

Math-Related Problems of DYSLEXIA

By Prema Gaikwad

A group of seventh-graders are busily working on a math assignment. Suddenly John exclaims, "I give up! I hate math!" His teacher feels jolted for a second. Questions flash through her mind—Is John just frustrated? Or does he really dislike math? Does he understand the problems? Does he feel ill at ease doing paper-and-pencil work most of the time?

The above situation raises issues that occur in math classes at all levels—elementary, secondary, and college. In many cases difficulties in math can be traced to dyslexia or reading-related problems.

To help them, a math teacher must first identify students with math difficulties. Second, the teacher needs to understand why some students face severe math difficulties. Third, he or she must find ways to help students overcome their deficiencies.

Scope of the Difficulty

Math deficiencies, according to Rothman and Cohen,¹ can occur as part of an overall learning disability. However, for many children, math is the only subject in which they have problems.

A major factor influencing mathematical learning is reading ability. Dyslexia or reading-related difficulties can significantly affect math learning.

Some students with mathematics disability have good verbal and auditory skills. In fact, they may be highly verbal and read well. Other youngsters' disabilities in mathematics are intensified by difficulties in language and reading.

Several of the tasks required in reading are also used in math. Aukerman² lists these reading tasks as follows:

1. Learning to identify important ideas.
2. Developing specialized arithmetic vocabulary.

3. Translating words and phrases into arithmetic symbols (four becomes 4, *divided by* becomes \div , for example).
5. Reading charts, graphs, and tables.
6. Performing verbal problem-solving, including searching for answers and reading for clues or directions.

Clearly, mathematics, like reading, demands *word* or *symbol* recognition, as well as usage and application of language.

Difficulties Related to Reading and Mathematics

Much study has been given to reading problems, but comparatively little research has been done on math disorders. As a result, teachers often have to invent their own strategies to identify and assist students who suffer from math difficulties.³

Several studies suggest that poor achievement in math may result from the same language-based deficits that underlie poor reading achievement.⁴ Therefore, some of the same strategies that help reading-disabled students may also benefit those with math problems.

Described below are a few of the reading-related problems that students encounter in mathematics.

Problems Related to Sounds and Symbols

In reading, matching sounds to symbols and blending is known as "decoding," while reading for meaning is called "comprehension." Similarly, in math the child has to learn word/symbol relationships and verbalize in a specific way to compute correctly.⁵

In spelling class, children learn that a sound can be represented in two or more ways. For example: "au" in *augment* and "aw" in *paw* have one sound, but two different spellings. Likewise, in arithmetic different symbols can de-

Student difficulties in math can often be traced to dyslexia or reading-related problems.

3. Becoming aware of specialized reading cues—such as punctuation (5-gal. can is considerably different from 5 gal. cans, for example).
4. Following written arithmetic directions, including translating words

scribe the same operation:

$47 - 23 =$ (Here the word *equals* is represented by two small horizontal lines.)

$\begin{array}{r} 47 \\ -23 \\ \hline \end{array}$ In this problem the word *equals* is represented by a long line drawn under the 23.

In math problems, the sequence of words is critical. The child may read from left to right the problem $40 \div 5 = 8$, as "Forty divided by five equals eight." But if the child reads the rearranged problem from left to right, $\begin{array}{r} 8 \\ 5 \overline{)40} \end{array}$ he will say, "Five divided by 40 equals eight." In this case the problem is incorrectly stated, and the inaccurate statement may affect comprehension and computation.

Problems Related to Vocabulary

The child should memorize math vocabulary as soon as he or she begins to learn reading. As children progress, they should also acquire an operational vocabulary for math: *Addition* means "plus" or "sum." *Subtraction* means "minus" or "the difference between." *Multiplication* means "times," and *division* means "divided by."

As in other subjects, word lists and vocabulary are integral to mathematics study.⁶ In teaching computation terminology, educators should use synonyms to help students recognize that the same operation can be described in different ways.

Other Math Difficulties

Another learning disability that affects

As in other subjects, word lists and vocabulary are integral to mathematics study.

a number of students is dyscalculia, or difficulty in mastering math concepts and/or computations. Testing and observation can identify three categories of children with this problem:

1. Those who understand mathematical vocabulary but are deficient in computation skills.
2. Those who are good at computation but cannot read mathematical terms with understanding, and
3. Those who are deficient in both areas.

The Wiebe/Cox Mathematical Vocabulary Reading Inventory found in the January 1984 issue of *The Reading Teacher* can help to diagnose these problems.

Dyslexics often have other math-related problems. David Wambsgans, an adult dyslexic, says, "I have problems with keeping numbers in a line or in a straight column. My writing with or without lines is messy and not straight." He continues, "Sometimes I become confused with respect to which way to turn and I reverse the order of directions or numbers. I have a hard time remembering things from a list without writing it down for a reference."⁷

Dyslexics may also have visual per-

ception problems and auditory processing difficulties. This will make it difficult for them to do math calculations and to understand the teacher's explanations.

Diagnostic Procedures

Formal and informal measures can be used to measure a student's skills and proficiency in mathematics. As in reading, diagnostic procedures for math include informal inventories, curriculum-based assessment, analysis of the student's errors, standardized survey tests, and individual clinical tests. Extensive and comprehensive evaluation would involve all of these types of assessment. In less severe cases, one or two methods may suffice.

What Can Be Done to Help

Helping students with dyslexia and dyscalculia require much time and effort. Is it really worth all the work necessary to remediate math problems?

Joyce K. Brobeck, a middle-school teacher, answers this way: "The difference you make is that one spark that illuminates for students the idea that they are OK, that they can make it in life, and their efforts do pay off."

The impact of the teacher is brought out by John, a 32-year-old student with learning difficulty, whom Brobeck interviewed:

If more teachers had been aware of my learn-

GLOSSARY OF TERMS

Auditory processing difficulties —

Problems in processing the language a person hears. These problems can include difficulties in understanding and remembering oral directions, in analyzing sounds in order to spell them correctly, in putting sounds together to recognize a word, and difficulties in remembering verbal information.

Learning styles —

Auditory—preference for learning strategies that involves hearing.

Kinesthetic/Tactile—preference for learning strategies and processes that involve the sense of movement, pressure, and touch; learning especially by doing and through using the large muscles.

Visual—preference for learning strategies and process that involve visual input and activity. This may not always include a reading preference.

Right-brain/Left-brain processes —

Certain types of mental functions and styles associated with each brain hemisphere. The term "right brain" is associated with a type of thinking or mind style that is creative, intuitive, whole-to-part, artistic, kinesthetic, 3-D visual, and nonverbal. A "left brain" mind style prefers analytic, sequential, logical, part-to-whole, linguistic/verbal, objective, and structured detail. School is often conducted in left-brained fashion. Many dyslexic students' strengths are in right-brain areas.

ing disabilities and behaviors, things could have been so much better. They could have walked through the math problems with me, and by teaching me that my problems could be overcome I could have known I was valuable and capable....My best teachers were patient and didn't humiliate me. They gave me lots of one-on-one time.⁸

Ellen White reinforces this observation by saying: "The greatest of teachers are those who are most patient, most kind."⁹

Listed below are some ideas I have gathered from research and from my own personal experiences in helping students with difficulties in math and reading.

Use a Multisensory Approach

Coming at the problem from a variety of angles can help ensure success. Ask students to describe their difficulties and to tell you the ways they learn best. As Joyce Steeves explains, "Usually a dyslexic child is intelligent enough to know his own learning pattern and is able to say how he learns best."¹⁰ Using the preferred learning style of the student, such as visual, auditory, kinesthetic, or tactile, or a combination of these methods can be very effective.

In addition to sequential or left-brain processes, add some right-brain, multisensory strategies. Optimal results occur from using these modes simultaneously.

1. Visual Emphasis

- a. Have the student trace the

A calculator frees students from routine computation, giving them time to think about problem-solving.

A Sample Math Lesson Plan

5 minutes	Review Try to connect the new concept to familiar concepts. Reinforce previous learning.
15 minutes	Presentation of new learning activity. Proceed in small, distinct steps. Use multisensory modes as much as possible.
10 minutes	Practice Oral, written, or any other multisensory method may be employed.
5 minutes	Review May be a seatwork activity.
10 minutes	Game A variety of games, including computer games are available. These may act as incentives and provide motivation.

number facts with a washable pen, using a clear plastic page placed over a worksheet or card. The clear plastic may be a page protector or cover like those used for term papers. This allows the student to trace without needing a new model each time, since the ink can be washed off. Next, have the student make his or her own card. If the student also says the number fact aloud, this helps fix the idea through two sensory channels.

- b. Use an overhead projector and chalkboard. Be sure the writing is clear and visible from all parts of the room. Color-code parts that need differentiation. For example, write the decimal part in a different color to differentiate it from the whole-number part.
 - c. Use picture clues to solve problems. Ask older students to draw pictures of what is happening in story problems. Provide sketches to accompany worksheets.
2. *Auditory Emphasis*
- a. When giving lectures, keep the instruction short and to the point. Add humor and anecdotes to make it interesting. Include mnemonic devices to aid memory. *The Memory Book* by Lorayne and Lucas gives suggestions of ways to improve memory.
 - b. Use a language master or tape

ing disabilities and behaviors, things could have been so much better. They could have walked through the math problems with me, and by teaching me that my problems could be overcome I could have known I was valuable and capable....My best teachers were patient and didn't humiliate me. They gave me lots of one-on-one time.⁸

Ellen White reinforces this observation by saying: "The greatest of teachers are those who are most patient, most kind."⁹

Listed below are some ideas I have gathered from research and from my own personal experiences in helping students with difficulties in math and reading.

Use a Multisensory Approach

Coming at the problem from a variety of angles can help ensure success. Ask students to describe their difficulties and to tell you the ways they learn best. As Joyce Steeves explains, "Usually a dyslexic child is intelligent enough to know his own learning pattern and is able to say how he learns best."¹⁰ Using the preferred learning style of the student, such as visual, auditory, kinesthetic, or tactile, or a combination of these methods can be very effective.

In addition to sequential or left-brain processes, add some right-brain, multisensory strategies. Optimal results occur from using these modes simultaneously.

1. Visual Emphasis

- a. Have the student trace the

A calculator frees students from routine computation, giving them time to think about problem-solving.

A Sample Math Lesson Plan

5 minutes	Review Try to connect the new concept to familiar concepts. Reinforce previous learning.
15 minutes	Presentation of new learning activity. Proceed in small, distinct steps. Use multisensory modes as much as possible.
10 minutes	Practice Oral, written, or any other multisensory method may be employed.
5 minutes	Review May be a seatwork activity.
10 minutes	Game A variety of games, including computer games are available. These may act as incentives and provide motivation.

number facts with a washable pen, using a clear plastic page placed over a worksheet or card. The clear plastic may be a page protector or cover like those used for term papers. This allows the student to trace without needing a new model each time, since the ink can be washed off. Next, have the student make his or her own card. If the student also says the number fact aloud, this helps fix the idea through two sensory channels.

- b. Use an overhead projector and chalkboard. Be sure the writing is clear and visible from all parts of the room. Color-code parts that need differentiation. For example, write the decimal part in a different color to differentiate it from the whole-number part.
 - c. Use picture clues to solve problems. Ask older students to draw pictures of what is happening in story problems. Provide sketches to accompany worksheets.
2. *Auditory Emphasis*
- a. When giving lectures, keep the instruction short and to the point. Add humor and anecdotes to make it interesting. Include mnemonic devices to aid memory. *The Memory Book* by Lorayne and Lucas gives suggestions of ways to improve memory.
 - b. Use a language master or tape

recorder for drill and practice. You can record facts with or without answers. Ask students to listen, and then write the complete fact.

- c. Reinforce instructions and answers. This provides immediate verbal and auditory reinforcement. Either you or the student may repeat items. Overteaching and overlearning help enhance recall.
3. *Kinesthetic and Tactile Emphasis*
- a. Provide sufficient writing practice. This may involve both paper and chalkboard. Having students work on the chalkboard provides a number of advantages, including kinesthetic and tactile benefits. Any mistakes made can be erased immediately, thus avoiding the recording of errors.
 - b. Don't be too quick to forbid a student to count on his or her fingers. This type of tactile reinforcement may help build up a "muscle memory."
 - c. Have the student skip or do jumping jacks while memorizing tables or facts. Stair climbing is another time when students can repeat number facts.
 - d. Use sand or rice trays for finger writing. Having students trace in

midair is also useful. Using an index finger to write in the air is especially effective with number-reversal problems.

Use Computers and Calculators

Computers offer great potential in instruction. Numerous educational software programs are available. For example: *Math Rabbit* (for recognizing number patterns), *Sticky Bear Math*, *Number Munchers* (for the four basic operations), *Weekly Reader Math Word Problems*, *Math Twister* (for word problems).

Computers guide the student one step at a time through mathematics operations, and reinforce concepts through repetition.

Computers can individualize instruction. With infinite patience, they wait for a response without glaring or disapproval. They make learning an interactive process. The most sophisticated programs seem able to carry on a conversation with the user.

As a boon to problem-solving, calculators can extend students' mathematical experiences. A National Council of Teachers of Mathematics publication¹¹ recommends that teachers at all levels take full advantage of the power of calculators and computers. This means that children should use the calculator as a learning and computing tool. This

Sources of Help or Information

Producers and distributors of mathematics learning aids

Cuisenaire Company of America, Inc.
12 Church Street, Box D
New Rochelle, NY 10805

Creative Publications
505 West 110th Street
Oak Lawn, IL 60453

Activities Resources
P.O. Box 4875
Hayward, CA 94540

Software Producers and Distributors

Midwest Visual Equipment Co.
6500 N. Hamlin
Chicago, IL 60645

Scholastic Software
P.O. Box 7501, 2931 McCarty St.
Jefferson City, MO 65102

Journals

Arithmetic Teacher
Journal of Learning Disabilities
The Reading Teacher

skill is just as important as learning to do paper-and-pencil algorithms and mental arithmetic processes.¹²

Once students understand the meaning of an operation and learn one or more algorithms for computing, they should begin to use a calculator to perform the operation. A calculator frees students from routine computation, giving them time to think about problem-solving.

Use Manipulatives

Research shows that lessons incorporating hands-on materials are more likely to ensure learning.¹³

Teachers can choose either commercial or teacher-made materials. Here are some sample ideas: Cuisenaire rods, tangrams, pattern blocks, interlocking cubes, dominoes, attribute blocks, geoboards. Various games may be used to teach counting, fractions, or other concepts.

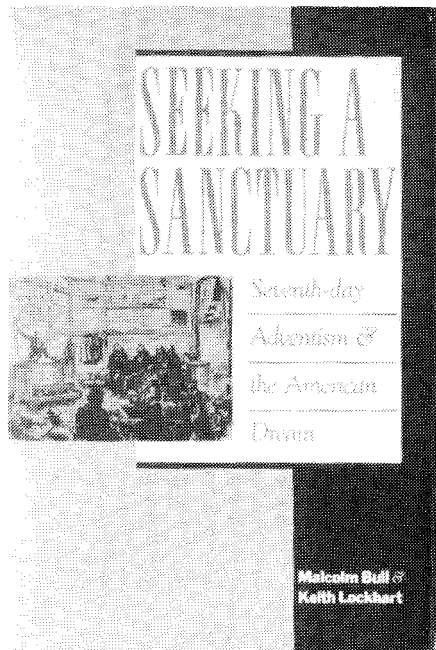
Other Suggestions

It is important to keep a careful record of student progress. Use positive reinforcement as much as possible. Emphasize learning over performance. For example, give the student credit for doing the task correctly, even if the final answer may not be accurate. This helps build self-esteem.

Conclusion

Language is the fundamental key to learning. Disabilities in reading and writing may cause difficulties in any subject,

Continued on page 45



of historical and sociological methodology, it is also such a good read that many people have found it hard to put down. Adventist scholars and educators will doubtless wrestle with the book's arguments for years.

The authors boldly state their central argument as follows:

America had offered sanctuary to generations of immigrants from Europe: Adventism sought to provide a sanctuary from America. By presenting itself as an alternative to the Republic in this way, the church rapidly came to operate as an alternative to America in the social sphere as well, as Adventists replicated the institutions and functions of American society (pp. IX, X).

Bull and Lockhart then apply this thesis brilliantly to the separate themes of Adventist theology (including eschatology, God, and salvation), experience (such as church structure, growth patterns, religious liberty, and art), and subculture (women, blacks, ministers, doctors, educators, and the self-supporting movement).

The role of Adventist education provides a major buttress to their central argument. Adventists have primarily drawn their converts from marginal socioeconomic elements in society. The church has enabled those individuals, through its educational system, to leave their low status behind and join higher-status occupations.

In Bull and Lockhart's model, the individual member, upon first joining the church, becomes an aspirer, then a sustainer, and finally, through what they call "the revolving door," a transformer who exits the church. At each stage the Adventist school is critical in socializing the young to Adventism. However, the authors write little about the critical role Adventist boarding academies have played in this process, choosing to con-

centrate more on higher education.

The model described in this book obviously applies to many Adventists, but it fails to take into account the vast majority of church members who live outside North America, or those who do not live in large Adventist educational and medical centers but rather attend small, struggling churches, many of them without a church school. However, for many highly educated Adventists, this model is persuasive and must be dealt with.

Bull and Lockhart also explore extensively the internal philosophical struggles in Adventist education. As they analyze the founding of Adventist schools, they find no driving educational philosophy at the start. Instead they see a need to replicate all of society's institutions within the church. So, when Ellen White advocated a new philosophy, elementary church schools attempted to implement her views, but colleges—in their drive for professionalism—never changed. Instead, colleges, with the strong encouragement of church leaders, focused on becoming as good as colleges on the outside.

Into this setting came the self-supporting movement, which rejected the original basis for having schools, in order to realize Ellen White's unrealized goals. This movement serves a role similar to that of Roman Catholic monasteries. It ultimately functions within Adventism in the same capacity as the church relates to America—with discomfort and suspicion.

In reading this book, one has to exert caution not to get so caught up in the creativeness of the thesis and the clever writing as to lose one's critical capacities.

Adventist educators do need to study this book in order to challenge their own thinking about the church's origins and current structure in the United States. College professors should expose their upper-division students to the important sociological elements of the book. Bull and Lockhart's study should offer insight and guidance into church sociology. It may prove a helpful companion study to such studies as *Valuegenesis*, as the denomination attempts to close its revolving door.—Richard Osborn. □

Dr. Richard Osborn is Director of Education for the Columbia Union Conference, Columbia, Maryland. He has recently completed a Ph.D. in American History at the University of Maryland.

SUCCESS IS WITHIN REACH

Continued from page 22

cessful naval career, and now reads for pleasure. He especially enjoys science/adventure stories.

Carol, Rich, and David are similar to millions of other learning-disabled students. Carol dropped out because no one recognized her problem or tried to help her. Rich and David were luckier. They connected with skillful teachers who recognized their individual needs. The result? Teachers made the difference for the *different learner*. □

Diane Vyskocil is Director of Special Education and a member of the Administrative Team for Blaine, Washington, Public Schools. Blaine Elementary School was one of six schools to receive the James Madison Model School Award given by the U.S. Office of Education in 1988. Ms. Vyskocil is a Clinical Affiliate Professor for Western Washington State University. She is also a member of the Project Affirmation Committee for the General Conference of SDA and of the Board of Education for the Washington Conference of SDA.

MATH-RELATED PROBLEMS AND DYSLEXIA

Continued from page 26

including mathematics. Many instructional methodologies can be used to enhance student achievement and to

An understanding, caring attitude, and fair treatment will inspire the student to WANT to improve.

deal with language disabilities. But most important, an understanding, caring attitude, and fair treatment will inspire the student to *want* to improve. □

Prema Gaikwad is a Doctoral Student at Andrews University, Berrien Springs, Michigan. She is working on a Curriculum and Instruction degree with a cognate in reading. Ms. Gaikwad taught mathematics for 13 years at Spicer College, Pune, India, at the secondary and college levels. When she returns to Spicer College, she will direct a reading center there.

REFERENCES

¹ F. W. Rothman and J. Cohen, "The Language of Math Needs to Be Taught," *Academic Therapy*, 25:2 (1989), pp. 133-142.

² Cited by S. W. Johnson, *Arithmetic and Learning Disabilities: Guidelines for Identification and Remediation* (Boston: Allyn and Bacon, Inc., 1979).

³ N. S. Bley and C. A. Thornton, *Teaching Mathe-*

FOR FURTHER INFORMATION

VIDEO RECORDINGS

"Come Inside Our World," by Texas Scottish Rite Hospital, Child Development, 2222 Welborn, Dallas, TX 75219. A production by gifted dyslexic children depicting scenes from school life, their aspirations, and their appreciation for people who supported them.

"Dyslexia: The Challenge and the Promise." Produced by the Orton Dyslexia Society, New England Branch, Linden Hill School, S. Mountain Rd., Northfield, MA 01360.

"Dyslexia: The Hidden Disability," Produced by the Grand Rapids Public Schools and Grand Rapids Junior College in conjunction with WGVC/WGVK, Professional Media Services, Grand Rapids College, 143 Bostwick Ave. NE, Grand Rapids, MI 49503. (616) 771-3830.

Effective Teaching for Dyslexic/All College Students, Center for the Advancement of College Teaching, Box 1867, Brown University, Providence, RI 02912. Examines instructional strategies that are particularly effective for dyslexic college students.

"Gifts of Greatness" — A Positive Look at Learning Differences. Written and Directed by Joyce Bulifant. PBS Video Library: (Telephone) 900-860-9301. Good morale booster for learning-disabled students.

"Learning Difference Awareness" video series. Audio-Visual Department, Sacramento City College, 3835 Freeport Blvd., Sacramento, CA 95822. Presentations to develop awareness among college personnel and the business community about learning disabilities/learning differences.

"Learning Disabilities: A Family Crisis," by Menninger Video Productions, Menninger Center for Learning Disabilities, Box 829, Topeka, KS 66601-0829.

PBS's Bodywatch—"Dyslexia: Why Can't I Learn?" moderated by Red Duke, M.D.—PBS Video Library: (Telephone) 900-860-9301.

"Teaching the Learning Disabled—Study Skills and Learning Strategies." The TLD Video Program, edited by Judith R. Birsh of Teachers College, Columbia University, Tisbury, MA 02575: Vineyard Video Productions, 1990. Eight cassettes.

ORGANIZATIONS

Learning Disabilities Association
4156 Library Road
Pittsburgh, PA 15234

The Orton Dyslexia Society
724 York Road
Baltimore, MD 21204
(301) 296-0232 or (800) ABCD 123

Children With Attention Deficit Disorders
(C.H.A.D.D.)
1859 North Pine Island Road
Suite 185
Plantation, FL 33322
(305) 384-6869

RECORDED BOOKS

Recording for the Blind, Inc.
20 Roszel Road
Princeton, NJ 08549

PUBLICATIONS

Aaron, P.G., and Baker, Catherine. *Reading Disability in College and High School*, Diagnosis & Management, New York Press Inc., Parkton, MD 21120, 1991.

Adams, Marilyn Jager. *Beginning to Read, Thinking and Learning About Print*, A Summary, University of Illinois, P.O. Box 2276 Station A, Champaign, IL 61825-2276.

Anderson, C. Wilson, Jr. "Helping Your Learning Disabled Youngster With School Work at Home," Monograph from The Menninger Clinic. Send \$2 and self-addressed, stamped envelope to the Reading Center, Andrews University, Berrien Springs, MI 49104. Helpful suggestions for parents.

Clark, Diana Brewster. *Dyslexia: Theory and Practice of Remedial Instruction*, York Press, Inc., Parkton, MD 21120, 1988. This work provides perspectives on the reading process, the nature of dyslexia, and principles for teaching dyslexic students. It also overviews programs of remediation and their effectiveness.

D'Antoni, Alice; Minifie, Darrel & Elsie. *A Parent's Guide to Learning Disabilities*, The Continental Press, Inc., Elizabethtown, PA 17022, ISBN 0-8454-2183-2. This book deals with the characteristics of learning disabilities and how parents can help.

Dyslexia, The Language Disability That Can Be Overcome, The Orton Dyslexia Society, 724 York Rd., Baltimore, MD 21204, 1985.

Duane, Drake and Paula Rome. *The Dyslexic Child*, Charles C. Thomas, 2600 S. First St., Springfield, IL 62794-9265, 1980. This collection of articles includes information on identifying and providing educational treatment for the dyslexic student.

Ezrine, Sandi. *A Primer on Dyslexia*, The Jemicy School, 11 Celadon Road, Owings Mills, MD 21117. (301) 653-2700. Or contact Sandi Ezrine, 2303 Hidden Glen Drive, Owings Mills, MD 21117. (301) 252-0306.

Gardner, Howard. *Frames of Mind: Theory of Multiple Intelligences*, Basic Books, Inc. Subsid. of Harper & Row, 10 E. 53rd St., New York, NY 10022, 1983.

Levine, Melvin. *Keeping a Head in School*, Educator's Publishing, 75 Moulton St., Cambridge, MA 02138, 1990. This book is designed with the preadolescent and adolescent reader in mind. It deals with the characteristics of learning disabilities and ways to cope and compensate.

MacCracken, Mary. *Turnabout Children*, Little, Brown & Co., 34 Beacon St., Boston, MA 02106. (800) 343-9204, 1986. The author tells of her experiences in clinical work with dyslexic children.

Miles, T. R. *The Dyslexic Child*, Technomic Publishing Co., 851 New Holland Ave., Box 3535, Lancaster, PA 17604, 1970.

_____. *More Help for Dyslexic Children*, Methuen, 1975. Heineman Educational Books, Inc., 70 Court St., Portsmouth, NH 03801.

Orton Society, *Dyslexia, The Language Disability That Can Be Overcome*, The Orton Dyslexia Society, 724 York Rd., Baltimore, MD 21204.

Osman, Betty, and Henriette Blinder, *No One to Play With*, Warner Books, 666 5th St., New York, NY 10103.

Rawson, M.B., *The Many Faces of Dyslexia*, The Orton Dyslexia Society, 724 York Rd., Baltimore, MD 21204.

Silver, Larry, *Attention Deficit-Hyperactivity Disorder and Learning Disabilities. A Booklet for Parents*. Available from physicians or from ADD Clinic, 308 S. Front St., Dowagiac, MI 49047. (616) 782-9200. For more than three copies, there is a \$1 charge per booklet.

Silver, Larry, *Attention Deficit-Hyperactivity Disorder and Learning Disabilities. A Booklet for the Classroom Teacher*. Available from physicians or from ADD Clinic, 308 S. Front St., Dowagiac, MI 49047. (616) 782-9200. For more than three copies, there is a \$1 charge per booklet.

_____. *The Misunderstood Child*, McGraw-Hill Co., 13955 Manchester, Manchester, MO 63011, 1984. 1-800-262-2248. This author provides practical insights to parents with children with pronounced learning disabilities, including attention deficit disorder. Included are descriptions of normal development in contrast to the development of the learning-disabled child.

Stevens, Suzanne, *Classroom Success for the Learning Disabled*, John F. Blair, 1406 Plaza Dr., Winston-Salem, NC 27103, 1984.

_____. *The Learning Disabled Child: Ways Parents Can Help*, John F. Blair, 1406 Plaza Dr., Winston-Salem, NC 27103, 1984.

Vail, Priscilla L., *Smart Kids With School Problems*, Penguin Books, 2 Park Avenue, New York, NY 10016, 1987. 1-800-631-3577. This is one of the most practical and readable of books on the subject. Vail explains and illustrates the problems of children who are bright, yet struggle with some aspects of academic work. Topics include: motor skills, visual, auditory, and language problem areas, diagnostic testing and interpretation, and multiple intelligences.

_____. *Clear and Lively Writing*, Walker and Company, 720 Fifth Ave., New York, NY 10019, 1984. Here Vail describes activities for teaching language skills. Emphasis is on writing, but activities in listening and other language areas are also included.

Waites, Lucius, *Specific Dyslexia and Other Developmental Problems in Children: A Synopsis*, Educator's Publishing Services, 75 Moulton St, Cambridge, MA 02138, 1990.

BIOGRAPHIES OF DYSLEXIC PERSONS

Clarke, Louise, *Can't Read, Can't Write, Can't Talk Too Good Either*, Walker & Co., 720 Fifth Ave., New York, NY 10019, 1973.

Evans, James, *An Uncommon Gift*, Westminster/John Knox Press, 100 Witherspoon St., Louisville, KY 40202-1396, 1983.

Fleming, Elizabeth, *Believe the Heart, Our Dyslexic Days*, Strawberry Hill Press, 2594 15th Ave., San Francisco, CA 94127, 1984.

Hampshire, Susan, *Susan's Story: My Struggle With Dyslexia*, St. Martin's Press, 175 Fifth Ave., New York, NY 10010, 1983.

Simpson, Eileen, *Reversals, A Personal Account of Victory Over Dyslexia*, Washington Square Press, 200 Old Tappan Rd., Old Tappan, NJ 07675, 1981.

CHILDREN'S BOOKS FOR BIBLIOTHERAPY

Blue, Rose, *Me & Einstein: Breaking Through the Reading Barrier*, Human Sciences Press, Inc., 233 Spring St., New York, NY 10013-1538, 1984.

Janover, Caroline, *Josh, A Boy With Dyslexia*, Waterfront Geographic Services, 18330 Brim St. No. 321, Bowling Green, OH 43402, 1988.

DeClements, Barthe, *Sixth Grade Can Kill You*, Scholastic Inc., 730 Broadway, New York, NY 10003, 1985.