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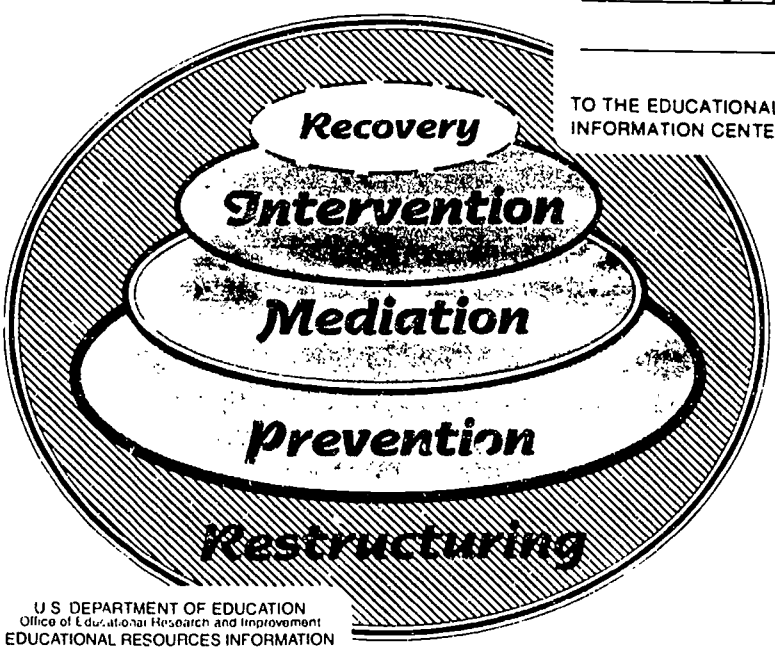
ABSTRACT

Every aspect of children's lives affects their ability to learn and succeed in school. However, conditions associated with poverty environments are major factors in students' dropping out. Children whose home environments and social backgrounds result in development different from the mainstream enter school at a distinct educational disadvantage. This publication is the result of a comprehensive review of the literature on research and best practice. It provides and in-depth look at: factors that place students at risk; the core organizational, instructional, and curricular structures of schools; and the strategies that have proven effective with students in at-risk situations. Strategies include those for prevention--actions taken to anticipate, forestall, or deal with problems before they irreparably impair a student's ability to perform successfully in school; mediation-- the process of providing an educational environment that ensures success for all students; and intervention--actions designed to interrupt or modify problems that are negatively affecting students' performances. It argues that restructuring the educational system is an essential prerequisite to successful and lasting educational reform. Chapters are: (1) The Need for Systemic Change; (2) Restructuring the System; (3) Prevention Strategies; (4) Mediation Strategies; (5) Intervention Strategies; and (6) Summary. Contains 184 references. (JBJ)

Effective Strategies for Educating Students in At-Risk Situations



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Effective Strategies for Educating Students in At-Risk Situations

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Introduction and Overview

This publication is the result of a comprehensive review of the literature on research and best practice. It provides an in-depth look at many of the factors that place students at risk; the core organizational, instructional, and curricular structures of schools; and the strategies that have been proven effective with students in at-risk situations.

Chapter One discusses a number of situations that affect children's and youth's academic success—the family, community, student, and school factors that contribute to placing children at risk. The chapter presents the argument that systemic change—rather than piecemeal change—is called for to ensure that all children have appropriate opportunities to achieve.

Chapter Two reviews the need for restructuring to ensure that the educational system has the flexibility to renew itself as social and economic conditions change. Restructuring the system is an essential prerequisite to *successful and lasting* educational reform and dropout prevention.

Chapter Three discusses effective prevention strategies. *Prevention* includes those actions taken which anticipate, forestall, or deal with cognitive, social, or personal problems before they irreparably impair a student's ability to perform successfully in school. Prevention strategies provide enriched learning activities in early childhood, ensure that children have a healthy start, teach socially responsible behavior, and involve parents in their children's education.

Chapter Four introduces the concept of mediation and suggests strategies that should be in place in restructured schools. *Mediation* is the process of providing an educational environment that ensures success for all students. Mediation strategies are the innovative curricular, instructional, and other school experiences provided for students from preschool through graduation.

Chapter Five presents intervention strategies. *Intervention* actions are designed to interrupt or modify academic, school, or personal problems that are negatively affecting students' performances. Intervention strategies are those that address the continuing needs of students who remain at risk in middle and high school.

Chapter Six provides a summary of the discussion presented in this publication.

Recovery is part of the model presented at the end of Chapter One but will not be discussed in this publication. Recovery is a process that provides individuals with a variety of opportunities to complete their education, usually in nontraditional settings. As important as recovery strategies are, this publication focuses primarily on strategies that prevent dropping out in the first place.

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Chapter One
The Need for Systemic Change

Situations That Place Students At Risk

It is inconceivable in a country with the resources of the United States that more than one in five of the children in our schools live in poverty conditions which put them at risk of school failure. Too many of our children do not have the kind of family which serves as their protector, advocate, and moral anchor. In contrast to just a decade ago, more children today suffer from mental and physical illnesses, substance abuse, child abuse, inadequate child care, and family disorganization. More students are entering public schools from single-parent families, from minority populations, and from non-English-speaking backgrounds. For too many children, their neighborhood is a place of menace, the street a place of violence. Too many children arrive at school hungry, dirty, and frightened. Too many children start school unable to meet the challenges of learning (1991, U. S. Department of Education).

Every aspect of children's lives affects their ability to learn and succeed in school. Wells (1990) identified a variety of circumstances that often place students at risk. She listed individual-related, family-related, school-related, and community-related factors. While any one factor, or even several factors, do not necessarily place students at risk, combinations of circumstances identify the potential to drop out (Frymier & Gansneder, 1989). Some of the factors identified by Wells are listed below:

Family Related
- Low SES
- Dysfunctional homelife
- No parent involvement
- Low parental expectations
- Non-English-speaking home
- Ineffective parenting abuse
- High mobility

Community Related
- Lack of community support services or response
- Lack of community support for schools
- High incidences of criminal activities
- Lack of school community linkages

Student Related

- Poor school attitude
- Low ability level
- Attendance/truancy
- Behavior/discipline problems
- Pregnancy
- Drug abuse
- Poor peer relationships
- Nonparticipation
- Friends have dropped out
- Illness/disability
- Low self-esteem/self-efficacy

School Related

- Conflict between home/school culture
- Ineffective discipline system
- Lack of adequate counseling
- Negative school climate
- Lack of relevant curriculum
- Passive instructional strategies
- Inappropriate use of technology
- Disregard of student learning styles
- Retentions/Suspensions
- Low expectations
- Lack of language instruction

As Table 1 illustrates, conditions associated with poverty environments are major factors in students dropping out (Peng & Lee, 1992). Inadequate housing often leads to overcrowding. This in turn results in a lack of privacy and no place to study or do homework. Inappropriate diet leads to health and dental problems which are too often ignored. The low educational level of caretakers results in a lack of exposure to books, newspapers, magazines, or cultural enrichment. Students' self esteem suffers when their clothing calls attention to their low economic status (LeCompte & Dworkin, 1991).

Table 1: Status Dropout Rate, ages 16-24, by income, and race/ethnicity

	Total	non-Hispanic White	non-Hispanic Black	Hispanic
Total	11.0	7.9	13.6	27.5
Low income level	23.9	19.1	24.5	41.3
Middle income level	9.9	7.7	8.6	23.9
High income level	2.7	2.5	3.9	6.0

Dropout Rates in the United States: 1994, National Center for Educational Statistics, U.S. Department of Education, Office of Educational Research and Improvement

The effects of poverty go beyond material concerns, however. Children whose home environments and social backgrounds result in development different from the mainstream enter school at a distinct educational disadvantage. Those who do not speak English or who behave according to the culture of a home that is radically different from that of the school are not prepared to meet teachers' social and behavioral expectations. Many students move

through school without the benefit of support from the home—that is, persons who understand the school curriculum, who can evaluate the quality of education being offered the child, and who know how to work within the school system to intercede on behalf of the child (Gandara, 1989).

The Educational Structure Places Students At Risk

John Cole, Vice President of the American Federation of Teachers (AFL-CIO) and President of the Texas Federation of Teachers, pointed out that most students attend public schools which, instead of being "centers for learning and intellectual development," are

> more like the great industrial factories of the 19th and early 20th century. . . there is not an assembly line, but in most high schools there is something like that. . . . Each teacher is at a station. A bell will ring. The line does not move but we have mobile units of production. They move themselves and cluster at a work station where a teacher for 45 minutes or so attempts to pour learning into their heads and then the bell rings and they get up and leave. (*The Education Deficit*, 1988, p. 20)

This structure worked relatively well for the agricultural industrial society it was designed to serve. It provided schooling for millions of immigrants, inculcated the skills and conformity needed to staff assembly lines, and followed a calendar dictated by agricultural seasons. Aspiring teachers had to pass rigorous exams to enter teaching, teaching was a respected profession, and there was a surplus of highly qualified teachers. Those students who entered the system had high standards set for them, parents pushed their children to excel, and most students were attentive to their teachers. This structure, however, was designed to sort and select; it was never designed to provide quality education for all students. In 1940, only about 25% of the students graduated from high school (26.1% of white; 7.7% of blacks; Bureau of the Census, 1994).

Most of the educational reform efforts of the last decade focused on refining the existing system—realigning or refocusing school programs and practices to better meet existing goals and standards. The primary concern was to find out "how to do things right" rather than to determine, first, if we were doing the "right things" (Jenks & Shaw, 1988). The kinds of reforms that emerged followed a strategy of

intensification—continuing to do what had been done for years, but doing more of it and presumedly doing it better (Covington, 1992). This strategy assumed the present educational system was fundamentally sound and that no basic changes were needed.

The futility of making piecemeal changes in the educational system is illustrated by the barriers identified though a survey of educational practitioners in districts and schools that were engaged in efforts to restructure (Duttweiler & Mutchler, 1990). The survey revealed eight major barriers to changing traditional behavior:

1. **Fear of taking risks**—The lack of a cooperative goal structure and fear of reprisal slowed down the implementation of many of the change efforts.

2. **Fear of losing power**—School board members and administrators at all levels were apprehensive about losing power in any reform effort that included a redistribution of authority.

3. **Resistance to changing roles and responsibilities**—Both administrators and teachers were reluctant to forge different roles or accept new responsibilities, were apathetic to changes, favored the status quo, or identified with traditional norms and roles.

4. **Lack of trust**—Mistrust at every level of the system and in every relational permutation was uncovered by the survey.

5. **Lack of skills**—A lack of skills, particularly in working with groups and group decision making, was a critical barrier to successful change.

6. **Lack of definition and clarity in the change effort**—Survey respondents reported the lack of a clear definition of the change effort itself, the strategies to be used to implement it, the boundaries of school authority, and the behaviors expected in new roles and responsibilities.

7. **Inadequate resources**—Respondents identified a lack of resources or resource allocation as a serious barrier to change. They identified *time* as the most important and most inadequate resource.

8. **Lack of hierarchical support**—Respondents identified major problems resulting from the absence of full-system commitment to change, transience of personnel, inadequate communication, and conflicts with outside regulations.

Addressing any one of the above barriers in isolation from the rest would be an invitation to further failure. More importantly, changes should address the whole educational system if we are to build the capacity of schools to redefine and renew themselves so that they can create learning environments which meet the needs of all students.

Students Are Underprepared

When the problems encountered within the family and neighborhood combine with the problems children encounter within the schools, the results are staggering. The *National Education Goals Report* found that nearly half of all American adults read and write at the two lowest levels of prose, document, and quantitative literacy in English. This means that nearly half of America's adult population may not be able to perform the range of complex tasks necessary for the United States to compete successfully in a global economy or for the adults to exercise the rights and responsibilities of citizenship.

The Children's Defense Fund (1992) pointed out that poor and minority children are not the only ones who are experiencing difficulty in school; many middle- and upper-income children are not learning what they need to know to keep the U. S. economy competitive into the next century. An international assessment of math and science achievement found that American 13-year-olds ranked 13th in math achievement and 12th in science achievement when compared to students from 14 other nations. If we are to survive as an economic power, students must develop the technological sophistication, adaptability, and problem-solving skills that will continue to drive our economy in the future.

Students Are Dropping Out

The traditional educational system was not designed to meet the needs of an information-based economy or effectively educate a population of culturally diverse students (Bureau of the Census, 1994). At a time when specialized, postsecondary education is a

prerequisite for many high-technology jobs, statistics indicate that 20% of adults over the age of 25 in the United States have not completed high school (Bureau of the Census, 1994). In 1993, approximately 3.4 million persons between the ages of 16 and 24 years of age had dropped out of school before they earned a high school diploma (NCES, 1992), and there were over 12 million persons 18 years of age and older who had less than a 9th grade education (Bureau of the Census, 1994).

The fact that reducing the dropout rate has been one of the education goals of two presidents indicates the seriousness of the problem. In attempts to improve the achievement of students in at-risk situations, many school districts have instituted a number of practices over the past two decades. These practices included such things as identifying children and pulling them out of class for activities unrelated to classroom instruction; retaining students in grade; slowing down instruction; using technology for drill and practice; and teaching the "basics" in fragmented, isolated bits. Rather than helping, however, such practices produced a number of damaging effects for many students such as lowered perceptions of their academic competence, decreased academic motivation, and reduced intrinsic interest in learning (Harter, Whitesell, & Kowalski, 1992).

In addition, rather than fostering a sense of belonging and providing opportunities for students to engage in positive social interaction, most schools continue to emphasize social comparison and competition. Competitive school environments separate students into groups determined by ability, publicly evaluate students based on relative ability, and honor only students of high ability. Because there are few winners and many losers in competitive school environments, lower achieving students are disruptive and protect their feelings of self-worth by withholding their efforts. And too often, even among the winners, the joys of learning and discovery are sacrificed for the sake of conformity (Covington, 1992).

Researcher Shi-Chang Wu (1993) investigated the possibility that schools may be actively contributing to students dropping out. Data from the first follow-up survey of the National Education Longitudinal Study of 1988 (NELS:88) revealed that (1) there is a clear link between students attending schools with high dropout rates and their risk of exposure to poorly organized academic

programs; (2) the school dropout rate often reflects morale problems in the school; (3) students attending high dropout-rate schools were more at risk of exposure to poor teachers; and (4) attending a school with a high proportion of dropouts was associated with diminished opportunities for students to be exposed to classroom activities which are purposively conceived, well-planned, well-organized, and well-executed.

Covington (1992) argued that the potential dangers in trying to fix the present system are greater for the "failure-prone child, the underprepared, and those disenfranchised youngsters from underclass ghettos and barrios." It is imperative that we change those school practices which place students at risk of failure. As educators, it is our job to create an enriching, culturally sensitive, relevant, and active environment for all children. We must not just write vision statements that parrot the phrase, "All children can learn;" we must shape our classrooms, our schools, and our districts so that it becomes a reality.

Arguments for Systemic Change

The problems faced by the educational system have their roots in the social and economic changes that have occurred in this country. Changes in one part of a system call for corresponding changes in the other parts. As it is currently structured, however, the educational system lacks the flexibility to adapt to societal changes.

While teachers and administrators continue to be blamed for the poor achievement of students, the structure of the workplace has a greater influence on what professionals do than personal abilities, professional training, or previous experience (Lotto, 1982). An early study of the implementation of federally sponsored innovations supports assertions that the critical variables related to improvement, change, and effectiveness are organizational and systemic rather than individual or programmatic in nature (Berman & McLaughlin, 1978).

The principles of Total Quality Management espoused by W. Edwards Deming affirm that the central problem in traditional organizations is that they tend to blame what goes wrong on individual people (Bonstingl, 1992). According to Deming, however, 85% of the problems in an organization can be attributed to systemic causes - practices, rules, expectations, working condi-

tions, and traditions. Frymier (1987) concluded from a study of 183 professional educators from nine urban schools that events and mandates required the educators to engage in activities that would not help their students perform well in school. By both circumstance and by law, the educators were forced to deal with factors over which they had almost no control.

The overarching goal of systemic change in education is to provide an organizational structure that allows each school to design a learning environment which ensures quality education for all of its students. Scarr (1992) summed up the need for systemic change with this statement: "As educators, we must accept that constant change and flexibility are the norm, not the exception. Organizational structures in education must change. The youth and the future of our country require no less."

Areas of Reform

The National Dropout Prevention Center advocates a comprehensive, systemic approach to educational reform. Attempts to improve student learning will be successful only to the extent that changes throughout the system give schools sufficient latitude to adapt new policies or practices to their unique circumstances and to develop their own solutions to problems. Educational leaders must manage change in turbulent times by anticipating new paradigms. Educators and policymakers must recognize the elements within a society "dynamically interact so that whatever happens with the family, or with the computer revolution, for example, is going to have an impact on the school" (Fullan, quoted in O'Neil, 1993, p. 11).

The effective implementation of systemic change means finding ways to create a collaborative mode of work to replace the existing isolation and powerlessness under the traditional system. The National Dropout Prevention Center identified the following areas of reform to be addressed:

- The educational system must be restructured to be more congruent with the needs of those who work in it and the needs of those it serves. Schools must have the authority to make meaningful decisions through participatory decision making; adequate resources must be available; and professional development should provide the knowledge,

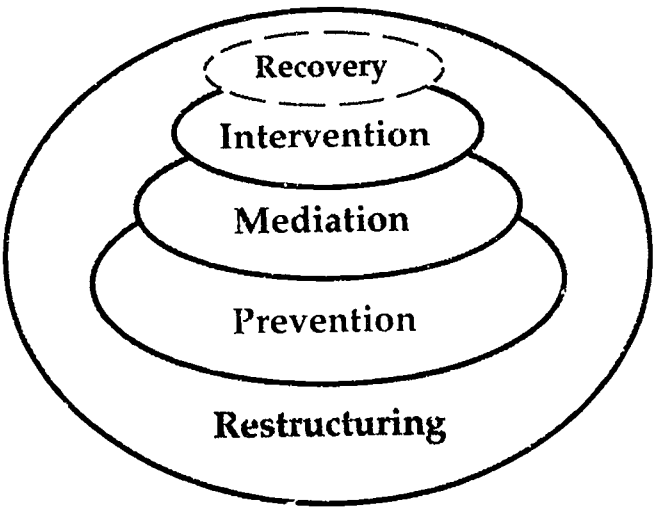
skills, and attitudes required to carry out new roles and use new strategies.

- The problems faced by children in at-risk situations are the collective responsibility of everyone. Government, businesses, community organizations and agencies, parents, and the schools must join together to provide the social support needed to ensure resiliency in children.

- The technical core of the school—teaching, learning, curriculum, and instruction—must engage children in learning. Effective prevention, mediation, and intervention strategies must be adopted to meet the needs of students in at-risk situations.

Figure 1 illustrates the components of systemic change and the relationship between restructuring and effective prevention, mediation, intervention, and recovery strategies.

Figure 1: Components of System Change



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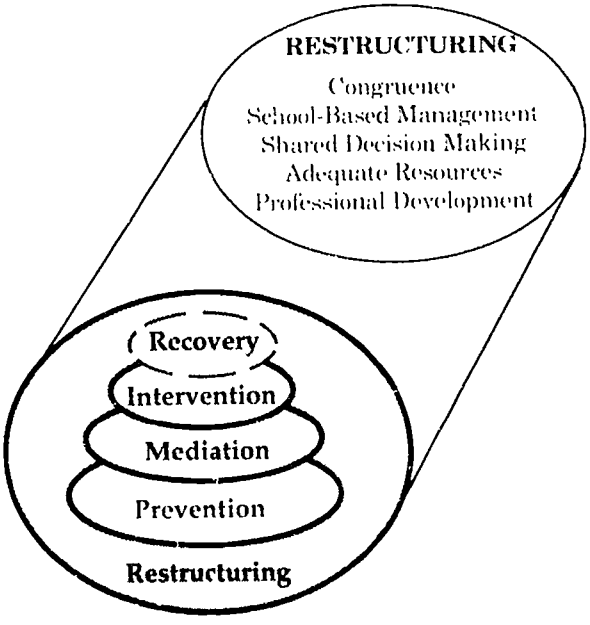
Chapter Two
Restructuring the System

The National Governors' Association Task Force on Education asserted that "significant steps must be taken to restructure education in all states" (U. S. Department of Education, 1991). Restructuring requires change in the roles, relationships, distribution of authority, and allocation of resources within the educational system. The purpose of restructuring is to create a flexible organization that enables teachers, school administrators, students, parents, and community members to collaborate in providing within each school the experiences students need to achieve success. Figure 2 illustrates the elements involved in restructuring.

Figure 2: Elements of Restructuring

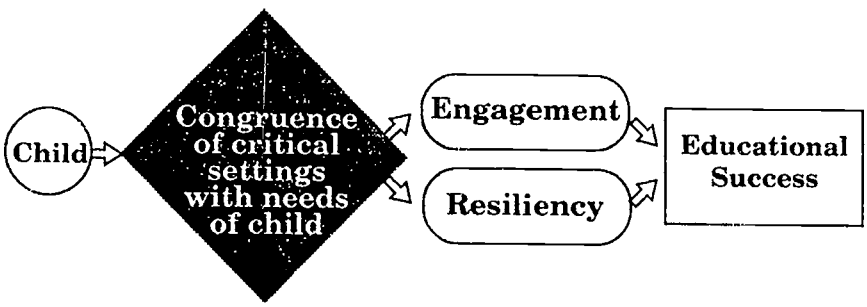


Congruence

Congruence is both a rationale for restructuring and a desired outcome. Congruence is the condition of being in agreement, harmony, or correspondence with the circumstances or requirements of a situation. Congruence translates into a "goodness-of-fit" match between the characteristics, climate, and practices of the critical settings in which the student must function (e.g., the family, the community, the school) or in which they receive services (e.g., social service and health agencies) and the needs of the student.

Whether or not the educational setting is congruent with a student's needs depends both on the characteristics of the school and on the ethnic, cultural, socioeconomic, demographic, and risk characteristics of the student. Schools that are congruent with the needs of one population quite often are not congruent with the needs of a different population. The existence or absence of congruent conditions within the schools will promote or hinder the engagement and resiliency of students in at-risk situations and, thereby, their educational success. Figure 3 illustrates the relationship.

Figure 3: Congruence and Educational Success



Congruent schools foster a child's engagement in learning and resiliency in life—they are learner centered. In learner-centered schools there is a focus on the individual learner's capabilities and needs from a perspective that is grounded in current research on how, why, and under what conditions learners best learn (McCombs, 1994). In *congruent classrooms*, teachers are facilitators of learning and students are actively engaged, participate, and are responsible for their own learning. For classrooms to be congruent with the needs of students, however, schools and the systems of

which they are a part must be congruent with the needs of teachers. Teachers cannot be expected to encourage their students to collaborate, participate, and make responsible decisions when the teachers themselves are not encouraged to do these things by the systems in which they work. The need to create cooperative structures at all levels of the educational system has been a key theme in the reform literature (Barth, 1990; Joyce, Wolf, & Calhoun, 1993; Schlechty, 1990). It is the focus of the following sections on school-based management, shared decision making, the provision of adequate resources, and the need for strong professional development.

School-Based Management

Schools have great difficulty transforming themselves within the constraints of existing governance structures. School-based management formally alters school governance arrangements. Decision-making authority is redistributed for the purpose of stimulating and sustaining improvements in individual schools, resulting in an increase in authority of staff at the school site (Malen, Ogawa, & Kranz, 1989). When decisions are decentralized to the school site, school personnel have a means of controlling and correcting overall school operations in order to meet the ultimate goal—student success in learning.

For school-based management to work effectively, there must be changes in the roles of school board members, superintendents, and district personnel to incorporate a different kind of power than they traditionally have had. Responsibilities should shift from enacting decisions and monitoring compliance to creating the conditions that support schools in their efforts to achieve their vision and goals (David, 1994). Efforts to change the system, whether in the area of decision making or curriculum and instruction, will surely lead to failure unless those in power at state and local levels provide the resources necessary for quality education and relinquish to the schools the authority to make decisions in significant areas.

For this reason, school-based management is an important component of any educational restructuring reform. School-based management expands the leadership within a system. It gives staff at school sites the authority to make certain decisions about personnel, staff development, allocation of resources, curriculum, and instruction. School-based management is distinguished by a focus on the individual

school as the unit of decision making; the management of substantial resources at the school level; the development of a collegial, participatory environment throughout the district; and the redesign of district structural elements to accommodate innovations in curriculum, instruction, and the use of time and resources.

There is some concern about the link between school-based management—a governance reform designed to alter the balance of power within educational systems—and improved school performance (Wohlstetter, Smyer, & Mohrman, 1994). Fullan (1993) pointed out that restructuring does not often touch the core of the school—instructional practices and the culture of teaching. This is substantiated by a study in a district widely acclaimed for its restructuring model. Teachers in the 16 pilot schools reported higher levels of participation in decision making, but the researchers found that teacher strategies used in the pilot schools were no different from those found in the 17 nonpilot schools. Nor did the researchers find evidence of greater teacher collaboration (Taylor & Teddlie, 1992). Other studies have uncovered the same results (Easton, 1991; Hallinger, Murphy, & Housman, 1991; Sarason, 1990; Weiss, 1992).

Wohlstetter, Smyer, and Mohrman (1994) studied the schools in four school districts where school-based management had been underway for at least four years. They focused on schools that were *actively restructuring* and those that were *struggling*. While struggling schools had school-based management activities in place, they had not made concrete, observable changes in classroom instructional practices. Actively restructuring schools had school-based management activities in place and also had made concrete, observable changes in their instructional approaches.

The researchers found that struggling schools had sporadic, administrator-designed professional development for staff and offered few opportunities for whole-school development. The site councils got bogged down in defining power relationships. Subgroups were empowered, leaving the bulk of the faculty out of the loop. Principals were often involved in power struggles with the staff. Struggling schools rarely developed a shared vision or redesigned the parameters within which the faculty operated. The most frequently cited means of information sharing in these schools was "the teacher grapevine." This restricted type of communication resulted in incomplete or inaccurate information which bred suspicion.

Actively restructuring schools, on the other hand, were characterized by an intense interest in professional development as an ongoing process for every teacher in the school as well as the principal. In actively restructuring schools, site councils created subcommittees which spread both the decision-making authority and allowed greater numbers of teachers to hold leadership positions. One of the most significant elements common to actively restructuring schools was the focus on creating opportunities for teachers to plan, discuss, meet, and generally talk about educational issues. School schedules were redesigned to encourage teacher interaction. Information sharing in actively restructuring schools often included school-wide development of a vision statement, retreats to define mission and goals, and sharing council meeting agendas, meeting minutes, school budget, student achievement results, and curriculum information.

The principals in the actively restructuring schools in the Wohlstetter et al. (1994) study were able to motivate staff and create a team feeling on the school campus. They regularly engaged the faculty in timely and informal conversations in the halls. The principals sought out grant opportunities and encouraged faculty to write proposals for funding innovations which supported school goals. The principals also served as liaison to the outside world with regard to educational research and practice. In several of the actively restructuring schools, the researchers found principals moving away from the role of instructional leader to one of manager. The principals saw their role as shielding teachers from concerns in which the teachers had little vested interest or expertise so that as instructional experts, they could concentrate on teaching.

Participatory Decision Making

The purpose of restructuring governance processes within a system is to ensure that each school has the resources and the flexibility to design the type of learning experiences necessary for its population of students to succeed academically. Lawler's (1986) research in the private sector confirmed the importance of employee power in improving organizational performance. Lawler found that "high involvement management" resulted in high performance organizations. Areas of high employee involvement included budget, personnel, work processes, knowledge, performance information, and rewards.

Including different perspectives in discussion and decision making ensures that the problems identified will reflect the true needs of the

students and that the solutions identified to address those problems will be supported by those who must implement them. Implementation is where the expertise of the entire learning community—of school staff, students, parents, and the community—becomes critical to the success of the effort. When participatory decision making is an integral part of organizational decision making, the learning community defines its vision for the school, explores the needs of the students and the school, researches possible approaches to restructuring the instructional and curricular core of the school, proposes possible strategies for implementation, and allocates resources to accomplish its goals.

Adequate Resources

Those who believe educational restructuring, reform, or improvement can be achieved without significant changes in the culture of the school and the provision of substantial resources are in for a big disappointment. For systemic change to be successful, long-term, system-wide commitment to the concept should be built and maintained. Such change requires clearly defined goals and outcomes, continuity and stability, protection from external constraints, and the necessary resources for successful implementation. Insufficient material resources are a major constraint on the effectiveness of self-managing schools. Even with all the other elements in place, restructuring efforts eventually will fail if schools do not have (and cannot get) the resources they need to do their work. Weiss and Cambone (1994) pointed out that sustained teacher planning and decision making over long periods of time will require a system of supports well beyond those currently provided by most school systems.

Professional Development

Professional development must be provided so that members of the school community can develop the knowledge and skills required to participate in school-based management and to become proficient in new instructional strategies. In addition, teachers must be prepared to work in creative ways with students who do not respond to traditional instructional methods.

A survey of the membership of the National Dropout Prevention Network, conducted in the fall of 1993 by the National Dropout Prevention Center at Clemson University, revealed that teachers are rarely prepared to work with students who are not part of the mainstream (Duttweiler, 1994). The respondents constituted an

experienced group of practitioners (71.4% had 15 or more years in education; 76.0% were school or district staff) representing every region of the country. The results of the survey included the following:

- Nearly 70% of the respondents indicated that, in general, staff development activities failed to prepare teachers to work with students in at-risk situations.

- While 78.9% of the respondents indicated their belief that active learning instructional strategies were effective in helping students in at-risk situations learn successfully, almost 60% indicated that active learning strategies were rarely used with lower achieving students.

Components of Effective Professional Development

A considerable body of research exists on successful professional development programs, and a number of components have been identified as critical to fostering change in participants' knowledge, skills, and attitudes (Duttweiler, 1989). The components--context, content, choice, continuity, coaching, control, and commitment—synthesized from a review of the literature, are summarized below:

Context—Context consists of the setting and conditions of communication, support, and cooperation within which professional development takes place. The participants in professional development programs are adults. Therefore, it is advisable to take into consideration the characteristics of adults when designing such programs. Change is almost always accompanied by uncertainty. Changing behavior requires commitment and emotional energy. Most adults are resistant to experiences in which they may not do well or in which their self-esteem might be damaged. It is important, therefore, for professional development to be conducted in a supportive climate of trust, peer support, collegiality, and open communication (Brookfield, 1986; Caldwell, 1986; Wood, Thompson, & Russell, 1981).

Content. Professional development programs should contain content that addresses three major areas: (1) attitudes, (2) skills, and (3) substantive knowledge. Programs should be demanding, with high but reasonable standards of performance set for participants. Professional development directed toward changing the tradition-

al norms of isolation and autonomy in teaching to those better suited to shared decision making must systematically replace those norms with new shared attitudes, habits, and values. Good programs will also include opportunities for participants to reflect on their actions (Pitner, 1987). Effective professional development provides an opportunity for adults to share their expertise and experience. Experiential techniques, such as discussion or problem solving, are effective devices for adult learning (Brookfield, 1986).

Choice—Involvement, expressed needs, and opportunity for choice ensure that participants are committed to change because of intrinsic motivation. The challenge for planners is to design experiences that take intrinsic motivators into consideration (Caldwell, 1986). Motivation for growth and learning comes from within; participant involvement from the beginning is, therefore, important (Levine, 1985). Professional development works best when participants take part in planning objectives and activities (Elam, Cramer, & Brodinsky, 1986). Research has shown that the most successful professional development activities have been those in which participants had maximum opportunities for involvement and self-help (Levine, 1985).

Continuity—Significant improvement in educational practice takes considerable time and is the result of systematic, long-range professional development (Caldwell, 1986). It is important to build on the experiences of participants and to foster cumulative learning (Pitner, 1987). Long-term commitment to a particular direction or program enables the learner to proceed in an orderly way from orientation to in-depth exposure to integrated practice (Dillon-Peterson, 1981). This is best accomplished by establishing expectations within each school staff for continuing professional growth in the school setting. Processes should be instituted in the school for active discussion of professional practice and for peer observation and coaching.

Coaching—Professional development should provide opportunities for learning job-related knowledge and skills through (1) the demonstration of the skill or its modeling in settings that simulate the workplace; (2) practicing the skill; and (3) receiving productive performance-based feedback (Elam, Cramer, & Brodinsky, 1986; Joyce & Showers, 1983; Pitner, 1987). In addition, professional development programs should provide mechanisms for follow-up assistance to participants after their return to the

workplace (Wood, Thompson, & Russell, 1981). Wherever possible, new administrators and teachers should not be left to solve their problems in isolation from their colleagues (Daresh, 1987). Joyce and Showers (1983) consider it essential for trainers to assist participants in developing self-help teams that will provide coaching. Ideally, "coaching teams" are developed during the initial phase of the program. It is important to train participants in the techniques needed to coach others (Pitner, 1987).

Control. Joyce and Showers (1983) have pointed out that the effective use of new knowledge or a skill depends on *executive control*—that is, on knowing how to adapt, apply, and blend the knowledge or skill with other approaches to develop a smooth and powerful whole. The achievement of executive control may require extensive amounts of new learning that can only be accomplished through practice and vertical transfer of learning. Vertical transfer requires additional learning to adapt the knowledge or skill to on-the-job situations and has to occur in the work setting (Joyce & Showers, 1983). In fact, professional development programs should be designed with a clear recognition that a considerable amount of additional learning is necessary to achieve full transfer to the workplace.

Commitment. Administrative commitment and support is critical for successful professional development. The level of support from district administrators must be genuine and visible (Elam, Cramer, & Brodinsky, 1986). Lack of resources makes it difficult to successfully implement new programs and to improve teacher and administrator performance. The schools must have sufficient and appropriate resources (e.g., time, training, technical assistance, and supplemental funds) to carry out effective professional development.

Restructuring in Practice

The following examples include one state and two districts that have successfully changed their traditional governance structures.

Restructuring Education in the State of Kentucky

The state of Kentucky is implementing statewide systemic education reform. In April of 1990, the Kentucky Education Reform

Act (KERA) took effect. Spurred by inequities in school funding, the Kentucky Supreme Court abolished the state's public school system. The Kentucky General Assembly replaced it with one radically different in form and philosophy. The goal of the resulting change was nothing less than the complete transformation of Kentucky schools by 1996. This transformation included the Kentucky Department of Education which was reorganized into a professional service center to support education reform in local schools and districts. A Professional Standards Board was established to develop new standards for teacher training and certification.

The following initiatives are part of the state's campaign to help all children succeed in school:

- **School-Based Decision Making** empowers a council of three teachers, two parents, and the principal in each school to adopt policies based on what is best for the school's students. Councils make decisions about instructional materials, school staff, curriculum, extracurricular activities, and other issues.

- **Curriculum and Assessment** focus on linking knowledge and skills across the curriculum with students learning to use knowledge in real-world applications and assessing what students are able to do with what they have learned.

- **Technology** is being used to link 150,000 student workstations, 35,000 teacher workstations, 1,400 school management systems, 176 district administrative systems, higher education campuses, educational television, the state library system, and state agencies in a communications, instructional, and administrative network.

- **Regional Service Centers/Professional Development** make expertise and technical assistance more accessible to districts and schools.

- **Extended School Services** provide additional instruction and support before or after school, on Saturdays, or during the summer for students who are at risk of falling behind in school.

- **Pre/Primary** schools use a developmentally appropriate curriculum and related services to prepare students in at-

risk situations for learning. Preschool is available for all four-year-olds from low-income families and for three- and four-year-olds with disabilities. Primary schools place five- through eight-year-olds in multiage, multiability classrooms so they can learn and progress at their individual paces. Children are assessed on a continuous basis and advanced to fourth grade when they are ready.

- **Family Resource and Youth Service Centers** provide health, social, justice, and education services for students and families. Centers are located in or near schools in which at least 20% of the students qualify for free school meals.

Lake Washington School District

In 1991, the Lake Washington School District in Kirkland, Washington, reorganized its central office staff, building administrators, and support personnel into three regional teams and a support team (Scarr, 1992). The regional teams--each includes one high school and the schools that feed into it—focus on supporting the operations and restructuring efforts of their area schools. The support team provides services to the schools such as business, facilities, and personnel.

The teams engage people at all levels of the organization and include teachers, other staff, students, parents, and business people. In addition to the area teams, individual buildings operate as work teams. Building principals and their staffs develop processes and decision-making models to harness the creativity and participation of teachers and staff. Each area team is self-regulating and has developed its own organizational structure and processes including budget allocation, communications, and decision making. Each team is responsible for working with staff and the community to make changes in the schools' organizational structures so that all students will obtain the skills, knowledge, and attitudes they need to be successful.

Lake Washington Superintendent L. E. Scarr wrote that the compelling reason for making the radical departure from the traditional structure was that work teams transformed a narrow, compartmentalized system into one with broad perspectives. He pointed out that bureaucracies break work down into a series of discrete tasks, whereas educating students is a set of integrated steps and responsibilities. The system as a whole—kindergarten through twelfth grade and the entire curriculum– rather than fragmented segments has become the focus

of change efforts. Each team is responsible for every student until the student demonstrates the required skills, knowledge, and abilities.

Boulder Valley Public Schools

The 1990-91 school year began a time of transition for the Boulder Valley Public Schools. Shifts in organizational philosophy led to measures which strengthened the schools and focused resources on teaching and learning. Schools were expected to operate with appropriate self-direction and creativity in providing "an outstanding educational environment" to better meet the needs of students. The district organization was refocused to provide technical assistance and support for each school's efforts to create a successful learning environment that promotes student learning and ongoing teacher development. The role of central administration was changed from being prescriptive to being responsive to requests for assistance from schools and their staffs.

In restructuring their environments, school staff members asked themselves whether the daily environment that they were offering kids was actually producing learners. In order for schools to make the changes their staffs deemed appropriate, they were given significant responsibility for curriculum, staff development, and assessment decisions. Principals found, however, that this freedom was accompanied by new responsibilities, as well as some loss of decision-making power. Decision making in the schools was expanded to include teachers, students, parents, and community members. Some principals, as well as others who became part of decision-making teams, needed training to learn to work effectively in a collaborative way.

While the central administration has responsibility for assuring that consistently high goals are set and met throughout the district, schools are now making their own decisions about what and how to teach, how to prepare teachers to teach, and how to assess what students have learned. The creation of school-controlled budgets makes it possible for schools to implement these decisions. In fact, the transfer of decision-making power—along with the money to carry out the decisions—from central administration to schools was the first major step in Boulder Valley's restructuring process. The switch from central decision making to school-based decision making has given schools a measure of control over the teaching and learning offered in their buildings

Caveat

Multitudes of resources have been wasted on failed reforms that were mandated from state or district offices or implemented through federal or foundation funding. Efforts that should have been successful given the amount of thought, time, money, and energy invested in them have nevertheless failed for want of sufficient input from the community and from those at the level of implementation. Most school boards want results as soon as possible; most school administrators are not prepared to spend three to five years on the processes necessary for effective restructuring, yet this is what it takes. Those systems that have experienced success can attest to this.

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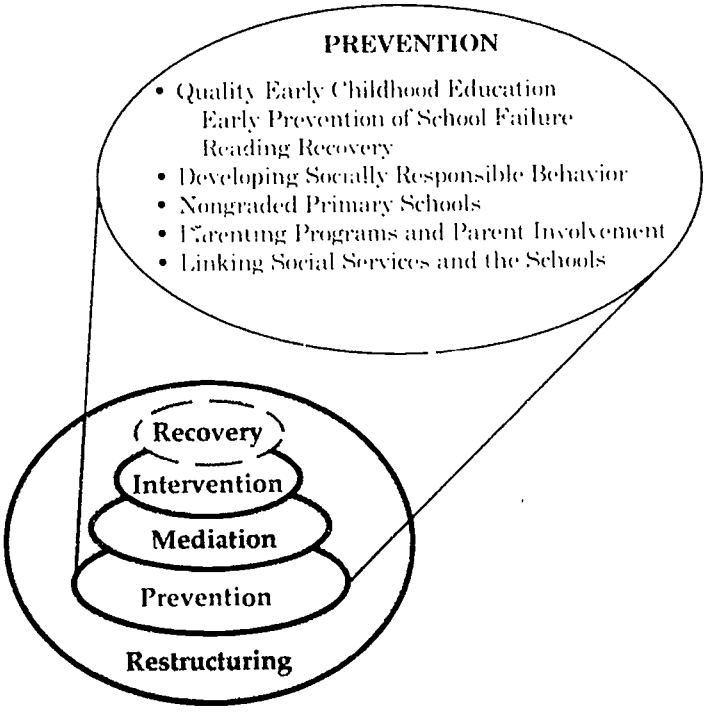
Chapter Three
Prevention Strategies

Prevention includes those actions taken which anticipate, forestall, or deal with cognitive, social, or personal problems before they irreparably impair a student's ability to perform successfully in school. Figure 4 identifies a number of prevention strategies that are proving to be effective with students in at-risk situations. The strategies are effective because they provide an enriched environment for these students—the type of environment that children from more affluent families are exposed to in their everyday lives at

Figure 4: Strategies for Prevention



home. Prevention strategies are designed to "level the playing field"—to help students in at-risk situations develop resiliency, to enter school ready to learn, to provide the skills necessary for school success, to assist parents in becoming involved in their children's education, to ensure physical and mental health, and to remove barriers to success within the early grades.

Resiliency

Resiliency is the ability to withstand, adjust to, or recover from risk, stress, or adverse environmental circumstances. Resiliency results from social supports which facilitate the development of psychological strengths and behavior-coping mechanisms that assist an individual in modifying his or her responses to critical risk situations. The degree of social support available to children can affect their learning. The strongest prevention measures are those which help children develop resiliency (Benard, 1991).

Social support is provided through the family, peers, the community, and the school. When these settings work together to nurture, protect, and set reasonable expectations for a child, the child develops resiliency to adversities. When social support is low in one setting, other settings need to compensate for that lack or provide assistance in rebuilding the support in the weakened area (Coleman, 1991).

Caring relationships increase resiliency in children. Resiliency is fostered in children by family relationships that are marked by warmth and cohesion. In families where there is continuous marital discord and the parents are unresponsive or abusive, the presence of some other caring adult provides social support. Resiliency can be fostered by the presence of a concerned teacher or mentor or the presence of an institutional structure, such as a caring agency or a church (Garmezy, 1991).

Effective schools foster resiliency by providing opportunities for students to develop caring relationships with both adults and other students. Effective, caring schools offer quality early childhood programs which identify and address problems before they become serious; they teach positive social behavior, assist parents in learning how to help their children, and they strengthen the social support network by linking with social service agencies to meet the needs of children from at-risk situations.

Quality Early Childhood Education

One of the most significant findings to emerge from research on dropouts is that early identification is vital to effective prevention. Although we tend to think of students dropping out during their last years of high school, many are lost long before that. Social and task-related behavioral problems that develop into school adjustment problems can be identified at the beginning of the elementary grades (Spivack, Marcus, & Swift, 1986). The dropout problem is not one that can be addressed exclusively at the middle or high school levels; by then it is too late for some students.

The earlier a problem is identified and addressed, the greater will be the impact on students in at-risk situations. The most effective way to reduce the number of children who will ultimately drop out is to provide the best possible classroom instruction from the beginning of their school experience. "Learning deficits easiest to remediate are those that never occur in the first place" (Slavin & Madden, 1989, p. 6). Studies of birth-to-three interventions demonstrate that IQ can be modified by changing a child's environment. Both child-centered and family-centered strategies often can make a lasting difference in IQ scores. These prevention strategies place infants and toddlers in stimulating, developmentally appropriate environments for part of each day. Family members are trained and given materials to help them stimulate their children's cognitive development, handle discipline and health problems, and develop vocational and home management skills (Slavin, Karweit, & Wasik, 1992/93).

Special education referrals and retention in grade are decreased by such early prevention strategies. It appears to take intensive efforts over a period of several years to produce lasting effects, but the fact that even the least intensive models produced strong immediate effects suggests that a combination of approaches within a comprehensive preventive program will have great promise in increasing children's cognitive functioning. Strategies that include birth-to-three, preschool, and kindergarten programs can ensure that children enter first grade with good language development, cognitive skills, and self-concepts regardless of their family background or personal characteristics (Slavin, Karweit, & Wasik, 1992/93).

Research has revealed that effective early schooling experiences include preventive health and nutrition components and involve parents as their children's first teachers. Children with prekindergar-

ten experience through programs such as Head Start had parents who were more involved in the children's school activities. Because of this influence on parental involvement, prekindergarten experience appears to have an indirect, positive effect on first grade academic achievement and on children's social adjustment (Taylor, 1991). In studies with matched control groups, more students who had early schooling experiences were employed at age 19, fewer were on welfare, and fewer were involved with the criminal justice system (The Conference Board, 1992).

In 1988 the Arizona Legislature initiated the Arizona At-Risk Pilot Project. This was a longitudinal evaluation study of 55 district- and school-based programs for students at risk of academic failure (Vandegrift, 1992). The study's focus was to identify what works for targeted at-risk students. The portion of the study investigating the 42 programs implemented at the K-3 level found that reduced student/staff ratios, full-day kindergartens, and tutorial programs consistently appeared to be effective. The study found a steady decrease in the number of children retained in the pilot sites, an increase in attendance, and gains in language and reading scores.

Longitudinal research from the Perry Preschool Study has followed a group of adults who participated as disadvantaged children in the Perry Project in the 1960s ("Updated Study Finds," 1993). The study found that 42% of the males who participated in the program made $2,000 or more per month at age 27 compared to only 6% of those in the control group who did not participate in the program. Eighty-four percent of the females who had participated in the preschool program had completed high school or higher compared to only 35% of the nonparticipants.

National Diffusion Network Programs

Begun in 1974, the National Diffusion Network is supported by the U. S. Department of Education to promote the transfer of successful programs from the development sites to schools throughout the country. Programs listed by the National Diffusion Network have been approved as "exemplary programs" after demonstrating their effectiveness at the original development site and proving the program can meet the educational needs of others in similar circumstances (National Diffusion Network, 1994). The following programs, Early Prevention of School Failure, and Reading Recovery, are NDN approved programs

Early Prevention of School Failure (EPSF). *Early Prevention of School Failure* has demonstrated that effective screening, conferencing, and teaching strategies can prevent academic failure. Through a series of assessment processes, EPSF identifies every child's developmental level in language, auditory, visual, and motor skills and learning styles. Students who are identified as having a developmental delay in one or more areas are provided direct instruction for approximately 15 to 20 minutes each school day. Fifty-two developmentally sequenced learning objectives form the basis for aligning teaching strategies and resources with the way children learn.

The project provides training and professional assistance to teachers to develop their competence in matching curriculum to levels of development. Training for school teams in implementing the project's components includes: (a) screening, (b) conferencing, c) educational follow-up, (d) parental involvement, and (e) evaluation. A computer program simplifies the conferencing process to provide teachers and parents with an individual student profile. In addition, the computer program groups children according to needs so teachers can plan appropriate instruction.

Studies on the effectiveness of EPSF indicate that the project has reached or surpassed expectations in all areas. High-risk students have recorded gains of 1.39 months to 3.12 months growth for each month in the program. An important finding is that gains made during Kindergarten persisted into subsequent years.

Reading Recovery. *Reading Recovery* is a one-to-one intervention strategy designed to enable the lowest achievers to make accelerated and continuous progress, to reduce reading failure, and to develop independent readers. The goal is to bring the least able readers in first grade to the average of their class. It is a specially designed set of interventions designed by Marie Clay, a New Zealand child psychologist who conducted the initial research and put together the procedures (Pinnell, 1990).

The program includes procedures for teaching children using recommended materials, a staff development program conducted by a specially trained teacher leader, and a set of administrative systems that work together to assure continued quality (Pinnell, 1990). The teacher leader prepares through a yearlong course. He or she, in turn, conducts staff development for the teachers in the school.

A Reading Recovery teacher develops lessons tailored to each child's needs and spends 30 minutes a day with each student. This session complements the regular reading program in the classroom. Techniques include diagnosing the child's specific weaknesses, the reading of many short books to build confidence, daily writing, the re-reading of favorite "little" books, and learning to hear sounds in words by writing simple stories. Reading Recovery focuses on providing opportunities for children to understand the link between reading and writing and to discover meaning.

Studies have shown that first grade children improved their reading and writing ability after an average of 16.4 weeks. Eighty-six percent of the children reached average levels of achievement for their class in reading. Follow-up studies indicate that children released from the program continued to make progress and to read with the average of their class through second, third, and fourth grades without additional help.

Studies from New Zealand and those done by The Ohio State University (Pinnell, 1990) provide convincing evidence that Reading Recovery has both immediate and long-term effects. The immediate effects are substantial and consistent across hundreds of studies conducted with different curricular approaches, with teachers of varying backgrounds and training, and with children from different socioeconomic and ethnic groups. Although one-on-one instruction is expensive, districts would be well advised to invest in this effective program.

Developing Socially Responsible Behavior

One consistent finding of the effective schools research was that a safe and orderly school climate is one of the requirements for successful learning to take place. Students are expected to behave in socially responsible ways while they are in school, and chaos reigns in schools where students do not behave. Although every school has certain expectations for behavior, most schools fail to systematically teach social and behavioral skills to students who come to school from environments where such things are not taught. Yet, students need to learn and practice these behaviors just as they learn and practice academic knowledge and skills. Businesses are having to train new employees such social skills as punctuality and personal appearance because many students do not learn these in either their homes or schools (Huelskamp, 1993).

There is a significant relationship between behavior in early grades and later success in school. Predictions of academic achievement have been as reliable when using socioemotional variables as when using intellectual ability (Horn & Packard, 1985). In a longitudinal study of inner-city school children, Spivack and Cianci (1987) found that behavior ratings in kindergarten through third grade such as "classroom disturbance," "disrespect-defiance," and "irrelevant responsiveness" were related to misconduct in the classroom at ages 14 and 15, school disciplinary measures, and police contacts by age 17. Parker and Asher (1987) concluded that antisocial and aggressive behavior in the early grades is a strong predictor of dropping out in high school, perhaps because students who do not behave responsibly receive less one-on-one instruction from teachers and are often rejected by peers (Wentzel, 1991).

Although most children learn classroom rules and norms quite easily, many children from at-risk situations have difficulty understanding what the rules are and how to behave appropriately. Each child enters school with a set of social behaviors, culturally derived expectations, and a system of communication skills. With some children, these behavioral characteristics provide a "good fit" with the demands of the classroom, with others they do not (Taylor, 1991). Often, children have problems meeting the behavior expectations of the school because they have learned to behave and respond to authority differently in their homes (Wentzel, 1991).

Wynn (1992) has pointed out that the undisciplined student is lacking one of the key skills needed for setting, focusing on, and achieving goals. Establishing a disciplined environment and teaching children self-discipline requires expanding our understanding of the cultures from which these children come. The goal of discipline is not to control children or "make them behave," but to encourage them to think and establish a proper foundation of courtesy, pride, dignity, and code of conduct. Wynn cautioned, however, that teachers must not view cultural differences as "disadvantages." Discussing African-American males in particular, Wynn pointed out that teachers and parents need to understand the concept of "Situational Appropriateness."

This concept underscores the idea that the "appropriateness" of behavior related to survival within the larger society should not displace the "appropriateness" of African-American culture as it relates to survival within the African-American community. While certain ways of talking, dressing, and behaving are appropriate for success in school

and business, the culture of many black children's neighborhoods and their bonding in the African-American community require different behaviors. Both forms of behavior are "appropriate" in different situations.

There is a certain amount of tacit knowledge that is neither taught nor made explicit by teachers but is necessary for students to do well in the school environment. This is knowledge that most children learn at home, but that many poor children or children from different cultural backgrounds may not have learned before entering school. Along with such things as talking quietly, sharing, taking turns, and not fighting, teachers expect students to know how to allocate their time doing homework, how to prepare papers, how to study for tests, and how to talk (or not talk) to a teacher (Sternberg, Okagaki, & Jackson, 1990). Students whose behavior is at odds with classroom social norms often develop patterns of school failure (Taylor, 1991). Students who cannot meet the implicit expectations of teachers often suffer year after year of poor school performance without knowing exactly what is wrong. For this reason, the development of socially responsible behaviors should be as much a part of the elementary curriculum as academic competence.

Charney and Clayton (1994), founders of the Northeast Foundation for Children and publishers of *The Responsive Classroom*, a newsletter for teachers, argue that the first six weeks of school are critical to the success of students for the entire year. They believe that the focus of instruction for the first six weeks of school should be on the social and ethical behavior of children, classroom management, and building group cohesiveness and caring. Their "responsive classroom" uses respectful and proactive ways to teach children expectations for behavior and how to care for themselves, others, and their materials. In this type of classroom, children develop the skills necessary to be independent and motivated learners. The goals and expectations of a responsive classroom for the first six weeks of school are listed below:

1. Build a solid foundation of trust and warmth between the teacher and children and among the children.

2. Give children many opportunities to model, role play, and practice expected behaviors in order to be successful.

3. Create an environment where it is safe to take risks, make mistakes, and work to fix mistakes.

4. Nurture and extend each child's sense of belonging to a group, of being an important contributor to the group.

5. Nurture each child's ability to exercise independence and responsibility in work, care for materials, and care for others.

6. Excite and motivate children to the potentials of learning in the classroom environment.

A responsive classroom involves children in the social processes of the classroom in such a way that they feel an ownership and sense of responsibility for the management and ethical behavior that is established. When classroom management is taught, children are given the opportunity to take an active role in finding solutions to behavior problems (Charney & Clayton, 1994).

Nongraded Primary Schools

In recent years, practitioners have been searching for alternatives to the choices of retention in grade or social promotion. The negative effects of retention have been documented by Shepard and Smith (1989), and arguments for both students' rights to quality education and the system's need for accountability reject the tactic of social promotion. A number of districts are resurrecting a practice tried in the 1950s -- continuous progress, nongraded primary schools. Nongraded levels and continuous progress schools are based on the philosophy that children develop at differing rates. Such schools offer flexible groupings that encompass a two- to four-year range in age, allowing movement between levels as pupils are ready to advance. An important component of today's implementation of the concept, however, is the use of developmentally appropriate strategies which allow young children to develop skills at their own pace (Gutierrez & Slavin, 1992).

One of the rationales for nongraded primary schools is that students are allowed to spend as much time as they need, without the stigma of failure and retention, to reach the level of achievement required to advance. Interestingly, in one of the few studies undertaken on this topic, McLoughlin (1970) compared students in graded and nongraded primary programs in eight New York State school districts and found that students in the nongraded schools progressed at the same or somewhat faster rate than did those in the graded schools. One hypothesis presented to explain this is that in a flexible, nongraded program, students who might otherwise fall behind

are identified and given the assistance they need to catch up to their peers. The nongraded program offers a way to use time and resources more flexibly to provide the extra help students might need (Gutierrez & Slavin, 1992).

Parenting Programs and Parent Involvement

Research consistently finds that parent involvement has a direct, positive effect on children's achievement. Today's fervent call for parents to become more involved in their children's education both at home and at school is not new. For decades, federal programs such as Head Start, Follow Through, Chapter One/Title One, and Special Education have mandated that parents be closely involved (Williams & Saavedra, 1993). In addition, hundreds of schools and thousands of teachers are successfully involving the families of students who are not in federally funded programs.

Many schools and teachers, however, have not made significant progress in reaching out to families. While some parents are informed about some things some of the time by some teachers in some schools, most families still feel "lucky" to be informed about or asked to participate in activities with their children (Epstein, 1991). Often schools and communities do not fully understand the problems parents encounter and the importance of reaching out to them in order to build the kind of relationships that engage parents as true, active partners early in their children's education (Williams & Saavedra, 1993).

Schools and school systems which are successfully involving parents began by responding to the qualities, characteristics, and needs of the parents in order to overcome the barriers which interfere with communication. These barriers include parents' level of literacy; language preferred for reading, listening, speaking, and writing; daily commitments and responsibilities that may affect the time, energy, and attention available to devote to school; and parents' level of comfort in becoming involved in their children's education.

Any parent may be hard to reach on occasion, therefore it is not possible to design a single method of communication that will reach all parents every time. However, the following tips, from Push Literacy Action Now of Washington, DC, may help educators develop better written information for parents (D'Angelo & Adler, 1991):

- Keep sentences short.
- Keep paragraphs short.

- Use easy words.
- Get to the point.
- Write things in logical order.
- Be definite.
- Be direct. Speak to each reader.
- Use the active voice. Put the subject at the beginning of the sentence.
- Use pictures and subheads.
- For easy reading, use at least 12-point type.
- Know your audience.
- Write as you would talk, and write to express—not *im*press.
- Write and rewrite.

As important as communication is, it is important for parent involvement programs to move from activities that merely focus on informing parents about school programs to activities that offer parents opportunities for broader levels of involvement. Head Start has been especially successful in enlisting families as partners in the education of preschoolers. Even Start—a two-generational program that links the education of underachieving parents with the education of their children (ages 1 through 7)—has been implemented to increase the literacy skills of parents so that their children can succeed in school. Through Even Start, parents are helped to improve the preschool activities of their children and to understand their role in their children's education (Epstein, 1991).

The Minnesota Department of Education's Early Childhood Family Education Program (ECFE) offers parents various involvement opportunities through centers based in housing projects, low-income apartments, store fronts, and elementary schools. Each center has a parent advisory board which is involved in deciding program content as well as fund-raising strategies. Regular parent group meetings include parent-guided discussions about topics that range from educational concerns to nutrition, child and spouse abuse, chemical addictions, child development, and discipline. ECFE also employs parents as classroom and community aides (Williams & Saavedra, 1993).

RAIN Makers at the Fienberg-Fisher Elementary School in Miami Beach, Florida, began as an initiative to integrate services with schools and to train parents in shaping and directing the provision of such services. Small groups of parents met to discuss the services they most needed. As a result of the interaction among these groups, which are in a primarily Hispanic and heavily immigrant community, the parents

and staff established the Referral And Information Network (RAIN) program. Through RAIN Makers, parents now participate in sessions on interviewing techniques, accessing community resources, and developing outreach strategies (Williams & Saavedra, 1993).

To be ready for school, children must live in an environment where language and behavior standards promote learning. Many children, however, come from situations where parents do not read to them and sometimes do not even talk to them. HIPPY (Home Instruction Program for Preschool Youngsters) is a two-year program designed to enrich the lives of four- and five-year-old disadvantaged, preschool children. It is a home based program, developed on the premise that parents are the key to their children's successful learning. Role-playing is used to help parents with limited reading skills learn to teach their children. By bringing 18 story books into the home, HIPPY makes reading one of many activities parents and children do together (Duckenfield, 1993).

Parents are trained by a paraprofessional from the same community who also has a four-year-old in HIPPY. The paraprofessional visits the home every other week. Parents are required to work with their children for 15 minutes a day, five days a week, 30 weeks in a year for the two-year period. The second year coincides with the child's kindergarten year. Materials for the program are carefully designed to develop language, discrimination skills, and problem solving. Twice each month the parents gather for group meetings. They work with the paraprofessionals to learn the next week's lesson. All HIPPY programs in the United States are affiliated with and receive training and technical assistance through HIPPY USA.

HIPPY was developed in Israel and is presently being implemented in more than seventeen states in the United States and in five other countries. The evidence suggests that the program is highly successful. Results from Israel indicate that HIPPY benefits disadvantaged children by improving academic achievement and adjustment to school, reducing the incidence of retention in grade, and increasing the rate of school completion. In one Arkansas district, tests administered before the program began in the fall of 1986 showed only 6% of the children who entered the HIPPY program tested average, and none tested above average. In the spring of 1988, 74% of the children in the second year of the program tested average or above (Duckenfield, 1993).

Avance, a program begun in 1973 in San Antonio, Texas, teaches parents the fundamentals of caring for their children—child growth and development, health, nutrition, cleanliness, and patience. It also develops self-esteem, helping poor women to achieve their dreams. Women are encouraged to complete the requirements for high school graduation and to seek additional education. Sixty percent of the mothers who started the program went on to complete the requirements for a GED ("Avance," 1994).

Avance operates 46 centers in San Antonio, Houston, and the Rio Grande Valley, primarily for Mexican-American families, but increasingly, also serving African-American families. Typically, the mothers meet for three-hour sessions at centers in housing projects or schools. Young children attend with their mothers. Parents are taught how to read to their children and how to make toys to play with their children. For parents who were never played with when they were children, learning how to play with their own children has positive results. In addition, working in a group with other women reduces the isolation and provides opportunities to get to know neighbors, discuss problems, and develop a sense of community. Mothers with limited English proficiency are taught English-as-a-Second-Language. The course lasts from September to May and ends with a formal graduation ceremony for mothers and children. Fathers are encouraged to participate in special meetings held in the evenings.

One father of eleven children was studying for the GED and said he hoped to make it to college. An Avance center manager recalled that sixteen years ago she was a client of the center. She studied for and received her high school diploma and then went on to college, majoring in child development. "Avance told me to dream," she said, "and everything I dreamed for came true for me and my children."

Linking Social Services and the Schools

Many crucial influences on the education of at-risk children are outside the school's orbit. Schools alone cannot handle the problems of students who come from at-risk circumstances. The effects of economic hardship, frequent school transfers, low parental involvement, nutrition and health problems, and the lack of fit between many low-income families and the schools mean that "the daily struggle for survival takes precedence over all other concerns" (Slaughter & Epps, 1987). To make a real difference in the lives of children with multiple needs and

dysfunctional families, educators must form an alliance with community and social service agencies. Comprehensive, family-based programs that attend to children's social, physical, and emotional development over time are essential to ensure proper cognitive development (Reynolds, 1992).

Children and families at risk have a variety of immediate health, education, and social service needs that no single agency can address effectively. *Case management* is a strategy that cuts across several human service systems to ensure clients receive the services, treatment, care, and opportunities available to them. There are a number of different approaches which use a case management strategy such as school-based integrated services, school-linked services, and full-service schools (Smith, 1995).

Programs that successfully link education, health, and human services tend to have some of the following characteristics: (a) comprehensive menu of services, (b) shared governance, (c) collaborative funding, and (d) organizational models that reflect the needs of the communities they serve (McLaughlin & Smrekar, 1989; Schorr, 1989). Some schools have become hubs for integrated social services, including health care, child care, children's protective services, juvenile justice counseling, and parent education. While grouping a number of services in one place makes it easier to use all of them, schools may not always be as appropriate a hub in some instances as child care centers, churches, or other institutions (Kirst, 1991).

Common qualities of programs that successfully coordinate services among education, social services, and health are (Schorr, 1989):

- They seek to meet the needs of a child through comprehensive service delivery.
- They treat a child as a member of a family, and the family as a member of a community so that a family unit, rather than a group of individuals, is served.
- They give program staff the time, training, and skills to build sustained, trusting relationships with children, families, and communities.

The flexibility necessary to deliver comprehensive services is often limited by policies that regulate the governance and funding of schools and other agencies. Creating such flexibility demands mechanisms

that span political and organizational boundaries (Schorr, 1989). State government has a major role in funding local planning and in providing start-up capital for integrated efforts. State jurisdictions should be merged and new state mechanisms created for governing health services, social services, juvenile justice, education, and other areas. For example, California has passed a bill creating a State Interagency Children's Services Coordinating Board composed of a director (whom the governor appoints), the chief state school officer, the attorney general, the secretary of health and welfare, and the directors of social services, the youth authority, and the departments of mental health, alcohol and drugs, and criminal justice. The legislation encourages counties to create interagency councils to coordinate children's services (Kirst, 1991).

Following the 1989 Kentucky Supreme Court ruling that declared the Kentucky school system unconstitutional, the Kentucky Legislature passed the Education Reform Act. One of the major strategies of the act is to "remove impediments to learning." To that end, Family Resource and Youth Service Centers have been funded to enable schools to link students and their families to social and health service agencies and other community resources ("Building a sense of community," 1992).

A university-based case management program is housed at the Center for the Study and Teaching of At-Risk Students (C-STARS) (Smith, 1995). C-STARS channels the interdisciplinary training, research, and technical assistance resources of the Colleges of Education of the University of Washington and Washington State University in support of K-12 schools. The Center links schools with health and social service agencies and assists in coordinating their respective services to students at risk of dropping out of school and their families. C-STARS has sponsored demonstration projects in Idaho, Alaska, and throughout Washington state.

For the past eight years, C-STARS has been developing, demonstrating, and evaluating a set of guidelines for school-based interprofessional case management. Interventions are designed to maximize opportunities for students at risk and their families to receive a variety of human services in a supportive, efficient, and coordinated manner through a "school-based" (on-site) or "school-linked" (off-site) setting, or a combination of both (Smith, 1995).

These guidelines identify seven functions that operate under the supervision of a case manager working with a team of educa-

tors, social workers, and health service professionals in partnership with the families of students referred to the case management team. The seven functions are (1) assessment, (2) development of a coordinated and integrated service plan, (3) brokering of community services via community service networking, (4) service implementation and coordination, (5) advocacy, (6) monitoring and evaluation, and (7) mentoring (Smith, 1995).

Typically, communities initiating a case management approach identify an existing staff member to serve as the team leader or "case manager." In some communities, this individual is hired by the school district to serve this role. Existing school personnel who assume new case manager roles are most frequently school counselors and school nurses. In some of the demonstration school-communities, social workers and health service professionals have been located in schools to serve on case management teams with educators (Smith, 1995).

Collaborative partnerships are springing up across the country which link home, school, and community partners to better address the complex needs of at-risk children and their families. The partnerships focus on parents and include school staff, health/human service agencies, businesses, churches, and other organizations which work interdependently to plan, implement, monitor, and assess comprehensive services to students and their families (Williams & Saavedra, 1993).

The Schools of the Future in Houston, Texas, modeled after James Comer's New Haven Schools Project, is a program that promotes active involvement of parents and community leaders in determining and delivering health and social services to at-risk children. The program is housed at a middle school which is in partnership with two elementary schools that feed into it to serve as neighborhood centers for the community. Parents serve as resources for the school and are advocates for the large number of monolingual Spanish-speaking families in the neighborhood. The program's goal is to improve outcomes by matching resources and services with student and family needs, and because the focus is on the family, parents take more active roles in working with school and community service deliverers (Williams & Saavedra, 1993).

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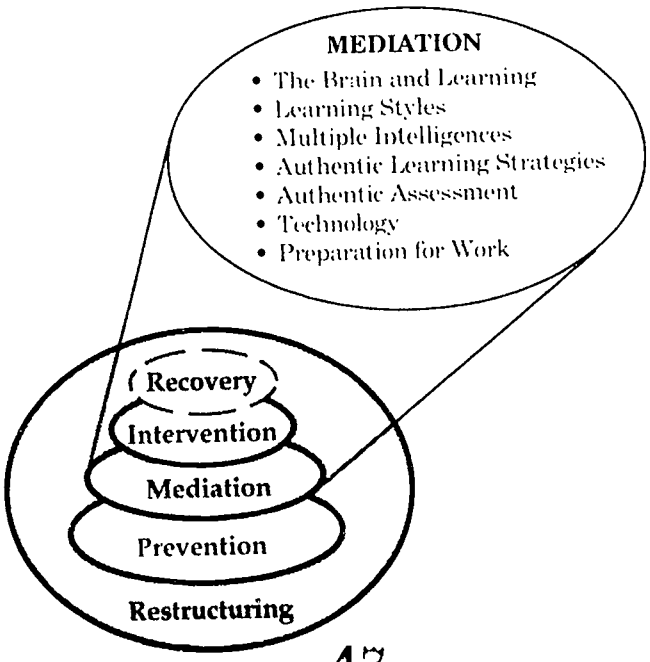
Chapter Four
Mediation Strategies

Mediation is the process of ensuring that all students acquire—the first time around—the skills they need to function effectively both in school and in the world outside of school. In other words, *mediation* ensures that *remediation* will not be necessary. This is accomplished by establishing hospitable educational environments in which students feel supported and cared for, where failure is seen as just one step on the road to learning, and where the needs of the students govern decisions made, not just at the classroom level, but also at the school and district level. Figure 5 lists the mediation strategies discussed in this chapter.

Figure 5: Mediation Strategies



Creating Learner-Centered Schools

Darling-Hammond (1994) asserted that schools need to focus on learners' needs, reach every student, look at learning more holistically, and be more flexible about learning styles. She suggested this can be done by creating learner-centered schools organized to build on what is known about teaching, learning, curriculum, and human development.

Mediation strategies are those that ensure a learner-centered environment in the school. In learner-centered schools, authentic work is the foundation of instruction. Curiosity, creativity, and higher order thinking are stimulated by relevant, authentic learning tasks of optimal difficulty and novelty for each student (American Psychological Association, 1993). Students, especially those from at-risk environments, flourish with instructional strategies that engage them in learning—that involve learning by doing, active applications of facts and skills, and working with other students.

Engagement

The concept of engagement describes an individual's willingness to invest personal resources such as talent, energy, enthusiasm, time, or effort in an activity or relationship. Individuals invest their personal resources in activities that they perceive as having value and meaning; as possible options for them; and as preserving or enhancing their self-concept.

Engagement in learning is facilitated when the student is pursuing personally meaningful goals and when the learning is active, volitional, and internally mediated (American Psychological Association, 1993). Motivation is a matter of choice. Students who appear "lazy" or "unmotivated" in one situation often exhibit energy and enthusiasm (motivation) in another situation (Maehr, 1984). In such cases, the question is, What is it about the setting that either elicits or suppresses the desire to invest personal effort? Individual motivation and will to learn are strongly affected by conditions external to the individual. If the primary conditions required for intrinsic motivation and self-regulation of learning are not present, schools will actually work *against* helping learners. In learner-centered schools, teachers act as facilitators of learning and create the conditions that motivate student engagement.

Teachers as Facilitators of Learning

Learner-centered schools view teachers as facilitators of learning. Teachers provide students with active learning environments and experiences which are relevant to life outside the classroom. The teacher as the facilitator of learning is responsible for providing students with schoolwork that has the following qualities (Schlechty, 1990):

1. Students can do what they are expected to do.

2. Students are motivated to do what is expected by the nature of the assigned work.

3. Students persist with the task when they do not meet with immediate success.

4. Students find sufficient satisfaction in the work or in the consequences of doing the work that they are motivated to pursue similar work in the future.

5. The cumulative effect is that students learn things that are valued by society at large, by the community, by parents, by teachers, and by the students.

The basic assumption underlying Schlechty's vision of teacher as facilitator of learning is that students are the workers in the classroom, and teachers as managers of that work provide students with the raw materials of learning. Just as production workers cannot produce Rolls Royces with Hundai parts, students must be given high-quality raw materials if they are expected to produce high-quality work. In addition, the conditions under which students are expected to work should be conducive to high-quality work. The fact that approximately 20% of our students are capable of turning shoddy raw materials into fairly high-quality work should not mask the fact that 80% of our students struggle to produce much poorer work. The truth is that the families of the 20% are providing much of the raw material not available in the schools.

How can teachers become facilitators of learning? How can they provide the kind of high-quality work advocated by Schlechty in order to engage students? An important first step is basing instructional strategies and curricular designs on research on how the brain works.

The Brain and Learning

To understand why so many of our curricular and instructional strategies fail to reach students with different modes of learning, it is necessary to understand how the brain functions. A very clear and easy-to-read explanation can be found in the Association for Supervision and Curriculum Development (ASCD) publication, *Making Connections: Teaching and the Human Brain*, by Renate Nummela Caine and Geoffrey Caine (1991).

According to the Caines, the brain controls all of human physiological, psychological, and cognitive activity and has an unlimited capacity for learning. Researchers have accumulated a substantial amount of data indicating that the brain will grow physiologically if stimulated through interaction with the environment. The physical structure of the brain actually changes as the result of experience. The evidence for such changes supports many of the hypotheses about the effects of the environment on the young and the elderly, the effects of sex differences, and the effects of nutritional and psychological deprivation, abuse, isolation, and overcrowding.

Among the models used to explain how the brain works, the Caines offer one by Paul MacLean, the "triune brain theory." MacLean (1978) identified three layers of the brain which were established successively in response to changing environmental needs—the reptilian system or R-Complex, the limbic system, and the neocortex. Each has a separate function, but all three layers interact.

The reptilian brain (or R-complex), the first layer to develop, consists largely of the brain stem. Its purpose is closely related to actual physical survival and overall maintenance of the body. Digestion, reproduction, circulation, breathing, and the execution of the "fight or flight" response in stress are all primarily located in this system. The overriding characteristics of R-complex behaviors are that they are automatic, have a ritualistic quality, and are highly resistant to change.

The limbic system, the second layer to develop, houses the primary centers of emotion. It includes the amygdala, which is important to the association of events with emotion, and the hippocampus, which is the critical part of the brain dealing with locale and contextual memories. Because the limbic system is capable of combining messages from our inner and outer experiences, it serves to inhibit the R-complex and its preference for ritualistic, habitual ways of responding.

The neocortex, the last layer to develop, constitutes five-sixths of the human brain. It is the outer portion of the brain which is approximately the size of a newspaper page crumpled together. The neocortex makes language, including speech and writing, possible. In that sense, it is different from the other two "brains." Much of the processing of sensory data occurs in the neocortex. It renders logical and formal operational thinking possible and allows us to plan for the future. Its capacities are at the heart of science and art.

All three layers of the brain interact—concepts, emotions, and behaviors are not separate; they influence and shape each other. Emotions give a sense of reality to what we do and think and are integral to learning. Memory is impossible without emotion of some kind; emotion energizes memory. To teach someone any subject adequately, the subject must be embedded in all the elements that give it meaning, and there must be a way for individuals to relate to the subject in terms of what is personally important to them. When we ignore the emotional components of any subject we teach, we actually reduce meaning.

Downshifting

It is important to understand the functions of these three layers of the brain in order to understand student learning. Evidence from different fields strongly suggests that some types of learning are positively affected by relaxation and challenge but inhibited by perceived threat. For example, perceptual psychologists have long been aware of the "narrowing of the perceptual field," which occurs when an individual perceives an experience as threatening. Leslie Hart (1983) called such perceptual narrowing "downshifting."

"Downshifting" occurs, in terms of the triune brain, because threat causes the brain to literally shift down from the neocortex into the older, more automatic limbic system and reptilian complex. Students are less able to access all that they know or to see what is really "there." The ability to take into consideration subtle environmental and internal cues is reduced. When downshifted, students seem less able to engage in complex intellectual tasks—those requiring creativity and the ability to engage in open-ended thinking and questioning. Indeed, much behavior and thinking become phobic in the sense that stimuli perceived as threatening trigger instant, potentially inappropriate, and usually exaggerated responses.

What is a threat? A threat is anything that suggests impending danger or triggers a sense of helplessness and will vary from person to person. In practice, many of the demands schools impose on students, ranging from placing unreasonable time limits on learning and restraints on individual thinking, to excessive competition and motivation by means of shame and guilt, will cause all but the most resilient students to downshift. In fact, the Caines suggest that most schools maintain most students in a downshifted state most of the time, which prevents them from engaging in the complex learning that educators supposedly wish to encourage.

Downshifting appears to affect many higher-order cognitive functions of the brain and prevents students from learning and generating solutions for new problems. It also appears to reduce students' ability to see the interconnectedness or interrelationships required by thematic or ecological thought processes. The more threatened and helpless students feel, the more likely they are to display behavior characterized as "reptilian." Students might have trouble grasping, or be unwilling to explore, patterns that conflict with what they already know, that require them to think in totally new and therefore potentially threatening ways, that involve the delay of gratification, and restrict the implementation of ritualistic behaviors that currently give their lives meaning.

Taxon and Spatial/Locale Memory

Research confirms that the brain has an infinite capacity to make connections, that multiple, complex, and concrete experiences are essential for meaningful learning. Every experience is incorporated into the brain, which links what is being learned from a current event to the learner's past knowledge.

When we compare memorizing a list of words with recalling facts about our meal last night, we notice a fundamental difference between the two tasks. Recalling the list will usually require repetition and some concerted effort at memorizing. The second task, recalling dinner, on the other hand, is easy. The point being: there are different ways of dealing with new information. Education that focuses on memorization disregards the immense "natural memory" that everyone has for the events of life. The key to enhancing learning is to find out how to have the two processes working together most effectively.

Memorizing isolated facts or lists is based on a **taxon memory system**. Such systems consist of items that do not depend on a specific physical context. They include prototypes or categories that represent a generic item, such as bird or house or dog; the contents of categories, such as types of trees and cars; and routines and procedures, such as driving. The most pervasive characteristic of these systems is that taxon memories must be rehearsed. Taxon learning is linked to extrinsic motivation and is powerfully motivated by external reward and punishment. Applying what has been learned in new and complex contexts is not automatic. Transfer of knowledge stored in taxon systems does not occur easily. Items in taxon systems are relatively isolated and are not initially meaningful.

A second type of memory is associated with locations and interconnected events—**the spatial/locale memory system**. Everything that happens to us happens in space. The brain is constantly creating and testing spatial maps that provide information about our surroundings. It automatically forms long-term memories of events and places without any deliberate attempt to memorize them. Its capacity is virtually unlimited.

Locale memories exist in relationship to where we are in space, as well as what we are doing. There is always a complex set of relationships among all these items. Initial maps tend to form very quickly. We update our maps on a continuous basis. Map formation is motivated by novelty, curiosity, and expectation. The dominant motivation is intrinsic. We seek to make sense of what happens in our world. Locale or spatial memory is enhanced through sensory acuity—enhanced awareness of smell, taste, touch, sound, and so on. Although maps for specific places are relatively instant, some large, intricate maps may take a considerable amount of time to be formed. They are the consequences of many experiences that only gradually come together.

Meaning for Educators

Investigations into the ways people learn have led many cognitive researchers to adopt a "constructivist paradigm." This paradigm views human beings as "constructors of meaning." Meaning is constructed through social interaction, is defined through the lens of one's culture, and is linked to past experience in an attempt to make sense out of new information (Caine & Caine, 1991; Nicolopoulou, 1993; Resnick & Klopfer, 1989). Constructions are extensively shared through the development of cultural norms and values. Individuals are socialized

to behave in certain ways, to hold certain values and beliefs, and to operate according to certain paradigms.

The assumptions, perspectives, and insights that individuals derive from their experiences in their home and community cultures are used as screens to view and interpret the knowledge and experiences that they encounter in school and within the larger society (Banks, 1993). Individuals link new information with existing knowledge in uniquely meaningful ways. Personal beliefs, thoughts, and understandings resulting from prior learning and interpretations become the individual's basis for constructing reality and interpreting life experiences (American Psychological Association, 1993).

Students' constructions of reality and their ability to deal with and instantly remember daily life experiences and to search for meaning in those experiences is ignored by educators who believe that for learning to take place, students must memorize isolated facts and repeatedly practice specific skills. In too many schools, literature, mathematics, history, and science are presented as separate disciplines; reading and writing are taught divorced from meaning and purpose; and what happens in the classroom is unrelated to the life of the learner.

Instruction and curriculum should be based on students' ability to construct meaning according to the brain's rules for learning. Designing active, authentic learning requires orchestrating lifelike, enriching, and appropriate experiences for learners. The primary task of educators is to expand the quantity and quality of ways in which a learner is exposed to content and context by presenting the various disciplines so they relate to each other and share common information that the brain can recognize and organize. It is in the recognition and use of the power of our spatial/locale memory—placing information in context—in constructing meaning that we begin to understand the complex forms of instruction that are needed to upgrade education.

Mediation strategies based on research on how the brain works will enhance students' engagement in learning. The next sections will discuss the following effective mediation strategies: (a) learning styles, (b) multiple intelligences, (c) authentic learning, (d) authentic assessment, (e) technology, and (f) preparing students for the workplace.

Learning Styles

"All students can learn. All students learn in different ways" (AASA, 1991, p. 1).

Attention to students' learning styles is essential for ensuring that all students are included in the learning process and have the support to master challenging academic work. Educators often pay lip service to diversity in learning, but when it comes to district regulations or classroom practices, they ignore it. Curriculum and textbooks are selected as if every student learned in the same way, classes are scheduled with little regard for the time of day when students function best, and classrooms are designed for direct teaching with little room for variation. Teachers and school administrators often argue that it is impractical to take students' personalities, cultural backgrounds, or learning styles into consideration when planning instruction. When all students are expected to flourish within the rigid confines of traditional classrooms, however, a quarter of our student population "falls through the cracks" (AASA, 1991).

Models of Learning Styles

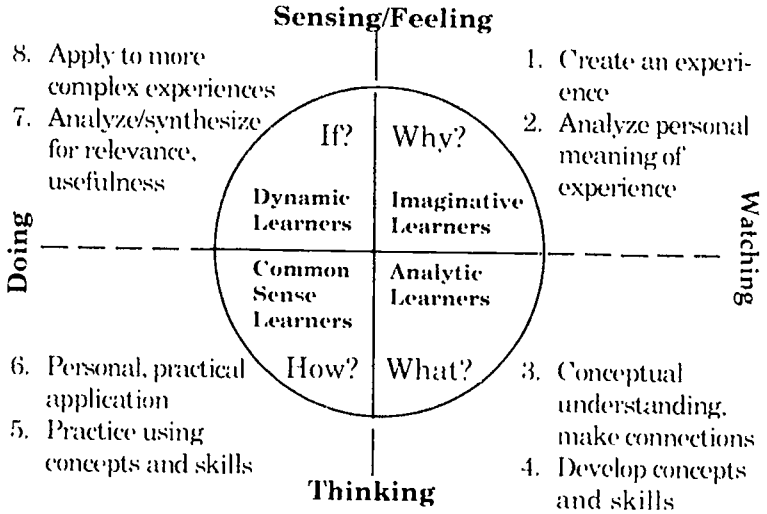
Different people often react in different ways to the same situation whether that situation is getting caught in a traffic jam, having to wait in line, or learning that someone loved is dying. These different reactions reflect characteristic ways of perceiving the world, processing and organizing the information received, expressing emotions, and behaving. Learning styles have to do with how individuals acquire information, how they organize it in their minds to make sense of it, and how they use it in their daily lives. Regardless of whether this is the result of brain differences, intellectual differences, cultural differences, or psychological differences, there are a number of approaches to identifying and applying the concepts of learning styles.

Perceptual Differences: One approach is to enhance personal awareness and provide tools for understanding what kinds of differences might exist within any group of individuals. The *Gregorc Style Delineator*, for example, is designed as a self-analysis tool (Gregorc, 1982). It is based on the theory that the human mind mediates interaction with the environment through perceptual and ordering abilities. Perceptual ability is the means through which individuals receive information, and varies on the qualities of "abstractness" and

"concreteness." Ordering ability is the way in which individuals arrange, systematize, reference, and dispose of information, and varies on the qualities of "sequence" and "randomness." The *Myers-Briggs Type Indicator* and the *Keirsey Temperament Sorter* are also examples of this type of approach.

4MAT System: A second approach looks at learning style theory as a means for diversifying curriculum and instruction rather than a tool for identifying individual characteristics. Figure 6 below illustrates the four-quadrant model Bernice McCarthy (1990) developed called the 4MAT System. The 4MAT System is an eight-step cycle of instruction, to help teachers organize their teaching based on differences in the way students learn. Based on theories of Kolb, Jung, Piaget, Rico, and others, the 4MAT System has two major premises: (a) people have major learning styles and hemispheric processing preferences, and (b) a systematic instructional framework which teaches to these preferences can improve learning. The preferences are based on how people perceive and how they process information.

Figure 6: Eight-Step 4MAT System of Instruction



Learning Styles Model: A third approach is diagnostic/prescriptive, based on identifying individual learning styles and matching the physical environment and instructional strategies, as much as possible, to those styles. The Learning Styles Model used by Dunn and Dunn

and Carbo is an example of this third approach. Supported by the results of more than 20 research studies, Rita Dunn, director of the Center for the Study of Learning and Teaching Styles at St. John's University in Jamaica New York, Kenneth Dunn, professor at Queens College, Flushing, New York; Marie Carbo, who has specialized in students' reading styles; and other faculty and doctoral students at St. John's University have promoted the importance of responding to students' individual learning styles in order to improve achievement and behavior (AASA, 1991).

Learning styles consist of "a biologically and developmentally imposed set of personal characteristics that make the same teaching method effective for some and ineffective for others" (Dunn, Dunn, & Price, 1989). The research investigated physiological, sociological, and environmental factors related to learning styles. For example, Dunn's research findings suggest that four elements affect from 10% to 40% of students (depending on age, gender, hemisphericity and achievement)—quiet versus sound, bright or soft lighting, warm or cool temperature, and formal versus informal seating designs. More than 70% of school-age children are affected by perceptual preferences, and using manipulatives, visuals, and other resources that match individual preferences increases student achievement and interest, even in high school (AASA, 1991).

Each individual's learning style is based on a complex set of reactions to varied stimuli, feelings, and previously established patterns that tend to be repeated when the person concentrates. The Dunns identified twenty-two areas encompassing environment, emotionality, sociological needs, and physical needs which may affect student learning. They suggested ways teachers can accommodate learning style preferences. Several areas from the *Learning Styles Inventory* are discussed below (Dunn, Dunn, & Price, 1989).

Learning Styles Inventory

Noise Level Preferences—Some people need quiet when they are learning, while others, once they begin to concentrate, can block out sound. Some people need sound; they will turn on a radio, stereo, or television when they study as a screen against random noise distractions.

Light Preferences—Some people work best under very bright light whereas others prefer dim or low light.

Temperature Preferences—Many students can't think when they feel hot, and others can't think when they feel cold.

Environmental Design Preferences—Many students think best in a formal environment—seated on wooden, steel, or plastic chairs like those found in a conventional classroom, a library, or kitchen. However, some learn better in an informal environment—on a couch, on a bed, on the floor, or on pillows on carpeting.

Pursuit of Academic Goals—Many students are motivated by the desire to achieve academically. Unfortunately, some students do not value academic achievement and are not motivated by grades or threats of suspension. Some students are inclined to complete tasks that are begun, while others need to take intermittent "breaks" and return to assignments or learning activities later.

Conformity to Norms and Expectations—This element involves students' desire to do what they think they ought to do. In schools, responsibility often is related to conformity or following through on what a teacher asks students to do. Students with low responsibility scores usually are nonconforming; they do not like to do something because someone asks them to.

Preference for Structure—This element involves a student's preference for specific directions or explanations prior to undertaking or completing an assignment versus the student's preference for doing an assignment his/her way.

Learning Modalities—People with an *auditory* preference learn best when initially listening to verbal instruction such as lecture, discussion, or recording. A visual learner can recall what has been read or observed. Students with *tactile* perceptual strengths need to underline as they read, take notes when they listen, and keep their hands busy—particularly if they also have low auditory ability. Learners with *kinesthetic* preferences require whole-body movement and/or real-life experiences to absorb and retain material to be learned. Such people learn most easily when they are totally involved. Acting, puppetry, and drama are excellent examples of kinesthetic learning; others include building, designing, visiting, interviewing, and playing.

Time-of-Day Preference—This area can best be described as a continuum from early morning to evening when individuals' energy levels and mental alertness help them function best.

Preference for Intake—This area describes those students who often eat, drink, chew, or bite objects while concentrating—as opposed to those who prefer no intake until after they have finished studying.

Mobility Preferences—How still can the person sit—and for how long? Some people need frequent "breaks" and must move about. Some need to kick a foot back and forth while sitting or tap a pencil or fiddle with a lock of hair. Others can sit practically motionless for hours while engaged in learning and are interested in the task.

Sociological Preferences—Some individuals prefer to study by themselves while others prefer to learn with a friend or colleague where discussion and interaction facilitate learning. Sometimes students prefer to study alone but in close proximity to someone. Some people feel better or more comfortable when someone with authority or expertise is present. Others do not need or want constant feedback or assurance from an authority figure. Some students want to achieve to please their parents or parent figures. They often complete tasks because a family member will be proud of their accomplishments. Some students want to learn and complete assignments because their teachers will be pleased with their efforts.

Multiple Intelligences

The research of Howard Gardner, professor of education at Harvard University, suggests that human beings are capable of developing strengths in at least seven different approaches to learning and interacting with the world. Owing to heredity, early training, and an interaction between these two factors, some individuals will develop unusual competence in certain intelligences to a far greater degree than do other individuals. Every individual, given the opportunity, however, should develop each intelligence to some extent (Gardner, 1983).

Gardner used a set of criteria to identify an intelligence. The following criteria were included:

- The potential for impairment of the intellectual capacity by localized brain injury (e.g., the loss of ability to carry out certain physical movements as a result of impairment of the left hemisphere of the brain or children with Gerstmann syndrome who exhibit an isolated impairment in learning arithmetic).

- The existence of prodigies, idiot savants, and other exceptional people who are extremely precocious in a specific area of human competence (e.g., Mozart in music, individuals like the character, Raymond, in the movie *Rainman* who have an amazing ability to calculate numbers).

- The existence of one or more core information-processing operations (e.g., perfect pitch in musical intelligence, acute sense of direction in spatial intelligence).

- A distinctive developmental history that ranges from the beginnings of competence through which most people pass, to exceedingly high levels of expertise which few individuals reach.

- The development of a special symbol system (e.g., language, mathematical symbols, pictures, notes, dance forms, social norms, etc.)

Gardner's Seven Intelligences

- **verbal/linguistic**—sensitivity to language, meanings, and the relations among words: commonly found in the novelist, poet, editor, reporter, advertising director, and speech writer;

- **logical/mathematical**—constitutes abstract thought, precision, counting, organization, logical structure: found in the mathematician, scientist, engineer, police investigator, lawyer, and accountant;

- **musical**—the sensitivity to pitch, rhythm, timbre, and the emotional power and complex organization of music: found in the performer, composer, conductor, and musical audience;

- **spatial**—keen observation, visual thinking, mental images, metaphor, a sense of the whole gestalt: found in architects, painters, sculptors, navigators, chess players, and strategists;

- **bodily/kinesthetic**—control of one's body and of objects, timing, trained responses that function like reflexes: found in dancers, athletes such as basketball players, actors, gymnasts, surgeons, karate teachers, and the mechanically gifted;

- **interpersonal**—sensitivity to others, ability to read the intentions and desires of others and potentially to influence them: found in politicians, teachers, religious leaders, counselors, salesmen, con men, and some managers; and

- **intrapersonal/introspective**—self-knowledge; sensitivity to one's own values, purposes, and feelings; a developed sense of self: identified with the novelist, counselor, wise elder, philosopher, and poet.

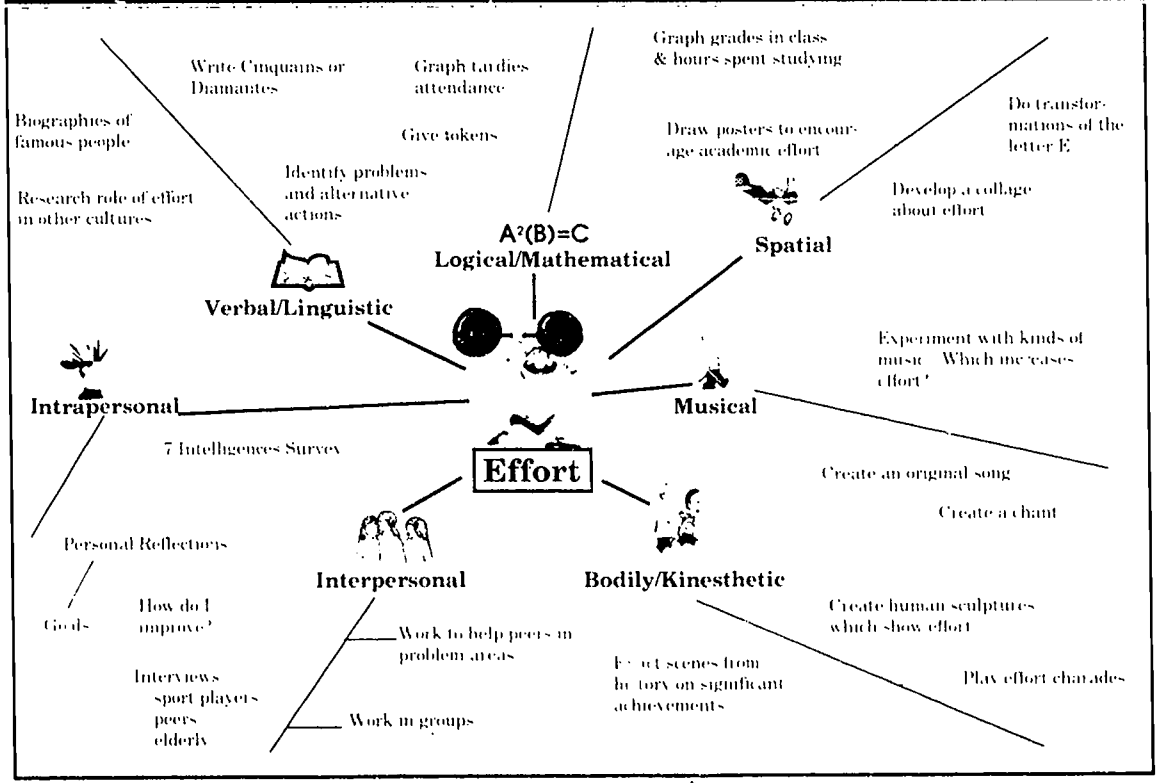
The theory of multiple intelligences (MI) focuses on the diversity in how students think and learn. Each person possesses all seven intelligences which function together in ways unique to each individual. Consequently, a person may not be able to read, yet be highly linguistic because he can tell a terrific story or has a large oral vocabulary. Similarly, a person may be quite awkward on the playing field, yet possess superior bodily-kinesthetic intelligence when she weaves a carpet or creates an inlaid chess table (Armstrong, 1994).

Students learn best when given an opportunity to explore ideas through their perceptual strengths. All students do not learn best using logical/mathematical or linguistic strategies. Educators must look beyond the traditional areas in which instruction usually takes place and find ways of providing materials and using strategies that build on students' strengths in all the intelligences. When approaching lesson planning and curriculum design, the best question to ask about students is "How are they smart," then seek instructional strategies that build on their "smarts." While every lesson does not need to include activities based on all seven of the intelligences, over the course of a unit each of the intelligences should be brought into play. The insert on page 62, "Classroom Activities...," illustrates how a unit on increasing student effort might employ activities that encompass all seven intelligences.

Authentic Learning Strategies

Students, especially those from at-risk situations, require instructional programs that involve learning by doing, active applications of facts and skills, and working with other students. Students learn best when they are interested in the work, feel challenged, experience success and receive rewards, and develop personal satisfaction in learning. Authentic instruction, which focuses on content and skills

Classroom Activities For Increasing Student Effort Using Multiple Intelligences



that are meaningful outside the classroom, requires students to use their minds well to construct meaning and produce knowledge which has value in the world outside of school.

Newmann and Wehlage (1993) have defined the components of authentic instruction and developed standards for assessing learning activities. Briefly, the first standard measures the degree to which students use "higher order thinking." Higher order thinking requires students to manipulate information and ideas through such processes as synthesizing, generalizing, hypothesizing, or interpreting. The second standard measures "depth of knowledge." Knowledge has depth when students are able to make clear distinctions, develop arguments, solve problems, construct explanations, and work with relatively complex understandings of the central ideas or topics of a subject.

The third standard measures the extent to which learnings have value and meaning beyond their importance for success in school. "Connectedness to the world" outside of school is demonstrated when students address real-world public issues and problems or use personal experiences as a context for applying knowledge. The fourth standard assesses the extent to which students engage in "substantive conversation," discussion, and interaction in order to learn and understand the substance of a subject.

The fifth standard measures the degree of "social support for student success" that exists in the classroom. Social support includes high expectations, mutual respect, inclusion of all students in the learning process, and establishing a climate in which students feel free to take risks and try hard to master challenging academic work. Successes and failures are seen as parts of the learning process, not as end products. Students are encouraged to examine the strategies they use to learn and, when something doesn't work, to try a different strategy.

Three examples of authentic instructional strategies that can be adapted to meet students' learning styles and include all of the multiple intelligences are *service learning*, *whole language* and *cooperative learning*. For these kinds of authentic learning strategies, *authentic assessment* provides more appropriate alternatives to measuring acceptable academic performance than do paper-and-pencil tests (verbal linguistic intelligence).

Service Learning

Service learning is a unique form of authentic learning—one that teaches "self-respect and respect for other people" and about responsibilities to one's community. A major purpose of school-based service learning is to connect real world experiences students gain through school or community service to the classroom curriculum. Service-learning activities are integrated into the curriculum by (a) identifying and analyzing the problem and developing the skills needed to carry out the project; (b) engaging in the service activity itself; and (c) reflecting critically about the project and sharing what has been learned (Duckenfield & Swanson, 1992).

Preparation for the service experience is essential. Positive outcomes are not automatic. Students need guidance and support before they are sent out into the community. Prior to the service experience, students must understand what is expected of them as well as what they can expect from the service project. The first step involves the students themselves assessing the needs of the local community as well as the interests of the student participants. After gathering the necessary background information, students select and develop the project that they would like to work on. The academic component ensures that students become knowledgeable in the areas in which they chose to work. Engagement in the project itself is rewarding, but the last stage of service learning, reflection, ensures that students assess the effects of the project on themselves and the community.

The lack of a meaningful role in society contributes to the sense of alienation found in so many of today's youth. Young adolescents, especially, are often viewed by society as problems rather than assets and have few opportunities to become valued members of the school or the community (Duckenfield & Swanson, 1992). When students fail to identify with the school, their strong needs for belonging find expression in other ways. Without constructive ways for satisfying their needs, adolescents often resort to gang membership, sexual activity that may lead to pregnancy, or destructive forays into substance abuse. Service-learning activities foster social, personal, and academic development for the struggling student. Students engaged in such activities gain a heightened sense of personal and social responsibility, have more positive attitudes toward adults and others, and enhance their self-esteem (Duckenfield & Swanson, 1992).

Whole Language

Defining *whole language* is rather like defining the ink blots on a Rorschact test—everyone sees something different. Definitions of whole language range from "...approaching reading and writing by building upon the language and experiences of the child" (Weaver, 1988 p. 44) to "...written and oral language in connected discourse in a meaningful contextual setting" (Anderson, 1984, p. 616). Watson (1989, p. 132)) defined whole language as "a label for mutually supportive beliefs and teaching strategies and experiences that have to do with kids learning to read, write, speak, and listen in natural situations."

In many non-whole-language settings, the teaching of language is fragmented into isolated segments where students learn lists of spelling words, discrete sounds, rules of punctuation, or parts of sentences. In whole-language settings, language is taught in an integrated way, with all its systems intact (Watson, 1989). It is based on the following ideas (McKenna, Robinson, & Miller, 1990): (a) language is for making meanings, for accomplishing purposes; (b) what is true for language in general is also true for written language; (c) the systems of language are always simultaneously present and interacting in any instance of language use; (d) language use always occurs within a context; and (e) contexts are critical to constructing meaning. The systems of language—morphology, semantics, syntax, phonics, and pragmatics—are taught in a situational context and build on students' prior knowledge.

Students' cultures are important to both understanding and learning language (Watson, 1989). Children do not learn by being left to their own devices; they must be encouraged and assisted (Smith, 1992). When given real opportunities in a safe and natural environment, students initiate learning, generate curriculum, direct their own behavior, and evaluate their own efforts (Watson, 1989).

Watson pointed out that whole language is a perspective on language and learning that leads to the acceptance of certain strategies, methods, materials, and techniques. At certain stages, with certain children, any attempt made by students to communicate is valued, even invented spelling. Process writing, big books, literature discussion groups, cooking, and singing are often seen and heard in whole-language classrooms (Watson, 1989).

The elements of a whole-language program include the following (Robbins, 1990):

- the teacher reading quality literature to children;
- everyone engaging in sustained, silent reading;
- the teacher guiding the reading of children and holding reading conferences;
- recording oral language (stories or experiences told to the class) and making it available to the children in a written format;
- students engaging in a writing process that includes rehearsal, drafting, revision, editing, publishing or sharing, and feedback;
- the teacher modeling writing; and
- sharing finished products with an audience.

In 1980, the ConVal School District in New Hampshire began to "bridge children and books first through the writing process and then through whole-language instruction" (Robbins, 1990, p. 51). The results of their efforts included the following:

- high scores on the California Achievement Tests reading comprehension,
- an increase in the quantity and quality of books read and written by students, and
- a dramatic drop in the number of students identified for special education.

Smith (1992) pointed out that to implement whole-language instruction in the classroom, more had to change than just the name. Teachers cannot continue traditional classroom structures and situations and implement whole language effectively. Whole language requires a change in philosophy. Its basis is respect for language which is natural and authentic and for learners who are engaged in meaningful and productive activities.

Cooperative Learning

Researchers have discovered that one of the most effective strategies for teaching at-risk students is cooperative learning (Slavin & Madden, 1989). All cooperative learning methods share the idea that students work together to learn and are responsible for one another's learning as well as their own. In addition, positive interdependence, face-to-face interaction, and individual accountability are required if cooperative learning strategies are to increase students' efforts to achieve and improve the quality of their relationships with classmates (Johnson & Johnson, 1990).

There also is strong evidence that team rewards are an important element in producing basic skills achievement. It is not enough to simply tell students to work together. They must be willing to accept the responsibility for one another's achievement, and team rewards encourage this willingness. When the group's task is to ensure that every member *learns* something (rather than *does* something), it is in the interest of every member to spend time explaining concepts to his or her team members Slavin (1991a).

Merely putting students in groups and calling it cooperative learning, however, is rarely successful. Students who have never been taught how to work effectively with others cannot be expected to do so automatically. All students need to become skillful in communicating, building and maintaining trust, providing leadership, and managing conflict. As students become more effective in working with each other, academic achievement improves (Johnson & Johnson, 1984).

Cooperative learning social skills should be taught just as systematically as any subject. Doing so requires that teachers communicate to students the need for such skills, define and model the skills, have students practice them, provide feedback on how well students perform the skills, and make sure that students fully integrate the skills into their behavior repertoires (Johnson & Johnson, 1990). There are four stages in developing cooperative skills (Johnson & Johnson, 1984, pp. 45-48):

1) *Forming*: those skills directed toward organizing the group and establishing minimum norms for appropriate behavior, such as *stay with the group*, *use quiet voices*, and *encourage everyone to participate*.

2) *Functioning*: those skills involved in managing the group's efforts to complete the task and maintain effective working relationships, such as *expressing support and acceptance*, *offering to explain or clarify*, and *asking for help*.

3) *Formulating*: those skills needed to build deeper understanding of the material, to stimulate the use of higher quality reasoning strategies, and to ensure mastery and retention of the material, such as *summarizing out loud what has just been read or discussed*, *elaborating*, and *discussing the reasoning process*.

4) *Fermenting*: those skills required for challenging other group members' conclusions and reasoning, such as *criticizing ideas, not people*; *integrating a number of ideas*; and *generating a number of plausible answers or solutions from which to choose*.

Models of Cooperative Learning. The Massachusetts Advocacy Center (1990, pp. 118-119) has developed a list of cooperative learning models that are beneficial to students who have experienced little success in classes using traditional instructional approaches. Included among these are the following:

Learning Together—Students work together in four- or five-member heterogeneous groups on assignments to produce a single group product. Students may be evaluated and rewarded on the basis of this single product or on a combination of their own performance and the overall performance of the group.

Group Investigation—Students work in small heterogeneous groups and assume substantial responsibility for deciding what information they will gather, how they will organize themselves to gather it, and how they will communicate what they have learned to their classmates.

Jigsaw—A subject or topic to be learned is divided into sections or subtopics and each member of a "home" group is assigned responsibility for one section. Members of different home base groups who are working on the same section meet together in "expert" groups to discuss their topics. They then return to their home groups and take turns teaching group members about their sections. Students are evaluated individually through quizzes, projects, or the like.

Jigsaw II—Similar to the original Jigsaw, all students are first provided common information. Students then break into expert groups to study their specific subtopics. There is team recognition based on team scores and often a newsletter recognizing team winners and individual high scorers, in addition to individual grades and scores.

Team-Games-Tournament (TGT)—Students work together in four- or five-member teams to help one another master material and prepare for competitions against members of other teams. For the competitions, each student is assigned to a three-person table with students from two other teams who are similar in skill level. In this way, all students have an equal chance to earn points to contribute to their team score.

Team-Assisted Individualization (TAI)—Developed especially for math classes in grades three to six. TAI combines direct instruction by the teacher with follow-up practice using a team learning approach. Students work in teams on material appropriate to their individual skills level. Teammates help one another with problems and check on each other's work. Meanwhile, the teacher calls forward students from the various teams who are working at the same level to instruct them as a group. In this way, TAI provides for both interactive peer learning and individualized instruction.

Cooperative Integrated Reading and Composition (CIRC)—This method is similar to TAI but designed for instruction in reading, writing, and language arts. Students work in mixed-ability teams on a series of reading activities or, in writing in peer response groups using the "process writing" approach.

Research on Cooperative Learning. Cooperative learning methods appear to work equally well for all types of students; high achievers gain from cooperative learning just as much as do low and average achievers when compared to their peers in traditional classes (Slavin, 1991b). One major controversy is over the benefits of the strategy for gifted students. Four *misconceptions* provide the basis for this dispute. The misconceptions along with the reality in effective practice are listed below.

1) *There is only one cooperative learning approach.* There are actually a number of different ways of generating cooperative activities in the classroom (Graves & Graves, 1990; Kagan, 1988).

2) *Cooperative learning is the* only *strategy to use.* No experts on cooperative learning suggest that any one technique will be effective all the time.

3) *Cooperative learning strategies are inappropriate for gifted and talented students.* The literature contains examples of students from a wide range of academic histories profiting from the environment of a cooperative classroom.

4) *Cooperative learning must be combined with heterogenous grouping.* Social models of teaching can be used with either specially selected or randomly assembled groups of students. Grouping to either *maximize or minimize* student differences is a matter of choice.

The issue of heterogenous grouping underlies much of the controversy. Yet, as Slavin (1991b) pointed out, cooperative learning and "untracking" have completely different rationales, research bases, and political and practical implications. Cooperative learning can work within a completely tracked school, and untracking does not require cooperative learning.

Graves (1991) found that most students consider the pleasure of working together in cooperative groups a reward. The "social rewards" of working cooperatively are among the greatest advantages of using cooperative learning strategies. Once students learn to work cooperatively, many teachers find that students no longer need the group certificates and other external incentives that induced them to work together effectively. Clearly, lessons should be made as intrinsically interesting as possible, and a continuing need for extrinsic rewards may serve as a signal that the curriculum requires substantial revision.

Studies on Group Investigation were carried out to ascertain the method's effects on achievement and social interaction. In Group Investigation, students take an active part in planning what they will study and how. They form cooperative groups according to common interest in a topic. All group members help plan how to research their topic, divide the work among themselves, and each member carries out his or her part. Finally, the group synthesizes and summarizes its work and presents these findings to the class (Sharan & Sharan, 1990).

The researchers found at both the elementary and secondary levels that students from the Group Investigation classes generally demonstrated a higher level of academic achievement and did better on questions assessing high-level learning than did their peers taught with the whole-class method. When analyzing the effect of Group Investigation on students' spoken language in Israel, one analysis of discussions found that both the lower-class Middle Eastern and middle-class Western students used more words per turn of speech than did their ethnic peers taught with the whole-class method. Moreover, those lower-class Middle Eastern students, often considered to have limited language ability, who studied in Group Investigation classes, used as many words per turn during the discussions as did the middle-class Western students in whole-class instruction. The studies also found that Group Investigation promoted cooperation and mutual assistance among students (Sharan & Sharan, 1990).

Positive effects on intergroup relations have been found for all forms of cooperative learning. Two studies on intergroup friendships conducted follow-ups several months after the end of the research. Both studies found that students who had been in cooperative learning classes still named significantly more friends outside their own ethnic groups than did students who had been in traditional classes (Slavin, 1991a).

Other outcomes for cooperative learning methods have included greater acceptance of mainstreamed students, improvements in students' self-concepts, liking school, development of peer norms in favor of doing well academically, feelings of individual control over student's own fate in school, and cooperativeness and altruism (Slavin, 1991a).

"The future of cooperative learning is rich in possibilities...If we use the principles of cooperative learning and the values of cooperation—empowering teachers and students, valuing cooperation as both process and content, and affirming interpersonal relations—we can create schools that are truly cooperative and a society in which people really do work together for shared, equitable goals" (Sapon-Shevin & Schniedewind, 1990, p. 65).

Authentic Assessment

Schools in the U. S. spend nearly $900 million per year on standardized testing. The National Commission on Testing and Public Policy estimates that, nationwide, 127 million such tests are adminis-

tered annually to students in grades K-12 (Willis, 1990). This is the result of what Shepard (1991) contends is an outdated, 30-year-old theory of learning that shapes our view of student achievement and how we assess it. Critics of standardized tests claim such tests have skewed the curriculum toward the teaching of what is most easily measured by machines, focusing on the acquisition of basic skills and facts—on the short-term goals of schooling—as ends in themselves rather than as a means to further learning and growth (Cole, 1990).

Students have learned that academic performance and knowledge are measured by paper-and-pencil tests. They have learned to judge the value of classroom activities by asking, "Is this going to be on the test?" Although teachers have been told that "teaching to the test" is bad practice, Grant Wiggins (1989, p. 704), an acknowledged expert in assessment, says that, "Schools *should* teach to the test." According to Wiggins, tests and final exams are central to instruction; they not only monitor standards, they set them. However, he advocates using tests that teachers have been involved in designing and that offer students genuine intellectual challenges.

In order to assess performance, Wiggins (1989) suggested we must first decide what are the actual performances students should be good at. Should students be good at writing, speaking, listening, artistic creation, finding and citing evidence, and problem solving? Then tests should be designed that ask students to write, speak, listen, create, do original research, and solve problems. Wiggins defines such tests as *authentic assessment*—tests that engage students in the actual behaviors, standards, and habits needed for success in the academic disciplines or in the workplace. Successful adults—scientists, people in business, attorneys, novelists, musicians, physicians—face the challenge of *producing*, rather than *reproducing*, knowledge.

Authentic assessments are public evaluations based on multiple criteria and agreed-upon standards. Criteria and standards must be set for expert performance, students should know what those criteria are, and teachers should teach the knowledge and skills students need to exhibit expert performance. The emphasis is on students' progress toward mastery; therefore, multiple opportunities must be provided for assessment so that practicing, rehearsing, and retaking are learning experiences. The tests are complex, cumulative activities that assess students habits and repertoires, as well as basic skills and knowledge, stress depth of knowledge, and allow students to demonstrate what they can do (Wiggins, 1989).

Authentic assessments can take many forms: writing tasks that mirror real-world activities; open-ended problem solving where problems may have more than one right answer; hands-on experiences in science; portfolios showing student work in progress; and culminating exhibits, performances, and demonstrations (Willis, 1990).

Wiggins (1991a, b) suggests that understanding the following terms is critical to developing authentic assessments:

Outcomes—Outcomes are the intended results of instruction; they are general goal statements about expectations for student learning. Outcomes are defined operationally by the explicit *standards* and *criteria* set for their accomplishment.

Standard—A *standard* refers to an exemplary performance, an objective ideal. It serves as a worthwhile and tangible goal for everyone—even if some cannot yet reach it. Real standards enable all performers to understand their daily work in terms of work in progress, and how to monitor and improve their performance.

Criteria—Establishing the *criteria* by which a performance, demonstration, or product is assessed involves determining (a) the most important or essential aspects, (b) the kind of errors that are acceptable and unacceptable, and (c) the relative weight of each criterion. A *rubric* for scoring must be established that ensures agreement on the above points among the various raters.

Rubric—A *rubric* is a set of scoring guidelines for assessing student work. It describes the progressive stages in developing mastery in a particular task. The rubric provides a scale (often ranging from 0 to 6) of possible points to be assigned, includes all the major dimensions to be assessed, and defines what mastery on each dimension looks like (the maximum number of points on the scale), as well as the salient traits or characteristics for scoring students' work or performance at the other levels of the scale.

Developing rubrics is difficult and time-consuming. O'Neil (1994) recommends that teachers and others create rubrics by meeting regularly to decide on the relevant dimensions of a performance and draft possible criteria, try them out with students, and revise them as needed. *A Practical Guide to Alternative Assessment* (Herman, Aschbacher, & Winters, 1992) suggests a process that includes (a) investigating how the assessed discipline defines quality performance;

(b) gathering sample rubrics as models; (c) gathering samples of students' and experts' work that illustrate a range of quality; (d) identifying the characteristics of the work that distinguishes excellent from good, good from poor, and poor from bad; (e) writing descriptors for the important characteristics; (f) seeing if the criteria help to make accurate judgements about a sample of student's work; (g) revising the criteria; and (h) trying the criteria again until the rubric defines the quality of the work.

Wiggins (1993) suggested that authentic assessment should include the following:

- engaging and worthwhile problems or questions of importance in which students must use knowledge to fashion performances effectively and creatively;
- faithful representations of the contexts encountered in a field of study or in the real life tests of adult life;
- nonroutine and multi-stage tasks;
- tasks that require the student to produce a quality product and/or performance;
- transparent or demystified criteria and standards;
- interactions between the student and the assessor;
- response-contingent challenges in which the effect of both process and product/performance determines the quality of the result.
- trained assessor judgement in reference to clear and appropriate criteria; and
- the search for patterns of response in diverse settings.

The Vermont Pilot Study. The Vermont Mathematics Portfolio Committee was established in 1989 to explore ways in which portfolios might be used for statewide assessment in mathematics (*Looking beyond "the answer,"* 1990-1991). A subcommittee developed specific scoring criteria for portfolios at grades four and eight. They looked at evidence for each of the criteria and identified what distinguished work

of higher quality from other work with respect to the criteria. These qualitative differences were used to define the rubric for each criterion. In the area of mathematical problem solving, four key criteria were isolated:

- Understanding the task
- How the student approached the task, the approaches, procedures, and/or strategies adopted to attack the task
- Why the student made the choices along the way; the reflection, justification, analysis, rationale, verification that influenced decisions
- What findings, conclusions, observations, connections, generalizations the student reached

The following scoring rubric was developed for each criteria:

Understanding the Task

1. Totally misunderstood
2. Partially understood
3. Understood
4. Generalized, applied, extended

Quality of Approaches/Procedure

1. Inappropriate/unworkable
2. Appropriate some of the time
3. Workable
4. Efficient, sophisticated

Decisions Along the Way

1. No evidence
2. Possible
3. Inferred with certainty
4. Show, explicated

Outcomes of Activities

1. Without extension
2. Observations
3. Connections, applications
4. Synthesis, generalization, and/or abstraction

After a pilot year of testing, the committee recommended additional specifications for the portfolios to provide an equitable basis for evaluating student performance. In 1990-91, students' mathematics portfolios in the pilot schools were assessed using four problem-solving and three communication criteria (Abruscato, 1993). The criteria posed the following questions: How well does the student understand the problem? How does the student solve the problem? Why does the student solve the problem in that particular way? What observations, connections, and generalizations does the student make about the problem? What terminology, notation, and symbols does the student use to communicate his or her mathematical thinking? What representations (graphs, tables, etc.) does the student use? How clear is the students' communication of mathematical thinking and problem solving?

Appropriate Use of Technology

Technology, in particular computer-based technology, offers some of the best opportunities for developing instruction which engages students in authentic learning, addresses multiple intelligences, and adapts to students' learning styles. When used appropriately, technology can provide instructional environments that have a powerful impact on those students who, without help, might continue to be at risk of school failure. Technology provides students with the means for taking responsibility for their own learning when used to allow students to learn without publicly being labeled slow or stupid; when used to enrich and *accelerate* the pace of learning for students who are behind; and when used as a tool for accessing information, research, and problem solving (Duttweiler, 1992).

Schools historically, however, have lagged far behind society in adopting new technologies. The typewriter, which has existed for well over a century, and the word processor have transformed written communication in our society. We communicate most effectively when vision and hand/finger movements function automatically—when the conscious brain can focus on the content of the message rather than on the means of expression. With less instructional time, elementary students can learn to touch-type well beyond the cursive writing speed of 15-30 words a minute. With spell checking and editing capabilities, word-processing software allows students to bypass the onerous physical task of writing and learn to express themselves fluently. Yet, classroom instruction still focuses on cursive writing rather than computer typing skills (Sylwester, 1990).

The computer is a powerful tool for motivating students, presenting content, and enhancing the educational opportunities of students unresponsive to traditional instruction. Unfortunately, Kirby and Styron (1994) found that those students most in need of alternative instructional approaches were the least likely to have access to computers. Their study on computer use in schools discovered that teacher expectations governed access to computer instruction. Students who were expected to do well in school were exposed to multiple methods (i.e., teacher and computer-directed instruction) thereby further increasing their likelihood of success. Those students who might have benefited from nontraditional approaches not only had less access to computers, but also came to accept that they somehow did not deserve the opportunity to try technological approaches to instruction. In addition, those students who were allowed most often to use computers were generally being rewarded for compliance in traditional teaching/learning settings. Kirby and Styron found this particularly troubling in light of data suggesting that disadvantaged students (i.e., blacks and, especially, black males) found computers most useful and believed that they could do well with them.

To restrict the use of computers for drill and practice or as an individualized textbook is to ignore the tremendous capacity computers have for making learning come alive for students. Human brains are better at discovering conceptual relationships than at processing the accurate details that computers handle so well. Human brains can rapidly process ambiguities, metaphors, abstractions, patterns, and changes. They are able to quickly classify objects into general categories, use reference materials, estimate general solutions to problems, adapt preliminary decisions to any new information gathered, and use machines to achieve the levels of precision necessary. Schools should concentrate on developing students' ability to quickly locate, estimate, organize, and interpret information, and teach students how to use the superior speed and accuracy of available information technologies whenever a complex problem requires an accurate solution (Sylwester, 1990).

Computers mix visual, tactile, and listening modes of learning, and they offer a nonjudgemental, private environment in which students can test their own thinking at their own speed. For example, videodisc technology provides rich, real-world contexts for teaching problem solving to at-risk students. In general, videodisc instruction combines

the visual impact of television and the interactive quality of computers to engage students in learning. CD-ROM allows entire encyclopedias to be stored on one computer disc, provides access to numerous databases stored on disc, and can store the contents of entire journal issues for reference. Such videodisc technology gives teachers and students almost instantaneous access to information for reports, projects, and discussion.

With existing computers and telecommunications equipment, for example, a student can search vast databases or collect weather data and share *online* with scientists and students at other sites. Students' capacities to do basic research are greatly enhanced when they are able to search beyond their local libraries. When students have the capacity to go online, there's no reason for using out-of-date or inaccurate information in research projects (ASCD, 1993).

Recent advances in digitization have made it possible, also, to transfer data at lightning speed and to combine text, sound, and video images to create multimedia environments. A pupil doing a research project on a planned landfill site can create a multimedia report using real science and real economics. At Peakview Elementary School in Cherry Creek, Colorado, students routinely use computers to prepare multimedia projects or presentations (ASCD, 1993).

Telecommunications allow cooperative learning at a distance where students are able to team up with students at other schools or in other countries to work on joint projects. In the National Geographic Society's "Kids Network," for example, students at different schools collect scientific data on problems such as acid rain and share observations about the patterns that emerge. During the Persian Gulf War, students in one New York high school understood the reality of war better when they traded e-mail messages with students in Israel who reported on Scud missile attacks (ASCD, 1993).

Georgia's Sandy Creek High School offers students a technology-rich environment. The school begins the day with announcements broadcast live in color television to each classroom. Students study anatomy by performing dissections on a cadaver through a computer simulation and turn geometry equations into moving, three-dimensional images. Using computers, students access newspapers and other material and write and edit research papers using spell-check software to correct errors. With computers minimizing the labor of researching and writing, students spend more time exploring ideas and applying concepts ("GA's Sandy Creek High," 1994).

Technology provides the authentic learning so vital for the educational success of students in at-risk situations. When teachers have students collaborate on activities using computers to work together to read, discuss, or edit each others text, cooperative behavior is encouraged (Sylwester, 1990). When students have opportunities to access information through electronic databases or CD-ROM, they can focus on complex, meaningful problems; basic skills instruction can be embedded in the context of more global tasks in which students are asked to tackle real problems; and students can make connections to their out-of-school experiences and cultures.

Preparation for the Workplace

Opportunities for today's young workers who have only a high school diploma are far more limited than were those of their counterparts 15 years ago. Today, over 80% of all jobs demand high levels of specialized knowledge and skills (Byrne, Constant, & Moore, 1992). Yet, for a majority of American students, what they learned in school is not adequately related to what they need to know in order to succeed after leaving school. The curriculum in many high schools for students not bound for college tends to be general and eclectic—neither strongly academic nor strongly vocational. Non-college-bound students are held to lower expectations and taught a watered-down academic curriculum. As a result, many of them are unprepared either for a job or for continued study (Barton, 1990).

Most students not planning to immediately go on to college receive little in the way of systematic assistance in preparing for and finding jobs when they leave school. The Commission on Achieving Necessary Skills (SCANS; 1990) asserted that the United States may have the worst school-to-work transition of any advanced industrial country. Many of the pieces which are in place are generally uncoordinated and less effective in helping prepare U. S. students for jobs. At most times and in most places young people are left to their own devices to make the connection between school and work (O'Neil, 1992). This has resulted in high youth unemployment, shortages of adequately prepared young people entering the labor market, and an increasing econc 'vift to low-skill, low-wage jobs (Byrne, Constant, & Moore, 1992).

In spite of the many gaps between schools and the workplace, there are encouraging signs of progress (Barton, 1990). Changes

in the Perkins Act governing federal vocational education programs are exerting pressure to tear down the long-standing wall separating academic and vocational programs. The Act requires more coordination between vocational and academic programs, a requirement which has strengthened the trend toward curriculum integration. A second positive sign is the accumulation of information about the skills, knowledge, and habits of mind that students need to be prepared for the work force as exemplified by the U. S. Secretary of Labor's Commission on Achieving Necessary Skills (SCANS) report. A third positive indicator is the development of systemic plans to address the school-to-work transition issue.

School/Business/Community Compacts

A number of broad-based community and business coalitions have been initiated to work with school districts. Formal agreements or compacts have been made through which business offered to provide jobs and other incentives if students agreed to stay in school and the schools agreed to make systematic efforts to raise students' academic success and attendance. For example, beginning in 1986, the National Alliance of Business (NAB) sponsored the *Compact Project* in Albuquerque, Cincinnati, Detroit, Indianapolis, Louisville, Memphis, Miami/Dade County, Pittsburgh, Providence, Rochester, San Diego, and Seattle. The primary purpose of the Compact Project was to provide jobs to students to motivate them to stay in school (Byrne, Constant, & Moore, 1992).

In 1990, a new school-to-work transition model was initiated by the NAB, the Bank of America, Sears Roebuck and Co., and local school districts in San Francisco, California, and DuPage County, Illinois. In this initiative, known as the Quality Connection, the job serves as an incentive to remain in school, but it also is a significant part of the learning experience, designed to teach skills by embedding them in a curriculum keyed to the requirements of the job.

The Quality Connection provides students with real jobs in which they work alongside adults. Learning is structured to ensure a thorough understanding of all job tasks, how the job tasks fit together, and how the job fits into the rest of the company. Certain conditions must be in place for the experience to be successful: the identification of learning objectives, the use of an experienced worker or supervisor to work closely with the student

employee, and a formal process for the employer to certify that skills and competencies have been learned. School-based learning is also fundamentally restructured with an emphasis on active student involvement, teamwork, problem-solving, goal-setting, and decision-making skills. All of these efforts to design and implement a thoroughly integrated school-to-work transition curriculum require close cooperation between the educators and the employers (Byrne, Constant, & Moore, 1992).

Apprenticeships

Apprenticeships offer a transition from school-to-work that provides young workers with a sheltered environment in which to develop skills. In an apprenticeship, a learner observes and assists a master at work, gradually gaining competence by taking responsibility for progressively more challenging aspects of the task. Two important features distinguish apprenticeship from classroom teaching: (1) the student performs *real* work, and (2) the teacher demonstrates and coaches rather than just tells the student how to do a task (Hamilton & Hamilton, 1992). Apprenticeships can increase competence both outside and inside school.

In Germany, approximately 70% of all youth between the ages of 16 and 18 participate in apprenticeships at the upper secondary education level. American observers of German apprenticeship programs are impressed with the quality of the vocational training they provide, the sense of purpose they lend to academic schooling (which continues part-time), and the smooth transition apprentices make from adolescence to adulthood (Hamilton & Hamilton, 1992).

In Broome County, New York, Cornell University has initiated the Youth Apprenticeship Demonstration Project to investigate how some of Germany's principles of apprenticeship can be adopted by U. S. high schools. Twenty-one high school juniors from five different high schools entered the program in the fall of 1991. Students were placed with four employers: a manufacturing firm, two health service providers, and an insurance company (Hamilton & Hamilton, 1992). The program is guided by the following set of principles:

- *Apprenticeships are organized by three career areas, not specific jobs*—Manufacturing and Engineering Technology; Administration/Office Technology; and Health Care.

- *Apprenticeships structure learning through work*—The curriculum both at school and at work includes goals, competencies, sequencing, and assessment. Basic academic competence is critical in all occupations.

- *Employers develop a learning environment for apprentices*—Participating employers train high school juniors who will be qualified after two to four years in the program. Selected employers must have well-developed human resource policies and practices.

- *Adults in the workplace perform four instructional roles*—The training director designs and oversees the program; area coordinators, usually department heads, identify and assist coaches; coaches work daily with apprentices; and mentors give apprentices advice about the technical aspects of the work and the social norms of the workplace.

- *Schools adapt instruction to take maximum advantage of apprentices' work experience.*

- *Training and support are provided to classroom teachers, training directors, area coordinators, coaches, and mentors.*

- *Youth Apprenticeship is potentially appropriate for those who do not expect to enroll in a four-year institution*—Youth Apprenticeship recruits students who are doing well enough in school but do not expect to enroll in four-year colleges. Some top students are included as well. Employers require apprentices to meet certain behavioral and academic standards, but every effort is made to involve and provide special support for young people who are at risk of dropping out of school.

- *Apprentices are employees*—Apprentices are hired, paid, supervised, and if necessary, dismissed according to employers' policies.

- *Apprenticeships lead youth toward academic diplomas and certification.*

- *Employers and schools share operating costs for the apprenticeship program*—Employers train apprentices; schools redirect resources already available to them.

Technology Preparation (Tech-Prep)

Tech-Prep has been promoted as a promising way to integrate the curriculum and provide transitions to postsecondary education. Tech-Prep (TECHnology PREParation) programs have a number of key elements. One of the most important is the articulation agreement which links secondary and postsecondary institutions to provide a closely coordinated high school/college curriculum. The Tech-Prep model envisions the articulation not just of single courses but of programs—a series of related courses—at the two educational levels. The purpose of Tech-Prep is to prepare students to begin rewarding careers in mid-level technology fields. These fields represent the types of positions for which a high school diploma, with vocational training up to and including an occupational associate degree, is required for entry and/or advancement.

According to the *National Assessment of Vocational Education: Interim Report to Congress* (1994), the great majority of Tech-Prep programs are either in the planning stage or the early stages of implementation. At first glance, Tech-Prep programs seem to be booming. About two-thirds of all public two-year postsecondary institutions said they had started Tech-Prep programs by 1991-92. At the secondary level, 41% of regular districts and 82% of vocational districts reported having initiated programs at the time of the survey. It appears, however, that only 17% of the districts which say they have Tech-Prep programs actually have students enrolled. Only 19% of the postsecondary institutions participate in consortia that have any secondary students, and only 9% participate in consortia that have any postsecondary students.

The interim report indicated that a few well-established programs have gone beyond simple course articulation. One such program is the Partnership for Academic and Career Education (PACE) Consortium. In 1991, PACE received the first U.S. Department of Education award for Tech-Prep Program Excellence and one of three national awards given by the American Association of Community Colleges. PACE, established in 1987, is a South Carolina business and education consortium involving the seven school districts of Anderson, Oconee, and Pickens Counties, South Carolina; Upstate South Carolina businesses and industries; the Anderson and Oconee Counties' Business and Educational Partnerships; Tri-County Technical College; Clemson University's College of Education and the National Dropout Prevention Center; and the Career and Technology Cen-

ter of Anderson (SC) Districts One and Two. A coordinating board, representing all partners, provides leadership for implementing Tech-Prep programs in the 16 high schools, four career centers, and one technical college in the PACE Consortium service area.

The PACE program includes rigorous academic study, enhanced and focused occupational coursework, and structured guidance experiences throughout high school and two years of postsecondary education. The program prepares students for careers in cluster areas such as industrial/engineering technologies, health technologies, business technologies, and human/public service technologies. Tech-Prep offers an integrated approach to educational reform through:

- restructuring curricula to meet changing needs;
- integrating academic and vocational studies;
- improving methods of teaching and counseling;
- increasing students' achievement and career/college options;
- responding to employers' needs for skilled technicians;
- promoting community support for student success; and
- enhancing articulation among secondary, two-year, and four-year colleges.

In 1993, PACE received one of nine U.S. Department of Education demonstration grants for model Tech-Prep programs. Among the documented accomplishments for the PACE Consortium are the following:

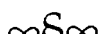
- Anderson School District Two reported an increase in students' average grades in Applied Communication classes over the previous year's basic English averages—from a D average in 1990-1991 to a B average in 1991-1992;
- 1991-92 data showed an increase in enrollment over 1990-91 in Applied English (116.4%), Applied Mathematics (200.9%) and Applied Science (63.9%); the 1993-94 enrollment showed a 35.5% increase in enrollment in applied academic courses over the 1992-93 enrollment;

- in 1993-94, two of the districts in the consortium placed 24 high school and technical college students in youth apprenticeships in 17 companies;

- in 1993-94, 729 businesses in Anderson, Oconee, and Pickens Counties participated in an employer needs assessment;

- in 1993-94, over 300 educators participated in PACE-sponsored staff development programs; a national conference was held for over 300 registrants representing 22 states; and 111 presentations were made at 40 state, regional, national, and international conferences.

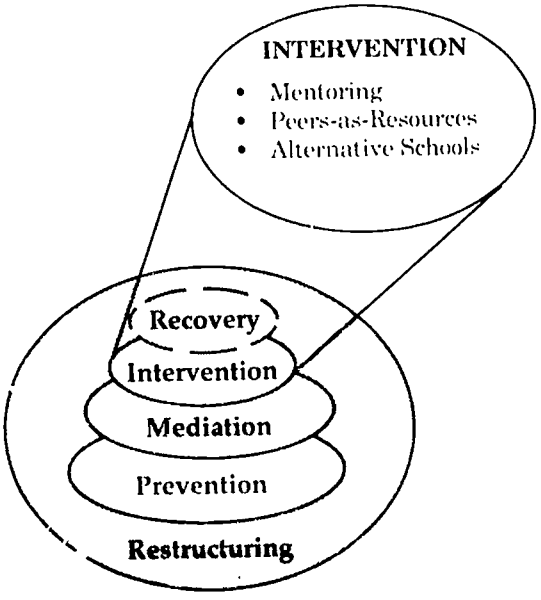
When implemented with the attention to detail exhibited by the PACE Consortium, Tech-Prep programs can help motivate students to finish high school, complete more challenging academic and occupational coursework, pursue postsecondary occupational education at least through the associate degree level, and enter the workforce with the skills needed to help compete in a global economy. Tech-Prep provides an important, viable alternative for students who do not plan to prepare for baccalaureate study while in high school.



Chapter Five
Intervention Strategies

Intervention strategies are designed to interrupt or modify academic, school, or personal problems that are negatively affecting students' performances. Intervention strategies are those that address the continuing needs of students who remain at risk in middle and high school. Although mentoring and peers-as-resources strategies might also be considered appropriate mediation strategies, they are especially effective when used to intervene in situations where students are having particular difficulties. Alternative schools provide settings in which students who do not do well in the regular classroom receive help appropriate to their needs. Figure 7 lists the strategies discussed in this chapter.

Figure 7: Intervention Strategies



Mentoring

What is Mentoring?

Mentoring can be defined as a sustained relationship between an adult and a youth or a more experienced person and a novice. This section focuses on the relationship between a caring adult and a student.

Adult relationships, not only those provided by parents and grandparents but by neighbors, teachers, and other concerned adults, are a protective factor for youth growing up in stressful family and community environments (Benard, 1992). Mentors—whether teachers, business people, or community volunteers—have opportunities to relate to students in ways that parents and teachers usually do not. Mentors can be friends, rather than authority figures (Smink, 1990). The establishment of a caring relationship between the adult and youth is the essential ingredient in mentoring (Cave & Quint, 1990; Ferguson, 1990; McPartland & Nettles, 1991).

A mentoring program is based on the premise that the mentor has something to offer: experience, position, advantages, abilities, or simply a caring attitude (Smink, 1990). The mentoring relationship provides youth from the disadvantaged environments an access to resources, opportunities, values, customs, and people of different occupational and social worlds (Smink, 1990). Many mentors tutor youngsters, coach them on job interviews, investigate scholarships, take them to visit college campuses, find them internships, and serve as their advocate in a variety of situations (Benard, 1992).

Supporting academic achievement is an extremely important mentoring role. In fact, if the primary goal of a mentoring program is to keep students from dropping out of school, academic support must be paramount. This support can include tutoring in specific subjects, working on basic skills, fostering effective time management habits, helping with homework, or assisting with special school projects (Smink, 1990). The mentor needs to display an attitude that views youth as resources to be nurtured and not problems to be fixed and to convey the message that the youth can be successful (Benard, 1992).

Effectiveness of Mentoring Programs

Mentors can play a critical role where parents are either unavailable or unable to provide responsible guidance for their children (Floyd, 1993). A survey of 800 Career Beginnings participants from 16 cities (Harris & Associates, 1990) found that at least half of the students said mentoring helped them learn to succeed, improve their grades, avoid drugs, increase their regard for people of other races, and improve their relationships with teachers and family. In addition, the adults reported that mentoring helped them:

- Fulfill their own responsibilities (50%)
- Strengthen family relationships (25%)
- Increase their regard for people of other races (50%)
- Recognize they make a difference (25%)
- Be willing to get involved again (80%)

A mentoring program, Rendering Educational Assistance through Caring Hands (REACH), was implemented at Langston Hughes Intermediate School in Reston, Virginia, during the 1988-1989 school year (Blum & Jones, 1993). The program components included a peer support group that met once a week, and daily, one-on-one contacts between students and their adult mentors. The teachers who taught the students in the REACH program indicated that the students improved in promptness to class, preparation for class, quantity of daily assignments completed, participation in class, classroom behavior, positive interactions with peers, and report card grades.

A comparison of the third-quarter and first-quarter grades in mathematics, English, science, and social studies of the students in the REACH program showed the following (Blum & Jones, 1993):

- 52% reduction of Fs
- 10% reduction of Ds and D+s
- 16% increase of Cs and C+s
- 22% increase in Bs and B+s

Students whose mentors interacted with them daily, tutored students or supervised after-school study sessions, monitored academic progress, and elicited parent involvement showed greater significant improvement.

Implementing a Mentoring Program

Establishing a mentoring program for youth in at-risk situations takes planning. While every school and community is unique, the following steps can serve as a guideline for setting up a program to meet individual needs and goals (Smink, 1990):

1. **Establish program need.** The program can include all students in at-risk situations, or a particular population such as all ninth-grade students. It can concentrate on academic skills, career awareness, or personal skills. The focus of a program is determined by the needs of the youth to be served. Each school and community has unique problems which must be considered when developing a mentoring program.

2. **Ensure school district commitment.** Whether the program is school-, community-, or business-based, the school district must be involved. Mentoring programs must complement, not compete with, the student's regular academic and scholastic activities. Additionally, teachers, guidance counselors, and school administrators are an invaluable resource in selecting students for the program, monitoring their progress in school, and locating additional help if necessary.

3. **Identify and select program staff.** Many programs begin with a steering committee or other type of advisory board comprised of school staff, business people, community leaders, and parents. It is helpful to assign at least one person to coordinate the program. This individual oversees the daily progress of the program and is available to both mentors and students when problems arise.

4. **Refine program goals and objectives.** It is impossible to measure the success of the program without clear-cut goals and objectives. For example, if the primary objective of the program is to keep dropout-prone students in school, set goals for improvement in attendance and academic achievement.

5. **Develop activities and procedures.** Establish guidelines for the length and frequency of mentor-student contact. Most planned mentoring programs require a commitment

of from six weeks to one year and from an hour a week to daily contact. Obviously a short-term relationship with only a few hours of contact cannot hope to achieve the richness, depth, and complexity of a long-term relationship (Benard, 1992). By making a time commitment, both the adult and student are committing themselves to being predictable, available, accessible, and responsive—all necessary for the development of trust and mutual respect in a relationship. Orientations, workshops, and other group activities should be planned in advance and put on a master calendar. Each participant should receive a written copy of the program details and a schedule of activities.

6. **Identify students in need of mentors.** Students may be referred by teachers, guidance counselors, social workers, the court system, or their parents. Participation by students works best, in most cases, when it is voluntary. Youth who are receptive to new ideas, committed, have the ability to listen and ask questions, and show enthusiasm will profit most from the experience.

7. **Promote program and recruit mentors.** Recruitment of mentors can be done both formally and informally through flyers, posters, mailings, word of mouth, and media announcements. Some program mentors come from college campuses or from specific businesses or community groups. The more a program demands from a mentor, however, the smaller the number of adults who will be willing to volunteer (Hamilton & Hamilton, 1992). Mentors should care about, understand, accept, and enjoy young people. In addition, the mentors should be perceived as trustworthy and flexible by the youth to be served. Mentors may be matched with students before, during or after training sessions.

8. **Train mentors and students.** While training may not turn a poor mentor into a good one, it can be used as part of a selection process. There is increasing evidence that lack of training is a primary cause of unsuccessful mentoring. Any training program must focus on the mentor's role, the goals of the relationship, and the development of a plan to meet those goals. Training should also cover the organization of the program, including what is expected of a mentor in terms of time and commitment. A training session

which includes both mentors and their students is helpful in communicating expectations and understanding roles. Showing students before they begin how to get the most from the experience will increase the benefits.

9. **Manage mentor and student matching process.** The literature on matching the race and gender of the mentor with a protege is inconclusive. Some studies say that similarity is necessary, others lean toward the opposite. Nor is similarity in personality necessarily a predictor of a successful match. What seems most important is the ability of the mentor to empathize with the student, to identify his or her needs, and to provide manageable steps to fill those needs.

10. **Monitor the mentoring process.** Student-mentor relationships require monitoring on a regular basis. Monitoring during the program is accomplished through brief meetings, questionnaires, or telephone calls. This ensures that problems are addressed early, and mismatches are reassigned. In addition, mentors must realize that they can not resolve every one of their students' problems. Other sources of help, such as counselors and social service agencies, must be made available during the mentorship.

11. **Evaluate ongoing and terminated cases.** One of the primary reasons for the absence of research on mentoring programs for youth is the lack of program evaluations. While time and money constraints often mean that evaluations are last on the list, they are critical to the success of the program. Evaluations based in part on information gathered during the monitoring stage measure a program's effectiveness, as well as suggest changes and improvements for future programs.

12. **Revise program and recycle steps.** Revision of a program should be based on information from mentors, students, program staff, and evaluation data. Revision should be a continuous process. As the program progresses, it may be necessary to eliminate some elements and add others. As students' needs change, the program should change in order to meet those needs.

Recommendations

To those considering implementing a mentoring program, Hamilton and Hamilton (1992) offered recommendations derived from experience gained by Cornell University's Department of Family Studies in a demonstration mentoring program called Linking Up. The recommendations included the following:

1. Employers and organizations that are willing to take on the task of finding volunteers within their ranks are a more promising source of mentors than one-at-a-time recruitment.

2. Mentoring programs should concentrate on youth in need.

3. Mentors need well-defined and clearly communicated goals. The Linking Up project's initial training for the mentors presented five mentoring functions and introduced the goals of building character and competence. An intense initial meeting of mentor, protege, parent, and program coordinator focused on what the pair would do together, under what conditions, and why. Yet the researchers found these efforts proved insufficient for most mentors.

4. Building competence is the most functional goal for mentoring. Competence is the capacity to do something well. Warm interpersonal relations are more likely to result from a focus on building competence than from a focus on building a relationship.

5. Mentors need continuing support. Even mentors who appeared to be successful expressed frustration about the need for additional support beyond the initial orientation and training.

Peers-as-Resources

Although this section is included as an intervention strategy, children need to experience themselves as resources from early childhood (Benard, 1990). Seeing oneself as an important part of the school or community reinforces children's positive self-concepts and increases their resiliency.

The term *peer resource* is used to refer to children and youth working with and helping others. A growing body of research indicates that peer interaction is important to many early achievements. For example:

- reciprocal peer interactions teach children to share, comfort, and empathize with others (Attili, 1990);
- through peer interaction, children learn critical social skills such as impulse control, communication, and friendship skills (Benard, 1990); and
- peer acceptance and the ability to make new friends has been associated with liking school, higher school attendance rates, and higher academic performance level (Ladd, 1990).

Several of the strategies discussed earlier such as service learning and cooperative learning are peer resource programs. Other programs include peer tutoring, cross-age tutoring, peer helping, peer mediation, and peer leadership (Benard, 1990). The following sections will discuss two of these—peer tutoring and peer mediation.

Peer Tutoring

Peer tutoring is a collaborative learning strategy. Such strategies have the potential to improve the learning of children of different ability levels (Fuchs, Fuchs, Bentz, Phillips, & Hamlett, 1994). Collaborative strategies—such as cooperative learning and peer tutoring—require students to work together to support each other's learning. Peer tutoring, however, usually matches pairs of students—older and younger or higher-achieving and lower-achieving—with the purpose of helping the younger or lower-achieving student improve academically.

Effectiveness of Peer Tutoring. Research studies have documented the effectiveness of peer tutoring. Peer tutoring has been found to be more beneficial than reduced class size, longer instructional time, or individualized computer-assisted learning (Berliner & Casanova, 1988). Studies have identified an increase in the academic skills of low-socioeconomic students; academic gains for both tutees and tutors; and improvements in students'

attitudes, self-concepts, and social skills. In comparison to most other methods of instruction, peer tutoring appears to be relatively inexpensive (Giesecke, Cartledge, & Gardner, 1993).

Recent cost-effectiveness research shows that peer tutoring provides higher achievement-per-dollar than many other educational innovations which are used more often (Martino, 1994). For example, Levin, Glass, and Meister (1984) found peer tutoring produced more than twice the achievement in math and science than did computer-assisted instruction when program costs were weighed. Bloom (1984) found that the average tutored students outperformed 98% of a similar group of students taught under a conventional form of textbook, lecture, worksheet, and test method.

Research reported by the National Association of Secondary School Principals (Wircenski, Sarkees, & West, 1990) found that young people in at-risk situations who were involved in well-planned and supervised peer tutoring situations showed the following:

- gains in their grade-point averages;
- improvement in reading, math, writing, communication, and study skills;
- increases in reading comprehensive levels;
- improvement in their ability to identify long-range goals; and
- gains in self-confidence and in interpersonal skills.

Most peer tutoring occurs between high-achieving students and their low-achieving peers or younger students. A study reported by Giesecke, Cartledge, and Gardner (1993) was designed to determine whether low-achieving students could tutor younger students effectively and if they themselves could experience improved achievement and self-confidence. The children were selected by their classroom teachers to participate in this study. Fourth-grade students served as tutors to third graders. Tutors were chosen by the fourth-grade teacher who selected students whom she judged to be least skilled in reading and who were least likely to be "viewed as role models by their peers."

The six-week tutoring program included one week for tutor preparation and five weeks of tutoring. Tutor preparation consisted of five 30- to 40-minute sessions one week prior to the tutoring sessions. Tutors received training in what it meant to be a tutor, the activities and materials of the tutoring program, the four components of each tutoring session, reinforcement procedures, review games, and testing and charting procedures.

The responses from the tutors and tutees were uniformly positive. The gains made by the students in this study over the relatively brief period of five weeks were impressive. In addition, there was sufficient evidence to determine that under well-structured, closely supervised conditions, low-achieving students can be successful tutors (Giesecke, Cartledge, & Gardner, 1993).

Miller, Kohler, Ezell, Hoel, and Strain (1993) found that *structured* peer tutoring resulted in greater benefits to students than did informal tutoring. In structured situations, students are taught systematic procedures that involve presentation of instructions and feedback, including reinforcement and correction, so that high rates of tutee participation are generated (Greenwood, Carta, & Kamps, 1990).

Results from a study by Fuchs et al. (1994) suggest that peer tutoring can be structured to promote positive instructional interactions among children. In this study, youngsters who had previous instruction and experience in peer tutoring conducted longer instructional sessions and the accuracy of the problems completed was higher. In addition, observations of student interactions during the peer-tutoring sessions revealed the use of more effective tutoring strategies by experienced tutors. The explanatory-prompting and question-asking among experienced tutors served to structure and increase the tutees' direct involvement in the learning tasks (Fuchs et al., 1994).

The transcripts of the tutoring sessions illustrate how the experienced tutors structured more interactions with their tutees compared to the inexperienced tutors. In fact, many of the inexperienced tutors in this study spent most of their time talking, demonstrating, and completing problems by themselves, with little if any interaction with the tutee. This provided little (and sometimes no) opportunity for their tutees to apply or practice the tutor's explanations and demonstrations. The tutees of inexperi-

enced tutors spent more time sitting, watching, and listening. In contrast, experienced tutors structured questions that guided tutees to rehearse the steps necessary to complete the problem. This instructional style resulted in the tutees of experienced tutors responding more actively (Fuchs et al., 1994).

The Parsons, Kansas, School District is in its third year of conducting a for-credit peer tutoring class at the high school level (Martino, 1994). The peer tutoring class is a regularly scheduled elective course offered for high school students. Students wanting and needing help with any of their classes can request enrollment in the peer tutoring class. Also, honor students, gifted students, and other caring students with solid study skills who are taking many of the same courses (or already have taken them) apply and are chosen to enroll in the tutoring class as peer tutors.

The peer tutoring class meets daily throughout the semester. Students receiving help attend both their content classes and the peer tutoring class. Both peer tutors and tutees receive a grade and earn elective credit in this class—class credit has been a significant carrot for students' academic success in this class (Martino, 1994).

Implementing a Peer Tutoring Program. To begin a successful peer tutoring program, commitments from the building administrators, staff, school board, and parents are necessary to establish several prerequisites (Martino, 1994):

- creating program philosophies and policies,
- setting criteria for choosing peer tutors,
- setting criteria for choosing students to be tutored,
- defining roles and limits of peer tutors,
- holding peer tutor training sessions,
- providing community awareness about the benefits of the program,
- generating parental awareness that their children are more involved in learning, and

- designing an evaluation plan for both the program's outcomes and those of individual participants.

Miller et al. (1993) provided the following systematic process for planning, implementing, and maintaining a structured peer-tutoring program:

Planning. The planning process addresses (a) identification of the skill to be taught, (b) selection of the materials with which to teach the skills, (c) selection of the times for tutoring, and (d) structure of the tutor-tutee interactions necessary to teach the skill.

Training. The goal of training is for all students to perform their assigned roles as accurately and independently as possible. This involves (a) introducing and providing the rationale for each step of the tutoring procedure, (b) modeling the tutoring step, and (c) having the students rehearse the tutoring step with decreasing levels of adult instruction and feedback.

In structuring the students' interactions necessary to teach the skill, the most important part is developing a tutoring procedure that builds on effective teaching practice. The goal is to apply a few basic strategies that will structure and facilitate the tutor-tutee interactions. These include the following:

Provide Prompts: Examples of prompts the tutor can use include, "Start with the first word on this page" or "Try this card next."

Give Immediate Correction: Stop the tutee immediately whenever an incorrect response has been given, and immediately provide the correct answer.

Repeat a Corrected Response: This directs the tutor to seek more practice of the correct answer by the tutee.

Give Reinforcement: The intent of this action is to strengthen correct responding by the tutee and to give credit for a job well done.

Monitoring and Evaluation. Once training has been completed and the tutoring sessions have begun, the next step is to observe whether the procedures are being implemented as planned (Miller et al., 1993).

Conflict Resolution and Peer Mediation

Conflict Resolution

Conflict often is seen as something that needs to be eliminated or removed, instead of something that can be worked through and used constructively. Conflict is normal and is part of everyone's life. How each person chooses to handle conflict determines whether the experience is beneficial or detrimental to his or her growth. Some people choose to handle problems by avoiding confrontation altogether. People who avoid conflict, however, lose opportunities to express their own feelings and convictions and often damage not only their self-esteem, but also their relationships with others (Rogers, 1994).

Children learn early by example how to handle conflict, anger, and frustration. Unfortunately, some families and communities send the message to children that the best way to deal with conflict is through violent means. In the state of South Carolina, out of 5,000 students who were surveyed, 33% of the females and 50% of the males had engaged in physical fights within the last 12 months (Department of Health Promotion and Education, 1991). In order to survive at home, in the community, and among their peer groups, children learn to lash out, make threats, defend themselves, and take revenge when conflict arises. Handling conflict in nonviolent ways is something many children never have been taught (Rogers, 1994).

Early intervention programs can teach students how to be aware of and overcome the violence that surrounds and influences them. Children of preschool and kindergarten age can learn the conflict resolution skills of empathy, impulse control, and managing anger. Such programs, implemented in preschool and/or elementary school, teach nonviolent behavior, a life skill that will continue to develop in the later years of adolescence and adulthood. Not only schools, but parents, communities, child-care providers, and health-care providers

can help equip children with the skills to manage and work through impulsive, aggressive actions (Rogers, 1994).

The Choosing Non-Violence (CNV) Program of Chicago found that when primary school students were asked to think about how they express their strong feelings, they spontaneously shared a list of extremely violent responses, such as breaking windows, beating up little kids, and destroying loved items or works of their own art (Parry, 1993). As a result of these findings, the program developed a strategy of early intervention to redirect the destructive tendencies already exhibited by the young students. The purpose of the CNV program is to help children with the following (Parry, 1993):

1. understand what violence is; be able to identify it in their lives, their toys, their choice;

2. realize they have the power to choose and control how they will act; and

3. learn the power of language so they can use it to express how they feel, to protect and defend themselves without being violent.

Peer Mediation

Peer mediation is a method of conflict resolution that enables people involved in conflict to reach a mutually acceptable agreement with the help of a neutral "mediator." In peer-mediation, this mediator, instead of being the adult referee who simply steps in and makes the calls, is usually only slightly older than those involved in the dispute. Mediations can involve third- and fourth-grade students as mediators when first- and second-grade students are the disputants (Rogers, 1994).

Peer mediation emphasizes that everyone engaged in a conflict has the choice of allowing themselves to be overcome by negative perceptions and resentment, or to control the situation, take action, and resolve it in a nonviolent way. As students become aware of the constructive results that can come out of a conflict when dealt with through peer mediation, they are encouraged to take control of their lives and relationships with others (Rogers, 1994).

Effectiveness of Peer Mediation

Peer mediation programs are most effective when they provide exposure to conflict resolution skills in elementary and middle schools. By the time students reach high school, some violent tendencies may be more difficult to overcome and change (Rogers, 1994). The National Association for Mediation in Education found that peer mediation programs are considerably less successful in high school where being 'cool' takes precedence (Pilati, 1993). To effectively affect the way a person chooses to resolve conflict throughout life, the training of peer mediators and the teaching of conflict resolution skills must occur during the younger years of life (Rogers, 1994).

Although qualitative research studies on the effectiveness of peer mediation programs are more abundant than are quantitative studies, research findings indicate that programs provide many benefits for students. In the Resolving Conflict Creatively Program in New York City, a K-12 peer mediation training program, teachers reported the following (Metis Associates, 1990):

- 70.9% observed that to a moderate or great extent children demonstrated less physical violence in the classroom,
- 66.3% observed less name-calling and fewer verbal put-downs among children,
- 77.8% observed more caring behavior among the children,
- 69.1% observed an increased willingness to cooperate among children, and
- 71.5% noticed that children increased skills in understanding others' points of view.

Peer mediation programs provide benefits for teachers as well as for students. When encouraging students to resolve conflicts constructively, teachers could not help but adopt some of the problem-solving techniques themselves. The teachers reported the following (Metis Associates, 1990):

- 83.9% stated their listening skills improved,

- 89.3% felt they had increased understanding of individual children's needs and concerns,
- 87.7% felt an increase in use of specific conflict resolution techniques in the classroom,
- 92.9% felt their attitudes changed to be more positive about conflict and conflict resolution,
- 78.6% agreed their sensitivity to children whose backgrounds were different from theirs increased, and
- 89.3% noticed an increase in their willingness to let young people take responsibility for solving their own conflicts.

Components of Peer Mediation

Peer mediation programs train a group of students to take on the role of being unbiased, empathetic listeners, respectful of the differences of others, helping them work together, so they can come to a mutual, peaceful agreement. Major components of peer mediation are: active listening, cooperation between participants, acceptance of each other's differences, and creative problem-solving which takes into account each participant's position. Peer mediation promotes communication that is fundamental to growth, emphasizing that conflict can be constructive if feelings are communicated and dealt with rather than ignored and/or allowed to escalate (Rogers, 1994).

The peer mediation process consists of the following 11 basic steps (Rogers, 1994):

1. Mediator asks each participant to agree to adhere to certain rules:
   - to try to solve the problem
   - not to interrupt others while they talk
   - not to put down or threaten while you tell your side of what happened
   - to be honest
2. Mediator asks one participant what happened.
3. Participant responds.

4. Mediator summarizes what was said.

5. Mediator asks the other participant what happened.

6. Participant responds.

7. Mediator summarizes what was said.

8. Feelings of both participants are discussed.

9. Mediator asks participants to think of ways to solve the problem.

10. Alternatives are discussed and some eliminated.

11. Agreement is made for a solution to which both disputants can agree.

It is important to note that peer mediation may not be appropriate in some instances. Conflicts involving weapons, illegal activity, or blatant injustice are normally beyond the scope of peer mediation and are the responsibility of the school administration. Peer mediation may be used to "talk out" the conflict after other school policy measures have been taken (Rogers, 1994).

Implementing a Peer Mediation Program

Rogers (1994) outlined the following steps for implementing a peer mediation program:

1. Form an advisory council that includes students, parents, teachers, administrators, and counselors.

2. Send representatives to be trained or bring in a professional mediator to train staff members on site. Training can occur during several in-service sessions. All teachers, parents, administrators, and counselors should be invited to attend.

3. Purchase or write a program manual including your purpose, procedures, and plan (timetable), establishing goals and making modifications along the way as needs are revealed.

4. Select the students to be trained as mediators. This can be done in various ways:

   - teacher recommendation
   - student interest application
   - student body elections
   - student body sample, appointed
   - conflict mediator club participants

5. Train the student mediators by first analyzing the alternatives to violence, exposing them to the simple mediation process (establish rules, hear each student's side of the conflict, summarize, and suggest possible solutions to the problem), and finally, placing them in many impromptu role play situations, taking turns being the mediator.

6. Make sure the student body is fully aware of the purpose and availability of the peer mediation program.

7. Keep the program going with monthly or bimonthly meetings including the advisory council and the student mediators to discuss happenings, problems, successes, and to offer encouragement and feedback to all involved.

Peer mediation programs provide many benefits for students. Students like being given the tools and the responsibility to work out their problems without parental or teacher supervision. Talking out disputes is a new approach for many students. Most students enjoy attempting to understand different points of view, when he or she knows that others are making an effort to understand his or her point of view. Peer mediation not only builds self-respect, but it also encourages students to understand those who, either culturally or ethnically, have a perspective different from their own. For many students, being able to sit down and talk about disputes without the threat of violence is a new and rewarding experience (Rogers, 1994).

Alternative Schools

Until the late 1980s, the research base for alternative education was dependent on studies conducted during the 1970s. In a review of this early research, Young (1990) discussed a study by

Gold and Mann on the academic achievement and attitudes of delinquent students. The researchers compared approximately 60 at-risk students from three alternative secondary schools with a matched group of students from conventional secondary schools in the same districts. The study found the following:

- Alternative students were significantly less disruptive in school at the end of the study than conventional students.
- Teachers rated alternative students who returned to conventional schools as slightly better behaved than conventional students.
- Alternative students were significantly more positive about school and confident in their role as students than conventional students.
- While alternative students received slightly improved grades when they reenrolled in conventional schools, their achievement test scores did not improve and were not different from those of conventional students.

The researchers explained these findings by pointing out the importance of alternative school students' perceptions that teachers considered their feelings, needs, and abilities when teaching. Alternative schools were perceived as more flexible than conventional ones. Alternative school students reported more personal contacts with teachers and classmates, and observers recorded more incidents of praise and acknowledgment of students in alternative schools (Young, 1990).

Another early study by Foley (1983) conducted for the Public Education Association (PEA) examined alternative public high schools in New York City. These schools were organized in the 1970s to provide an opportunity for youths dropping out of, or experiencing difficulty in, traditional schools. The eight high schools in the study served mainly students with records of poor attendance and underachievement. A preliminary assessment compared credit accumulation and attendance data for the fall of 1981 for 25% of incoming students at the eight alternative schools. On average, this group of nearly 300 students earned 60% more credits and cut their absences by nearly 40%.

Three of the schools, which had significantly improved students' attendance and credit accumulation, were selected for intensive study. Repeatedly, students in these schools expressed real satisfaction about their relationships with teachers; about the safe, nonviolent, and caring atmosphere of their schools; and about the educational programs they perceived as well suited to their needs and interests. Observations and interviews suggested specific factors that accounted for the success of the three case-study schools.

The strengths of the alternative schools appeared to be their well-focused academic programs and their capacity to foster creative human relationships between students and teachers. These exemplary teaching/learning relationships were the result of several features of the schools (Foley, 1983):

- These schools had well-defined student populations; the faculties knew what their students needed, and they planned accordingly.

- The schools had principals who were strong academic leaders who worked with the faculty to structure curriculum on the personal, social, and cultural experiences of the students, their intellectual needs, as well as the school system's subject requirements.

- Teachers' roles were diversified to allow for increased participation in management and opportunities to counsel students, which enhanced teachers' sensitivity to students' needs.

- Partial course credit, fast-paced cycles, and learning contracts enhanced students' opportunities to succeed academically. Participation was encouraged by regular classroom discussions, encouraging students to make decisions regarding the courses they would take, and by structuring learning through doing.

- A few commonly agreed upon, frequently discussed school rules established clear standards for conduct, and a highly structured support system enabled students to live within those rules.

- Small school size allowed principals and teachers to reach students who were formerly hard to reach in school,

encouraged communication and a sense of belonging, and limited bureaucratic obstacles.

The studies reported by Young and Foley are interesting because more recent evaluations of the effectiveness of alternative schools have produced similar results. For example, in 1988 the Arizona legislature initiated the Arizona At-Risk Pilot Project, a longitudinal evaluation study (1989-92) of 13 district- and school-based projects that affected the lives of over 10,000 7-12th grade "retrieved" dropouts and potential dropouts. Sites were charged with integrating academic, vocational, and support services and did so through a continuum of programs ranging from off-site alternative schools serving exclusively teens in at-risk situations to "school-wide" reforms serving all students (Vandegrift, 1992).

The programs were diverse in nature, but overall, the findings indicated that alternative programs appeared most "promising" for 7-12th-grade students at risk, although other delivery systems did produce positive outcomes related to the services they provided (e.g., vocational services produced vocational outcomes). The evaluation results consistently pointed to the alternative-school model as the most effective and positively perceived delivery system for students in at-risk situations at the secondary school level. By incorporating a variety of instructional, vocational, and support strategies into a comprehensive system, which was customized to the unique and diverse characteristics of older at-risk students, alternative schools seem to be providing a viable option for students who have been alienated from the "regular" educational system.

Evaluation data for all the programs indicated that students made progress in attendance, credits earned, and achievement. During 1990-91 alone, nine out of every ten of the program participants—teens who were well-acquainted with school failure—reportedly remained in school or graduated. Attendance rose for the first time since the initiation of the programs. Standardized test gains were made in language and math with 12th-grade students exiting at higher skill levels than their predecessors in these areas. Many of the attitudinal and behavioral changes were attributed to helpful and caring staff who provided more individual attention (Vandegrift, 1992).

The Maine Department of Education and the College of the Atlantic conducted a study of seven rural alternative education programs to develop systematic assessment processes for such

programs and to provide insight into what qualities contribute to their success (Antonucci & Mooser, 1993). Each program was unique, responding to the needs of its own community. The types of programs ranged from those which provided support within the regular school setting to those which were completely self contained. The goal of the support centers was to help students experience success in the regular programs. The goals of the self-contained programs were to develop the whole child, foster a sense of belonging, and instill a desire to be a productive member of the community and to complete high school.

The research team decided rather than listing the deficiencies of the students, to focus, instead, on mechanisms and schooling practices that program staff could control in order to change the schools to fit the students. The team completed a structural analysis of each program from interviews and researchers' field notes. Looking at organizational and policy patterns, they found a complex relationship between the programs and the school and community of which they are a part. It was clear that there were no easy steps to program success and no sure formulas for dropout prevention. External causes had a great impact on the programs. A change of principal, loss of an advocate at the central office, the assignment of a faculty member to an alternative program because there was no other place to "dump" him or her, a struggle to maintain funding, a new school board, or a hostile faculty can doom a program (Antonucci & Mooser, 1993).

When programs did not have to fight for their existence, however, they met the needs of their students. Although students felt that teachers and administrators in their regular schools didn't care about them, each alternative program had at least one person who students felt did care about them. The alternative schools had more realistic homework expectations. Students who worked after school, took care of their own children, or had no place to do homework found alternative programs more flexible. The students liked the schedules in the alternative programs where they had longer time periods to concentrate on fewer subjects. The flexibility of alternative program schedules allowed students to work school around other commitments.

An important factor in the alternative-school programs was that these programs gave students a sense of belonging. Few of the students had successful social lives in the regular schools. Many of the students had a history of dysfunctional relationships with adults. Often their relationships with their alternative-school teachers were the only

meaningful adult relationships in their lives; their relationships with other students were their only experience with acceptance by peers. A significant number of the students expressed feelings of not being valued. The alternative programs were structured so that students could achieve success and feel valued as individuals, "perhaps for the first time in all of their schooling years" (Antonucci & Mooser, 1993).

Research indicates that there are certain characteristics present in alternative schools which are successful with students who do not prosper in the regular schools. It is clear that successful alternative programs have the following characteristics: (a) they are small and have low teacher/pupil ratios; (b) they have faculties that develop caring relationships with students; (c) they set forth clear rules; (d) they have high expectations for student achievement; (e) they foster positive peer relationships; and (f) they develop student self-esteem. Students who are problems in regular schools seem to function better in alternative schools. Students who might otherwise drop out of school and become problems to society can become productive adults with the help of understanding and caring alternative-school teachers.

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Chapter Six Summary

Comprehensive, Systemic Change

Every aspect of children's lives affects their ability to learn and succeed in school. However, conditions associated with poverty environments are major factors in students' dropping out. Children whose home environments and social backgrounds result in development different from the mainstream enter school at a distinct educational disadvantage. When the problems encountered within the family and neighborhood combine with the problems children encounter within the schools, the results are staggering. Nearly half of America's adult population may not be able to perform the range of complex tasks necessary for the United States to compete successfully in a global economy or for the adults to exercise the rights and responsibilities of citizenship. At a time when specialized, postsecondary education is a prerequisite for many high-technology jobs, statistics indicate that 20% of adults over the age of 25 in the United States had not completed high school, and that over 12 million persons 18 years of age and older had less than a 9th-grade education in 1993.

School systems across the country are antiquated bureaucratic and technical structures, highly complex, surprisingly similar, and very resistant to change. Most reform strategies have assumed the present educational system is fundamentally sound and that no basic changes are needed. The potential dangers in trying to fix the present system, however, are greater for the failure-prone child, the underprepared, and those disenfranchised youngsters from underclass ghettos and barrios. Many practices designed to "remediate" students produce, instead, a number of damaging effects such as lowered perceptions of academic competence, decreased academic motivation, and reduced intrinsic interest in learning.

The National Dropout Prevention Center advocates a comprehensive, systemic approach to educational reform. While teachers and administrators continue to be blamed for the poor achievement of students, research indicates that the structure of the school workplace has a greater influence on what professionals do than personal abilities, professional training, or previous experience. Attempts to improve student learning will be successful only to the extent that changes throughout the system give schools sufficient latitude to adapt new policies or practices to their unique circumstances and to develop their own solutions to problems.

The effective implementation of systemic change means finding ways to create a collaborative mode of work to replace the existing isolation and powerlessness under the traditional system.

Restructuring

The National Governors' Association Task Force on Education asserted that significant steps must be taken to restructure education in all states. The purpose of restructuring is to ensure that the educational system is congruent with the needs of those who work within it and the needs of those it serves. The educational system must be changed to create a flexible organization that enables teachers, school administrators, students, parents, and community members to collaborate in providing within each school the experiences students need to achieve success. School-based management is an important component of any educational restructuring reform. School-based management expands the leadership within a system and is distinguished by a focus on the individual school as the unit of decision making and the management of substantial resources.

When participatory decision making is an integral part of organizational decision making, the school community defines its vision for the school, explores the needs of the students and the school, researches possible approaches to restructuring the instructional and curricular core of the school, proposes possible strategies for implementation, and allocates resources to accomplish its goals. Insufficient material resources are a major constraint on the effectiveness of self-managing schools. Even with all the other elements in place, restructuring efforts eventually will fail if schools do not have (and cannot get) the resources they need to do their work.

Professional development must be provided so that members of the school community can develop the knowledge and skills required to participate in school-based management and to become proficient in new instructional strategies. In addition, teachers must be prepared to work in creative ways with students who do not respond to traditional instructional methods.

A considerable body of research exists on successful professional development programs. Components to be considered for effective professional development include context, content, choice, continuity, coaching, control, and commitment.

Prevention Strategies

Prevention includes those actions taken which anticipate, forestall, or deal with cognitive, social, or personal problems before they irretrievably impair a student's ability to perform successfully in school. Prevention strategies are designed to "level the playing field"—to strengthen students' resiliency, to help students in at-risk situations enter school ready to learn, to provide the skills necessary for school success, to assist parents in becoming involved in their children's education, to ensure physical and mental health, and to remove barriers to success within the early grades.

Resiliency is the ability to withstand, adjust to, or recover from risk, stress, or adverse environmental circumstances. The strongest prevention measures are those which help children develop resiliency. Resiliency results from social supports which facilitate the development of psychological strengths and behavior coping mechanisms that assist an individual in modifying his or her responses to critical risk situations.

Social support is provided by the family, peers, the community, and the school. When social support is low in one setting, other settings need to compensate. Caring relationships increase resiliency in children. Effective schools foster resiliency by providing opportunities for students to develop caring relationships with both adults and other students.

The earlier a problem is identified and addressed, the greater will be the impact on students in at-risk situations. Studies of birth-to-three interventions demonstrate that IQ can be modified by changing a child's environment. The most effective way to

reduce the number of children who will ultimately drop out is to provide the best possible classroom instruction from the beginning of their school experience. It appears to take intensive efforts over a period of several years to produce lasting effects, but the fact that even the least intensive models produced strong immediate effects suggests that a combination of approaches within a comprehensive preventive program will have great promise in increasing children's cognitive functioning. National Diffusion Network programs such as *Early Prevention of School Failure* and *Reading Recovery* can prevent academic failure.

There is a significant relationship between behavior in early grades and later success in school. Although most children learn classroom rules and norms quite easily, many children from at-risk situations have difficulty understanding what the rules are and how to behave appropriately. Students who cannot meet the implicit expectations of teachers often suffer year after year of poor school performance without knowing exactly what is wrong. For this reason, the development of socially responsible behaviors should be as much a part of the elementary curriculum as academic competence.

In recent years, practitioners have been searching for alternatives to the choices of retention in grade or social promotion. A number of districts are resurrecting a practice tried in the 1950s—continuous progress, nongraded primary schools. Nongraded levels and continuous progress schools are based on the philosophy that children develop at differing rates. Such schools offer flexible groupings that encompass a two- to four-year range in age, allowing movement between levels as pupils are ready to advance.

Research consistently finds that parent involvement has a direct, positive effect on children's achievement. Schools and school systems which are successfully involving parents began by responding to the qualities, characteristics, and needs of the parents in order to overcome the barriers which interfere with communication. These barriers include parents' level of literacy; language preferred for reading, listening, speaking, and writing; daily commitments and responsibilities that may affect the time, energy, and attention available to devote to school; and parents' level of comfort in becoming involved in their children's education.

Many crucial influences on the education of at-risk children are outside the school's orbit. Schools alone cannot handle the problems of

students who come from at-risk circumstances. Programs that successfully link education, health, and human services tend to have some of the following characteristics: (a) comprehensive menu of services, (b) shared governance, (c) collaborative funding, and (d) organizational models that reflect the needs of the communities they serve. The flexibility necessary to deliver comprehensive services is often limited by policies that regulate the governance and funding of schools and other agencies. Creating such flexibility demands mechanisms that span political and organizational boundaries. State government has a major role in funding local planning and in providing start-up capital for integrated efforts.

Mediation Strategies

Mediation is the process of ensuring that all students acquire—the first time around—the skills they need to function effectively both in school and in the world outside of school. In other words, *mediation* ensures that *remediation* will not be necessary. This is accomplished by establishing hospitable educational environments in which students feel supported and cared for, where failure is seen as just one step on the road to learning, and where the needs of the students govern decisions made, not just at the classroom level, but also at the school and district level. Mediation strategies are those that ensure a learner-centered environment in the school and focus on teachers as facilitators of learning.

Teachers, as facilitators of learning, provide students with active learning environments and experiences which are relevant to life outside the classroom. Classroom instruction and curriculum must provide students contexts within which they can construct meaning, contexts in which they engage in authentic learning. Mediation strategies (a) are based on the research on how the brain functions, (b) consider learning styles, (c) engage the multiple intelligences, (d) provide students with authentic learning opportunities, (e) use authentic assessment to determine achievement, (f) use technology appropriately, and (g) prepare students for the workplace.

To understand why so many of our curricular and instructional strategies fail to reach students with different modes of learning, it is necessary to understand how the brain functions. Researchers have accumulated a substantial amount of data indicating that the brain will grow physiologically if stimulated through interaction with the environment. The physical structure of the brain actually changes as the result of experience.

Among the models used to explain how the brain works is Paul MacLean's "triune brain theory." MacLean (1978) identified three layers of the brain which were established successively in response to changing environmental needs—the reptilian system or R-Complex, the limbic system, and the neocortex. All three layers of the brain interact—concepts, emotions, and behaviors are not separate; they influence and shape each other. Some types of learning are inhibited by perceived threat. For example, perceptual psychologists have long been aware of the "narrowing of the perceptual field," which occurs when an individual perceives an experience as threatening. Leslie Hart (1983) called such perceptual narrowing "downshifting."

"Downshifting" occurs because threat causes the brain to literally shift down from the neocortex into the older, more automatic limbic system and reptilian complex. When downshifted, students seem less able to engage in complex intellectual tasks--those requiring creativity and the ability to engage in open-ended thinking and questioning. In practice, many of the demands schools impose on students, ranging from placing unreasonable time limits on learning and restraints on individual thinking, to excessive competition and motivation by means of shame and guilt, will cause all but the most resilient students to downshift.

Research confirms that the brain has an infinite capacity to make connections and that multiple, complex, and concrete experiences are essential for meaningful learning. Students' constructions of reality and their ability to deal with and instantly remember daily life experiences and to search for meaning in those experiences is ignored by educators who believe that for learning to take place, students must memorize isolated facts and repeatedly practice specific skills. In too many schools, literature, mathematics, history, and science are presented as separate disciplines; reading and writing are taught divorced from meaning and purpose; and what happens in the classroom is unrelated to the life of the learner.

Learning styles have to do with how individuals acquire information, how they organize it in their minds to make sense of it, and how they use it in their daily lives. Different people often react in different ways to the same situation, whether that situation is getting caught in a traffic jam, having to wait in line, or learning that someone loved is dying. These different reactions reflect characteristic ways of perceiving the world, processing and

organizing the information received, expressing emotions, and behaving. The process of learning is just as affected by these characteristics.

The theory of multiple intelligences (MI) focuses on the diversity in how students think and learn. Each person possesses all seven intelligences (logical/mathematical, verbal/linguistic, spatial, musical, bodily/kinesthetic, interpersonal, and intrapersonal) which function together in ways unique to each individual. Students learn best when given an opportunity to explore ideas through their perceptual strengths. When approaching lesson planning and curriculum design, the best question to ask about students is *"How are they smart?"* then seek instructional strategies that build on their "smarts."

Students, especially those from at-risk situations, require instructional programs that involve learning by doing, active applications of facts and skills, and working with other students. Authentic instruction, which focuses on content and skills that are meaningful outside the classroom, requires students to use their minds well to construct meaning and produce knowledge which has value in the world outside of school. Three examples of authentic instructional strategies that can be adapted to meet students' learning styles and include all of the multiple intelligences are *service learning*, *whole language* and *cooperative learning*.

Authentic assessment provides more appropriate alternatives to measuring acceptable academic performance than do paper-and-pencil tests. Critics of standardized tests claim such tests have skewed the curriculum toward the teaching of what is most easily measured by machines, focusing on the acquisition of basic skills and facts—on the short-term goals of schooling—as ends in themselves rather than as a means to further learning and growth. Authentic assessments are public evaluations based on multiple criteria and agreed-upon standards. Criteria and standards must be set for expert performance, students should know what those criteria are, and teachers should teach the knowledge and skills students need to exhibit expert performance.

Technology, in particular computer-based technology, offers some of the best opportunities for developing instruction which engages students in authentic learning, addresses multiple intelligences, and adapts to students' learning styles. When used

appropriately, technology can provide instructional environments that have a powerful impact on those students who, without help, might continue to be at risk of school failure. When teachers have students using computers to work together to read, discuss, or edit each other's text, cooperative behavior is encouraged. When students have opportunities to access information through electronic databases or CD-ROM, they can focus on complex, meaningful problems; basic skills instruction can be embedded in the context of more global tasks in which students are asked to tackle real problems; and students can make connections to their out-of-school experiences and cultures.

Most students who do not plan to go immediately on to college receive little in the way of systematic assistance in preparing for and finding jobs when they leave high school. Many of the school-to-work transition programs which are currently in place are generally uncoordinated and not particularly effective in helping prepare U. S. students for jobs. There are a few bright spots, however. A number of broad-based community and business coalitions have been initiated to work with school districts. Formal agreements or compacts have been made through which businesses offer to provide jobs and other incentives if students agree to stay in school and the schools agree to make systematic efforts to raise students' academic success and attendance. Programs of apprenticeships offer a transition from school to work that provides young workers with a sheltered environment in which to develop skills. In an apprenticeship, a learner observes and assists a master at work, gradually gaining competence by taking responsibility for progressively more challenging aspects of the task.

Tech-Prep has been promoted as a promising way to integrate the curriculum and provide transitions to postsecondary education. Tech-Prep (TECHnology PREParation) programs have a number of key elements. One of the most important is the articulation agreement which links secondary and postsecondary institutions to provide a closely coordinated high school/college curriculum. The Tech-Prep model envisions the articulation not just of single courses but of programs—a series of related courses—at the two educational levels. The purpose of Tech-Prep is to prepare students to begin rewarding careers in mid-level technology fields. These fields represent the types of positions for which a high school diploma, with vocational

training up to and including an occupational associate degree, is required for entry and/or advancement.

Intervention Strategies

Intervention strategies are designed to interrupt or modify academic, school, or personal problems that are negatively affecting students' performances. Intervention strategies are those that address the continuing needs of students who remain at risk in middle and high school. Although mentoring, peer tutoring, and peer mediation strategies might also be considered appropriate mediation strategies, they are especially effective when used to intervene in situations where students are having particular difficulties.

Mentoring can be defined as a sustained relationship between an adult and a youth or a more experienced person and a novice. Adult relationships, not only those provided by parents and grandparents, but also by neighbors, teachers, and other concerned adults, are a protective factor for youth growing up in stressful family and community environments.

Supporting academic achievement is an extremely important mentoring role. Mentors can play a critical role where parents are either unavailable or unable to provide responsible guidance for their children. A survey of 800 Career Beginnings participants from 16 cities found that mentoring helped at least half of the students learn to succeed, improve their grades, avoid drugs, increase their regard for people of other races, and improve their relationships with teachers and family.

Using peers as resources includes programs such as cooperative learning, peer tutoring, cross-age tutoring, peer mediation, and peer leadership. Peer tutoring is a collaborative learning strategy. Such strategies have the potential to improve the learning of children of different ability levels. Peer tutoring usually matches pairs of students—older and younger or higher-achieving and lower-achieving—with the purpose of helping the younger or lower-achieving student improve academically.

Peer tutoring has been found to be more beneficial than reduced class size, longer instructional time, or individualized computer-assisted learning. Studies have identified an increase in the academic skills of low-socioeconomic students; academic

gains for both tutees and tutors; and improvements in students' attitudes, self-concepts, and social skills. In comparison to most other methods of instruction, peer tutoring appears to be relatively inexpensive.

Early conflict mediation programs can teach students to be aware of and overcome the violence that surrounds and influences them. Children of preschool and kindergarten age can learn the conflict resolution skills of empathy, impulse control, and managing anger. Such programs, implemented in preschool and/or elementary school, teach nonviolent behavior, a life skill that will continue to develop in the later years of adolescence and adulthood. Not only schools, but parents, communities, child care providers, and health care providers can help equip children with the skills to manage and work through impulsive, aggressive actions.

Peer mediation emphasizes that everyone engaged in a conflict has the choice of allowing themselves to be overcome by negative perceptions and resentment, or to control the situation, take action, and resolve it in a nonviolent way. Peer mediation programs train a group of students to take on the role of being unbiased, empathetic listeners, respectful of the differences of others, helping them work together, so they can come to a mutual, peaceful agreement. Major components of peer mediation are: active listening, cooperation between participants, acceptance of each other's differences, and creative problem-solving which takes into account each participant's position.

One of the most common intervention strategies is placing in alternative-school settings those students who have difficulties in regular schools. Research indicates that there are certain characteristics present in alternative schools that are successful with students who do not prosper in the regular schools. It is clear that successful alternative programs designed to help students achieve have the following characteristics: (a) they are small and have low teacher/pupil ratios; (b) they have faculties that develop caring relationships with students; (c) they set forth clear rules; (d) they have high expectations for student achievement; (e) they foster positive peer relationships; and (f) they develop student self-esteem. Students who are problems in regular schools seem to function better in alternative schools. Students who might otherwise drop out of school and become problems to society can become productive adults with the help of understanding and caring alternative school teachers.

Recommendations for Reform

The National Dropout Prevention Center believes the following areas of reform must be addressed:

- The educational system must be restructured to be more congruent with the needs of those who work in it and the needs of those it serves. Schools must have the authority to make meaningful decisions through participatory decision making; adequate resources must be available; and professional development should provide the knowledge, skills, and attitudes required to carry out new roles and use new strategies.

- The problems faced by children in at-risk situations are the collective responsibility of everyone. Government, businesses, community organizations and agencies, parents, and the schools must join together to provide the social support needed to ensure resiliency in children.

- The technical core of the school--teaching, learning, curriculum, and instruction--must engage children in learning. Effective prevention, mediation, and intervention strategies must be adopted to meet the needs of students in at-risk situations.

A Call to Action

It is clear there are many effective strategies for preventing students from dropping out of school before they complete their high school education. These strategies range from nutritional care for infants and parenting training for teenage mothers to alternative schools for middle and high school students who are not doing well in their regular schools. The earlier problems are addressed, the more effective and lasting the results. Students who live in at-risk situations, however, will need special assistance throughout their schooling. A quick fix in preschool or kindergarten cannot overcome the pervasive and continuing problems encountered by so many of our youth today in their homes and communities.

Many of the state and national policies being proposed at this time are "penny wise and pound foolish." Spending billions on police and jails while skimping on nutritional aid to mothers and children or cutting back on educational programs is not a prudent course. When 80% of prison inmates are high school dropouts, it makes more sense to spend our country's limited dollars on programs designed to prevent school failure.

If we fail to set education as our number one national priority, we must be prepared for the consequences. We will have to pay even more for prisons to house society's rejects. When young girls get pregnant and drop out of school, we will have to pay even more to feed their children. And if we don't want to pay, are we prepared to let those children starve?

Students from at-risk situations are not someone else's responsibility. When the schools fail such children, the schools are failing each one of us. More importantly, we have failed the schools because our priorities do not include designing and supporting schools that are congruent with the needs of those who are supposed to learn in them. We have failed to provide caring schools that nurture and support resiliency; we have failed to provide schools that invite engagement in learning.

We have all heard the following adages:

It takes a whole village to raise a child.

Give a man a fish and you've fed him for a day; teach a man to fish and you've fed him for life.

Education is our collective responsibility. It is time to realize we are a village in a global economy, and all of us share the responsibility for raising all of our children. It is time to shoulder that responsibility and teach every one of those children to fish in the waters of the 21st Century.

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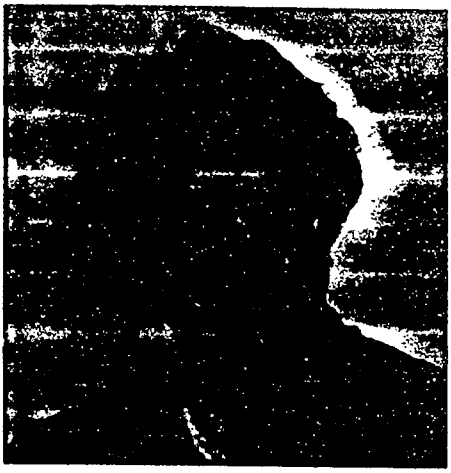
EFFECTIVE STRATEGIES FOR EDUCATING STUDENTS IN AT-RISK SITUATIONS

In this book, author Patricia Cloud Duttweiler argues that restructuring the educational system is an essential prerequisite to successful and lasting educational reform. The publication discusses the core instructional and curricular structures of schools and the strategies that have proven effective with students in at-risk situations. The strategies include those for *prevention*—actions taken to anticipate, forestall, or deal with problems before they irreparably impair a student's ability to perform successfully in school; *mediation*—the process of providing an educational environment that ensures success for all students; and *intervention*—actions designed to interrupt or modify problems that are negatively affecting students' performances.



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Patricia Cloud Duttweiler is Assistant Director of the National Dropout Prevention Center at Clemson University. Prior to joining the NDPC, Dr. Duttweiler was Assistant Director for Research at the South Carolina Center for the Advancement of Teaching and School Leadership at Winthrop University, Rock Hill, SC. Dr. Duttweiler spent eight years with the Southwest Educational Development Laboratory (SEDL) in Austin, TX. As a Senior Research Associate, she coordinated partner teams in five Southwestern states. The teams developed a process for implementing systemic change and promoted restructuring efforts in their states. Dr. Duttweiler received a B.A. in Sociology, an M.Ed. in Social Science Education, and an Ed.D. in Adult Education from the University of Georgia, Athens, GA. Prior to working on her doctorate, she taught high school behavioral science courses.

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