

Contents

Preface	xi
Acknowledgments	xxi
1 Introduction to Poverty: Variables Affecting Students' Performance	1
Introduction	3
Definitions and Demographics of Poverty	4
Physical and Psychological Effects of Poverty	10
Prenatal and Birth Issues	10
Hunger and Malnutrition	14
Overall Brain Development	15
Basic Safety Issues	16
Access to Health Care	18
Environmental Issues	20
Hearing and Vision	22
Emotional Atmosphere of the Home	25
Understanding Children and Families from Backgrounds of Situational and Generational Poverty	26
Conclusions	33
2 Language Skills and Behavioral Characteristics in Children of Families of Low Socioeconomic Status	35
Introduction	36
Factors Affecting and Characteristics of Oral Language Skills of Low-SES Children	37
Overview	37
The Research of Hart and Risley	41
Other Factors Affecting Oral Language Development	47
Factors Affecting and Characteristics of Literacy Skills of Low-SES Children	49
Behavioral Characteristics of Some Children from Low-SES Homes	55
Conclusions	57

3	Considerations in Assessment of the Language Skills of Students from Low-SES Backgrounds	59
	Introduction	60
	Laws Affecting the Assessment of Children from Low-SES Families for Special Education	62
	Preliminary Components of the Assessment Process	63
	Screening and Response to Intervention	63
	The Case History	65
	The Use of Standardized Tests	69
	General Considerations in Using Standardized Tests with Students from Low-SES Backgrounds	69
	Formal Test Assumptions	72
	Sources of Bias in the Use of Standardized Tests with Culturally and Linguistically Diverse Students from Low-SES Backgrounds	74
	Modifying Standardized Tests for Use with Students from Low-SES Backgrounds	75
	Language Samples	77
	General Considerations	77
	Informal Evaluation of Language Use	78
	Other Alternatives to Standardized Assessment	79
	Legal Considerations	79
	Dynamic Assessment	81
	Portfolio Assessment	83
	Assessment of Information Processing Skills	83
	Conclusion	84
4	Practical Strategies for Increasing the Oral Language Skills of Children From Low-SES Families	87
	Introduction	88
	Stimulating Infant Language Development	89
	Stimulating Language Development in Toddlers and Preschoolers	92
	The Importance of High-Quality Preschool Experiences	92
	The Importance of Appropriate Training for Early Child Care Providers	97
	Practical Strategies for Increasing the Language Skills of Toddlers and Preschoolers in Natural Settings	102

General Principles of Successful Language Stimulation with Young Children	102
Specific Incidental Learning/Milieu Teaching Techniques to Encourage Language Development	104
Practical Strategies for Teaching Formal Language Register in Naturalistic Settings	107
Increasing the Vocabulary Skills of Children from Low-SES Families	109
Using Contrastive Analysis to Increase Formal Register Language Skills	111
Increase Grammatical Language Skills in Formal Register	111
Increase Pragmatic Language Skills in Formal Register	115
Conclusions	121
5 Practical Strategies for Increasing the Literacy Skills of Students From Low-SES Backgrounds	123
Introduction	126
Promoting Early Literacy Skills in Children: Practical Strategies	128
Optimizing Book Reading Experiences for Young Children	128
Increasing Early Preliteracy and Literacy Skills: Evidence-Based Strategies	131
Enhancing Literacy Skills in the Elementary Years and Beyond	143
Providing Assistance for Students from Low-SES Backgrounds with Other Written Language Challenges	148
Conclusions	157
6 Structuring the School Environment for Optimal Performance of Students from Low-SES Backgrounds	159
Introduction	161
Current School Conditions and Attempts at Reform	162
Attempts at School Reform	162
Current Conditions in Low-SES Schools	165
Teacher Preparation and Developing Professionalism	168
Integrating Schools by Students' Socioeconomic Status	172

Dealing Constructively with Students from the Culture of Resistance	174
School Enhancement: Providing Supportive Programs and Relationships for Students from Low-SES Backgrounds	179
Parallel Education Systems	179
All Day Kindergartens	180
Supporting Early Literacy	181
Implementing the Arts	181
Providing Supplemental Programs	183
Opportunities for Schools to Connect with Community Resources	186
Enhancing Self-Esteem and Motivation: Providing Appropriate Learning Incentives for Students from Low-SES Backgrounds	189
Increasing Student Independence, Self-Direction, and Motivation to Succeed	195
Basic Principles	195
Implementing the Equity Game	197
Conclusions	205

7 Practical Strategies for Enhancing Learning and Increasing Executive Functioning Skills 207

Introduction	209
Enhancing Learning: Optimizing the Environment	209
Practical Strategies for Enhancing Whole-Brain Learning	213
Reducing Stress	213
Increasing Memory Skills	214
Contextualizing Language for Children from Low-SES Backgrounds	217
Children from Low-SES Families and Language Learning in School	217
Increasing Contextual Cues to Enhance Learning	221
Increasing Executive Functioning Skills in Students from Low-SES Backgrounds	230
Definition and Basic Facts	230
Practical Strategies for Increasing the Executive Functioning Skills of Students from Low-SES Backgrounds	231
Conclusions	240

8	Poverty and Special Populations	243
	Introduction	245
	Special Considerations in Serving Highly Mobile Students from Low-SES Backgrounds	245
	Considerations in Providing Services for Students from Low-SES, Immigrant/Refugee Backgrounds	252
	Serving Gifted Students from Low-SES Backgrounds	254
	Conclusions	258
9	Considerations in Working with Families of Students from Low-SES Backgrounds	259
	Low-SES Families: Cultural and Social Capital	262
	Low-SES, CLD Families: Special Considerations in Service Delivery	267
	Some General Considerations	267
	Language and Literacy Practices in CLD Families: Facilitating an Optimal Language Learning Environment for Children	268
	Facilitating Overall Involvement of Low-SES, CLD Families in Children's Education	273
	Possible Value Conflicts between Low-SES Families and Middle-SES Professionals	280
	Facilitating Foundational Support Services for Low-SES Families: Practical Suggestions	283
	Supporting Low-SES Families in Meeting Basic Needs	283
	Supporting Children from Homes Characterized by Abuse or Neglect	288
	Helping Caregivers Provide a Supportive Home Atmosphere	292
	Conclusions	295
10	Some Words of Encouragement	297
	References	303
	Index	327

Introduction to Poverty: Variables Affecting Students' Performance

If there are amazing graces on this earth, I believe that they are these good children sent to us by God and not yet soiled by the knowledge that the nation does not love them.

Jonathan Kozol
Amazing Grace

Mr. and Mrs. H. have relocated from Mexico to work as agricultural laborers in California. They work hard in the fields. They have no health care insurance but do not want to use welfare; this does not fit with their value system of hard work and family values. One day, Mrs. H. realizes that she is pregnant. She and her husband are overjoyed—their first child! They hope for several more.

As the pregnancy continues, Mrs. H. is tired beyond what she thinks she should be but cannot afford pre-pregnancy checkups. It is very hard to work outside all day in 100-degree temperatures as a pregnant woman, and one day she collapses. They have no health insurance; she is rushed to the nearest emergency room. After a 2-hour wait, she finally is able to see a doctor, whom she has never met before. After a series of tests, she is told that she has gestational diabetes. She needs to attend classes on how to control

this, and she needs to conduct a blood test four times a day. She needs to take specific medication.

Mrs. H. cannot take a break to conduct a blood test four times a day; her employer would not stand for it. She would lose her job if she attended the diabetes classes, which are held two mornings a week at the local hospital. Even if the couple could survive financially on Mr. H.'s paycheck alone, they have only one car, and she can't take it to the hospital because her husband needs it to get to work. She and her husband cannot afford the medication that she needs. Her gestational diabetes goes untreated.

Marcos is born 2 months premature, and he has to be in the neonatal intensive care unit (NICU) for the first 6 weeks of his life. Mr. and Mrs. H. are heartbroken that they do not get to hold him. Mrs. H. would like to nurse Marcos, but she can't. She realizes that she eventually will need to bottle-feed him. This is very difficult for her, because in Mexico, almost all mothers nurse their babies. At work, Mr. and Mrs. H. cannot stop thinking about their baby who lies alone in the NICU. When they go home at night, Mrs. H. cries herself to sleep.

Another first-time mother, Dr. M., is a White university professor. She and her husband also were overjoyed to find out that she is pregnant. Dr. M. is in her 30s, so she is careful to keep up with her prepregnancy care. After a checkup in the first trimester of her pregnancy, Dr. M. is informed that she has gestational diabetes. She is shocked; so is Mr. M., her husband.

Dr. M., who was raised in southeast Asia, believes in Western medicine; however, she also is open to herbal and nutritional remedies. Through consultation with her doctor and some alternative health care professionals, she is able to find the right combination of safe herbs, vitamins, and healthy foods to treat the gestational diabetes. A blood test at her local HMO clinic reveals that the gestational diabetes has resolved and is no longer present.

Mark is born full term at a healthy weight. His parents take him home. His mother has quit her job to stay home and care for him full time. The couple can afford to do this,

although the family budget is much tighter now. Dr. M. is able to nurse Mark, and he is a beautiful baby who brings his parents much joy. Visitors come to the house, bringing flowers for the new mother and presents for Mark. He is off to a great start in life.

INTRODUCTION

As the population of the United States grows and changes, professionals who work with children, particularly in public schools, are realizing that part of helping these children succeed is recognizing and respecting their ethnic, linguistic, and cultural backgrounds (Lynch & Hanson, 2004; Roseberry-McKibbin, [in press]). Professionals are increasingly recognizing, however, that socioeconomic status (SES) may be an even more important factor in understanding children's and families' behavior and in helping the children succeed in school and, eventually, in life (Payne, 2003; Roseberry-McKibbin, 2000). Woolfolk (2004, p. 157) has stated:

Social class is a significant dimension of cultural differences, often overpowering other differences such as ethnicity or gender. For example, upper-class Anglo-European Americans, African Americans, and Hispanic Americans typically find that they have more in common with each other than they have with lower-class individuals from their own ethnic groups . . .

SES issues often have a greater impact on children's and families' behavior and values than ethnic, linguistic, or cultural factors. Although these factors are important, understanding SES issues may be even more helpful to professionals who work with students and their families.

This chapter introduces some basic facts about poverty and its effects on learning as considerations in the choice and application of practical strategies to help at-risk children from low-SES homes. (Such strategies, aimed at increasing the language skills of these children and thereby maximizing their academic achievement, are the subject of later chapters.) The well-recognized goal of educators and other professionals who work with children is to help students eventually

become successful, productive members of society. Some background information about students and families from low-SES households is presented next.

First, it is important to realize that poverty in the United States has grown in both extent and magnitude. The Reagan Administration guaranteed that the “truly needy” would be provided for by the “social safety net.” Despite these assurances, social welfare programs were deeply slashed in the 1980s and the 1990s. Homelessness, poverty, and hunger reached levels unknown in the United States since the Great Depression (DiFazio, 2006). In the 21st century, the United States has the highest rate of poverty for children of all developed nations, as much as five to eight times higher than in other industrialized countries (Woolfolk, 2004). Approximately 50% of these children live in deep poverty—their families have incomes 50% below the poverty threshold.

Entire books have been devoted to why so much poverty exists in the United States. Here, a brief examination of two major contributing factors is sufficient. First, the globalization of the world economy has caused many entry-level, unskilled, blue collar jobs in the United States to be exported overseas. This trend leads to diminished benefits and lower pay in many jobs found in the United States (Howard-Hobson, 2002; Obama, 2006).

Second, the United States is experiencing—and has already experienced—an ongoing macroeconomic shift from a manufacturing to an information-based economy (Van Hook, Brown, & Kwenda, 2003). In today’s knowledge-based economy, eight of the nine fastest-growing occupations in this decade require technological or scientific skills. To fill the jobs of the future, most workers need higher education (Obama, 2006). In an information-based economy, workers must have relatively high levels of oral and literate language skills. Without such skills, these potential workers—for whom few unskilled blue collar jobs are available—will be condemned to poverty and probably the welfare rolls.

DEFINITIONS AND DEMOGRAPHICS OF POVERTY

In 2006, the *federal poverty level* was defined as follows: \$20,000 for a family of four, \$16,600 for a family of three, and \$13,200 for a family of two. Research suggests that on the average, families need an

income approximately two times greater than federal poverty level to meet their most basic needs. Families whose incomes are below these levels would be considered *low income*: \$40,000 for a family of four; \$33,200 for a family of three; \$26,400 for a family of two. Of the 73 million children in the United States, 40% (29.2 million) live in low-income families; 18% (13.5 million) live in poor families, or those that meet federal poverty level standards (National Center for Children in Poverty, 2005).

For children from low-income families, 26% live with parents who have less than a high school education; 35% live with parents who have a high school diploma, and 39% live with parents who have some college or more (Figure 1-1).

Of children in low-income families, 51% live with a single parent; the remaining 49% live with married parents. Between 12% and 15% of children living with their grandparents and parents belong to families with incomes below the poverty level; the children who live with their grandparents do even worse: incomes are below the poverty level in 30% of these households.

The percentage of children in low-income families varies by race and ethnicity. Twenty-seven percent of White children live in low-income families; 30% of Asian, 61% of African American, and 63% of Hispanic children live in low-income families (Figure 1-2).

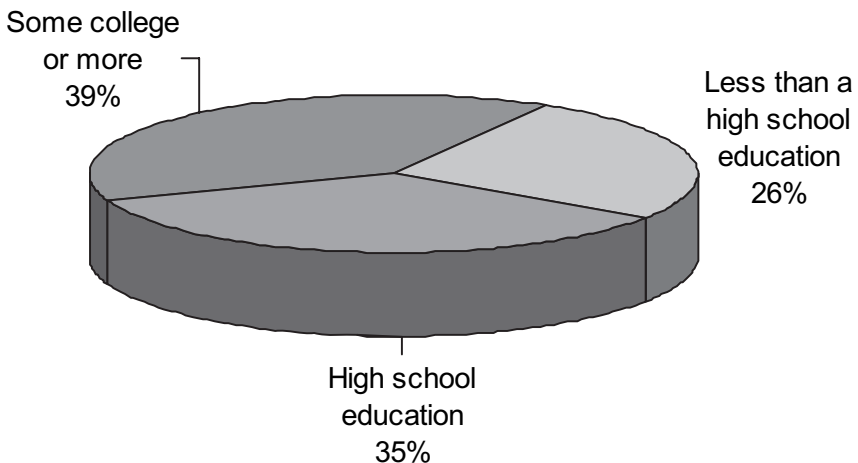


Figure 1-1. Parental education in low-income homes. (National Center for Children in Poverty, 2006.)

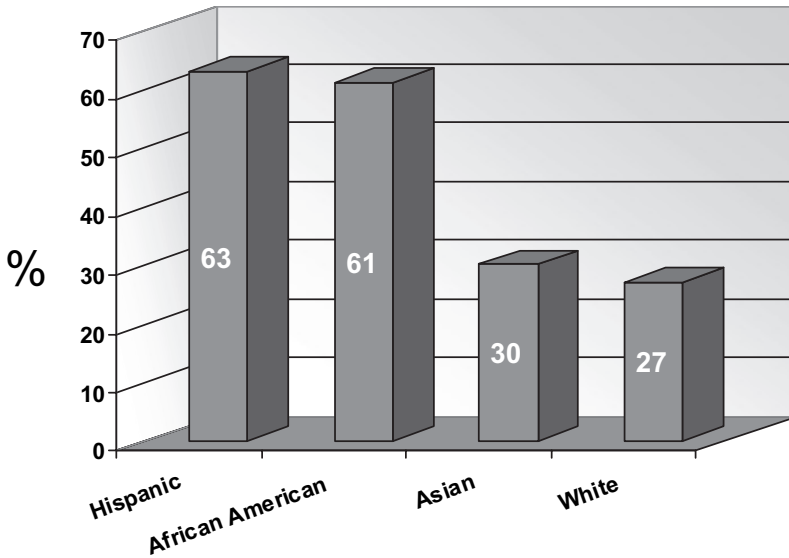


Figure 1–2. Percentage of children who live in low-income families by race and ethnicity. (National Center for Children in Poverty, 2006.)

In 2004, Black children had a poverty rate of 33%, Hispanic children had a poverty rate of 29%, and White, non-Hispanic children had a poverty rate of 10% (Forum on Child and Family Statistics, 2006). Fifty-nine percent of children of immigrant parents live in low-income families, whereas 36% of the children of native-born parents live in low-income families. The proportion of children living in low-income households varies by geographic region: 43% in the South; 42% in the West, 37% in the Midwest; and 33% in the Northeast (Figure 1-3).

Living in a rural community in a southern state increases the likelihood that families will experience poverty. Cities with the greatest number of school-age children living in poverty are in the East and the South. Children who live in inner cities have a greater chance of living in poverty (Morrison, 2003).

Being raised in poverty is related in part to the structure of the family. Changes in family structure have occurred in past decades. In 1950, 22% of all householders were not married. In the year 2000, 48% of all householders were not married. In 1970, 40% of householders had children; in 2000, 24% of householders had children. Between 1990 and 2000, the number of families headed by single mothers

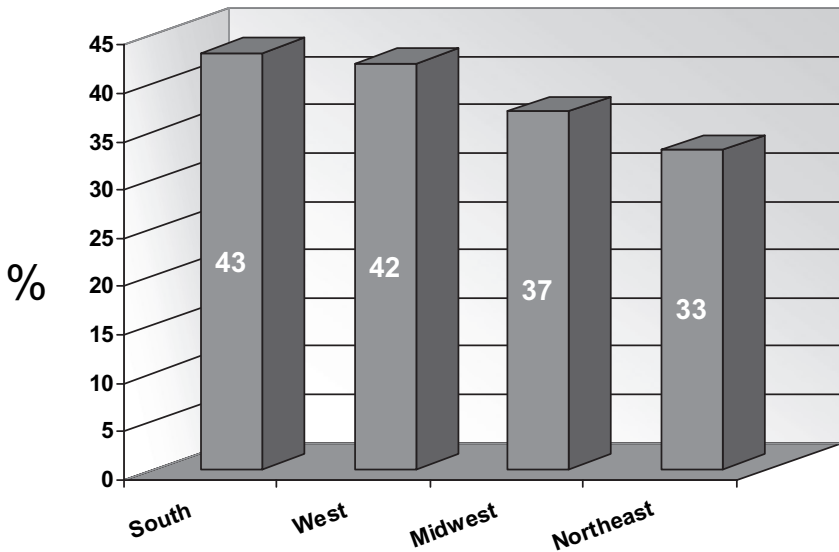


Figure 1–3. Percentage of children of low-income families by geographic region. (National Center for Children in Poverty, 2006.)

increased by 25% to more than 7.5 million households (U.S. Bureau of the Census, 2000).

Single-parent families have fewer resources than any other types of families, and poverty is more common in these families (Barrett & Turner, 2005; Corcoran, 2001). As Corcoran (p. 128) has stated:

Growing up in a single-parent family is associated with less schooling, more male idleness, higher rates of teen births, and more psychological and behavioral problems . . . single-parent families have fewer economic and community resources than do two-parent families . . . even after controlling for race, ethnicity, family size, parental schooling, and family income, growing up in a single-parent home matters for children's futures.

Children in married-couple families are much less likely to experience poverty than children who live in homes headed by single mothers (Ispa, Thornburg, & Fine, 2006). In 1997, 49% of children in female-householder families lived in poverty, compared with 10% of children in married-couple families. In 2004, children living in single-householder families with no husband present experienced a higher

poverty rate (42%) than children living in married-couple families (9%) (Forum on Child and Family Statistics, 2006).

This is partly due to the fact that at all levels of educational attainment, median female wages in the United States are 30% to 50% lower than male wages at equal levels of educational attainment (U.S. Bureau of the Census, 2000). The proportion of females aged 18 to 64 years with incomes below the U.S. Census poverty thresholds is higher than that of males.

Working-age females in the 70 largest U.S. cities surpass males in their rate of high school completion and match males in rate of attaining a bachelor's degree; unfortunately, this has not translated to sufficient labor market gains to offset higher poverty rates. Basically, "... [a] female's labor and human capital garners fewer rewards than that of males" (Lichtenwalter, 2005, p. 86). Being raised in a female-headed family doubles the risk that a child will drop out of high school, triples the risk that that a girl will have a birth out of wedlock, and increases by 40% the risk that young men will be idle (Corcoran, 2001).

It is important to realize, however, that in some cultures, family members provide more intergenerational support for one another than family members do in mainstream culture. For instance, African Americans have been found to provide more intergenerational support than Whites (Payne-Johnson, 1992; Willis, 2004). Thus, in discussing risks for children in female-headed households, it is essential to take into account the amount of intergenerational support that is available to these single mothers. In families in which such support is available, even without a father living in the home, children may be shielded from some of the risks that accompany living in a female-headed household where such support is not available.

Being raised in poverty puts children at risk in a number of areas. Children from low-SES homes are more than three times as likely to drop out of high school. Girls from low-SES families are more than twice as likely as girls from middle-SES families to have a teen birth and are 2.6 times more likely to have had an out-of-wedlock birth. Boys and youth from low-SES homes work fewer hours per year, have lower hourly wages and annual earnings, and spend more weeks idle in their mid-twenties compared with boys and youth from middle-SES homes (Corcoran, 2001).

Minorities are over-represented at all levels of the juvenile justice system; racism and poverty play major roles in this situation. A new report by Amnesty International and Human Rights Watch found that

at least 2,225 prisoners in the United States currently are serving sentences of life without parole for crimes they committed as minors. This type of sentence is rare internationally; a total of 12 child offenders are serving life terms in Tanzania, South Africa, and Israel. African American youth are serving life-without-parole sentences at a rate that is 10 times higher than for White youth. If teenage offenders live to age 70 years and die behind bars, taxpayers will pay more than \$6 million to keep them locked away (Hubner, 2006).

It is urgent that conditions in the United States change to prevent these kinds of sad, shocking situations. In the Preface, three basic levels of support that are available to low-SES children and their families were delineated (Figure 1-4):

1. Macroeconomic levels of support; federal and state policies that support the poor;
2. District- and school site-based support
3. Individual/personal effort on the part of professionals who work directly with low-SES students

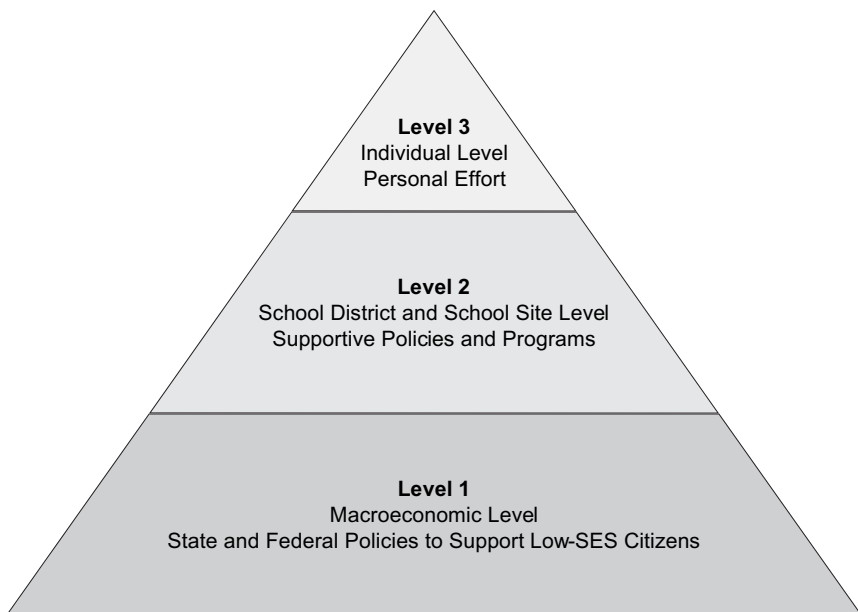


Figure 1-4. Three levels of support for low-income/low socioeconomic status (SES) children and their families.

Practical Strategies for Enhancing Learning and Increasing Executive Functioning Skills

*It's not that I'm so smart; I just stay with
problems longer.*

Albert Einstein

When Marcos starts kindergarten at age 5, he has never been in a structured setting outside of his home before. Not only does he not speak English; he has no idea why things move along so quickly and are so rigidly scheduled. Just when he is enjoying drawing a picture, suddenly it is time to put the crayons away and go to recess. At recess, finally, he gets to run around and play with his friends. But just as their game of tag is really heating up, the bell rings—and it is time to go back inside.

Later, at lunch in the cafeteria, Marcos eats slowly. He gets a free hot lunch at school each day. He savors his food, appreciating it as he feels the pleasant sensation of a full stomach. But now his teacher is telling the class that it is time to go outside. Marcos really wants his dessert; he doesn't get treats like pudding at home. He can't have it—lunch time is over.

In class, the teacher gets ready to teach the class how to do simple addition problems. She explains them verbally

and then expects the children to complete a worksheet of problems by themselves—she tells them that they need to work *independently*, whatever that means. Marcos has no idea how to do these problems. No one has shown him exactly how to look at the addition process on the paper so it makes sense, or used anything like beads, chips, or tokens to show how things “add up” in real life.

A wave of shame sweeps through him as he sees most of his classmates doing the problems with ease. The teacher’s back is turned. Marcos stealthily glances at the sheet of the girl beside him. He doesn’t think he should be copying from her paper, but it is the only way he can hope to get any of the problems correct. The teacher has said that children who get 90% or more of their problems correct will get a lollipop. Marcos wants one. He feels fidgety; he wishes he could get up and walk around instead of just sitting there. School isn’t much fun. Marcos gets only 30% of his math problems correct—no lollipop. On his first-trimester report card, the teacher reports to his parents that he has deficiencies in most areas of school and that they need to work harder with him at home.

As previously mentioned, when Mark starts kindergarten at a public school, he has had several years of preschool. He already knows his shapes, colors, and letters of the alphabet. Because he has been at a Montessori preschool, where activities are minimally structured, the relative rigidity of the fundamental school kindergarten is hard for him at first. He eventually adjusts, however; after all, he is accustomed to a time-conscious schedule at home. Although his parents try not to rush him, he is aware of the clock and that there are certain times for everything.

Because of his advanced oral vocabulary and many hours of being read to at home, Mark can readily understand the decontextualized language of the stories in his classroom. He is an active child, however, and sitting a lot in kindergarten is not easy for him. It is made easier by some support at home: His mother, recognizing his need for movement, has provided a miniature trampoline in the living room for him to jump on before he goes to school.

He enjoys “working off steam” in this way, and he knows that when he goes home, he can do it again. Mark has some as-yet-undiagnosed fine motor and visual motor deficits, but in most areas, he is still able to meet the standards of the kindergarten curriculum.

INTRODUCTION

Most students from low-SES backgrounds need extra support to learn optimally at school. Educators and other professionals can provide this support by working to optimize the physical learning environment. They also can use practical strategies to increase whole-brain learning. Some of these strategies involve helping students reduce their stress levels to free up their brains for learning—for taking in information that they are taught. Related strategies address helping students increase their memory skills.

Many young children from low-SES homes come to kindergarten with a language information structure that is not adequate to process the language information load of the classroom. For these children, it is extremely important to increase contextual cues to enhance learning (Weiner, 2001). Many of these children also are physiologically and environmentally vulnerable to difficulties with executive functioning—application of the problem-solving processes used at the outset of a novel, nonautomatic task. Direct strategies and activities to help increase these skills are the subject of this chapter.

ENHANCING LEARNING: OPTIMIZING THE ENVIRONMENT

Professionals who serve the needs of children from low-SES homes work in many settings. Some are speech-language pathologists (SLPs) or other special education personnel who work with these students in small therapy rooms. Others teach in traditional classrooms. Whatever the teaching environment, it can be optimized in ways that are especially beneficial to learning in these students.

First, clutter and distractions in the environment can be limited. For students from low-SES backgrounds who have challenges with focusing and paying attention, making the classroom relatively simple and clutter-free can be very helpful. In my district, some teachers use the “office,” in a quiet corner of the classroom, that has nothing on the walls. This area is similar to a library carrel, where a student can sit and work without the visual stimulation of being able to look around the entire classroom.

Next, it is important to optimize the signal-to-noise ratio in the classroom (or therapy room). The teacher’s voice needs to stand out above background noise in the classroom. As noted, many children from low-SES homes have a history of otitis media, or middle ear infections. These children often have difficulty hearing in noise. Research shows that they and many other children benefit from an increase in loudness of the teacher’s voice by approximately 20 decibels (dB). A somewhat louder voice creates a better signal-to-noise ratio for the children, who then pay better attention and learn more (Nelson, Kohnert, Sabur, & Shaw, 2005; Windsor & Kohnert, 2004).

In many school rooms, students sit on uncomfortable plastic chairs. Students can be provided with chair cushions to increase comfort. Very active students often learn well if they sit on a large, “bouncy” activity ball, rather than on a traditional chair. In my own clinical experience, a few extremely active students learned best when they were allowed to stand up for most of the day. It is important to prevent such children from disrupting their classmates; nevertheless, this strategy is worth trying.

Of relevance here is Gardner’s theory of multiple intelligences, which was discussed in Chapter 6. Students with strong abilities in kinesthetic intelligence (good athletic skills) often find it quite challenging to sit still for long periods. These students can be given “movement breaks” to help dispel excess energy so that they can concentrate better.

Jones (2002) states that the peak daily learning time for most students is the period 8 to 10 AM. Professionals may wish to consider teaching more abstract, difficult information during this time slot, using the afternoon hours for less cognitively demanding tasks. Jones also discusses what many early childhood professionals already know: Children’s attention spans, up till the age of 7 years, roughly correspond with their chronological age. A 5-year-old, for example, will have an attention span of 5 minutes for a particular task.

Many children have difficulty paying attention in school because they are asked to sit still at their desks and focus for much longer time spans than they are maturationally ready for. Children may be expected to sit and do tasks at their desks for 1 or 2 hours without breaks or being able to get up and move around. Movement breaks can help children to focus much better in class.

Music can influence students' moods, create relaxing climates, and even relieve stress. Most teachers who use music choose musical pieces that have a strong, repetitive beat and instruments that lend themselves well to this feature. Classical music often works well.

Table 7-1 lists suggestions for improving the classroom environment according to the age levels of students. Of particular value is keeping a water bottle handy throughout the day. Dehydration is well known to have many negative sequelae: thirst, headaches, impaired digestion, and reduced cognitive functioning. It's important to avoid caffeine-filled sodas, which both contribute to dehydration and increase blood sugar levels (with predictable results). Students need to be strongly encouraged to drink as much plain water as possible to enhance both comfort and school performance.

When students are physically comfortable in their classrooms and therapy rooms, professional can begin to implement practical strategies for whole-brain learning. As discussed in Chapters 4 and 5, specific strategies have been identified to increase the oral and written language skills of students from low-SES backgrounds. These strategies can be enhanced by adding others that increase whole-brain learning—the ability to use both the right and the left hemispheres of the brain to promote optimal cognitive and linguistic functioning.

Table 7-1. Suggestions for Improving the Classroom Environment

Kindergarten through Third Grade

Overall goal: To create an atmosphere of security, reassurance, and comfort

- Offer recess 2 to 3 times a day.
- Have frequent “stretch” breaks for children to move around.
- Lighting should be low and natural; try to avoid artificial light as much as possible.

continues

Table 7-1. *continued*

-
- The teacher manages much of the material and introduces responsibility slowly.
 - Have rugs and carpeted areas.
 - Have a reading center with soft pillows and a rug where students can come to read and relax.
 - Colors should be bright yet soothing and warm.
 - Let students keep water bottles at their desks to sip from throughout the day.
-

Fourth through Sixth Grades

Overall goal: To promote collaboration and outreach, and to foster a team spirit

- Have an average level of lighting.
 - Provide interesting and flexible, easy-to-move seating arrangements.
 - Place students with new friends; don't let them choose their partners until the end of sixth grade, when their brains are mature enough to handle this better.
 - Provide dry erase boards.
 - Let students keep water bottles at their desks to sip from throughout the day.
 - Provide structure, but also give students opportunities to do independent work.
 - To encourage students working together, provide activities that utilize the concept of groups, teams, and partners.
 - Make sure students get some time to work on computers.
-

Eighth through Twelfth Grades

Overall goal: To promote planning and organization, and to develop the ability to speak in front of a group

- Post schedules of activities and check off activities as they are completed.
 - Model study and organizational skills; demonstrate calendars and electronic planning devices.
 - Lighting should be normal to bright.
 - Include state-of-the-art technology such as the Internet and other computer resources.
 - Include motivational posters with appropriate role models.
-

Adapted from Jones, 2002.

PRACTICAL STRATEGIES FOR ENHANCING WHOLE-BRAIN LEARNING

Reducing Stress

As mentioned in an earlier chapter, Farah, Noble, and Hurt (2005) showed, in a study of poverty and brain development, that children from low-SES families who are under stress may have high levels of cortisol, a chemical released by the brain during times of stress. When produced in high quantities, cortisol can alter brain tissue by making it vulnerable to processes that destroy brain cells. Cortisol negatively affects brain cells and pathways, thereby inhibiting learning in students experiencing high levels of stress. Degeneration of brain tissue occurs as well. Professionals can help these students cope with stress in a variety of ways.

An important stress reliever is aerobic exercise, which stimulates and calms the brain. Physical movement benefits everyone (Jones, 2002). Professionals who work with students of any background are well advised to provide short breaks for the children to get up, stretch, and move around. A technique called the “cross crawl” (Dennison & Dennison, 2006) is highly recommended: The child stands up, raises the right knee, and touches the left hand to it, and then raises the left knee and touches the right hand to it, continuing until approximately 20 of these sequences have been performed. The goal of the cross crawl exercise is to stimulate both sides of the brain, and it is very effective. This exercise takes only a minute or less. In general, children sit still far too long in classrooms and in therapy sessions. Exercise stimulates oxygen to the brain, helping students learn more efficiently and effectively. Accordingly, it is important that professionals avoid taking away recess or physical education (PE) sessions as a punishment for students.

To reduce stress, students also can be taught to do deep breathing exercises. I have used these with my university students! Deep breathing draws oxygen into the brain, helping students be more alert. It also can help students to relax—especially during stressful times such as during test-taking. Use of calming, soothing music is another way to help relieve stress. Classical music is a popular favorite with many professionals.

Students also can be given blocks of time during the day to record their thoughts in a journal. Often, the simple act of writing something down—especially if it is negative—can provide the writer a great sense of relief.

Children who are very active and have trouble listening (and thus feel stressed) can be given “squishy” balls or other quiet toys to squeeze. This keeps their hands busy and, ironically, can truly help them concentrate better—especially during listening activities.

Research has shown that children who go to bed early seem to have healthier cortisol levels than children who stay up late. All educators know that it is very difficult for a tired student to learn optimally. Professionals can provide the relevant information to parents in the hope that they will act on it appropriately (Jones, 2002), although parents operating in survival mode may not implement changes recommended by professionals. In such cases, I talk to the students themselves about the importance of a good night’s sleep, despite the countermessage of family lifestyles and habits. It is an unfortunate reality among many children from low-SES homes I have so often found in my career that they have to parent themselves.

Another self-care issue with these children is nutrition. Lack of structure in the home may be a major factor contributing to a poor diet. Professionals can teach these children about the benefits of adequate protein, for example, and about the importance of drinking lots of water, although implementation of any changes at home may be difficult. It is ideal to point to role models whom the students admire—for example, teachers can post pictures of revered athletes to illustrate the benefits of exercise, eating healthy meals, and getting enough sleep.

Increasing Memory Skills

Because of many of the problems experienced by these students (e.g., high levels of cortisol, lack of sleep, or inadequate nutrition), they may have difficulty remembering information acquired through the usual modes of hearing and seeing. In my own clinical experience, virtually 100% of the students from low-SES backgrounds who are referred for speech-language testing have deficient memory skills. Thus, all professionals who work with these students should implement strategies to improve memory skills.

According to Jones (2002), to increase memory skills, students can be taught several crucial steps:

1. *Rehearse information*—Say it, see it, repeat it, do it again.
2. *Associate information*—Tie it to something you already know.
3. *Visualize information*—Make a picture in your head.

The work of Nanci Bell (1991) has been very influential for many professionals who work with students exhibiting difficulty with memory. Her program, *Visualize and Verbalize*, helps students create detailed images in their brains to help them recall information. I have used principles of Nanci Bell's program very effectively with my own students to help increase their reading and listening comprehension.

I tell the students that we are going to learn to “make a picture in our brain.” I tell them that their brain has a TV in it (I have yet to meet a child who did not know what a TV was). I begin by asking a child to tell me about something in his life that is not present. For example, I may say: “Tell me what your kitchen looks like.” The child describes the kitchen. When he has finished the description, I say: “But you are not in your kitchen, are you? How were you able to tell us about it?” At this point, an “aha!” look often comes into the child's eyes. I say: “You were seeing your kitchen as a picture on the TV in your brain, weren't you?” I spend time with all the children having them describe something familiar that is not present in the room. We then moves on to more sophisticated activities, and I teach the children to visualize in detail as an adjunct to reading and listening.

Bell (1991) recommends having children begin with the “what” and then go on to create detailed images complete with color, shape, size, mood, background, and other parameters. Research shows conclusively that the more detail that students use in their images, the clearer and stronger the memories are. It also is helpful if images are exaggerated and include movement (Jones, 2002). Jones uses the acronym ACE: association, color, exaggeration.

As an example, the ACE acronym can be used as follows to remember a name. For example, because my son is in a new school, I have so many new names to remember: children, parents, teachers, other school staff. One little boy who I frequently see in the mornings is named Louis. I can use ACE by *associating* him with King Louis—visualizing him with a little gold (*color*) crown dancing wildly (*exaggeration*) on his head. One of the moms I really like is named Eileen. She

happens to have blue eyes and is slender. So her name can be associated with a blue eye, as in Eileen (*color, association*) and with being lean, as in Eileen (*exaggeration*—she is slender, but not super thin).

Jones (2002) suggests other ways in which color can be used in aiding students' recall. She recommends using colors for each subject—for example, blue for math, green for science, red for social studies, yellow for reading, and so on. Folders for each subject can be in the color for the subject. Assignments in various subjects can be written on the whiteboard in the color of pen for that subject. Because many children from low-SES homes thrive on structure and routine, this is an excellent strategy for helping them organize their learning and experience predictability.

It is a well-known fact that words set to rhyme or music also are more easily remembered (Wolfe, 2001). When possible, teachers can sing with their students—especially younger ones. Songs are available for days of the week, for names of the continents, and other subject matter. Rhyme also is fun, and it helps stimulate memory. Professionals can use music and rhymes, especially for helping students memorize basic facts.

According to Jones (2002), people understand and remember information best when skills and facts are embedded in spatial memory. In other words, memory functions best when supported by touch and physical manipulation, rather than relying on passive intake of information. (Appropriately updated, the old Chinese proverb now reads: “I hear, I forget; I see, I remember; I do, I understand.”). Manson (2005) states that students from low-SES backgrounds often benefit from *active learning*—in situations in which they actively manipulate objects and materials related to the subject matter.

This researcher discusses a study (Basham, 1994) of fourth grade inner-city students; 83% of them were identified as being “at risk.” The students participated in an interdisciplinary, hands-on, 2-week learning unit about the environment. The goal of the study was to determine the effects of active learning on students' attitudes about science and their knowledge of subject matter. Lessons covered a wide range of environmental issues such as deforestation, pollution, Earth appreciation, and recycling. Students engaged in activities with environmental topics including insects, trees, soil water, trash, paper, and recyclable tires. Children were encouraged to discover environmental problems through artwork, experiments, and literature-based activities; they were encouraged to become active participants in solving these problems.

To evaluate the efficacy of this program, attitudes about learning and science were assessed through several means. Nineteen of the

students were surveyed before and after the program. In-depth interviews were conducted with seven students. Results of the surveys and interviews showed that positive attitudes toward science and learning about science significantly increased as a result of the active style of instruction and learning. In addition, all students were observed to have learned the subject matter to mastery level.

Haberman (1999) also discusses the success of active, hands-on learning. Students do not learn best by only reading textbooks or watching demonstrations—they need to actually *experience* what they are learning. As Wolfe (2001) says, would you rather go on a cruise to Hawaii or see slides of someone else’s trip there?

Sounds like a pretty silly question, yet we have traditionally structured our students’ learning by “showing them slides.” We have placed students at desks, admonished them to be quiet, and limited their study of the curriculum to reading or hearing rather than experiencing. Aristotle supposedly said “What we have to learn to do, we learn by doing.” Concrete experience is one of the best ways to make strong, long-lasting neural connections. These experiences engage more of the senses and use multiple pathways to store—and therefore more ways to recall—information. This is probably why we remember what we have experienced much better than what we have heard or read. True, it is not possible for students to experience everything we want them to learn, but we probably miss many opportunities to engage students in more authentic learning. (p. 188)

When professionals help students from low-SES backgrounds with active learning, one way they can do this is to help children—especially young ones—experience contextualized language in settings that make it concrete and real.

CONTEXTUALIZING LANGUAGE FOR CHILDREN FROM LOW-SES BACKGROUNDS

Children from Low-SES Families and Language Learning in School

Professionals who work with students from low-SES backgrounds in school settings need to be aware of whether learning situations involve concrete versus abstract experience. Wolfe (2001) discusses three levels

of learning: (1) concrete experience, (2) representational or symbolic learning, and (3) abstract learning. As an example, a little girl walking with her mother sees a small, furry, four-legged creature that meows at her. The mother tells her that this is a *cat*. After determining that the cat is friendly, her mother lets her pet the cat, which purrs as the little girl strokes its soft fur. The child stores this multisensory experience in her brain in a physiological connection between neurons. In the future, when she encounters other cats, the word *cat* probably will not be very hard for her to remember, because she has just experienced level 1 learning—a concrete experience.

At level 2, representational or symbolic learning, learning occurs through exposure to symbols or representations such as objects and pictures. Although this is not as effective as concrete experience, it can be considered “second best” as a level of teaching. For example, a child may have never seen a cat. Yet she can be shown pictures of cats and maybe even be presented with various toy cats. This will assist her in learning the word *cat*. It would be ideal if she had hands-on experience with actual cats, but at level 2, at least she is exposed to symbols that help her learn the word.

At level 3, abstract learning, only abstract information is used—usually this information comes in the form of words and numbers. For example, a child may see the word C-A-T printed on a page—she is reading about it. The teacher says “cat,” and she hears the word. But perhaps she has never seen a real cat or even been exposed to pictures of cats or toy cats. It will be quite difficult for her to learn the word because she has not experienced the first two levels of learning.

As discussed elsewhere, this is a major reason why students from low-SES backgrounds have so much difficulty in school. Language is a system of symbols used to represent concepts that are formed through exposure and experience (Bloom & Lahey, 1978). If students have had little exposure to various experiences, they do not bring a “memory bank” of experiences to school with them. Successful teaching, of course, utilizes things that learners already know and builds on that store of information. Children from low-SES homes often have very low stores of information, so teaching must occur through utilizing levels 1 and 2 as much as possible before moving to level 3—abstract learning.

As a related consideration, Weiner (2001) notes that schools expect kindergartners to come to school able to use language to learn about things they have not directly experienced. They need to be able to

learn by discussing a variety of topics with others. Many children from low-SES homes, however, come to school with their language levels not matching the level expected even in kindergarten. Their language information structure (LIS) is not on par with the language information load (LIL). For these children, classroom instruction will be, to put it informally, “way over their heads.” These children frequently have had much less experience with oral and literate language than their more privileged counterparts (Hart & Risley, 1995), yet the school curriculum is based on the assumption that children have acquired all of this experience in the home, before entering kindergarten. When the LIL of the classroom exceeds children’s LIS, content learning is impaired, and the level of the LIS increases very slowly.

As discussed earlier, many schools, in their attempts to raise standardized test scores, have pushed standards down so that younger and younger children are expected to know more and more. Weiner (2001) accurately states that the people who write commercial school curriculum materials and state standards for content areas, and develop educational assessments, often base their ideas on their own middle-class children or on the children of middle-class friends. This researcher goes on to say that well-meaning policy makers write objectives not attainable by a kindergartner from a low-SES home: “Freed from the weighty anchor of reality, individuals may fantasize freely about what young children could learn or what they should learn” (Weiner, 2001, p. 10). My own professional experience unfortunately bears out the truth of this observation this is so true. Sometimes I think to myself—perhaps too cynically—that I would like to see these policy makers come to my school for a month or two and teach in one of our classrooms. After this hands-on experience with actual low-SES children, I would be very interested to see if their academic and curricular goals were quite so lofty. Students from low-SES backgrounds often are not prepared, academically or psychologically, for the rigorous demands of school when they enter kindergarten.

For example, in many California kindergartens, children need to read and solve story problems, make and use graphs, and understand mathematical set theory. Weiner points out that to decision makers, “abstract” means “high standards,” and “concrete” means “watered down.” In actuality, if ideas are presented concretely first, then children will understand them abstractly later. Weiner stresses that children from low-SES homes need more contextualized language, direct hands-on experiences with objects, opportunities for cooperative learning,

opportunities for individual exploration, and enhanced one-to-one conversational opportunities.

A majority of classroom activities, even in kindergarten, rely on students' skill with decontextualized language. Many children from low-SES families come from homes in which language is highly context-dependent. Listeners need a shared experience because the casual register of language used does not provide all the necessary information (Bernstein, 1964; Payne, 2003). The contextualized language of casual register depends heavily on nonverbal supports and shared meanings between listeners and speakers. Children from these environments struggle in the classroom because the language supposedly provides all of the information, with little if any context. The language of the classroom is highly abstract.

By contrast, children from middle-SES homes come to school with the ability to understand and use language removed from actual actions and objects. They usually can use language to talk about things that are not physically present in the classroom. Typical classroom interactions depend very heavily on these skills, which grow out of literally thousands of conversations early in childhood in which the child leads and the adult scaffolds the communication.

Children from low-SES families experience fewer of these conversational opportunities at home (Hart & Risley, 1995; Weiner, 2001). When they enter kindergarten, they can talk about actions and objects that are physically present in their environment, but they cannot yet use language to talk about things that are not physically present. Thus, the LIS of these children is not equipped to meet the demands of the classroom, even at kindergarten level.

Unfortunately, a vicious circle develops: Children from low-SES families do not have the language skills to meet classroom demands. When they go home at night, they may not learn any more language skills. Thus, at school, these children are consistently asked to do things they cannot do.

As summarized by Weiner (2001), children from poverty homes, in order to learn, need real-world experiences with real-world objects, meaningful tasks, opportunities to make activity-based discoveries, and individualized pursuits that allow them to engage in learning. Instead, the current school curricula encourage contrived tasks, requests to parrot back unconnected pieces of information, admonitions to remain silent, and artificial activities with abstract drawings. According to Weiner, children from more privileged homes are able to bear up

under these conditions; children from poverty homes “stumble on the first day” (p. ix).

A basic tenet of teaching at the elementary school where I work as an SLP is to provide students with opportunities to *practice language*. My principal Mr. Gulden (who has been an educator for 18 years) encourages teachers to increase children’s language experiences as much as possible, in both teacher-student and student-peer conversations. Many children from low-SES homes come to school without a basic language foundation—and this is the heart of the challenges they experience in school (M. Gulden, personal communication, January 9, 2007). Teachers attempt to draw students out and help them elaborate on topics, rather than just giving brief answers and then moving on to the next student. He helps teachers avoid what he calls a “One-way dialogue,” in which the teacher talks and students sit passively; again, practicing language—speaking and listening, as well as reading and writing—as much as possible is the goal (M. Gulden, personal communication, January 9, 2007).

Students from low-SES homes learn best from hands-on activities that are relevant for them. Jones (2002) recommends that professionals use many types of hands-on manipulatives to provide multisensory learning for children. Objects like buttons, chips, noodles, straws, paper clips, and others can be placed in containers for use in various activities. They can be especially helpful for learning in math.

In point of fact, relevance is a factor in any learning experience, as borne out by my own observations of a child from a middle-SES family—my son. He had always dreaded doing math worksheets for school. But, in preparation for a longed-for trip to Disney World, he willingly and competently performed frequent computations to determine how much he had saved from his allowance, and earned from extra chores, for his spending money, as he excitedly counted and sorted his collection of coins and \$1 and \$5 bills. He was fully engaged in this relevant, fun, and hands-on math learning experience.

Increasing Contextual Cues to Enhance Learning

Professionals can change the way they speak with young students especially. As noted by Hart and Risley (1995), young children from low-SES backgrounds are likely to have much less experience with conversations—the interchange of speaking and listening—than are