 1986; Rich, 1986). For example, Epstein (1988) suggests that this can be done by: (1) helping parents provide a home environment that is conducive to learning; (2) providing frequent and clear communications from the teacher about pupil progress; (3) encouraging parental involvement at school through volunteer and workshop activities; (4) assisting with educational activities in the home; and (5) involving parents in decision-making and school governance (Epstein, 1988).

Successful Instructional Techniques

Regardless of the means of service delivery, there are instructional strategies that appear to be successful across programs, and there is consensus on what these strategies are. In a recent reviews, Crawford (1989) and Stein et al. (1989) concluded that effective instruction with at-risk students is behaviorally focused, with an emphasis on mastery learning. Further, at-risk students are best served when the teacher provides direct instruction in reading and math. In the tradition of cognitive scaffolding (Rogoff & Gardner, 1984), direct instruction involves demonstration by the teacher, guided practice, and corrective feedback. Effective instruction also involves frequent monitoring and assessment of pupil progress, high expectations, and feedback that is performance-based. Stein et al. stress the need for academically oriented classrooms in which students spend a great deal of time on tasks, actively engaged in appropriately challenging materials. Indeed, Natriello and Dornbusch (1984) found that students who were exposed to more challenging standards were more likely to attend class and more likely to do well in school than students who were exposed only to teacher warmth and support. Researchers and educators have realized that the acquisition of cognitive skills also depends very

much on the development of "metacognitive" skills, or strategies that help children learn how to learn, such as self-monitoring (see Crawford, 1989; Stein et al., 1989).

Brophy (in Crawford, 1989) argues that Chapter 1 students learn best when teachers clearly structure content, use overviews, outline lessons, highlight main points, and review mastered material. His research suggests that low SES students will benefit more than high SES students from questions that are not overly difficult and that ensure a high success rate.

Larrivee's observational study of teacher behavior (1989) confirms the value of some of the abovementioned techniques. In her examination of teachers of mainstreamed students, she found that effective teachers used frequent positive feedback, minimal punitive feedback, and sustaining feedback to students who answer questions incorrectly. For mainstreamed students in particular, Larivee notes that positive and encouraging feedback, high success rates, and lack of criticism are very important in enhancing achievement.

The emphasis on lack of criticism is somewhat disconcerting from a motivational standpoint. While it is true that we would not want already disadvantaged children to feel worse about their academic skills than they may already feel, it is important that educators not fall into the trap of exposing children to "success only" schedules of reinforcement. Such schedules have been shown to foster maladaptive achievement cognitions, such as attributions to lack of ability, and behaviors, such as a lack of persistence and learned helplessness (Dweck, 1975). In fact, the evidence suggests that teachers do children a disservice by protecting them from mistakes. Children are better served by learning experiences that include a mix of success and failure, coupled with extensive modeling on how to strategize in the face of difficulty (see Dweck & Bempechat, 1983). Teaching strategies that may make children feel better in the short-run may actually prevent children from realizing their potential in the long-run.

FUTURE PROJECTIONS

DEMOGRAPHICS

Our concern over the academic achievement of poor and minority children is further heightened by the reality that this segment of the population is expected to increase dramatically into the next century. Thus, any prevention or intervention services that are now in place will have to increase in order to meet the demand of readying larger numbers of at-risk children for school success (see Pallas et al., 1989).

Using data from the U.S. census, Pallas et al. (1989) projected changes in the characteristics of the school-aged population through the year 2000. According to their work, the childhood population (i.e., 0-17 years) is expected to increase by 17 percent. The population of white, non-Hispanic children will decrease by 13 percent, while the population of black children will increase by 22 percent, to almost 12 million. The population of Hispanic children will more than triple to 18.6 million. In fact, the increase in Hispanics will account for most of the overall population growth during this period. In 1982 almost 75 percent of children were white, almost 10 percent were Hispanic, and almost 15 percent were black. By the year 2000, 54 percent of children will be white, 25 percent Hispanic, and 16 percent black.

The number of children living in poverty will increase to 27 percent of all children, and the percent of children living in one parent households will increase to 30 percent, or 21.1 million. An increase of 56 percent in children living with mothers who are poorly educated (i.e., high school dropouts) is also projected. Finally, children whose primary language is not English will number six million. Pallas et al. (1989) argue that more resources must be allocated to public schooling in the future, because many schools will see the day when the majority of their children will be educationally disadvantaged.

CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

In some ways, the task before educators and community leaders would be simpler if the problems of educationally disadvantaged children were limited to the classroom. As we have seen, however, this is not the case. Poor and minority children who are at risk for school failure are likely to experience many other problems. With the projected population increase in poor and minority children, educators, community leaders, and public policy makers will have to contend with

greater numbers of children who engage in at-risk behaviors. In this section, we examine methodological approaches to studying at-risk children that can improve the current state of our knowledge on effective prevention and intervention.

Definitional Issues. In examining the literature on at-risk children, it is difficult at times to distinguish poor from good measures of risk. One reason for this is that many researchers do not actually define the method(s) they used to measure indicators. While categorizing children by race and ethnicity may seem obvious to some, the task is actually non-trivial and is hardly ever explained in methods sections. For example, it is unclear whether Hispanic children are categorized as such by their last names, place of birth, or both. There do not appear to be any "rules" by which children of mixed parentage are classified into race or ethnic categories.

A second reason is that researchers use different definitions for the same indicators. Social class may be defined grossly by geographic location or very specifically on the basis of the Hollingshead scale. It is also sometimes measured by combined parent education or simply by mother's education. As discussed earlier, minority language status is assessed variously on the basis of self-report data, objective test results, or language spoken at home.

All of these issues cast doubt on the validity and reliability of indicators of at-risk status, and make results across studies difficult to assess and compare. Researchers should work more closely at identifying and agreeing upon common methods of defining indicators of at-riskness.

The Value of Ethnographic Research. While it is clear that ethnographic research is limited in the degree to which generalizations about behavior can be drawn, it is nonetheless unfortunate that more of it is not conducted. There is a certain richness to ethnographic data that cannot be captured by large data sets (such as the High School and Beyond study). For example, Reginald Clark's work on poor, black high- and low-achievers (1983) helped to illuminate differences in academic socialization that both foster and inhibit academic achievement. A recent book on the life of Edmund Perry, a black private school student in New York City who was killed by police while allegedly trafficking in drugs, provided compelling evidence that we cannot offer poor and minority students the finest of educational opportunities and ignore the difficulties they may have adapting to schools created for upper-class children (Anson, 1987).

Motivational Factors in Learning. The syndrome of problem behaviors tends to be precipitated, although not necessarily caused, by early school failure. There is, thus, a greater urgency in our need to stem the tide of school failure among at-risk children. There is the hope that if we can intervene when, or even before, children begin to lose ground in school, we may be able to ward off the myriad problems they are likely to face in early adolescence.

Researchers have been justifiably concerned with enhancing the cognitive skills of children at risk for school failure. However, cognitive skills alone do not ensure school success. We are not only obligated to help children acquire increasingly sophisticated cognitive skills; we must also teach children to make the most of these skills by fostering adaptive motivational beliefs and behaviors. As children get older, the tasks that we require of them become increasingly difficult and take much longer to complete. Children will not reach their potential if they are prone to maladaptive motivational tendencies, such as a lack of persistence, a preference for easy over challenging tasks, a propensity to fall apart in the face of failure, and low expectations for success; and to attributions to lack of ability rather than to lack of effort.

Motivational factors are important because the evidence suggests that children's performance in school is predicted more reliably from motivational factors than from actual measures of intelligence (Crandall, 1969; Dweck & Licht, 1980; Weiner, 1972). Where motivation is concerned, educationally advantaged children do not necessarily have an edge over educationally disadvantaged children. Thus, future research on effective teaching programs and strategies for at-risk children should include comprehensive measures of achievement cognitions and behavior, such as attributions for success and failure, beliefs about effort and ability, and vulnerability to learned helplessness.

Counter-Stereotypic Patterns of Achievement. Developmental psychopathologists argue that the study of atypical development helps to illuminate "normal" development (e.g., Cicchetti & Rizley, 1981). Similarly, we suggest that much can be learned about achievement in at-risk children by focusing attention on successful students. There is a great deal of literature on low-achieving poor and minority students, but relatively little on high-achieving at-risk students. For example, Coleman's work, described earlier, is particularly informative because he examines conditions under which at-risk students excel in school, namely private Catholic

schools. Researchers might do well to extract some principles from these children's experiences and apply them toward helping other at-risk children reach their academic potential. Additional factors that bear exploration include individual differences such as temperament and environmental influences, such as the presence of an individual who is supportive of academic pursuits (see Boardman, Harrington, & Horowitz, 1987).

In sum, research on at-risk children can benefit from careful attention to the definition and measurement of risk indicators, and from the use of ethnographic research methods. Research should also place greater emphasis on the study of the motivational underpinnings of school success and failure, and on individuals who succeed despite high risk status. New research directions of this sort will make important contributions to the understanding of at-risk children.

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