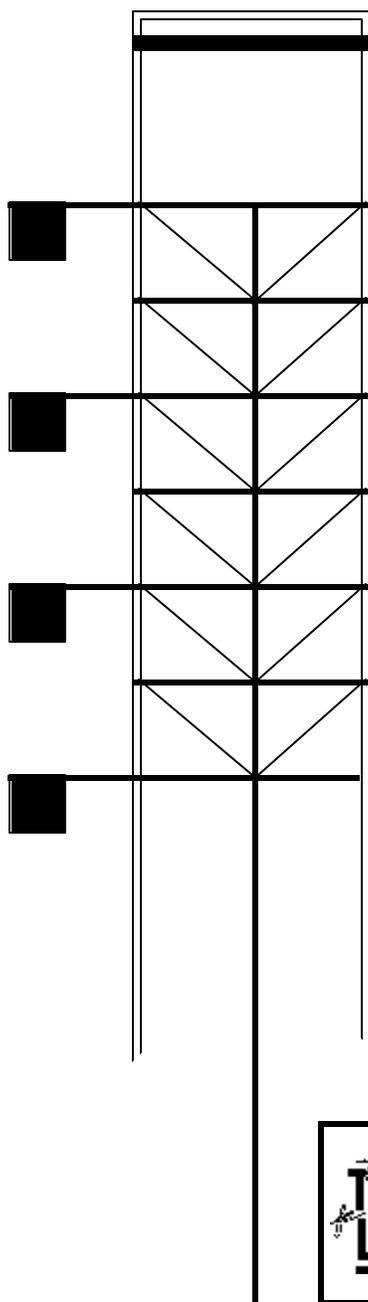

Resource Packet

An Assistive Technology Publication of Tools for Life, The Georgia Assistive Technology Project



Learning Disabilities and Assistive Technology

An Emerging Way to Touch the Future



Tools For Life
2 Peachtree Street, 35th Floor
Atlanta, Georgia 30303

Phone 404-657-3081
Fax 404-657-3086
TDD 404-657-3085
Web www.gatfl.org

Table of Contents

Learning Disabilities and Assistive Technology	2	Daily Living and Social Skills Difficulties	15
What is a Learning Disability?	3	Social Difficulties Hardware and Software	16
Reading Difficulties	8	Assistive Technology Solutions Chart	17
Reading Difficulties Hardware and Software	10	Advocacy Group Resources	20
Writing Difficulties	11	Internet Resources	22
Writing Difficulties Hardware and Software	13	Vendor Resources	23
Math Difficulties	14	LD Adults of Georgia Publications/Order Form	24
Math Difficulties Hardware and Software	14	LD of Georgia Membership Form	24

Learning Disabilities and Assistive Technology

Brent struggles to form each letter of the words on his tablet. Michelle looks at her checkbook to spell her name and address on a job application. After his son falls asleep, Bill slams the third-grade reader shut in frustration because he can't read it to his child or himself. Susan just received the wrong change at the grocery store, but she cannot tell because she can't count fast enough. Jack, late again for another job interview, drives around anxiously in search of office building number 215, or is it 251? Mark's mind drifts away to many other places as he tries again to concentrate on his GED examination.

These conscientious people share one thing in common: learning disabilities. They have the intelligence to accomplish all of these tasks; they have just not found the means to accommodate their needs. But, there are ways for them to reach their goals if they have the appropriate support behind them. Such is the purpose of this guide-- to provide information on assistive technology for individuals with learning disabilities and their providers.

Assistive technology is an important piece of the whole support system individuals with learning disabilities require to achieve success. Exactly what is assistive technology (AT)? AT is any item, piece of equipment, or product that is used to increase, maintain or improve the abilities of individuals with disabilities: tools to promote independence across all areas of daily living. These common tools extend from low-tech, low-cost items to high-tech, more expensive devices. Low-tech devices require little or no training; high-tech devices may require extensive training.

Technology can affect the lives of people with learning disabilities in daily living, whether it's in the classroom, at work, in the home, or in other social settings. Technology provides, in other words, valuable tools for life. The simplicity and ready availability of low-tech devices should not be overlooked. Inexpensive color highlighters, for example, can help individuals with reading difficulties distinguish words that appear the same, like *proud*, *pound*, and *pond*. Providers help the student highlight the troublesome words in different colors and make the reader visually aware of the differences between these words. Such training leads the student to a higher level of awareness of his/her disabilities. High-tech devices, such as an optical character recognition (OCR) system, provides a means of entering text or printed material directly into a computer by use of a scanner. Once the text has been scanned into the computer, it can be read back to the user by means of a speech synthesizer. Another useful accommodation is a speech recognition system. Appropriate for adults with learning disabilities, the system operates in conjunction with specially equipped personal computers. Such programs enable the user to dictate to the computer, converting oral language to written text.

New technological systems and their applications continue to evolve rapidly. In the recent past, technologies now applied to individuals with learning disabilities were originally developed for people with other disabilities. OCR programs, to select one example, appeared at first for individuals with visual impairments or blindness. Only recently were these programs found to be effective in the learning disability community.

Technology in itself is not the answer to all problems faced by people with learning disabilities or for their service providers. Technology does, however, provide valuable tools for life. Those seeking technological assistance should focus not on the device, but on what the device can do for the individual in need. The fit must be right. The biggest or most expensive may not always be the best fit. The key to selecting the most appropriate tool involves many elements: seeking a thorough team evaluation, finding the resources to obtain the technology, customizing the technology to make the best fit, and providing the time as well as the patience for training.

As a consumer, an individual with learning disabilities, I can speak from experience that technology has made a difference not only in my work environment but also in my day-to-day living. For all the Brents, Michelles, Bills, Susans, Jacks, and Marks who seek your help, there are assistive tools to level the field and give them the opportunity to realize their dreams. This guide can lead you to see technology as an emerging way to touch the future.

Christopher M. Lee

LD Assistive Technology Consultant

What is a Learning Disability ?

Broadly defined, the term *learning disability* has been used to describe a variety of problems in acquiring, storing, and/or retrieving information. People with learning disabilities have difficulty taking information in through the senses and processing the information with accuracy to the brain. The information becomes scrambled, like a short circuit, a distorted radio signal, or a fuzzy television picture. Learning disabilities occur irrespective of race, culture or class. People with learning disabilities possess average or above average intelligence levels; however, the disability is often confused with other difficulties including slow learning, retardation, emotional and/or behavioral disabilities.

Thought to be a neurologically based nervous system disorder, learning disabilities are not the result of visual, hearing, and/or physical disabilities; mental retardation; emotional disturbance; acquired brain injury; ineffective instruction or lack of motivation to learn; cultural diversity; and/or socio-economic conditions. Learning disabilities can be genetic or acquired and may accompany other disabilities such as deficits in sight and hearing. They may also be the result of birth trauma, low birth weight, lead poisoning, fetal alcohol syndrome/ effect, and long-term chemical dependence.

The inaccurate sensory transmissions to the brain may often lead to difficulty learning and performing in training and job settings, as well as to emotional instability. The most common manifestations occur in the areas of reading, writing, and/or mathematics, subsequently affecting a broad range of skills and functions. Additionally, manifestations are commonly found in attention, reasoning and processing, memory, oral communication, coordination and motor functions, social competencies, and executive functioning skills such as organizing, problem solving, prioritizing, and self-management.

This condition is the most neglected, most misunderstood disability due to its hidden nature--and there is no cure. However, with appropriate accommodations and training strategies, the person with learning disabilities can learn to take advantage of strengths and minimize weaknesses, and thus enhance the potential of success in training and employment environments.

Without reasonable accommodations, the person with learning disabilities is presented with innumerable barriers. The inability to demonstrate skills adequately results in poor performance evaluations, stress related health problems, and job instability, not to mention the unrealized productivity standards of the employer. Without appropriate education and training, there are few employment opportunities which allow advancement.

What are we looking for in the adult or adolescent learner suspected of having a learning disability? Most individuals with learning disabilities display a number of the following characteristics at one time or another and in varying degrees. These characteristics are listed in three broad categories:

- ◆ **General Characteristics**
- ◆ **Academic/Employment Skills**
- ◆ **Social Skills**

General Characteristics

Auditory and visual deficits affect one's ability to develop and use language effectively; the effects are most apparent in reading, math, writing, and spelling skills. In both instances, the central nervous system is not processing symbols correctly. The individual:

- demonstrates variable or unpredictable performance;
- has difficulty staying on task or using a procedure past the point of its being appropriate;
- is able to learn information presented in one way, but not in another;

- experiences severe underachievement in one or more of the basic academic areas (reading, writing, spelling, math);
- reveals an obviously uneven profile on a battery of tests (showing real strengths and real weaknesses);
- has generally poor work and organizational habits;
- seems to lack resourcefulness.

It is important to note that many of these observed learning characteristics and behaviors result from problems that the individual experiences in the areas of visual discrimination and visual memory, as well as auditory discrimination and auditory memory.

- ◆ **Visual discrimination** refers to the learner’s ability to retain a full mental image of what s/he has seen. In both instances, the central nervous system is not processing symbols correctly.
- ◆ **Visual memory** refers to the learner's ability to store and recall what has been seen.
- ◆ **Auditory discrimination** involves the ability to recognize the differences between sounds. The result of an auditory deficit is that the individual fails to hear vowel or soft consonant sounds in spoken words.
- ◆ **Auditory memory** refers to the learner’s ability to store and recall what has been heard.

Auditory and visual deficits affect one’s ability to develop and use language effectively; the effects are most apparent in reading, math, writing, and spelling skills.

Academic/Employment Skills

▶ **Writing**

The individual:

- may have poor handwriting and problems writing legibly;
- writes short and simple sentences;
- may have difficulty copying;
- has poor spelling skills;
- has trouble with written expression (putting thoughts down on paper);
- has trouble filling out forms;
- substitutes written words incorrectly;
- has problems filling in bubble answer sheets;
- demonstrates writing skills inconsistent with verbal abilities;
- may have problems with grammar, syntax and organization;
- demonstrates inconsistent memory for sentence mechanics (e.g., lack of punctuation and capitalization);
- may have persistent problems with sentence structure (sentences may be incomplete or syntax may be incorrect or disassociated);
- may write letters or numbers backwards or upside down (especially when he gets tired);
- reverses letters in spelling;
- spells words differently in the same document

(*Divorce*, for example, may appear as *devoice*, *devocie*, *devoeace*);

- spells phonetically and cannot remember patterns;
- mixes capital and lower case letters inappropriately;
- continuously whispers to himself while writing;
- has difficulty copying from a book or a chalk-board.

▶ **Reading**

The individual:

- reads slowly and deliberately;
- appears to be re-reading or reading very slowly, when reading silently;
- rereads lines in oral reading;
- has trouble reading signs, notes, forms, want ads, etc.;
- may substitute, omit, and/or transpose letters, words, syllables, and phrases;
- loses place on page;
- reads with an over-dependence on guessing and thus compromises comprehension;
- has trouble using basic phonics to sound out words;
- has decoding problems (difficulty with sound/symbol relationships; problems discriminating

between sounds and between certain letters (e.g., *bs* and *ds*, *ps* and *qs*; frequent reversal of letters and numbers; difficulty blending sounds together to form a word);

- transposes words or syllables;
- skips lines, words, letters, and numbers;
- has poor comprehension of written material;
- has difficulty with basic skills assessment;
- has problems keeping place in test answer sheets;
- has difficulty tracking from test booklet to answer sheet.

► **Mathematical Calculation and Application**

The individual:

- has trouble with mathematical concepts ($>$, $<$, \times , $-$, $+$, $=$);
- demonstrates inconsistent mastery of math facts and procedures;
- has trouble with following sequential procedures and directions with multiple steps;
- has problems with math concepts in word problems;
- has trouble with left/right orientation;
- confuses similar numbers (e.g., 7 and 9; 3 and 8) or transposes numbers;
- reads numbers out of sequence;
- has difficulty managing money;
- has trouble balancing a checkbook;
- cannot do written calculations;
- cannot do simple mental calculations;
- has trouble with basic skills assessment;
- has difficulty using a calculator;
- cannot count money or make change;
- has trouble with measurement;
- has difficulty conceptualizing time and space.

► **Oral/Verbal Expressive Language**

The individual:

- omits or uses words inappropriately;
- has problems explaining things logically;
- has trouble expressing thoughts concisely (forgetting, confusing, or having difficulty articulating words);
- has trouble with telephone conversations;
- frequently misunderstands verbal communications (because of auditory discrimination problems, the person may process the sounds in

words out of sequence, e.g., hears “aminal” instead of “animal”);

- has difficulty expressing herself in group settings;
- substitutes words incorrectly;
- has trouble retrieving known words;
- has problems making generalizations;
- is hesitant to speak out in class or at work;
- has difficulty listening;
- manifests slow verbal information processing;
- has trouble understanding words or concepts;
- has difficulty selecting relevant information;
- has auditory sequencing problems;
- has problems organizing ideas and expressing ideas in words;
- misinterprets language subtleties (e.g., tone of voice, sarcasm);
- has difficulty following complex directions.

► **Memory/Recall**

The individual:

- has difficulty with short-term memory (e.g., following simple and/or multi-step instructions, remembering material read and/or information presented orally);
- cannot remember personal history or data (long-term memory);
- has problems repeating information (saying the same thing over and over without realizing it);
- has difficulty synthesizing discussion (time, place, events);
- has difficulty retaining information without excessive rehearsal, practice, or other memory techniques;
- has trouble remembering information presented orally;
- has trouble remembering information read;
- has trouble with multiple directions;
- experiences difficulty retaining recently learned material;
- has problems recalling simple instructions (e.g., how to deposit money in the bank).

► **Reasoning/Processing**

The individual:

- has difficulty absorbing major ideas from oral presentations (instructions, lectures, discussions);

Social Skills

- makes frequent errors, both verbal and written;
- needs information to be repeated and reviewed;
- demonstrates poor decision-making skills;
- has poor abstract reasoning skills;
- shows poor cause/effect reasoning;
- has trouble recognizing and learning from mistakes;
- cannot recognize mistakes;
- has trouble moving from one idea to the next one;
- delays verbal responses;
- takes longer on reasoning tasks;
- has difficulty with abstractions; needs concrete demonstration;
- has trouble following oral information;
- has difficulty solving problems;
- is unable to transfer or generalize skills or integrate information;
- has difficulty drawing conclusions, making inferences, dealing with abstractions, seeing the whole.

► **Organization**

The individual:

- has problems managing the details of daily life;
- has trouble organizing;
- experiences difficulty prioritizing;
- has problems identifying the next step;
- manifests inconsistent performance;
- jumps from topic/idea to topic/idea;
- shows poor organization of concepts and tasks (including sequencing, prioritizing, grouping or categorizing, generalizing, grasping similarities between items, relating parts to the whole);
- has difficulty with maps, graphs, and charts;
- has trouble following multiple directions, especially in a prescribed sequence;
- complains of getting lost easily/disoriented easily;
- arrives very early or very late;
- has difficulty spacing assignment on a page (e.g., crowding math problems on a page);
- has difficulty telling time;
- has problems adjusting to change.

► **Social/Interpersonal**

The individual:

- demonstrates difficulty with social skills;
- blames self for poor social skills or may be unaware of inappropriate social behaviors;
- is noticeably out of place in group settings;
- interacts inappropriately with peers;
- has difficulty in establishing meaningful friendships;
- has trouble responding to nonverbal cues;
- lacks awareness of one's personal space;
- has difficulty working in close proximity to another;
- is untidy or disorderly in appearance;
- is most comfortable with familiar, unchanging settings;
- appears rigid (difficulty with new people and situations); displays rigidity when an established routine changes;
- has ineffective eye contact;
- may be overly aggressive or assertive;
- lacks awareness of consequences;
- talks excessively;
- uses language inappropriate to the situation;
- shares intimate information inappropriately;
- may be excessively shy and withdrawn;
- has trouble following "the rules";
- has problems accepting criticism;
- experiences low self-confidence.

► **Self-Concept**

The individual:

- has a poor self-concept, feelings of inadequacy;
- displays lack of motivation or extreme drive to complete tasks;
- resists attempting new or difficult tasks;
- lacks self-reliance;
- often says "I can't" or uses excuses;
- may be untidy or disorderly in appearance;
- can't describe successes;
- demonstrates indifference or a self-defeating attitude.

Publications of LD Adults of Georgia

► **Coordination/Motor Functions**

The individual:

- experiences late development of gross or fine motor skills (used in handwriting, needle work);
- displays poor motor coordination (appears clumsy or poorly coordinated, has difficulty manipulating fingers on a keyboard, filling in bubbles on answer sheets, copying from books and off chalkboards);
- is accident prone;
- has poor handwriting (letter formation inconsistent);
- confuses right and left;
- has difficulty keeping balance;
- has slow reaction time;
- shows limited endurance.

► **Attention/Impulsivity**

The individual:

- has difficulty concentrating/focusing;
- has a short attention span (easily distracted by sounds, movement, or other visual stimuli);
- displays off-task behavior;
- fidgets;
- is impatient; does not wait his or her turn;
- rambles verbally;
- responds without thinking;
- appears not to listen;
- has trouble staying on task;
- interrupts;
- takes big risks;
- wanders mentally;
- is in perpetual motion;
- has difficulty following through;
- has problems working alone;
- is unorganized;
- is extremely restless;
- is highly impulsive.

Edited and printed by permission of Sturomski & Associates, Payne & Associates.

Power Pack:

A Multi-Resource Guide for Adults with Learning Disabilities \$15.00

(Special Member Price: \$10.00)

This contains basic information for the consumer with LD/ADD and it contains tools for self-advocacy; description of learning disabilities; attention deficit disorders; information on legal rights, alternative ways to learn; state (Georgia), and national resources.

PEACH Packet for Teens \$15.00

This includes transition information, self-advocacy, resources, and insights from adults with learning disabilities about life after high school. It is geared for teenagers.

LD/ADD in the Workplace:

Information for Employers \$10.00

This is an overview of LD/ADD. It addresses employment issues, accommodations, and ADA. It is also a useful resource for employer and employee.

2000 Directory of Services for Adults with LD/ADHD \$20.00

(Special Member Price: \$15.00)

The only comprehensive guide to services and resources in Georgia for adults with learning disabilities and attention deficit disorders. Primarily in the Metro Atlanta area.

Diskette of 2000 Directory of Services for Adults with LD/ADHD \$ 5.00

This comprehensive guide is available in Window 2.x and Word Perfect 5.x format.

The order form for these publications on page 24.

Reading Difficulties

► **PROBLEM:** Individuals with learning disabilities may have difficulty with understanding what they read. This difficulty stems from an inability to decode and/or comprehend written information due to an information-processing deficit. This deficit may be visual and/or auditory.

Some of the most effective devices for individuals with reading disabilities take a **multisensory approach**. This approach uses other sensory modes, such as hearing and sight, to assist individuals who have visual and/or auditory processing deficits. Individuals with learning disabilities may have difficulty processing visual information, perceiving words incorrectly. They may often look up while reading and lose their place. They may also have difficulty recognizing their own written mistakes. Assistive technologies can make visual tasks less complicated and less strenuous.

Many of the assistive devices were originally developed for individuals with visual impairments, but these tools have been found to be very effective for people with reading disabilities. There are reading aids which will do the following:

- ◆ enter a text into a computer through a scanner;
- ◆ read back a text, scanned in or typewritten, as the words are highlighted on the screen;
- ◆ provide access to printed materials through tapes, CD-ROMs, and special internet services;
- ◆ magnify text and graphics;
- ◆ alter colors, font, or print size; and
- ◆ provide materials through videotape or videodisc.

In the next few pages, we give a brief overview of the most frequently used and most helpful technologies for reading difficulties.

Reading Difficulties Strategy I

Books on Tape and Computer Disk

◆ **Books on Tape and Computer Disk:** There are two different services to utilize for books on tape and disk.

Recording for the Blind and Dyslexic (RFB&D) is a non-profit service organization providing educational books (academic text books) on audio cassette. This service requires a \$50.00 registration fee and a \$25.00 membership service charge a year. Some schools, including colleges and universities should have an institutional membership. RFB&D has materials in all subject areas from grade four to the postgraduate level. RFB&D notes that "more than half of the people who use RFB&D's services have a learning disability--not a visual disability."

An RFB&D application requires a signature either by a professional in medicine or psychology. Applications for RFB&D can be obtained by calling (800) 221-4792; faxing (609) 987-8116, or writing to RFB&D, 20 Roszel Road, Princeton, NJ 08540. Books may be ordered by calling (800) 221-4792.

National Library Service for the Blind and Physically Handicapped (NLS), a free service of the Library of Congress, is commonly referred to as **Talking Books**. NLS offers leisure materials and magazines on audio cassette or audio disc. The collection includes popular novels, classical literature, poetry, biographies, and magazines. The Talking Books program is maintained by the National Library Service (NLS) for the Blind and Physically Handicapped at the Library of Congress, 1291 Taylor Street NW, Washington, DC. the

telephone number is (202) 882-5500. The service has thousands of titles available or will order what the applicant requests. **Talking Books** are distributed through a network of regional and sub-regional libraries. There are no fees charged by the regional libraries of the NLS. **Talking Books** requires that your application be signed by a doctor of medicine, **not** a psychologist. Applications can be obtained from a Talking Books Center in your area.

Both services require a special cassette player. The cassette player uses 4-track tapes. The tape player is supplied as a free loan when you submit your application. A smaller sized version of the 4-track player can be purchased through RFB&D by calling (800) 221-4792. The players range in price from \$100-200.

◆ **Academic and Professional Books from RFB&D:** RFB&D, best known for academic and professional books on audio tape, also sells a computer disk collection, called Electronic Text (E-Text), consisting largely of reference materials (computer manuals, reference works, specialized dictionaries, law books, thesaurus, and the Bible), which can be used on an individual's personal computer and work with most adaptive equipment, such as a screen reader which will read text through a speech synthesizer (see below). The E-Text on floppy disk is available for both IBM compatible PC or Macintosh systems. As most of the computer disks and audio tapes are reference materials, RFB&D's search and retrieval software program, BookManager, is especially useful. Audiotaped books need special playback equipment as explained above. E-Text can be used with your personal computer with screen reader and speech synthesizer equipment.

◆ **Variable Speech Control Tape Recorders (VSC):** VSCs are portable units that, unlike standard/conventional tape recorders, enable the user to play back audiotaped material (e.g. lectures, meetings, books on tape) slower or faster than the rate at which it was initially recorded without the loss of intelligibility ("chipmunk"-like speech at faster speeds). Intelligible speech at varying rates is easily achieved by adjusting speed and pitch control levers. (Portions of Strategy I drawn from Raskind, 1993)

Reading Difficulties Strategy II

Computer Assisted Reading (CAR)

There is software capability built into many computers, or it can be installed: to have text read aloud interactively (what you type is what you hear), a speech synthesizer, text to speech technology is used. With this technology you can have any text read back to you, text that you write or text that someone else has written.

◆ **Optical Character Recognition (OCR) including speech synthesis:**

OCR systems may be used to "read" material from hard copy (books, magazines, etc.). The system consists of a scanner, speech synthesizer with aid of software (i.e. screen reader software which will read any text input or documented by the user) and computer. Users scan the material into the computer which is, in turn, read aloud via the synthesizer as it is simultaneously highlighted on the screen. Options such as voice, rate of speech, and screen display may be individualized. These devices, originally designed for the visually impaired, may also be useful for persons with LD to circumvent difficulties with reading. If the user wants to use the reading machine with other software, such as word processing programs - this will make standard applications, such as WordPerfect, talk to you.

Speech synthesizers transform written text into spoken words (especially helpful to users with minimal reading skills). Text can be read back a letter, word, line, sentence, paragraph or screen at a time.

◆ **Reading Machines (screen readers):** Reading machines are electronic devices that scan a printed page and, through a synthesized voice machine, read the printed material back to the user. Screen readers can be used for home, work or school. Capabilities of the product can be expanded to suit the user's needs and require an electrical outlet.

For reading and writing activities, students with LD may find screen reading/speech synthesis/highlighting systems useful. As the user types in data, a voice synthesizer speaks what is being typed at the same time the print is highlighted on the computer screen. In addition, reading machines scan printed materials and convert them to synthesized speech. Some reading machines can be interfaced with personal computers (the user can plug into a Macintosh, PC or laptop) while others are stand alone models that need only an electrical outlet. When purchase of a reading machine to be operated with a computer is being considered, the user should determine whether this technology will work with the user's system (most programs work only in DOS). It is also necessary to specify which version of Windows is loaded on your system.

◆ **Electronic Books/Books published on Disk/E-Text:** Other than scanning, there are additional options for getting text into your computer. Once you have the electronic text on your machine, you can enlarge its type or have the machine read it to you. As described in Strategy I, RFB&D provides books copied to floppy disk for use with a computer. The floppy disks are available in either 3.5" or 5.25" for IBM compatible or Macintosh systems.

◆ **Screen Magnification/Enlargement Software:** People with vision problems can have difficulty reading computer screens. Screen magnification helps them to be more productive. It is a useful tool in any situation where prolonged viewing of the screen might cause eyestrain and/or decreased productivity.

There is software available which allows text to be magnified on screen. As well, alteration of colors on the screen is desirable and individual preferences catered for to make the viewing of text as comfortable as possible. Sometimes changing font or print size makes the text more legible. Text may also be magnified by low-tech means such as the use of closed circuit television.

Reading Difficulties Software and Hardware

Building Reading Comprehension	800-624-2926	Quicktionary Reading Pen	877-344-4040
Can-Do Products	800-537-2118	Reading Advantage	800-421-7323
Electronic Magnification	800-829-0500	Recording For the Blind and	
English Language Learning Tools	800-274-7624	Dyslexic (RFB&D)	800-803-7201
ESL Series	800-274-7624	Screenpower for Windows 95	410-893-9333
Hear It	www.ldresources.com	See it Right (color transparencies)	909-481-2950
Help Read	www.pixi.com	Soft Voice	609-984-8044
History of American Literature I	800-624-2926	Soundproof	916-652-7253
History of English Literature I	800-624-2926	Sun Sounds (Radio Reading Service)	602-231-0500
InLarge	510-923-6280	textHELP!	441-849-2815
IntelliTalk	800-899-6687	Ultimate Reader	508-538-0036
Internet Public Library	www.ipl.com	Ultimate Word Attack	800-777-3642
Kurzweil 3000	800-894-5374	Understanding Biographies	800-624-2926
Open Book	800-444-4443	What's the Story?	800-321-7511
p w WebSpeak	609-984-8044	The WireTap E-Text Archive	wiretap.spies.com
Project Guttenberg	www.promo.net	WYNN for Reading Ease	800-444-4443

Writing Difficulties

► **PROBLEM:** **Individuals with written language disorders may have difficulty with written language, which includes grammar, punctuation, spelling, organization, and coherence. Assistive technology, especially computer-based programs, can simplify pre-writing and revision processes and boost the creativity of persons with LD.**

Writing software can turn a personal computer (PC) or Macintosh (MAC) into a voice-driven typewriter. With an additional card installed on a computer, the user speaks into a microphone instead of typing on the keyboard. Other aids allow the user to hear what is being written on the screen. Some programs use the computer's internal speakers to reproduce the words auditorially, while others may require an external speech synthesizer.

Computer word processing lessens the stress about making errors, especially spelling. Cut and paste features enhance coherence by allowing the writer to move words, sentences, and paragraphs within the text. This freedom can release persons with written language deficits from concern about the mechanics of writing, allowing them to redirect their efforts toward the meaning of their writing.

Students who have access to word processing report that they write more frequently than they did without the computer. Word processing also reduces the difficulties of writing by hand and the computer gives a clear, accurate picture of what is written.

Word processing software can also facilitate a sequential approach to writing when used with an accompanying outlining software. One of the most important areas in which word processing software can help all students, including those with LD, is in the revision process. By electronically reorganizing the information through moving the text around, the student is able to write a draft and edit easily to make revisions. The student often experiences academic success and develops a sense of independence and pride in the work.

Writing Difficulties Strategy I

Using Computers for Writing

The computer is an important element in the assistive technology universe. Computer-based programs can assist persons with LD, in activities involving reading and writing.

How a computer changes the writing process:

- ◆ The computer eliminates handwriting problems.
- ◆ Proofreading is easier because the text is more legible.
- ◆ The writer may experience less frustration, including anxiety, than when using pen and paper.
- ◆ The writer may experience fewer difficulties with vocabulary and reasoning.
- ◆ Spelling and mechanics can be de-emphasized and moved to the end of the writing process.
- ◆ Outlining and organization are easier by cutting and pasting.

Beginning users will find the MacIntosh family of computers easier to learn. Many of the software processes are simple and intuitive. On-screen icons, small pictures representing a range of activities, simplify the process. The user needs only to point and click to open a program application.

Now that Microsoft Windows is available, an IBM-compatible computer (PC) can function in much the same way as a MacIntosh. Windows is a software program that interfaces the user with the disk operating system (DOS) on IBM and compatible computers. Windows software requires a PC with system 286 or higher.

It is imperative that persons with LD choose computer systems and software programs that operate with Windows or one of the MacIntosh family of computers. The icons on these more advanced machines are a significant accommodation for persons with LD.

Writing Difficulties Strategy II

Word Processing Programs

Word processing is a method by which persons with LD and other impairments can produce written documents without many of the barriers they face with conventional writing methods. In a word processing program, typewritten text gives a clear, accurate picture of what is written. Word processing programs work hand-in-hand with other computer software writing aids. These aids help with outlining, revising, predicting words, checking grammar and spelling, developing vocabulary and highlighting words and phrases.

Writing Difficulties Strategy III

Word Abbreviation and Expansion Programs

- ◆ **Intelligent Word Prediction** programs help poor spellers to write. Users who use a speech recognition program need only to speak the word; those lacking a speech recognition program must spell out the first few letters. In either case, a list is displayed of the most likely words. The user needs only to have the word entered into the text.
- ◆ **Predictive Word Processors** offer valuable support to learners for whom every word is achieved with difficulty. They offer a selection of likely words to follow what has been typed already so the user selects the most appropriate word with a single key stroke. The more sophisticated programs allow the user to add personal words to the list.
- ◆ **Word Abbreviation/Expansion programs** allow the writer to 1) use pre-established abbreviations (e.g., typing "asap" produces "as soon as possible" in the text) or 2) customize abbreviations for words, phrases, sentences as computer commands (e.g., "LD" yields learning disabilities.") The writer, in other words recalls the word(s) by using an abbreviation. Such programs enable persons with limited keyboard skills to increase typing speed.

Writing Difficulties Strategy IV

Speech Recognition Software

These programs enable text to appear on the computer screen as the user speaks into a microphone rather than typing on the keyboard. Such programs are compatible with word processing programs.

Writing Difficulties Strategy V

Other Software Writing Programs

- ◆ **Spell-Checking Programs** may be useful to even the most competent speller. To a hesitant speller, they can be invaluable.

Spell-checking software checks for correct spelling of words in a document; each incorrect spelling is compared to the dictionary file, and an alternative spelling is offered. Spell checkers do not alert for inappropriately used words. If the word is spelled correctly, it will not be flagged. Therefore, it is important to proofread the document for inappropriate word use or to use grammar checking software which will alert the user to incorrect usage and offer alternatives.

◆ **Outlining/Brainstorming Software**

Many persons with LD have difficulty organizing topics, categories and sequence. An appropriate method for many adult students with LD is to allow them to “dump” any ideas on paper without regard to organization.

Outlining programs allow the user to "dump" information in an unstructured manner; this information can subsequently be placed in appropriate categories and ordered more easily. An outlining program assists in planning and organizing a document by creating outline headings, subheadings and key points.

◆ **Free Form Databases**

These software programs enable the user to create his own notes, of any length, on any subject. Rather than notes on paper, these electronically-stored notes can be retrieved by typing in any piece of information contained in the note. The ability to retrieve information by only remembering a fragment or piece of information contained within the note can be quite beneficial for individuals with memory and organizational difficulties. Through a simple cursor movement that highlights a keyword or phrase within each note, the user can browse through all the notes within the database until the one being sought is found.

◆ **Encyclopedias** on computer are available on CD-ROM or Internet online services. Depending on the product, one can get options for speech (the research source is read to the user) and size of print. The user who experiences difficulty with comprehension due to decoding may circumvent or bypass this area by listening to the articles read aloud. [Portions of Strategy V were drawn from Raskind 1993, 1994]

Writing Difficulties Strategy VI

Electronic Assistive Technology (not computer-based)

Hand held electronic devices, such as dictionaries, encyclopedias, spell checkers and thesaurus, are useful for students and workers as they move about, without access to a computer.

◆ **Audio cassette recorders** may be used for note taking.

Writing Difficulties Software and Hardware

Alphagram Learning Materials	212-685-4095	Outspoken	510-883-6280
Alpha Smart 2000	888-274-2720	QuickPad	800-726-7086
Aurora Systems Inc.	888-290-1133	Reach Interface Author and	
Co: Writer	800-999-4660	Soothsayer	210-408-0098
Custom Keyguards	770-922-6768	Sony Mini Disc Recorder	800-245-2133
Digital Notebook	800-726-7086	Spell Checker and Database	800-274-7624
Digital Voice Recorder	800-759-6255	Tex-Edit Plus	www.nearside.com/trans-tex/
Dragon Dictate	800-825-5897	TypeIt4Me	www.hebel.net/-retto
Digital Micro Recorders	650-593-7590	Viavoice Office/Viavoice Executive	800-759-6255
Floating Arms Keyboard	888-881-7592	Voice	800-245-2133
Highlighter Tape, Hefty Tabs	800-989-3544	Voice Xpress	800-894-5374
Inspiration	800-877-4292	Voice It VTR	800-245-2133
IQ Voice Organizer	650-593-7590	WordPerfect	800-772-6735
Kurzweil Voice	800-245-2133	Write Outloud	800-999-4660
Lasar PC6 Keyboard	800-726-7086	Writer's Blocks	800-229-6737
Norcom Products	800-245-2133	Writer's Helper	800-887-9998
Olympus Products	800-245-2133		

Math Difficulties

► **PROBLEM:** Math difficulties can be a challenge to remediate and/or accommodate. Many students with disabilities have histories of academic failure that contribute to the development of learned helplessness in math. Students may practice computing division facts but do not understand what division means. This lack of understanding fosters the student's dependency on the teacher and promotes the belief that external help is needed to solve problems correctly. People with LD who have math problems usually have visual perception difficulties which affect their ability to see likenesses and differences in shape and form.

They may experience conceptual problems with

- ◆ measurements: What is a 2 by 4? Is a quarter of an inch smaller than three-sixteenths?
- ◆ volume: Is a half-cup larger than a fourth-cup?
- ◆ computation symbols: What is 37×3 ? What is $1/16 \div 3/7$?

Because math symbols represent a way to express numerical language concepts, language skills become very important to math achievement. Many students with learning disabilities have reading difficulties that interfere with their ability to solve word problems. The fear of failure and low self-esteem cause students to become so tense that their ability to solve problems and to learn or apply math concepts is impaired. Confused thinking, disorganization, avoidance behavior and math phobia are common results.

The technology for remediating and accommodating persons with math disabilities has not developed as readily as the technology for reading and writing. However, the technology which is available now can provide beneficial assistance for some problems.

The limited technology can be of help, especially to those who have problems writing numbers down in the correct order. The most common currently available tools include the following:

- ◆ **hand-held calculators** that can help a learner who has problems writing numbers in the correct order;
- ◆ **talking calculators** that vocalize data and resulting calculations through speech synthesis;
- ◆ **special-feature calculators** that enable the user to select options to speak and simultaneously display numbers, functions, entire equations and results;
- ◆ **on screen computer calculator programs** with speech synthesis;
- ◆ **large display screens** for calculators and adding machines;
- ◆ **color coding** for maintaining columns;
- ◆ **big number buttons and large keypads;**
- ◆ textbooks on **CD-ROM;**
- ◆ **video-taped math lessons.**

Computer-assisted instruction (CAI) math courses (instruction targeted to special students) are being developed. These are particularly helpful to the user with learning disabilities if the learning is reinforced with voice output.

Math Difficulties Software and Hardware

Access to Math	800-999-4660	Math Pad	800-899-6687
Alge-Blaster 3	800-624-2926	Math Pad by Voice	817-261-1658
Arithmetic Talk	817-261-1658	Math Shop Series	800-624-2926
Big: Calc	800-999-4660	Math Trek	800-624-2926
The Cruncher	800-624-2926	MathCad	800-628-4223
Geometry Blaster	800-624-2926	Operation Neptune	800-624-2926
MAC Access Pad	800-899-6687	Theorist	519-747-2373
Math Ace	800 624-2926	The Trigonometry Explorer	800-321-7511

Daily Living and Social Skills Difficulties

- **PROBLEM:** **Daily living and social skills are often disregarded as an element of learning disabilities. Some people have more difficulty than others in environments less structured than school and work.**

Some persons with learning disabilities face challenges in their day-to-day activities besides the more familiar writing, reading, and math problems. These highly documented academic problems clearly permeate the lives of persons with LD and have a significant impact on daily living. But there are challenges which will arise within the course of daily living and in social interaction.

Daily living requires the fulfillment of many tasks like conceptualizing directions; reading maps, signs, and menus; dialing phone numbers; filling out job applications; playing board games and cards; telling time; staying abreast of current news; managing personal information; staying on task; purchasing retail items; managing time; scheduling and keeping appointments; and, in general, organizing their lives.

The absence of social skills is also a disability. Everyone from time to time experiences deep discomfort in social situations, especially persons with LD. This discomfort often arises from the individual's low self-esteem and a lack of self-confidence. For example, Jonathan's reluctance to raise his hand in class or confront a disruptive co-worker could be a direct result of his struggles growing up as a person with LD. He thinks that he is not smart enough or capable of asking a question or expressing himself in a stressful work situation.

But there is another level which may be affecting Jonathan, one in which lack of social skills is based not only on low self-esteem or confidence, but also on **neurological impairments which affect social skills**. For example, Mary has trouble getting a job. During her interviews she speaks too loudly and avoids eye contact; she asks personal questions of the interviewer, rambles about her own personal life, and strays far afield when she is asked a direct question. To Mary her behavior appears appropriate and her disability prevents her from recognizing her inappropriate social behavior.

Common manifestations of this social disability may include the following: clumsiness; lack of eye contact; asking inappropriate or blunt questions and giving the same type of responses; inability to control voice volume and tone; failure to "take turns" in conversation, to initiate conversations, to form healthy relationships with family and friends, to date, to maintain personal hygiene, to dress appropriately for the occasion, and many others.

Assistive technology remains limited in these areas. What high-tech tools are on the market appear below.

Strategies to Enhance Daily Living and Social Skills Difficulties

- ◆ **Headphones or earplugs** to shut out distractions and enhance concentration while reading or writing are beneficial to persons with Attention Deficit Hyperactivity Disorder (ADD).

- ◆ **Amplification for Students with LD** improves listening conditions and attention levels by amplifying the instructor's voice, and reducing the effects of background noise. A typical product is composed of two basic parts: a wireless transmitter with a microphone (worn by the instructor) and a receiver with headset or earphone (worn by the student). The system carries the speaker's voice directly from the speaker's mouth to the listener's ear, helping to make the speaker's voice more prominent. This device improves auditory discrimination and auditory attention by allowing the individual to focus on the speaker, overriding extraneous and distracting background noise.

◆ **Variable Speed Control Tape Recorders (VSC)** enable the user to play back audiotaped material at rates that are slower or faster than those at which it was initially recorded. The ability to adjust speech rates means that users can reduce the speed of playback to a more comprehensible level without the loss of voice quality. Similarly, VSC tape recorders enable the user to increase the speech rate in order to reduce the amount of time it takes to listen to class lectures or prerecorded text.

◆ **Personal Data Managers** are available as software programs. Typical features include monthly calendars, daily schedules, planners, a clock and alarm, memo files, “to do” lists, address books, telephone directories, and check registers. Personal Data Managers allow the user to store, organize, and retrieve vast amounts of personal information useful for persons with organizational and/or memory difficulties.

◆ **Free Form Databases** are software programs that enable the user to create her own notes of any length on any subject. Rather than notes on paper, these electronically stored notes can be retrieved by typing in any piece of information contained within the note. The ability to retrieve information by only remembering a fragment or piece of information can be quite beneficial for individuals with memory and organizational difficulties. Through a simple cursor movement that highlights each note, the user can browse through all the notes within the database until the one being sought is found. [Raskind, 1993, 1994]

◆ **Interactive CD-ROM** programs are the most effective media for assisting those persons with social skills difficulties. They enable the user to role play in simulations of real-life situations and to place the user in decision-making positions.

Social Difficulties Software and Hardware

Analog/Digital/Talking Clock	800-522-6294	Reading Realities	904-332-6404
Be Cool Conflict Management	800-421-6534	Reading Skills for Daily Living	800-753-6488
Being With People	800-421-6543	Skills for Living	619-587-0087
Can Do Products	800-537-2118	Straight Talk	800-624-2926
Check Register	800-829-0500	Survival Skills-Childcare Cluster	800-338-2644
Community Man	800-421-6543	Talking Caller ID	800-829-0500
Home of Your Own	800-421-6543	Talking Watch	800-537-2118
Keitzer Multi-Purpose Guide	800-829-0500	Time Cube	800-829-0500
Large Print Check Register	800-829-0500	A Tour of Your Tomorrow	800-328-2560
Lessons for Living	800-421-6543	Ultrafinder	800-759-6255
LoTTIE Kit (low tech tool kit)	860-693-2683	Voice Activated Auto Dialer	800-759-6255
Low Vision Ruler	800-537-2118	Voice Mate by Parrot	888-936-0001
Multimedia Tour	612-944-2880	Work Series: Earning Money Now	800-338-2644

Assistive Technology Solution Chart

Frequently Used Modifications and Assistive Technology Solutions for Instruction and Access*

Instructional or Access Area	Modifications of Task Expectations	Standard Tools	Assistive Technology Solutions
Writing	<ul style="list-style-type: none"> ◆ Increased time for completing assignments ◆ Decreased length of assignment/number of responses ◆ Oral diction as an alternative to writing ◆ Peer notetaker ◆ Format of assignment changed to multiple choice, fill-in-the-blank ◆ Webbing-concept mapping strategy 	<ul style="list-style-type: none"> ◆ Crayon/marker ◆ Pencil ◆ Pen ◆ Typewriter ◆ Computer with word processing software 	<ul style="list-style-type: none"> ◆ Pencil grip or other adapted grip ◆ Adapted paper (bold line, raised line, different spacing, secured to desk, paper stabilizers) ◆ Slate Board ◆ No-slip writing surface ◆ Tape recorder ◆ Portable word processor (e.g. PC-5, Alpha Smart, etc.) ◆ Notetaking device (e.g. Braille, adapted tape recorder) ◆ Computer with word processing software with adaptive input hardware and/or software (e.g.) keyboard, keyboard utilities, enlarged keyboard, touchscreen, trackball, switch access, word prediction software, voice dictation software, Braille input, etc..) ◆ Computer with word processing software and appropriate output software (e.g. scree enlargement, screed reading software, etc.) ◆ Computer with appropriate process and editing tools (outlining software, multimedia software, grammar and spell checkers, talking word processors)
Spelling	<ul style="list-style-type: none"> ◆ Peer/adult assistance for difficult to spell words ◆ Personal or custom dictionary ◆ Problem word list ◆ Reduce number of spelling errors ◆ Increased time for completing assignments 	<ul style="list-style-type: none"> ◆ Print dictionary ◆ Instructional software to enhance phonics and spelling skills ◆ Computer with word processing software with built-in spell checker 	<ul style="list-style-type: none"> ◆ Tape recorder with difficult to spell words recorded ◆ Hand-held spell checker without auditory output ◆ Hand-held spell checker with auditory recognition of entered word ◆ Portable word processor with built-in spell checker ◆ Computer with word processing program and adaptive features (talking spell checker, word prediction software, etc.)

*This document was developed by the Georgia Project for Assistive Technology (328 Forest Parkway, Suite C, Forest Park, GA 30297), 1998.

Assistive Technology Solution Chart

Frequently Used Modifications and Assistive Technology Solutions for Instruction and Access

Instructional or Access Area	Modifications of Task Expectations	Standard Tools	Assistive Technology Solutions
Reading	<ul style="list-style-type: none"> ◆ Peer/adult reading ◆ High interest, lower reading level materials ◆ Increased time for completing reading materials ◆ Decreased length of assignment ◆ Simplify text 	<ul style="list-style-type: none"> ◆ Textbooks ◆ Worksheets ◆ Printed information board ◆ Printed test materials ◆ Instructional software to remediate or enhance basic reading and/or reading comprehension skills 	<ul style="list-style-type: none"> ◆ Reading aids (e.g. talking spell checker or dictionary as a word recognition aid, etc.) ◆ Electronic books (e.g. disk or CD-ROM) ◆ Alternatives or supplements to printed information (e.g. tape recorded or talking books, computer based talking word processing program with adaptive input as needed, screen reading software with adapted input as needed) ◆ Solutions for converting text into alternative format (e.g. scanner with OCT software, Braille translation software, Braille printer/embosser, refreshable Braille displays and tactile graphic production systems, etc.)
Math	<ul style="list-style-type: none"> ◆ Change format of assignment (e.g. write answers only) ◆ Peer/adult reading of problem and recording of answer ◆ Reduce number of problems 	<ul style="list-style-type: none"> ◆ Manipulatives (beads, etc.) ◆ Abacus ◆ Number line ◆ Math fact sheet (e.g. multiplication facts) ◆ Calculator with print output ◆ Instructional software to enhance and remediate math skills 	<ul style="list-style-type: none"> ◆ Modified paper (e.g. graph, enlarged, raised line, etc.) ◆ Talking calculator with speech output ◆ Calculator with large print display ◆ Calculator with large keypad ◆ Computer based on-screen calculator ◆ Electronic math worksheet software with adaptive input and output as needed (e.g. MathPad, Access to Math, and Study Works) ◆ Adapted measuring devices (e.g. devices with speed output, large print display tactile output)
Seating, Positioning and Mobility		<ul style="list-style-type: none"> ◆ Classroom chairs 	<ul style="list-style-type: none"> ◆ Adaptive classroom equipment (e.g. prone and supine standers, side lyers, adapted chairs with seating modifications and support, etc.) ◆ Walkers ◆ Crutches/canes ◆ Manual or power wheelchairs

Assistive Technology Solution Chart

Frequently Used Modifications and Assistive Technology Solutions for Instruction and Access

Instructional or Access Area	Modifications of Task Expectations	Standard Tools	Assistive Technology Solutions
Study Skills	<ul style="list-style-type: none"> ◆ Assignment sheet provided by peer/adult ◆ Outlines of key points 	<ul style="list-style-type: none"> ◆ Instructional materials including software to remediate deficit areas, to teach compensation strategies, and focus on strengths 	<ul style="list-style-type: none"> ◆ Print or picture schedule ◆ Organizational aids (e.g. color coding, appointment book, etc.) ◆ Tape recorder ◆ Computer based electronic organizer with adapted input and output provided as needed ◆ Speech prompting device
Oral Communication		<ul style="list-style-type: none"> ◆ Organizing diagram for presentations 	<ul style="list-style-type: none"> ◆ Speech enhancing devices (e.g. amplifiers, clarifiers) ◆ Augmentative communication solutions (e.g. object based communication displays, picture communication boards, books, wallets, talking switches, dedicated augmentative communication devices, and integrated computer based augmentative communication solutions- all with adaptive input as needed)
Aids to Daily Living		<ul style="list-style-type: none"> ◆ Eating utensils (e.g. spoon, cup, etc.) 	<ul style="list-style-type: none"> ◆ Adapted eating aids (e.g. grips for standard eating utensils, adapted cups/glasses, etc.) ◆ Adapted dressing aids, (e.g. button helpers, pulls for zippers, velcro fasteners, etc.) ◆ Adapted cooking and food preparation aids (e.g. blender attached to power control unit, adapted pouring handles, etc.)
Recreation and Leisure		<ul style="list-style-type: none"> ◆ Puzzles ◆ Games ◆ Toys ◆ music (e.g. tape player, CD-ROM etc.) 	<ul style="list-style-type: none"> ◆ Knobs for puzzles ◆ Spinners for games ◆ switch accessible toys (commercially available or switch accessible through switch interface) ◆ Power control units
Pre-vocational and Vocational		<ul style="list-style-type: none"> ◆ Sorting and assembling materials ◆ Office equipment 	<ul style="list-style-type: none"> ◆ Individualized modifications to meet student needs

Advocacy Resources

- ◆ Adult Basic Education and General Educational Development Programs for Disabled Adults: A Handbook for Literacy Tutors and Instructors
800-222-1754
- ◆ Alabama Learning Disabilities Association
334-277-9151
- ◆ American Association for Adult and Continuing Education (AAACE)
202-429-5131
- ◆ American Speech-Language-Hearing Association (ASLHA)
800-638-8255
- ◆ Architectural and Transportation Barriers Compliance Board
800-USA-ABLE
- ◆ Arizona Learning Disabilities Association
602-495-1175
- ◆ Arkansas Learning Disabilities Association
501-666-8777
- ◆ Association for the Advancement of Rehabilitative Technology (RESNA) Technical Assistance Project
703-524-6686
- ◆ Association on Higher Education and Disability (AHEAD)
614-488-4972
- ◆ Attention Deficit Information Network, Inc.(AD-IN)
617-455-9895
- ◆ Berkshire Center
413-243-2576
- ◆ Campus Opportunities for Students with Learning Differences
703-836-5480
- ◆ Career College Association (CCA)
202-336-6749
- ◆ Center for Applied Special Technology (CAST)
978-521-8555
- ◆ Center for the Visually Impaired Center on Education and Work (CEW), University of Wisconsin
608-263-2378
- ◆ Centergram, Center on Education and Training
Ohio State University
800-848-4815
- ◆ Chapel Haven, Inc.
203-397-1714
- ◆ Children and Adults with Attention Deficit Disorder (CHADD)
301-306-7070
- ◆ Closing the Gap (CTG)
507-248-3294
- ◆ Colorado Learning Disabilities Association
303-894-0992
- ◆ Connecticut Learning Disabilities Association
860-560-1711
- ◆ Contact Center Inc., National Literacy Hotline
202-632-1500
- ◆ Creative Community Services (CCS)
404-814-1775
- ◆ Cystic Fibrosis Foundation Division for Learning Disabilities (DLD) Council for Exceptional Children
800-328-0272
- ◆ District of Columbia Learning Disabilities Association
202-667-9140
- ◆ Division of Adult Education and Literacy Clearinghouse
202-205-9996
- ◆ Educational Resources Information Center (ERIC)
800-328-0272
- ◆ Equal Employment Opportunity Commission (EEOC)
800-669-4000
- ◆ EDUFAX
www.tiac.net/users/edufax/
- ◆ Family Support Program, Federal Communications Commission (FCC)
202-418-0126
- ◆ Florida Learning Disabilities Association
941-637-8957
- ◆ Friends of Disabled Adults (FODA)
770-491-9014
- ◆ Getting Ready for the Outside World
508-888-0489
- ◆ Georgia Learning Disabilities Association
404-514-8088
- ◆ HEATH Resource Center
National Clearinghouse on Postsecondary Education for Individuals with Disabilities
800-544-3284
- ◆ Horizon Program, University of Alabama
205-975-6770
- ◆ Illinois Learning Disabilities Association
708-430-7532
- ◆ Independence Center
310-202-7102
- ◆ Indiana Learning Disabilities Association
317-898-5751
- ◆ Institute for the Study of Adult Literacy, The Pennsylvania State University
814-863-3777
- ◆ International Dyslexia Association
800-222-3123
- ◆ Iowa Learning Disabilities Association
515-961-6413
- ◆ Job Accommodation Network (JAN)
800-ADA-WORK

Advocacy Resources

- ◆ Laubach Literacy Action (LLA)
315-422-9121
- ◆ Learning Disabilities Association of America (LDA)
412-341-1515
- ◆ Learning Disabilities Center (LDC), University of Georgia
706-542-4589
- ◆ Learning Disabilities Network
ldntwk@aol.com
- ◆ Learning Resources Network
785-539-5376
- ◆ Library of Congress National Library Service for the
Blind and Physically Handicapped
800-424-8567
- ◆ Life Development Institute
602-254-0822
- ◆ Literacy Volunteers of America (LVA)
315-472-0001
- ◆ Louisiana Learning Disabilities Association,
Northwestern State Univeristy
318-357-5154
- ◆ Maine Learning Disabilities Association
207-582-2866
- ◆ Mainstream, Inc.
301-654-2400
- ◆ Maryland Learning Disabilities Association
410-265-8188
- ◆ Michigan Learning Disabilities Association
517-485-8160
- ◆ Mississippi Learning Disabilities Association
601-982-2812
- ◆ Montana Learning Disabilities Association
406-252-7716
- ◆ National Adult Literacy and Learning Disabilities Center,
Academy for Educational Development
202-884-8185
- ◆ National Association of Vocational Education Special
Needs Personnel (NAVESNP)
703-522-6121
- ◆ National Center for Learning Disabilities
212-545-7510
- ◆ National Center on Adult Literacy (NCAL),
University of Pennsylvania
215-898-2100
- ◆ National Clearinghouse on ESL Literacy Education (NCLE),
Center for Applied Linguistics
202-429-9292
- ◆ National Council of Independent Living Programs
703-525-3406
- ◆ National Information Center for Children and Youth with
Disabilities (NICHY)
800-695-0285
- ◆ National Institute for Literacy (NIFL)
202-632-1500
- ◆ National Literacy Hotline
800-228-8813
- ◆ National Network of Learning Disabled Adults
602-941-5112
- ◆ National Rehabilitation Information Center (NARIC)
800-322-0956
- ◆ Nebraska Learning Disabilities Association
402-571-7771
- ◆ New Hampshire Learning Disabilities Association
603-429-0648
- ◆ New Jersey Learning Disabilities Association
908-571-1221
- ◆ New Mexico Learning Disabilities Association
505-821-2545
- ◆ New York Learning Disabilities Association
518-436-4633
- ◆ North Carolina Learning Disabilities Association
919-493-5362
- ◆ North Dakota Learning Disabilities Association
710-224-2671
- ◆ Ohio Learning Disabilities Association
216-273-7388
- ◆ Oklahoma Learning Disabilities Association
405-743-1366
- ◆ Office of Special Education and Rehabilitative Services
(OSERSO)
202-205-9864
- ◆ Office of Vocational and Adult Education (OVAE)
202-205-5451
- ◆ Office on the Americans with Disabilities Act
202-514-0301
- ◆ Parent to Parent
800-229-2038
- ◆ Pearle Vision Foundation
214-277-5993
- ◆ Pennsylvania Learning Disabilities Association
610-458-8193
- ◆ President's Committee on the Employment of People
with Disabilities
202-376-6200
- ◆ Professional Assistance Center for Education (PACE),
National-Louis University
708-475-1100
- ◆ Promoting Post-Secondary Education for Students with
Learning Disabilities
512-451-3246
- ◆ Recording for the Blind (RFB)
800-221-4792

Advocacy Resources

- ◆ Rural Clearinghouse for Lifelong Education and Development, Kansas State College
913-532-5560
- ◆ Rhode Island Learning Disabilities Association
401-232-3822
- ◆ Social Security Administration (SSA)
800-772-1213
- ◆ South Carolina Learning Disabilities Association
803-926-8302
- ◆ Texas Learning Disabilities Association
512-458-8234
- ◆ Threshold Program, Lesley College
617-349-8181
- ◆ Vermont Learning Disabilities Association
802-362-3127
- ◆ Virginia Learning Disabilities Association
804-842-9305
- ◆ Vocational Independence Program (VIP),
New York Institute of Technology
516-348-3354
- ◆ Washington Learning Disabilities Association
206-882-0820
- ◆ West Virginia Learning Disabilities Association
304-344-0252
- ◆ Wisconsin Learning Disabilities Association
414-821-0855

Internet Resources

- ◆ Able-job
E-mail- listserv@sjuvm.stjohns.edu
- ◆ Ada-law
E-mail- listserv@vm1.nodak.edu
- ◆ Advocacy
E-mail- listserv@sjuvm.stjohns.edu
- ◆ American Association of Disabled Persons
E-mail- aadp@aol.com
- ◆ Assistive Media
Internet- www.assistivemedia.org
- ◆ Commdis
E-mail- listserv@rpitsvm.bitnet
- ◆ D-sport
E-mail- listserv@stjohns.edu
- ◆ Disability-research
E-mail- mailbase@mailbase.ac.uk
- ◆ Dis-forum
E-mail- mailbase@mailbase.ac.uk
- ◆ DO IT Disabilities
E-mail- doit@u.washington.edu

Internet Resources

- ◆ Doitsem
E-mail- listproc@u.washington.edu
- ◆ EASI (Equal Access to Software and Information)
Internet- www.isc.rit.edu/~easi
- ◆ Factors Human Applied
Internet- www.ahf-net.com
- ◆ Icade-1
E-mail- listserv@ualtavm.bitnet
- ◆ Job Accomodation Network
Internet- janweb.icdi.wve.edu/
- ◆ Kiosk-1
E-mail- listproc@trace.wisc.edu
- ◆ L-hcap
E-mail- listserv@vml.nodak.edu
- ◆ LD Adults of Georgia
Internet- www.gatfl.org
- ◆ LD Resources
Internet- www.ldresources.com
- ◆ LD Online
Internet- www.ldonline.org
- ◆ Learning Disabilities Association of America
Internet- www.ldanatl.org
- ◆ Metroplex Voice Computing, Inc.
Internet- http://www.mathtalk.com
- ◆ Morse 2000
E-mail- listproc@trace23.waisman.wisc.edu
- ◆ National ADD Association
Internet- www.add.org
- ◆ National Center for Learning Disabilities
Internet- www/nclcd.org
- ◆ Onion Mountain Technology, Inc.
Email- jsweeney@snet.net
- ◆ Orton Dyslexia Society
Internet- www.inetport.com/dyslexia/austin.html
- ◆ Parrot
Internet- http://www.voice-assistant.com
- ◆ Perfect Solutions
Internet- http://perfectsolutions.com
- ◆ Project Enable
Internet- www.icdi.wvu/enable.html
- ◆ Reading for the Blind and Dyslexic
Internet- http://www.rfbd.org/
- ◆ Rebus Institute
Internet- cenatica.com/rebus/
- ◆ Rehab-ru
E-mail- listserv@ukcc.uky.edu
- ◆ See it Right!
Internet- www.seeitright.com
- ◆ Service-dogs
E-mail- majordomo@acpub.duke.edu
- ◆ Special Education Technology-Readings
E-mail- ericec@cec.sped.org

Internet Resources

- ◆ Spiramed
E-mail- listserv@sjuvm.stjohns.edu
- ◆ Teamwork
E-mail- listserv@sjuvm.stjohns.edu.
- ◆ Traversable
E-mail- listserv@sjuvm.stjohns.edu.
- ◆ Untangling the Web
Internet- www.icdi.wvu.edu/others.html
- ◆ W3S (World Wide Web Consortium)
Internet- ww.w3.org/pub/www/

Vendor Resources

Advantage Learning Systems, Inc	800-338-4204
Alva Access Group	510-923-6280
American Guidance Service (AGS)	800-328-2560
American Printing House for the Blind	800-223-1839
Aquarius Instructional Systems	800-338-2644
Ashley Software	800-229-6737
Arkenstone, Inc.	800-444-4443
Articulate Systems	617-935-5656
Assistive Technology	800-793-9227
Aurora Systems	888-290-1133
Corel	800-321-5906
Davidson	800-545-7677
Don Johnston Inc.	800-999-4660
Dragon Systems	800-825-5897
Educational Resources	800-624-2926
Factors Human Applied	210-408-0098
Franklin Learning Resources	800-266-5626
Hawthorne Educational Services, Inc.	800-542-1673
Henter-Joyce	800-336-5658
Humanware, Inc.	916-652-7253
Independent Living Aids	800-537-2118
Information Services, Inc.	800-569-3399
Inspiration Software, Inc.	503-245-9011
Institute on Applied Technology	355-735-6998
Intelligent Peripheral Devices, Inc.	408-252-9400
Intellitools	800-899-6687
Interfaces	888-881-7592
Inventures	650-593-7590
James Stanfield Publishing, Inc.	800-421-6534
Jostens Learning	800-247-1380
Kurzweil Inc.	800-894-5374
Learning Company	800-521-6263

Vendor Resources

Learning Company/School Division	800-685-6322
Lighthouse, Inc	800-829-0500
Madanta Communications, Inc.	800-661-8406
MathSoft, Inc.	800-628-4223
Merit	800-753-6488
Metroplex Voice Computing, Inc.	817-261-1658
Microsystems Software, Inc.	800-828-2600
Onion Mountain Technology, Inc.	860-693-2683
Overseas Connection	800-274-7624
Parrot	888-936-0001
Perfect Solutions	800-726-7086
Prentice Hall/New Horizons	800-887-9998
Prentke Romich Company	800-262-1984
Productivity Works, Inc.	609-984-8044
Pro:Ed	800-397-7633
Recorded Books Inc.	800-638-1304
Recordings for the Blind and Dyslexic	800-803-7201
Scantron Quality Computers	800-722-6876
Scholastic	800-631-1586
See it Right!	909-481-2950
Seiko Instrumental USA, Inc.	877-344-4040
Skymall	800-759-6255
SoftKey, Inc.	800-227-5609
Sunburst Communications	800-321-7511
SunSound Radio	602-231-0500
Teacher Support Software Company	904-332-6404
Tech-Able	770-922-6768
Telesensory	800-421-7323
Things for Learning Inc.	800-228-6178
Universal Learning Technology	508-538-0036
Waterloo Maple Software	519-747-2373
Word Communications	800-808-4595
Words +	800-869-8521
Wilson Learning Corp.	800-247-7332
Xerox Imaging Systems	800-248-6550
21st Century Eloquence	800-245-2133

LD Adults of Georgia Membership Form

We invite your membership to LD Adults of Georgia. Not only will you receive valuable information from our quarterly newsletter, **SCOPE**, but also the state LDAG newsletter, *Learning Times*, and the LDA (National) newsletter, *Newsbriefs*, published six times a year. Members receive discounts on materials, workshops, and conferences. By joining L. D. Adults of Georgia, you are also adding to our strength in representing the many thousands of Georgians with learning disabilities and/or attention deficit disorders.

Date _____

Name _____

Home Phone _____ E-Mail _____

Address _____

City _____ State _____ Zip Code _____

Check one:

Adult LD/ADD

Family Member

Profession in LD field: (please specify)

Annual Membership* (includes subscription to SCOPE)	\$35.00
Second LDAG membership* (if you are already a member of another LDAG Council)	\$ 5.00
SCOPE subscription only	\$ 5.00
Donation to Member Scholarship Fund	\$ _____
Total	\$ _____

* For Membership only: Please make membership check payable to Learning Disabilities Association of Georgia: For annual subscription to SCOPE, donations or to purchase publications (listed below), please make check payable to L. D. Adults of Georgia and mail to:

LDAG
P. O. Box 1337
Roswell, Georgia 30077

Membership Dues and Donations are tax-deductible

Publication Order Form

Quantity		
_____	Power Pack: A Multi-Resource Guide	\$15.00
_____	PEACH Packet for Teens	\$15.00
_____	LD/ADD in the Workplace: Information for Employers	\$10.00
_____	2000 Directory of Service for Adults with LD/ADHD	\$15.00
_____	Diskette of 2000 Directory of Service for Adults with LD/ADHD	\$ 5.00

Shipping and Handling - \$1.50 per publication _____

*Note: Members of LD Adults of Georgia deduct \$5.00 for Power Pack - _____

Total _____