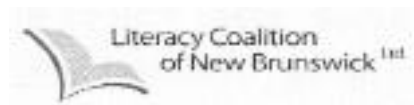


Adult Literacy and Learning Disabilities: Best Practices for Success A Resource Manual for Practitioners



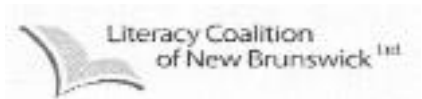
Literacy Coalition of New Brunswick



Adult Literacy and Learning Disabilities: Best Practices for Success A Resource Manual for Practitioners

Compiled by
Ann Wagner, MEd, CCC

Arranged and Edited by
Joan Perry, MEd, ThB



Funded by the National Literacy Secretariat (NLS), Human Resources and Skills Development Canada (HRSDC), Ottawa ON

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The Coalition does not promote, endorse, or recommend anyone definition, method, treatment, product, remedial center, program, service provider, or person for adults with learning disabilities. The Coalition does, however, endeavor to inform, with the belief that we all have a right to know.

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The event was hosted by The Literacy Coalition of New Brunswick (LCNB), in partnership with the Learning Disabilities Association of New Brunswick (LDANB), Laubach Literacy New Brunswick (LLNB), the Meighen Centre at Mount Allison University, and the Community Adult Learning Network (CALN). The Coalition gratefully acknowledges the time investment of each steering committee member who shared valuable experience and information while planning this learning institute.

Thank you to a number of adult literacy practitioners who continue to voice a desire for professional development opportunities, such as the need for learning strategies in teaching adults with learning disabilities. Their persistent requests motivated the Coalition's former Executive Director, Jan Greer, to submit the proposal for such an event. Jan's initial involvement in managing the project helped to lay the groundwork for the Institute.

Special thanks to the Learning Disabilities Association of Canada (LDAC) and LOANS for permission to use some of their materials in the preparation of this resource manual. A note of appreciation is also extended to the workshop presenters who submitted articles for inclusion as supplementary reading for the event participants.

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The Adult with Learning Disabilities (LDAC). Available online at:
www.ldac-taac.ca/InDepth/adult_ld-e.asp

LDAC Fact Sheet: Understanding Learning Disability? (Walcot-Gayda)

Excerpt from LD and the Law- Canadian Human Rights Laws (LDAC)
Available online at: www.ldac-taac.ca/LDandtheLaw/Ch03Law-e.asp

Section 2 Readings- SCREENING, ASSESSMENT, & PSYCH. REPORTS

The Adult with Learning Disabilities and Assessment (LDAC) Available
online at: www.ldac-taac.ca/InDepth/adult-assessment-e.asp

Jane Drover & Dr. Lex Wilson's Supplementary Workshop Reading:
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Success Attributes across the Life Span (LDAC)

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Using Assessments- (National Institute for Literacy) Printed 06/27/07
from: www.nifl.gov/readingprofiles/PFMCUsingAssessments.htm)

Assessment Strategies & Reading Profiles-Oral Reading: Print Skills
(Alphabetic)-Rate & Fluency. (National Institute for Literacy). Printed
06/27/07 at: www.nifl.gov/readingprofiles/MCOraReadingRate.htm

Kay MacPhee's Supplementary Workshop Readings:

Florida Center for Reading Research- Spell Read P.A.T.
SpellRead P.A.T. -Description of Program Materials
SpellRead P.A.T. Summary of Research Evidence
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Section 5 Readings- READING 11- (COMPREHENSION)

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Precision Reading with Below Average Readers in Sr High school-(RF)
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(Regina G. Richards). From LD online website at:
www.ldonline.org/article/56087theme=print

(Other handouts will be given during workshop presentation)

Section 7 Readings- ACCOMMODATIONS FOR LDs

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Section 9 Readings- MATH AND LEARNING DISABILITIES

Characteristics of LD-Appropriate Instruction. From *Bridges to Practice: A Research-based Guide for Literacy Practitioners Serving Adults with Learning Disabilities*. (1999). Available online at:
http://ldlink.coe.utk.edu/characteristics_of_ld.htm

Math Strategies-(from Learning Disabilities Training: A New Approach-Effective Instructional Methods) (Literacy Link South Central)

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Section 13 Readings-COMMUNITY SUPPORT & REFERRAL INFORMATION

The Helping TREE charts (Grand Falls Region Community Suicide Prevention Committee, CHIMO and CMHA)

NB Department of Family and Community Services (FCS)---Community Based Services for Children with Special Needs

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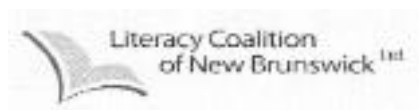
NB Department of Training and Employment-Regional contacts (DPET)

EEO/Equal Employment Opportunity Program- Official Languages & Workplace Equity Branch, Office of Human Resources, Province of NB

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(DPET)Gizele McCarthv's Power Point Presentation on TESS Program

Section 15 Readings- BIBLIOGRAPHY



A Message from the Literacy Coalition of New Brunswick

The Coalition is pleased to make this resource manual available to each of you. Special thanks to all whose efforts helped to make it a reality. This manual, in conjunction with the Institute, is a response to a recognized need for resources in the area of learning disabilities with adults.

Adults with learning disabilities are a rich portrait of diversity in strength and need. It's essential for teachers and tutors to have ready access to research-based, relevant resources, so that they can better support them on a daily basis.

Armed with the strategies and techniques shared in this handbook, we hope that you will return to your students feeling empowered, with wits and wills refueled. Our hope is that this manual will serve as a useful reference tool in your teaching roles. The greatest applause possible will be the test of time ...to see how dog-eared and worn this book becomes'

Lynda Homer

President, LCNS



Greetings from the Institute Steering Committee

Welcome to the Adult Literacy and Learning Disabilities Institute. This week's program, funded by the National Literacy Secretariat, will include, but will not be limited to: the characteristics of learning disabilities; assessment and diagnosis of learning disabilities; research-based teaching strategies and instruction; the importance of advocacy; grants; technology; mental health issues; and referral agencies.

We are pleased to hold the Institute at Mount Allison University in Sackville, New Brunswick. We encourage you to explore the beautiful campus, enjoy the town, and discover the natural wonders outlined in the tourist information contained in your registration kit. The Meet and Greet, nutrition breaks, lunches, and dinners will provide opportunities for making connections, renewing old acquaintances, making new friends, and expanding your networks.

The Steering Committee hopes that this Literacy Institute is a valuable and enjoyable educational experience. Thanks for coming, participating, and working together. Please share your learning enthusiastically with others who cross your paths.

INSTITUTE STEERING COMMITTEE

Cynthia Adams, BA and Class 1 Teaching Certificate

CALP Teacher/CALN reo, Tantramar Adult Learning Center, Sackville NB.

Deanna Allen, BA, HRM

Executive Director, LLNB, Moncton NB.

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Institute Consultant/Presenter

Gwen Zwicker, BA

Research Associate, Mount Allison University, Sackville NB.

Institute Event Coordinator



Words from the Academic Coordinator

The meaning for me ..

I was delighted to be contracted in the Academic Coordinator role, with an opportunity to study the latest research and to share it. This project has taken me on a fascinating journey, spending hours and hours reading and rereading old or new research on **LD**. It has been a wonderful opportunity to reflect, adjust, and realize how far we've come.

My background (as a private transition consultant and advocate for educational programming and accommodations for persons with LD) had allowed me to see globally what programs were available, as I worked closely with support staff in schools and government programs.

As a consultant, screening for LDs, providing vocational counseling, assisting clients to make realistic, obtainable goals or to find training programs and job placements helped me to gain new knowledge in assistive technology, accommodations, grants! workplace support, and legal rights of the disabled.

On a personal note, my two younger children were discovered to be *dyslexic* in elementary school. Today, they are thriving in post-secondary schooling, knowing how to self-advocate with excellent social skills and a great sense of humour. It's been my privilege to assist others, who do not have a parent or cheerleader, to move within a system that focuses on memory and text.

My father, a physician, was *dyslexic*, as is my brother, who also has *AOHO*. I've been linked to *dyscalculia* and a short-term memory deficit, so I've walked in my clients' shoes, knowing the fear, the anxiety! and day-to-day struggles of trying to hide an invisible disability. Many struggle with anxiety and depression as a result of an undiagnosed learning disability.

Literacy workers say they are seeing an increased number of students with learning disabilities in their classrooms. Some left school prematurely, feeling stupid, having been labeled as lazy, stubborn, unmotivated, or uncaring. They may struggle with self-esteem and question their worth. By providing strategies built on scientifically-based research in teaching adults with learning disabilities, the rationale is that such practices might help teachers to improve student outcomes, so they get a second chance to succeed and live their dreams. That thought was empowering for me!

My research direction in collecting information for this manual was twofold:
i) finding interventions that were research-supported *specifically* for students with learning disabilities and,
ii) seeing if the research supported these interventions for students with *varying types* of learning disabilities.

The meaning for you...

The purpose of the manual was to give adult literacy teachers an easy-to read resource presenting current, clear, concise, and practical information on a topic filled with challenges and contradictions. I hope this manual conveys the committee's enthusiasm for exploring issues pertaining to educating adults with learning disabilities.

The manual is divided into several sub-sections:

- i) The different approaches and definitions of a learning disability;
- ii) Different screeners and assessments;
- iii) Mental health and learning disabilities;
- iv) Reading, math, writing, and LDs;
- v) Various accommodations for those with learning disabilities;
- vi) Assistive technology for individuals with learning disabilities;
- vii) Anxiety and relaxation techniques.

Institute presenters will introduce us to the various types of LOs, current practices and intervention techniques, information, tools, and resources to help in the teaching and learning process. Some of the techniques may not always fit an instructor's teaching style or a student's learning style. We encourage each to adapt or expand the strategies to suit the need. If an intervention does not help a student to progress, then both method and approach should be adjusted. We invite you to engage in building a better future for persons with learning disabilities and their families.

Ann Wagner, Academic Coordinator

(Editor's note: A number of handouts or readings submitted by workshop presenters and others who've conducted valuable research on LD were included in the original printing of this resource manual. Many have not been included in the online version, but sources for them have been noted wherever possible.)



Dr. Erin Steuter, PhD
OPENING SPEAKER

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Erin Steuter has been teaching Sociology at Mount Allison University for 15 years. Her primary area of research is in the field of media analysis. She has published several articles about journalistic freedom of speech in an age of media monopolies as documented racism and tolerance in post 9/11 media coverage. She teaches multiple courses at Mount Allison, including *Popular Culture* and *Gender Relations*. She regularly works with her students to design and implement community outreach projects. These projects are a means of applying academic analysis tools to practical issues that encourage the development of student leadership skills while contributing to the community. She is the 2006 winner of the Mount Allison's Tucker Teaching Award and the Atlantic Association of Universities Distinguished Teacher Award.

Jane Drover, MEd
WORKSHOP PRESENTER
(LEARNING DISABILITIES)

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Jane Drover works as Coordinator / Learning Specialist at the Meighen Center at Mount Allison for the last 20 years. The Center provides services for students who have learning disabilities. Jane served as President of the Canadian Association of Disability Service Providers in Post Secondary Education (CADSPPE) and received the Canadian Association of College and University Student Services (CAUSS) Award for service in 2002. She also served as a member of the Board of the Learning Disabilities Association of New Brunswick and was part of the Meighen Center team that received the Learning Disabilities Association of Canada's Education Award in 1999. Jane has presented at provincial and national conferences and given many workshops on learning disabilities to both professionals and parents.

Alexander (Lex) Wilson, PhD, LPsyc.
WORKSHOP PRESENTER
(LD; SCREENING & ASSESSMENTS; UNDERSTANDING PSYC.
REPORTS;GED)

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Dr Alexander (Lex) Wilson is the Director of the Meighen Center, at Mount Allison University where he is also Associate Professor of Psychology. He is a licensed Psychologist and his primary research interests lie in the study of neurological disorders and more specifically learning disabilities. He served as Chair of *The Summit on Learning Disabilities* hosted by LDANB at Mount Allison University in 1999, which included specialists from New Brunswick including Speech/ Language Therapists, Medical Doctors, Nurses, Adult Literacy Instructors, Correction Canada personnel, and members of the Teachers Association and the Dept. of Education. They met to determine the direction needed for persons with learning disabilities in New Brunswick to access services to help them succeed. Lex also works on behalf of adults with learning disabilities by serving as the Canadian Liaison Person. He was part of the (LDAC) team that developed the latest definition of Learning Disabilities adopted in January 2002. He recently worked with (LDAC) as the co-principal investigator of a team that was responsible for the research project PACFOLD, *Putting a Canadian Face on Learning Disabilities*.

Dr. Bill Morrison, PhD, LPsyc.

WORKSHOP PRESENTER

(LEARNING DISABILITIES and MENTAL HEALTH)

Professor of Educational Psychology, Faculty of Education, UNB, Fredericton

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As a psychologist and academic Dr. Morrison has been actively involved in research and intervention projects related to school health, program evaluation, and the implementation of community-based rehabilitation services for high-risk children and their families. He has had extensive experience in the development and implementation of treatment services for this group. Following his work in Edmonton Public schools as a psychologist for behaviour-disordered youth, he became the Director of the Pierre Casey Youth Treatment Center in Moncton, NB. His work on competency-based approaches has been embraced by a variety of community human service agencies and has been implemented within existing intervention programs in education and the correctional system. From 1996 to 2002, Dr. Morrison was a professor of Psychology and Education at the Atlantic Baptist University. In March 2002, Dr. Morrison accepted a position at UNB as a professor of Educational Psychology in the Faculty of Education. In this position, he has received numerous grants which highlight his professional expertise related to at-risk children and their families. He has received funding from the Canadian Institute for Higher Research, Health Canada, and the National Crime Prevention Center.

Patricia (Patti) Kirby, EdD Candidate

WORKSHOP CO-PRESENTER

(LEARNING DISABILITIES and MENTAL HEALTH)

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Patricia (Patty) Kirby is Director of Knowledge Transfer and Personnel with the University of New Brunswick's Health and Education Research Group. She also serves as UNB's Coordinator of Services for Students with Disabilities and teaches graduate courses in educational exceptionalities with the Faculty of Education. She will receive a doctoral degree in Special Education from Boston University in the Fall of 2007. Research interests include inclusive education systems, learning disabilities and exceptionalities, autism spectrum disorders, multi-sensory impairment, and educational technology. Patricia serves as Program Supervisor for UNB's Successful Transition to Employment Program (STEP) for students with disabilities. She also serves on the Board of Directors of the Learning Disabilities Association of New Brunswick. She is currently Principal Investigator on two research initiatives with the New Brunswick Department of Education.

Greg Harris, PhD
WORKSHOP PRESENTER (*RELAXATION TRAINING*)
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Greg Harris has worked as a counselor and provisional psychologist in multiple contexts including hospitals, community clinics, and educational institutions. He currently works in as an assistant professor at Memorial University in the Faculty of Education (counseling psychology) in Newfoundland. He maintains an eclectic counseling and psychotherapy orientation, with a primary focus on the principles of person-centered counseling. His research has been predominantly in the areas of HIV/AIDS, counseling/psychotherapy, and positive psychological principles (e.g. hope, empowerment). His clinical and research interests have also focused on relaxation training, including progressive muscle relaxation (PMR).

Gizete McCarthy
PRESENTER (*Training and Employment Support Services- TESS*)
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Gizele McCarthy, a Program Consultant at the Department of Post-Secondary Education, Training and Labour's central office in Fredericton NB, provides *Employment Services Program* support to Regional Staff. She delivers the *Training and Employment Support Services* (TESS) component, the *Employment Assistance Services* (EAS) component, and the *Research and Innovation* (R&I) component. In 28 years of service with the province, she's worked in different capacities for the Regional Development Corporation and the Department of Post-Secondary Education, Training and Labour.

Margaret Harriman
WORKSHOP PRESENTER (*Written Expression*)
CALP Teacher, Salisbury Adult Learning Center, NB
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Margaret Harriman has been teaching adult literacy classes since 1995. She received a certificate from Dr. Laubach for *writing with a limited vocabulary*, a feat she claims was 'hard to do when you're a wordy person like me.' She is noted for developing the *CASPer* newsletter on NALD's website. A freelance writer, who once owned and edited her local newspaper, she's also published two cookbooks as fundraisers for her class. She is a Blog writer for the local *Moncton in the Know*, a private tutor, longstanding community volunteer, and the recipient of a 2000 ALPHA award for facilitator excellence.

Kay MacPhee
WORKSHOP PRESENTER

READING I (DECODING and FLUENCY)

President, SpellRead P.A.T. Learning Systems Inc., Charlottetown, PEI

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Kay is the founder of SPELLREAD and Director of Program Development with Kaplan SPELLREAD. Kay trained in oral instruction techniques at some of North America's leading institutions. She was a teacher of hearing-impaired students for 25 years, teaching them how to use their available hearing to recognize and process speech sounds, to acquire language, and to learn how to read. In the mid-1970's, Kay identified **that** students with learning disabilities could also benefit from using techniques that she had been using with the hearing-impaired. Given the rapid and reliable results she was achieving using her instructional approach; Kay was compelled to make it more widely available and so launched her company, SPELLREAD, in 1994. The intensive reading intervention program has yielded some of the most powerful results in the key areas of reading skills development. Kay continues to be involved in program development and program delivery.

Debbie Savage
WORKSHOP CO-PRESENTER

READING I (DECODING and FLUENCY)

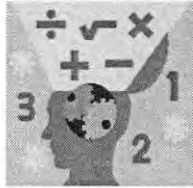
Director of Implementation for Kaplan K12 Learning Services

SpellRead P.A. T. Learning Systems Inc., Charlottetown, PEI

Debbie Savage has worked with the Spell Read program for over ten years. During her tenure, Debbie has been a leader in program delivery and promoting the Spell Read program in Canada and the United States. In 1999, she implemented a research project with Dr. Carol Rashotte and Dr. Joe Torgeson which produced the first published evidence documenting the effectiveness of the SpellRead program. In 2003, SpellRead was selected by a scientific panel of the most respected researchers in the US as one of only four programs included in the Power4 Kids clinical trial. The \$9.6 million project is the largest clinical trial of reading interventions ever undertaken in US history. Debbie was instrumental in implementing this initiative by developing the teacher training program for SpellRead. The Power4Kids research led to the development and modification of professional development of the online instructor training component and computerized Instructor Support System. Debbie currently holds the position of Director of Implementation at Kaplan K12 Learning Services and continues to develop teacher training in the SpellRead program as well as other Kaplan K12 reading products.

Kim Tackaberry, BA, BEd
WORKSHOP PRESENTER
READING II (COMPREHENSION)
Precision Reading, Strategies, & Case Studies
CHISANBOP (FINGER MATH)
Foothills Academy, Calgary, Alberta
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Kim Tackaberry has been teaching for 15 years in the area of learning disabilities. Kim has taught Grades 1-12 at Foothills Academy, a center for children with learning disabilities. She provides ongoing in-service and support for the implementation of the Precision Reading program throughout the school and community services program. This past year, she has embarked on a reading research project, in collaboration with Dr. Libbe Kooistra, Associate Professor with the Department of Pediatrics and Research Manager with Estelle Siebens Community Services, to enhance the professional development of the Foothills Academy staff. Over the past six years, Kim presented specific reading and writing programs as well as strategies to educators in districts throughout Alberta and British Columbia.



Lawrence Ethier
WORKSHOP PRESENTER
(MATH)
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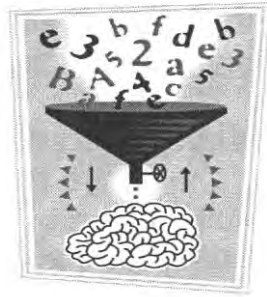
For the last 7 years, Lawrence has taught mathematics to high school students with learning disabilities at Foothills Academy in Calgary, Alberta. Lawrence has used numerous strategies to help his students prepare to successfully complete the Alberta Learning Standardized Examination.



SECTION 1:

LEARNING DISABILITIES

DEFINED



LEARNING DISABILITIES DEFINED

What is a learning disability (LD)?

The Learning Disabilities Association of Canada, after several years of specialists reviewing the research, proposed a new definition of LD in 2002, based on the issue of whether a learning disability can be 'social' as well as is traditionally referred to as being 'academic'. The question is, are social disabilities the primary barrier or secondary barrier? There are many definition variations, but the LDAC's newest definition explains it well. (See next page or online at: www.ldac-taac.ca/Defined/defined-new-e.asp)

How many people have a learning disability?

According to LDAC, "learning disabilities affect approximately 10 per cent of the population", which equates to more than 3 million Canadians: (See the *Statistics* section of this manual for more on numbers.)

Are there common characteristics?

No one person may show all of the known signs. "Characteristics are often balanced by the presence of significant strengths and creativity" (LDAC)

"Many adults with learning disabilities are not aware that the difficulties they encountered in school, and the problems in their relationships or their jobs, are due to learning disabilities ...Learning disabilities are lifelong and can affect friendships, school, work, self-esteem and daily life. Many adults with learning disabilities lead very productive and successful lives. But for many, success is not easy. Even though they have average or above average intelligence, some adults with learning disabilities are conditioned to believe that they are stupid and lazy. Their defeated efforts often result in frustrations, disappointment, low self-esteem and failure." (LDAC, *Adults and Learning Disabilities*, www.ldac-taac.ca/inDepth/adult_ld-e.asp)

Finding out learning disabilities (LDs) were the reason for past struggles can be a great relief to adults. LDs can range from mild to severe, are lifelong and genetically-based or the result of a brain injury, and affect about 10% of the population. If they are identified as having an LD, they are entitled by law to certain accommodations in school, university, and in the workplace.

SOURCES:

www.ldac-taac.ca Learning Disabilities Association of Canada

www.nald.ca/ldanb Learning Disabilities Association of New Brunswick

Section I Readings- Learning Disabilities Defined

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LDAC Fact Sheet: Understanding Learning Disability? (Walcot-Gayda)

(Excerpt) from LD and the Law- Canadian Human Rights Laws (LDAC)
Available online at: www.ldac-taac.ca/LDandtheLaw/Ch03Law-e.asp



LEARNING DISABILITIES ASSOCIATION OF CANADA
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Official Definition of Learning Disabilities

Adopted by the Learning Disabilities Association of Canada

January 30, 2002

Learning Disabilities refer to a number of disorders which may affect the acquisition, organization, retention, understanding or use of verbal or nonverbal information. These disorders affect learning in individuals who otherwise demonstrate at least average abilities essential for thinking and/or reasoning. As such, learning disabilities are distinct from global intellectual deficiency.

Learning disabilities result from impairments in one or more processes related to perceiving, thinking, remembering or learning. These include, but are not limited to: language processing; phonological processing; visual spatial processing; processing speed; memory and attention; and executive functions (e.g. planning and decision-making).

Learning disabilities range in severity and may interfere with the acquisition and use of one or more of the following:

- oral language (e.g. listening, speaking, understanding);
- reading (e.g. decoding, phonetic knowledge, word recognition, comprehension);
- written language (e.g. spelling and written expression); and
- mathematics (e.g. computation, problem solving).

Learning disabilities may also involve difficulties with organizational skills, social perception, social interaction and perspective taking.

Learning disabilities are lifelong. The way in which they are expressed may vary over an individual's lifetime, depending on the interaction between the demands of the environment and the individual's strengths and needs. Learning disabilities are suggested by unexpected academic under-achievement or achievement which is maintained only by unusually high levels of effort and support.

Learning disabilities are due to genetic and/or neurobiological factors or injury that alters brain functioning in a manner which affects one or more processes related to learning. These disorders are not due primarily to hearing and/or vision problems, socio-economic factors, cultural or linguistic differences, lack of motivation or ineffective teaching, although these factors may further complicate the challenges faced by individuals with learning disabilities. Learning disabilities may co-exist with various conditions including attentional, behavioural and emotional disorders, sensory impairments or other medical conditions.

For success, individuals with learning disabilities require early identification and timely specialized assessments and interventions involving home, school, community and workplace settings. The interventions need to be appropriate for each individual's learning disability subtype and, at a minimum, include the provision of:

- specific skill instruction;
- accommodations;
- compensatory strategies; and
- self-advocacy skills.

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The Adult with Learning Disabilities

Many adults with learning disabilities are not aware that the difficulties they encountered in school, and the problems in their relationships or their jobs, are due to learning disabilities.

It was once believed that learning disabilities was a childhood disorder. We now know that this is not true - learning disabilities are lifelong and can affect friendships, school, work, self-esteem, and daily life.

Many adults with learning disabilities lead very productive and successful lives. But for many, success is not easy. Even though they have average or above average intelligence, some adults with learning disabilities are conditioned to believe that they are stupid and lazy. Their defeated efforts often result in frustrations, disappointment, low self-esteem and failure.

WHAT IS A LEARNING DISABILITY?

A learning disability is a disorder that affects people's ability to either interpret what they see and hear or to link information from different parts of the brain. Although the individual with a learning disability has an average or above-average IQ, the disability becomes evident in both academic and social situations. Learning disabilities may be divided into five categories:

1. Visual Problems: poor visual memory, reversals in writing
2. Auditory Problems: poor auditory memory, speech problems
3. Motor Problems: poor hand-eye coordination
4. Organizational Problems: poor ability in organizing time or space
5. Conceptual Problems: poor social skills and peer relations, difficulty correctly interpreting nonverbal language.

Learning disabilities need not prevent an individual from leading a productive and happy life. Individuals with learning disabilities can be found in all walks of life. Success may depend on many factors – severity of disability, early identification, remediation, career choice, support from family, friends and employers, etc.

HOW MANY PEOPLE HAVE A LEARNING DISABILITY?

You are not alone!! Learning disabilities affect approximately 10 per cent of the population. This means more than 3 million Canadians.

COMMON SIGNS AND CHARACTERISTICS

No individual will manifest all of the difficulties listed below.

- Difficulty reading, writing, spelling. Inability to complete a job application form.
- Cannot follow written direction and/or remember several verbal directions.
- Problems putting thoughts down on paper.
- Feelings of anxiety, depression, and low self-esteem.
- Difficulty finding or keeping a job.
- Difficulty budgeting and managing money.
- Time management difficulties.
- Short attention span, restlessness or hyperactivity.
- Difficulty in remembering and following the sequence of instructions.

- Difficulty in understanding appropriate social behaviour.
- Poor coordination and spatial disorientation.
- Difficulty with problem solving strategies.

It is important to note that these characteristics are often balanced by the presence of significant strengths and creativity.

USING SUCCESSFUL COPING STRATEGIES

Coping strategies are methods, systems, or tricks people use to help themselves accomplish what they want/need to do. Examples include:

- Identifying and recognizing strengths and weaknesses.
- Setting realistic goals based on abilities.
- Using technology to compensate for weaknesses (word processor, spell checker, calculator, books on tape, etc.).
- Accepting the disability and knowing that it's quite OK.
- Being flexible - finding other ways of getting information.
- Joining activity-centered groups to make friends.
- Breaking down large tasks into small ones.
- Identifying deadlines for small manageable tasks.
- Making to-do lists with deadlines.
- Prioritizing rather than procrastinating.

IF THESE ARE NOT ENOUGH!

If solid coping skills and compensatory strategies are not developed, the learning disability may continue to interfere with work, education, social relations and basic daily activities. Some suggestions are:

- Being assessed by a professional trained in learning disabilities (neuro-psychologist, educational psychologist, etc.).
- Finding other adults with learning disabilities for sharing strategies, information and support.
- Seeking counselling from a professional with knowledge about learning disabilities.

THINGS TO REMEMBER

- Having a learning disability is a life-long condition.
- You are not alone.
- Support and information is available.
- Celebrate your uniqueness.
- Remember, it is never too late to ask for help!
- Never give up!

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UNDERSTANDING LEARNING DISABILITY?

By Elizabeth Walcot-Gayda, Ph. O.

'What are learning disabilities?' 'What do they look like in my classroom?' and 'How can we help students with learning disabilities (LD) succeed?' In order to frame the responses to these frequently asked questions a current, research-based, national definition of LD¹ is used. This definition, which underlines the capacity of those with learning disabilities to be successful in their elementary, secondary and post-secondary studies, makes evident the measures needed to support secondary graduation and options at the post-secondary level.

The definition targets the following fundamental parameters

- Learning disabilities are distinct from global intellectual deficiency
- Learning disabilities result from impairments in one or more processes related to perceiving, thinking, remembering or learning
- Learning disabilities range in severity and may affect any or several areas of life
- Learning disabilities are life long
- Learning disabilities are neurobiological and/or genetic in origin

It is important to understand what is meant by each of the statements and what such impairments look like and to recognize that each presents serious implications for educational practices and policies.

Learning disabilities are distinct from global intellectual deficiency

This distinction is important. As such, learning disabilities refer "to a number of disorders which may affect the acquisition, organization, retention, understanding or use of verbal or nonverbal information. These disorders affect learning in individuals who otherwise demonstrate at least average abilities essential for thinking and/or reasoning." In order for students with LD to be able to benefit and learn from the whole educational experience, instructional interventions must be appropriately balanced between general education and remediation. The question remains as to how best to do this.

Ministries of Education/Learning have generally opted for a controversial policy of full inclusion.³ Within this approach, the integration of remedial specialists within the general classroom is one model used to address the balance of remediation and education. This model may be more or less successful in providing support for students with LD depending on a number of factors: qualifications of the teacher and specialist, frequency and amount of time allotted per week, time for planning, and curriculum constraints. However, even under the best conditions, there is not enough time or support given to teachers to help them provide the same students (if needed) with materials in alternate format, or in a media, other than print, for the essential concepts of social studies, biology, history and geography. This implies that a number of students with LD miss out on broader learning opportunities, because they cannot easily and meaningfully access the same information as their peers.

Given both remediation and a solid general education, elementary students with LD can learn to the same levels as their peers and make relatively smooth transitions to middle or secondary school. In turn, secondary schools must maintain remedial services, while providing accommodations⁴ for poor reading and writing skills. By addressing students' specific learning needs, schools can foster students' engagement, and willingness to take risks and responsibility for learning. Such motivation promotes the completion of secondary studies and, thereby, creates openings to further educational options. At the present time, only a few school districts and provincial/territorial educational authorities offer this balance.

LCNB-Adult Literacy & Learning
Disabilities Institute: Best Practices for
Success - August 2007

Learning disabilities result from impairments in one or more processes related to perceiving, thinking, remembering or learning

For the most part, school related information enters through the eyes (visual perception) and through the ears (auditory perception). Almost simultaneously, such information is 'processed' by different parts of the brain. Examples of these processes are "language processing; phonological processing; visual spatial processing; processing speed; memory and attention; and executive functions (e.q. planning and decision-making)."⁵

The following table provides some examples of how these cognitive impairments are manifested

Table 1: Examples of some cognitive manifestations of learning disabilities

Impairments in processes related to:	Perceiving	Thinking	Remembering	Learning
Language Processing	Difficulties in processing sarcasm or understanding when someone is joking Difficulty taking another's perspective	Difficulties in understanding long or complex sentences structure with figures of speech	Difficulties with retrieving vocabulary words orally presented task demands	Difficulties with new vocabulary and responses to teacher directed questions
Phonological processing	Sounds in words (e.g. bat/bag) are confused; poor sound sequencing in words; limited automaticity in decoding	Difficulty with comprehension of content caused by lack of fluency in decoding	Difficulty retaining sounds/symbols correspondence	Difficulty extracting essential concepts due to focus on decoding
Visual Spatial processing	Difficulty with oral or written directions for an activity; perceiving organization of ideas in a text	Difficulty identifying main ideas in a text	Difficulty with left/right; north south, hierarchical structures	Poor integration of sequential information (days of the week, recipe)
Processing speed	Poor social interactions; does not keep up with fast-paced lessons	Few connections between isolated bits of information in texts	Slow linking of new with previously learned information	Less material covered or takes extra time and much effort to cover material
Memory	Few strategies when trying to remember content or concepts	Difficulty writing since spelling may not be automatic	Difficulty retrieving previously learned information	Forgets spelling word after test; difficulty recalling significant events in history; any new learning is difficult
Attention	Difficulty knowing when to pay attention Poor reading of social; situations; impulsive	Poor concentration when putting ideas together	Little effort expended for remembering	Work may be disorganized; goes off on tangents

Impairments in processes related to:	Perceiving	Thinking	Remembering	Learning
Executive functions (planning or decision making)	Poor recognition of value of planning; impulsive	Difficulty problem solving and understanding consequences of decisions	Difficulty in linking new with previously integrated knowledge; few strategies	Difficulties in higher levels of learning, but has isolated pieces of knowledge

As implied, the impairments "may interfere with the acquisition and use of one or more of the following

- oral language (e.g. listening, speaking, understanding);
- reading (e.q. decoding, phonetic knowledge, word recognition, comprehension);
- written language (e.q. spelling and written expression); and
- mathematics (e.q. computation, problem solving).⁶

Learning disabilities range in severity and may affect any or several areas of life

Learning disabilities are identified along a continuum from mild to severe. How an individual's learning disabilities are classified relates to how significantly they interfere with current learning and with the individual's ability to function in society. For the most part, persons think of LD as related to academic problems. However, poor organizational skills, poor ability to 'read' social situations and to take another's perspective have significant impact on social interactions within schools, the family, significant relationships, and recreational activities.

In addition, even though students pass their academic courses, the effort required to do this or the 'just passing' results may indicate the presence of learning disabilities. (See Table 2.)

Table 2. Examples of general manifestations of learning disabilities

Learning disabilities are suggested by	Examples of some manifestations of the presence of learning disabilities
Unexpected underachievement	• Talks well on self-selected topics, but difficulty answering a teacher directed question • Exhibits knowledge of concepts taught when tested orally, but written test responses are short and do not exhibit same level of understanding • Strengths in reasoning, but weak reading skills
Unusually high levels of effort and support	• Homework completion is very slow when compared to other children • At the college, university level, student asks to reduce course load in order to give extra time to completing work requirements • Individual receives tutoring 3/4 hours (or more) per week over several years or in several subjects to keep up with peers

The range of severity and the variety of academic and social/familial areas in which learning disabilities are manifested implies intervention as soon as the disability becomes apparent, whether in kindergarten, late elementary or secondary school. Intervention should initially consist of pre-referral information from the student's current teacher and a timely and specialized assessment process. Referrals may be recommended when the students are having difficulties in any of the academic areas or when the performance is inconsistent or effortful.

What does such an assessment mean for educators at the primary, secondary and postsecondary level? It implies explicit teaching of specific skills, strategies and the use of tools that are recognized in the current research literature as being part of 'best practices' for this population? The consequence of an assessment requires interventions that involve the family, the school, the community and the workplace, depending on the needs of the individual.

Learning disabilities are life long

Learning disabilities influence the lives of children, adolescents, young adults and adults. However, the "way in which they (learning disabilities) are expressed may vary over an

individual's lifetime, depending on the interaction between the demands of the environment and the individual's strengths and needs." Instructional intervention decision-making must take into account what the individual needs in order to be able to function in a society of the future. Within all levels of schooling, students need to know how to explain their learning disabilities and what accommodations support learning and task completion. Without this self-awareness and ability to appropriately self-advocate, persons with learning disabilities are less likely to participate in successful post-secondary studies.

Learning disabilities are neurobiological and/or genetic in origin

What are the causes of learning disabilities? How are they different from other disorders of learning? In general, it is now recognized that

Learning disabilities are due to genetic and/or neurobiological factors or injury that alters brain functioning in a manner, which affects one or more processes related to learning.⁹

The neuro-biological basis of LD is supported by current reviews of the literature in the United States¹⁰ and Canada.¹¹ Such a basis does not imply that such students cannot learn. Taking the three first processes discussed earlier, it becomes apparent how the difficulties present themselves throughout the academic career of the students with LD.

Table 3: Examples of manifestations of neurological basis of learning disabilities at different age levels

Impairments in processes related to:	Examples of some manifestations of the presence of learning disabilities in students at the		
	Elementary Level	Secondary Level	Post-secondary Level
Language processing	Difficulty with responding to oral task demands	- Task demands no longer a problem, tasks seldom given only orally - Difficulty with learning new vocabulary in geography or history - May have few friends because misreads social interactions	- Has learned some vocabulary in geography and history, but has difficulty in courses, which require learning specific vocabulary (e.g. geology, medicine) - Difficulty being a roommate
Phonological processing	Difficulty learning to decode	- Phonetically regular and frequently seen words are decoded, but difficulty with unfamiliar, multi-syllabic words - Difficulty learning to read a 2nd language - Tutors necessary to cover the content material	- Difficulty fulfilling the language requirements - Unfamiliar words are skipped, so loses meaning in college level texts - Great effort must be exerted to access unfamiliar words while completing assignments
Visual spatial processing	Difficulty with letter formation	- Handwriting is barely legible - Difficulty with reading maps and understanding longitude and latitude	- Uses word processing, so handwriting no longer a significant problem - Difficulty getting from one place to another on campus - Difficulty with organization of lab work

Educators recognize that students with learning disabilities can and do learn, but they must be prepared to review material frequently, to teach compensatory strategies (e.g. note taking skills for those with poor memory), and to present material to be learned in a variety of formats and media.

Conclusion

Knowledgeable persons with the field frequently criticize definitions of 'learning disabilities' for the choice of vocabulary, phrasing and implied ideas. Although there may never be a universally accepted definition, a definition that reflects current research is used here to make evident some of the cognitive and behavioral manifestations of learning disabilities. In turn, one hopes that a better understanding of LD will lead to more cohesion in educational approaches to these students. Canadian educational systems must begin to deal with issues of inadequate elementary and secondary programs for students with learning disabilities. The need for appropriate and timely assessment, remediation, education and accommodations is critical if these individuals are to participate fully in Canadian society.

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- 1 The LDAC definition of Learning Disabilities (2002) can be found at the following address <http://www.ldac-taac.ca> or can be requested by post from the Learning Disabilities Association of Canada (LDAC). 323 Chapel St. #2. Ottawa. ON. K1H 7Z2. (This definition has been adopted and endorsed by LDAC and its provincial affiliates. the Canadian Teachers Federation. National Education Association of Disabled Students. some provincial Ministries of Education. etc.)
- 2 Ibid. para. 1.
- 3 Most definitions of full inclusion imply that the needs of students with learning disabilities are met within the context of a general class.
- 4 The term 'accommodations' refers to practices seen as supporting students with disabilities in learning content material. Examples are extra time for exams. oral exams. taped books. screen readers and voice activated writing tools. (Screen readers are software that reads aloud computer text and information on many websites. For examples see <http://www.kurzweilededu.com/> and <http://www.macspeech.com> . For an example of a voice activated writing tools see <http://www.speakingsolutions.com/>)
- 5 LDAC definition of Learning Disabilities (2002). para 2.
- 6 Ibid. para. 3
- 7 For a website that describes a number of instructional interventions. see <http://www.ldonline.org/>
- 8 LDAC definition of Learning Disabilities (2002) para. 4.
- 9 Ibid.. para. 5.
- 10 L. Joseph. "The Neurobiological Basis of Reading." *Journal of Learning Disabilities* 34 (6) 2001 566-579
- 11 C. Fiedorowicz. E. Benezra. W MacDonald. B. McElgunn. A Wilson and B. Kaplan. "Neurobiological Basis of Learning Disabilities An Update." *Learning Disabilities A Multidisciplinary Journal* 11 (2) 2001 61-74.

FACT SHEET *Understanding Learning Disability?*

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June 2007

Excerpt from LD and the Law-Current Canadian Human Right Laws (LDAC)(www.ldac-taac.ca/LDandthelaw/ch03_law-e.asp)

Human Rights Legislation That Prohibits Discrimination

Discrimination on the basis of physical or mental disability is prohibited by human rights legislation in Canada. Canada's provincial, territorial and federal human rights legislation prohibits discriminatory acts and practices on the ground of race, colour, religion, age, sex or disability, for example.

Under Canadian law, forbidden discrimination can include conduct that unintentionally results in discrimination. In a particular situation, it may also be forbidden for someone to discriminate against you because they think you have a disability, even if you do not have a disability.

Section 15 of the *Canadian Charter of Rights and Freedoms* (the Charter) guarantees equality rights, plus freedom from discrimination, for people who have a "mental or physical disability" - as well as for other categories of people who face discrimination ... Because of interpretations of section 15 by the Supreme Court of Canada, section 15 would guarantee the same fundamental rights for all disabilities, including learning disabilities ... Discrimination against persons with learning disabilities is also forbidden under each provincial, territorial and federal human rights statute (sometimes called a human rights "code" or "charter"). Most anti-discrimination cases do not involve the Canadian Charter at all, but deal with complaints about specific acts of discrimination that violate one of these other laws ... Human rights statutes have a purpose different from that of section 15 of the Charter. *Cases based on a human rights statute usually involve complaints about discriminatory actions or practices that violate that statute .*

... each province and territory, as well as Canada's federal government, has its own separate human rights statute, usually called a Human Rights Act or Human Rights Code. Prohibition of discrimination applies to activities such as education, employment, advertising, renting of premises, and selling or providing goods or services ordinarily available to members of the public ... There are some differences ... about the kinds of discrimination they prohibit, and the ways that their legislation is implemented and enforced. But there are more similarities than differences among the various statutes

If a school board, employer or government agency (or another body or person) discriminates against you or against someone you know, and the problem cannot be resolved through negotiation, you might look for help from a human rights commission or a government agency that performs similar functions

Federal human rights legislation applies to discrimination by, or within, the federal public sector (including the RCMP and the military). It covers actions by federal agencies such as the Canada Customs and Revenue Agency. The *Canadian Human Rights Act* and other federal laws also apply to businesses, occupations and activities in sectors regulated by the federal government. These include banking, transportation (inter-provincial trains and buses), communications (e.g. radio, television, telephones), agriculture, fishing, trade and foreign affairs.

When individuals or families encounter discrimination in the education, health or private employment fields, the problem is probably covered by the human rights legislation of a province or territory. These jurisdictions, rather than the federal government, are responsible for most aspects of education, health care and medical services, private businesses and private employment, social services, family and child services, court administration and regulation of the professions (i.e. doctors, teachers, nurses, lawyers).

The human rights legislation of each jurisdiction (provincial/ territorial! federal) usually deals with discriminatory actions or practices by that jurisdiction's government against its own public sector employees, or committed by such personnel against members of the public. (However, the rights of some territorial public servants are still covered under the *Canadian Human Rights Act*.)



LD DEFINITION and CHARACTERISTICS

Jane Drover & Dr. Lex Wilson



SECTION 2: SCREENING, ASSESSMENT, and PSYCH. REPORTS



ASSESSMENT

An *assessment* is a critical component of the educational process, allowing educators and other professionals to make relevant, educational decisions. Some downplay its importance, believing that time spent assessing would be better spent teaching. However, when appropriate assessment procedures are conducted, an action plan can be designed to enhance the teaching and learning process.

A diagnostic, *psycho-educational assessment* is necessary to identify a learning disability. It is best done by a registered psychologist with training and experience in the field of learning disabilities. The psycho-educational assessment enables those with LDs to access support and accommodations in the academic or work setting as well as tax rebates and grants. Generally the process consists of two steps: i) an initial screening to determine if a full assessment is warranted and, ii) the formal psycho-educational assessment.

Screening can be done through the use of a structured interview, informal tests and checklists. It should give the screener a good idea of whether or not further assessment is needed. Screening tools determine if an individual is at-risk. If so, a psycho-educational assessment needs to follow.

Formal psycho-educational assessment of a learning disability consists of standardized tests of cognitive abilities, information processing, and current level of academic achievement in reading decoding and comprehension, oral and written language, and mathematics.

Information on funding for an assessment and for postsecondary education

The Learning Disabilities Association of NB (LDANB) states 1 in 10 New Brunswickers has a learning disability, and of those, 20% have been identified and are receiving support. The cost of assessment is \$1500 to \$3000, putting diagnosis out of the means of many New Brunswickers. If they are identified, they are entitled by law to certain accommodations in school, university, and in the workplace.

Parents of a student who's been formally identified with a significant learning disability may qualify for the *T2001- A Disability Tax Rebate*. It is a \$2500 annual credit against their net income. A formal assessment must be submitted with the application to qualify.

To be eligible for other tax rebates under 'medical' on the income tax form, a copy of a formal assessment must also be submitted. For students struggling with attention, more investigation and a medical report may be required from a physician.]

Students with disabilities can apply for a *Canada Study Grant* for postsecondary placement but must submit an up-to-date formal psycho-educational assessment to qualify. The grant is intended to support high-needs students with disabilities who qualify for a Student Loan. To be eligible, a student must have a permanent disability that limits physical or mental ability to perform the daily activities necessary to participate fully in post-secondary studies. The student must be in need of exceptional related services or the equipment required for performing the daily activities essential to participating in such studies.

Students with learning disabilities who qualify for the *Canada Study Grant* can also apply for the *Canada Study Grant for the Accommodation of Permanent Disabilities*. *This grant provides up to \$8000 a year to purchase assistive technology and pay for tutor support to help them.* The grant will also pay up to 75% of a formal assessment. For more information about Canada Study Grants visit www.canlearn.ca or 1-800-0-Canada (1-800-622- 6232).

- ✓ *Training and Employment Support Services* will also help students and employees needing support in post-secondary levels or the workplace, but they also require a formal assessment for a client to qualify.
- ✓ Many colleges and universities will require an assessment before they can make accommodations for students with learning disabilities.

SOURCES:

AHEAD. (July 1997). Guidelines for Documentation of a Learning Disability in Adolescents and Adults.

www.disabilityresourcecenter.neu.edu/Forms/AheadStandards.PDF

Educational Testing Service. (1999). *Documenting learning disabilities: Policy statement for documentation of learning disability in adolescents and adults* (Rev. ed.). Princeton, NJ: Educational Testing Service.

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<http://www.ldonline.org/about/partners/njcld/highered.html>

Taylor, R. (2000). Assessment of Exceptional Students. Educational and Psychological Procedures. Allyn and Bacon. Boston, Mass.-,-

WEB RESOURCES:

www.progressmonitoring.org Research Institute on Progress Monitoring.

Section II Readings- Screening, Assessment & Psych. Reports

The Adult with Learning Disabilities and Assessment (LDAC) Available online at: www.ldac-taac.ca/InDepth/adult-assessment-e.asp

Jane Drover & Dr. Lex Wilson's Supplementary Workshop Reading: Guidelines for Documentation of a Learning Disability in Adolescents and Adults (AHEAD), July 1997.

The Adult with Learning Disabilities and Assessment

There is no one test for learning disabilities but a series of various tests. It is important to determine why the individual wishes to be assessed. The reasons that lead the individual to seek an assessment as well as current problems and challenges should be discussed in addition to the expectations of what the assessment will accomplish. There are major differences between assessing for employment, educational needs or for self awareness. The assessment should consist of:

1. An initial interview
2. A measure of intellectual functioning
3. A measure of academic achievement levels
4. Social and emotional evaluations
5. Feedback interview

1. AN INITIAL INTERVIEW SHOULD COVER A THOROUGH REVIEW OF:

- birth history and early development;
- language and cultural background;
- medical history including vision, hearing, neurological status, illnesses, allergies, medications and current health conditions;
- family and social history to determine social, behavioural or emotional factors or any hereditary patterns;
- academic and work history;
- previous psychological evaluations and relevant medical tests.

2. A MEASURE OF INTELLECTUAL FUNCTIONING:

The Wechsler Adult Intelligence Scale - Revised is widely used. In addition to determining levels of intellectual ability, specific measures should be included in the test battery to assess: short and long-term memory functions; language functions including receptive and expressive vocabulary; verbal and non-verbal abstract reasoning or logic; attention span, visual - perceptual abilities including various spatial tasks, sequencing, right-left orientation and fine motor dexterity and; organizational and planning skills.

3. A MEASURE OF ACADEMIC ACHIEVEMENT LEVELS

Basic skill areas of reading, spelling, written expression and mathematics should be evaluated. The profile of reading sub-skills should be determined (e.g.: reading vocabulary, word recognition, comprehension of paragraphs and phonetic knowledge); math computation and problem-solving; mechanical and creative aspects of writing. With this detailed information, the psychologist should outline an effective plan to remediate or compensate for the academic difficulties. Study skills, organizational and workplace skills, as well as time management are other areas that should be assessed along with the basic skills. Learning disabilities screening questionnaires may be used to assess the individual's perception of areas of ability and difficulty, life skills, specific academic problems, and workplace issues.

4. SOCIAL AND EMOTIONAL EVALUATIONS

This part of the assessment consists of formal instruments to determine whether social/emotional problems occur concurrently with or are secondary to learning disabilities. Anxiety, depression, poor self-esteem and attention deficit disorder are important areas to examine.

5. FEEDBACK INTERVIEW

Once the testing is completed, a one hour feedback interview is carried out to convey the results along with suggestions for remediation to improve weaknesses or compensatory strategies and accommodations to cope more effectively with problem areas. A written report is provided either at the same time or following the session.

6. LENGTH OF TIME

The time to complete the testing portion of the assessment varies but typically ranges from four to six hours. The interview and assessment may all be done on the same day or during different appointments.

7. CHALLENGES OF AN ASSESSMENT

Finding a registered psychologist who is thoroughly knowledgeable about learning disabilities may be difficult.

8. BENEFIT OF AN ASSESSMENT

Most feel a sense of emotional relief when they learn that their difficulties have a specific reason. Many adults have grown up feeling inadequate attributing their difficulties to a general lack of ability. Knowing why they have experienced definable weaknesses often has an immediate impact on how they perceive themselves. A better understanding of their problems and notably their strengths can be an important first step towards building self-esteem and developing more effective coping strategies. The greatest benefit is usually peace of mind.

9. COST OF ASSESSMENT

Psychologists are usually not covered under a provincial health plan. Many insurance companies cover some portion of psychological testing and most require a letter of referral from a physician to the psychologist. The cost typically ranges from \$800 to \$1200. Many unemployed or underemployed adults cannot afford such services. It is possible to gain access to an assessment through an institution (college, university or hospital) or agency (social services, vocational rehabilitation, Canada Employment Centre) if you meet their requirements and are willing to wait. Some people may be covered by the Extended Benefits Plan of their work Health Insurance Plan. Check cost and coverage before starting the assessment and ask about a sliding scale fee structure and payment over time.

For most adults with learning disabilities, this represents an insurmountable financial barrier.

AFTER DIAGNOSIS, WHAT NEXT?

There can be advantages to both the employee and employer in monetary and personal cost-effectiveness. Many employers are willing to accommodate special needs in a supportive yet confidential and professional manner. It is strongly recommended that students disclose since there are many excellent support programs for the student with learning disabilities in community colleges and universities.

Ensure that the assessment provides a clear statement about: whether or not there are learning disabilities and if so what types(s); about strengths and weaknesses; and about guidelines to remediate and/or compensate for the learning disability.

The psychological assessment must be carried out by or under the supervision of a registered psychologist who specializes in learning disabilities and is:

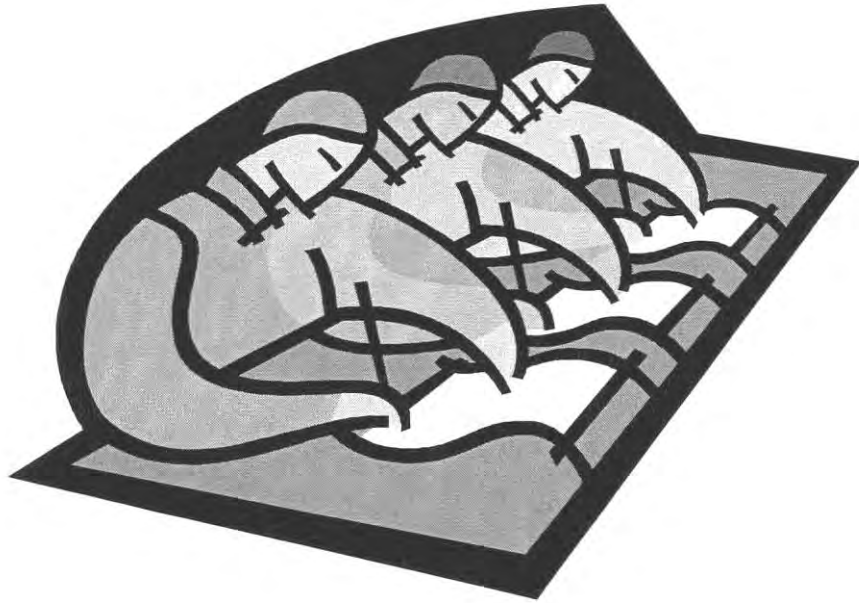
- trained to administer the tests;
- trained and experienced in interpreting the results;
- able to provide concrete recommendations for better learning and coping.

ADAPTED FROM:

For You.' Adults with Learning Disabilities, by C. Smith, (1991) LDAC

Tools for Transitions: A Counsellor's Guide to Learning Disabilities, by E. Nichols, (1994)
LDA-ON

Let's Look at the Assessment of Learning Disabilities in Adults, by Dr. C. Fiedorowicz, National, Summer 1995 pg 5, LDAC



SCREENING and ASSESSMENT

Jane Drover and Dr. Lex Wilson

Guidelines for Documentation of a Learning Disability in Adolescents and Adults

July 1997



AHEAD is an international, multicultural organization of professionals committed to full participation in higher education for persons with disabilities. The Association is a vital resource, promoting excellence through education, communication and training.

The Board of Directors established an Ad Hoc Committee to study issues surrounding the documentation of a learning disability. The Board wishes to thank the members of the AHEAD Ad Hoc Committee on LD Guidelines for their efforts in laying the foundation of these Guidelines for use by the Association's members.

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Guidelines for Documentation of a Learning Disability in Adolescents and Adults

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This publication is available in alternate formats upon request.

Guidelines for Documentation of a Learning Disability in Adolescents and Adults

Introduction

In response to the expressed need for guidance related to the documentation of a learning disability in adolescents and adults, the Association on Higher Education And Disability (*AHEAD*) has developed the following guidelines. The primary intent of these guidelines is to provide students, professional diagnosticians and service providers with a common understanding and knowledge base of those components of documentation which are necessary to validate a learning disability and the need for accommodation. The information and documentation that establishes a learning disability should be comprehensive in order to make it possible for a student to be served in a postsecondary setting.

The document presents guidelines in four important areas: 1) qualifications of the evaluator, 2) recency of documentation, 3). appropriate clinical documentation to substantiate the learning disability, and 4) evidence to establish a rationale supporting the need for accommodations.

Under the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973, individuals with learning disabilities are guaranteed certain protections and rights of equal access to programs and services; thus the documentation should indicate that the disability substantially limits some major life activity. The following guidelines are provided in the interest of assuring that LD documentation is appropriate to verify eligibility and to support requests for accommodations, academic adjustments and/or auxiliary aids. It is recommended that postsecondary institutions using these guidelines consult with their legal counsel before establishing a policy on documentation relating to individuals with disabilities. In countries not regulated by this legislation further modification may be appropriate.

These guidelines are designed to be a framework for institutions to work from in establishing criteria for eligibility. It is acknowledged that different educational settings with different student populations will need to modify and adapt these guidelines to meet the needs and backgrounds of their student populations.

Recommendations for consumers are presented in Appendix A to assist them in finding and working with a qualified professional in regard to documentation.

Documentation Guidelines

I. Qualifications of the Evaluator

Professionals conducting assessments, rendering diagnoses of learning disabilities, and making recommendations for appropriate accommodations must be qualified to do so. Comprehensive training and direct experience with an adolescent and adult LD population is essential.

The name, title and professional credentials of the evaluator, including information about license or certification (e.g., licensed psychologist) as well as the area of specialization, employment and state/province in which the individual practices should be clearly stated in the documentation. For example, the following professionals would generally be considered qualified to evaluate specific learning disabilities provided that they have additional training and experience in the assessment of learning problems in adolescents and adults: clinical or educational psychologists, school psychologists, neuropsychologists, learning disabilities specialists, medical doctors, and other professionals. Use of diagnostic terminology indicating a learning disability by someone whose training and experience are not in these fields is not acceptable. It is of utmost importance that evaluators are sensitive and respectful of cultural and linguistic differences in adolescents and adults during the assessment process. It is not considered appropriate for professionals to evaluate members of their families. All reports should be on letterhead, typed, dated, signed and otherwise legible.

II. Documentation

The provision of all reasonable accommodations and services is based upon assessment of the impact of the student's disabilities on his or her academic performance at a given time in the student's life. Therefore, it is in the student's best interest to provide recent and appropriate documentation relevant to the student's learning environment.

Flexibility in accepting documentation is important, especially in settings with significant numbers of non-traditional students. In some instances, documentation may be outdated or inadequate in scope or content. It may not address the student's current level of functioning or need for accommodations because observed changes may have occurred in the student's performance since the previous assessment was conducted. In such cases, it may be appropriate to update the evaluation report. Since the purpose of the update is to determine the student's current need for accommodations, the update, conducted by a qualified professional, should include a rationale for ongoing services and accommodations.

III. Substantiation of the Learning Disability

Documentation should validate the need for services based on the individual's current level of functioning in the educational setting. A school plan such as an individualized education program (IEP) or a 504 plan is insufficient documentation, but it can be included as part of a more comprehensive assessment battery. A comprehensive assessment battery and the resulting diagnostic report should include a diagnostic interview, assessment of aptitude, academic achievement, information processing and a diagnosis.

A. Diagnostic Interview

An evaluation report should include the summary of a comprehensive diagnostic interview. Learning disabilities are commonly manifested during childhood, but not always formally diagnosed. Relevant information regarding the student's academic history and learning processes in elementary, secondary and postsecondary education should be investigated. The diagnostician, using professional judgment as to which areas are relevant, should conduct a diagnostic interview which may include: a description of the presenting problem(s); developmental, medical, psychosocial and employment histories; family history (including primary language of the home and the student's current level of English fluency); and a discussion of dual diagnosis where, indicated.

B. Assessment

The neuropsychological or psycho-educational evaluation for the diagnosis of a specific learning disability must provide clear and specific evidence that a learning disability does or does not exist. Assessment, and any resulting diagnosis, should consist of and be based on a comprehensive assessment battery which does not rely on anyone test or subtest. Evidence of a substantial limitation to learning or other major life activity must be provided. A list of commonly used tests is included in Appendix B. Minimally, the domains to be addressed must include the following:

1. Aptitude

A complete intellectual assessment with all subtests and standard scores reported.

2. Academic Achievement

A comprehensive academic achievement battery is essential with all subtests and standard scores reported for those subtests administered. The battery should include current levels of academic functioning in relevant areas such as reading (decoding and comprehension), mathematics, and oral and written language.

3. Information Processing

Specific areas of information processing (e.g., short- and long-term memory, sequential memory, auditory and visual perception/processing, processing speed, executive functioning and motor ability) should be assessed.

Other assessment measures such as non-standard measures and informal assessment procedures or observations may be helpful in determining performance across a variety of domains. Other formal assessment measures may be integrated with the above instruments to help determine a learning disability and differentiate it from co-existing neurological and/or psychiatric disorders (i.e., to establish a differential diagnosis). In addition to standardized tests, it is also very useful to include informal observations of the student during the test administration.

C. Specific Diagnosis

Individual "learning styles," "learning differences," "academic problems" and "test difficulty or anxiety," in and of themselves, do not constitute a learning disability. It is important to rule out alternative explanations for problems in learning such as emotional, attentional or motivational problems that may be interfering with learning but do not constitute a learning disability. The diagnostician is encouraged to use direct language in the diagnosis and documentation of a learning disability, avoiding the use of terms such as "suggests" or "is indicative of."

If the data indicate that a learning disability is not present, the evaluator should state that conclusion in the report.

D. Test Scores

Standard scores and/or percentiles should be provided for all normed measures. Grade equivalents are not useful unless standard scores and/or percentiles are also included. The data should logically reflect a substantial limitation to learning for which the student is requesting the accommodation. The particular profile of the student's strengths and weaknesses must be shown to relate to functional limitations that may necessitate accommodations.

The tests used should be reliable, valid and standardized for use with an adolescent/adult population. The test findings should document both the nature and severity of the learning disability. Informal inventories, surveys and direct observation by a qualified professional may be used in tandem with formal tests in order to further develop a clinical hypothesis.

E. Clinical Summary

A well-written diagnostic summary based on a comprehensive evaluation process is a necessary component of the report. Assessment instruments and the data they provide do not diagnose; rather, they provide important elements that must be integrated by the evaluator with background information, observations of the client during the testing situation, and the current context. It is essential, therefore, that professional judgment be utilized in the development of a clinical summary. The clinical summary should include:

1. demonstration of the evaluator's having ruled out alternative explanations for academic problems as a result of poor education, poor motivation and/or study skills, emotional problems, attentional problems and cultural/language differences;
2. indication of how patterns in the student's cognitive ability, achievement and information processing reflect the presence of a learning disability;
3. indication of the substantial limitation to learning or other major life activity presented by the learning disability and the degree to which it impacts the individual in the learning context for which accommodations are being requested; and
4. indication as to why specific accommodations are needed and how the effects of the specific disability are accommodated.

The summary should also include any record of prior accommodation or auxiliary aids, including any information about specific conditions under which the accommodations were used (e.g., standardized testing, final exams, licensing or certification examinations).

IV. Recommendations for Accommodations

It is important to recognize that accommodation needs can change over time and are not always identified through the initial diagnostic process. Conversely, a prior history of accommodation does not, in and of itself, warrant the provision of a similar accommodation.

The diagnostic report should include specific recommendations for accommodations as well as an explanation as to why each accommodation is recommended. The evaluators should describe the impact the diagnosed learning disability has on a specific major life activity as well as the degree of significance of this impact on the individual. The evaluator should support recommendations with specific test results or clinical observations.

If accommodations are not clearly identified in a diagnostic report, the disability service provider should seek clarification and, if necessary, more information. The final determination for providing appropriate and reasonable accommodations rests with the institution.

In instances where a request for accommodations is denied in a postsecondary institution, a written grievance or appeal procedure should be in place.

V. Confidentiality

The receiving institution has a responsibility to maintain confidentiality of the evaluation and may not release any part of the documentation without the student's informed and written consent.

APPENDIX A

Recommendations for Consumers

- I. For assistance in finding a qualified professional:
 - contact the disability services coordinator at the institution you attend or plan to attend to discuss documentation needs; and
 - discuss your future plans with the disability services coordinator. If additional documentation is required, seek assistance in identifying a qualified professional.
2. In selecting a qualified professional:
 - ask what his or her credentials are;
 - ask what experience he or she has had working with adults with learning disabilities; and
 - ask if he or she has ever worked with the service provider at your institution or with the agency to which you are sending material.
3. In working with the professional:
 - take a copy of these guidelines to the professional;
 - encourage him or her to clarify questions with the person who provided you with these guidelines;
 - be prepared to be forthcoming, thorough and honest with requested information; and
 - know that professionals must maintain confidentiality with respect to your records and testing information.
4. As follow-up to the assessment by the professional:
 - request a written copy of the assessment report;
 - request the opportunity to discuss the results and recommendations;
 - request additional resources if you need them; and
 - maintain a personal file of your records and reports.

APPENDIX B

Tests for Assessing Adolescents and Adults

When selecting a battery of tests, it is critical to consider the technical adequacy of instruments including their reliability, validity and standardization on an appropriate norm group. The professional judgment of an evaluator in choosing tests is important.

The following list is provided as a helpful resource, but it is not intended to be definitive or exhaustive.

Aptitude

- *Wechsler Adult Intelligence Scale - Revised* (WAIS-R)
- *Woodcock-Johnson Psycho-educational Battery - Revised: Tests of Cognitive Ability*
- *Kaufman Adolescent and Adult Intelligence Test*
- *Stanford-Binet Intelligence Scale* (4 ed.)

The *Slosson Intelligence Test - Revised* and the *Kaufman Brief Intelligence Test* are primarily screening devices which are not comprehensive enough to provide the kinds of information necessary to make accommodation decisions.

Academic Achievement

- *Scholastic Abilities Test for Adults* (SATA)
- *Stanford Test of Academic Skills*
- *Woodcock-Johnson Psycho-educational Battery - Revised: Tests of Achievement*
- *Wechsler Individual Achievement Test* (WIAT)

or specific achievement tests such as:

- *Nelsen-Denny Reading Skills Test*
- *Stanford Diagnostic Mathematics Test*
- *Test of Written Language - 3* (TOWL-3)
- *Woodcock Reading Mastery Tests - Revised*

Specific achievement tests are useful instruments when administered under standardized conditions and interpreted within the context of other diagnostic information. The *Wide Range Achievement Test - 3* (WRAT-3) is not a comprehensive measure of achievement and therefore is not useful if used as the sole measure of achievement.

Information Processing

Acceptable instruments include the *Detroit Tests of Learning Aptitude - 3* (DTLA-3), the *Detroit Tests of Learning Aptitude - Adult* (DTLA-A), information from subtests on *WAIS-R*, *Woodcock-Johnson Psycho-educational Battery' - Revised: Tests of Cognitive Ability*, as well as other relevant instruments.



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World Wide Web: <http://www.ahead.org>

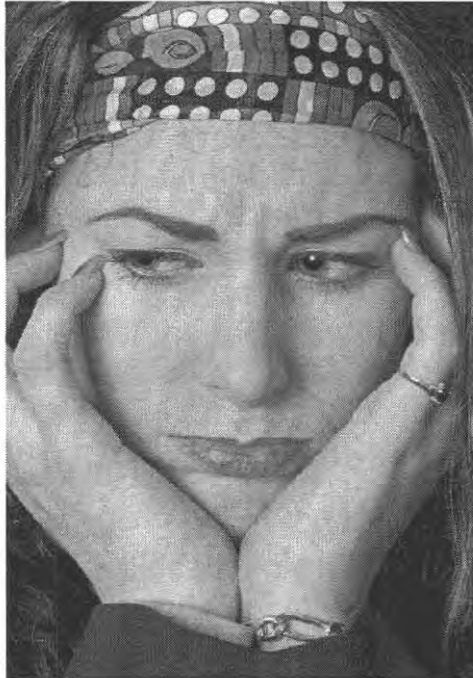


UNDERSTANDING PSYCHOLOGICAL ASSESSMENTS

Dr. Lex Wilson

SECTION 3:
LEARNING DISABILITIES &
SOCIAL and EMOTIONAL
HEALTH





SOCIAL & EMOTIONAL HEALTH

Many individuals with LOs also have a disability in the area of social skills, which may be a greater barrier than their academic challenges. Social skills are crucial in life, but because they do not come naturally for many with LDs and ADHD, they must be taught. Basic manners and skills like 'reading' situations, body language, and facial expressions become new areas of learning. Having an ability to understand innuendos/sarcasm/exaggerations, to listen or take directions must be developed. Personal controls for anger, expression of feelings, and thinking before acting must be practiced by those with LDs. Learning to accept consequences or deal with peer pressure and problem-solve are also on the learning agenda.

Some individuals with LDs can be impulsive. They may make inappropriate social comments or exhibit behaviour that others find irritating or unacceptable, and may not realize others are upset with them. As a result, they may have few friends and can't figure out why, or know how to make and keep them. Peer pressure is a concern as they want to be accepted, but often choose the wrong peer models. Seeming to lack common sense or 'street smarts,' they can be incredibly naive, unable to understand consequences of their actions. "Adults with an LD and/or ADHD often exhibit an inability to stick to simple schedules, repeatedly forget things, lose or leave possessions, and generally seem 'personally disorganized'"(Bender 2004).

For others who may not have difficulty in these areas but experience constant academic failure, the experience can increase anxiety and depression (PACFOLO, 2007) Self-esteem is a major concern for those with learning issues as they are 'success deprived'. There is a higher than normal incidence of school failure, substance abuse, addiction, suicidal thoughts, and unemployment within the LD population.

Teachers need to be aware of possible emotional issues when dealing with adults with LDs, as many have faced rejection, pain, or numerous obstacles from childhood. Intervention and personal counseling, social skills training, and help with personal management skills (e.g. time) may need to be included.

It is not enough to identify a learning disability. We must do a better job of counselling on personal learning styles and teaching social skills in different environments. Once students realize that they are bright, but have a unique learning style, they can learn how to cope in different situations.

"Studies have shown succeeding with a learning disability correlates most strongly with self-awareness and a positive attitude---not with grades or socioeconomic status. Success outcomes depend on self-awareness and reframing your learning disability in a positive way" (Howard Eaton, Globe and Mail, May 2006).

A positive, respectful learning environment is critical to reducing emotional problems. Effective intervention needs patience and compassion. Instruction offered at a student's level reduces resentment and fear of failure. If the curriculum is not relevant or seen as a waste of time, students are likely to shut down from boredom or frustration. Expectations that are too high or too low for a student's ability can lead to loss in motivation. Teachers must adjust expectations to fit a student's level of ability so that improvement is always possible and challenging. If the task is not accomplished the student's self-worth could be affected.

Programs must strive to foster independence and choice. Students need freedom to demonstrate their learning style preferences and interests. Positive reinforcement and routine structure needs to be in place, so they will have a better chance at success if managed consistently. Knowing the rules of the 'game' is key. Inconsistent routine is one factor that is almost certain to increase a student's frustration. Remember, if they are identified as having an LO, they are entitled by law to certain accommodations in school, university, and in the workplace.

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WEB RESOURCES:

www.cmha.ca Canadian Mental Health Association

www.nidline.com National Institute of Mental Health (US source)

Section III Readings- LD & Social and Emotional Health

[Social and Emotional Problems Related to Learning Disabilities \(LDAC\)](#)

[Positive Self Esteem: A Roadmap for Success \(LDAC\)](#)

[Success Attributes across the Life Span \(LDAC\)](#)



Social and Emotional Problems Related to Learning Disabilities

Dealing with social and emotional challenges is part of every day, but it can be particularly challenging for any individual with learning disabilities (LD). Learning disabilities can affect many skills including listening, thinking, speaking, reading, writing, mathematics and reasoning – skills that individuals must use every day to fulfill their roles as students, family members, employees and citizens. Learning disabilities may occur with, and be complicated by problems in social skills. Children with learning disabilities grow up to become adults with learning disabilities.

The consequences of their learning disabilities, however, changes. While the setting shifts from school to work and community, the implications are equally significant. The child with learning disabilities may rely on family and school for support. The adult with learning disability often struggles to find a support system and this puts many at increased risk of mental health problems. If not supported, these may lead to more severe mental illnesses.

As a consequence of struggling day in and day out at school, many individuals with LD perceive themselves as less competent. Professionals need to recognize the logical consequence of increased feelings of helplessness, hopelessness, lower self-esteem and lack of assertive skills that arise as the result of living day in and day out with a learning disability. In particular for adults who were inadequately or not identified and even less likely to have been treated.

Anxiety is the most frequent emotional symptom reported by individuals with learning disabilities. Individual with LDs become fearful because of their constant frustration and confusion in school. These feelings are exacerbated by the inconsistencies of learning disabilities. Because they cannot anticipate failure, entering new situations provokes extreme levels of anxiety ..

Anxiety causes human beings to avoid whatever frightens them. The individual with LD is no exception. However, many teachers, parents and spouse misinterpret this avoidance behavior as laziness. In fact, the individual with LD's hesitancy to participate in activities such as homework or work related activities is related more to anxiety and confusion than to apathy.

Frustration and anger

Many of the problems caused by learning disabilities occur out of frustration with school or social situations. Researchers have frequently observed that frustration produces anger. This can be clearly seen in many individual with LDs.

The obvious target of the individual with LD's anger would be schools and teachers. However, it is also common for the individual with LD to vent his anger on his parents. Mothers are particularly likely to feel the individual with LD's wrath. Often, the child sits on his anger during school to the point of being extremely passive. However, once he is in the safe environment of home, these very powerful feelings erupt and are often directed toward the mother. Ironically, it is the child's trust of the mother that allows him to vent his anger. However, this becomes very frustrating and confusing to the parent who is desperately trying to help her child.

This anger is particularly evident in adolescents. By its very nature, learning disabilities causes children to become more dependent on the adults in their environment. They need extra tutoring and help with their homework.

As youngsters reach adolescence, society expects them to become independent. The tension between the expectation of independence and the child's learned dependence causes great internal conflicts. The adolescent individual with LD uses his anger to break away from those people on which he feels so dependent.

Because of these factors, it may be difficult for parents to help their teenage individual with LD. Instead, peer tutoring or a concerned young adult may be better able to intervene and help the child. The individual with LD's self-esteem appears to be extremely vulnerable to frustration and anxiety. Research shows that if children succeed in school, they will develop positive feelings about themselves and believe that they can succeed in life.

If children meet failure and frustration, they learn that they are inferior to others, and that their efforts make very little difference. Instead of feeling powerful and productive, they learn that their environment acts upon them. They feel powerless and incompetent.

Researchers have learned that when typical learners succeed, they credit their own efforts for their success. When they fail, they tell themselves to try harder. However, when the individual with LD succeeds, he is likely to attribute his success to luck. When he fails, he simply sees himself as stupid.

Research also suggests that these feelings of inferiority develop by the age of ten. After this age, it becomes extremely difficult to help the child develop a positive self-image. This is a powerful argument for early intervention.

Depression

Depression is also a frequent complication in learning disabilities and individuals with LD are at higher risk for intense feelings of sorrow and pain. Perhaps because of their low self-esteem, individual with LDs afraid to turn their anger toward their environment, instead turn it toward themselves.

However, depressed children and adolescents often have different symptoms than do depressed adults. The depressed child is unlikely to be lethargic or to talk about feeling sad. Instead, he or she may become more active or misbehave to cover up the painful feelings. In the case of masked depression, the child may not seem obviously unhappy. However, both children and adults who are depressed tend to have three similar characteristics:

- First, they tend to have negative thoughts about themselves, i.e., a negative self-image.
- Second, they tend to view the world negatively. They are less likely to enjoy the positive experiences in their life. This makes it difficult for them to have fun.
- Finally, most depressed youngsters have great trouble imagining anything positive about the future. The depressed individual with LD not only experiences great pain in his present experiences, but also foresees a life of continuing failure.

Family Impact

Like any handicapping condition, learning disabilities has a tremendous impact on the child's family. However, because learning disabilities is an invisible handicap, these effects are often overlooked. Learning disabilities affects the family in a variety of ways. One of the most obvious is sibling rivalry. Non LD children often feel jealous of the Sibling with LD, who gets the majority of the parents' attention, time, and money. Ironically, the child with LD does not want this attention. This increases the chances that he or she will act negatively against the achieving children in the family.

Specific learning disabilities can run in families. This means that one or both of the child's parents may have had similar school problems. When faced with a child who is having school problems, individual with LD parents can react in one of two ways. They may deny the existence of learning disabilities and believe if the child would just buckle down, he or she could succeed. Or, the parents may relive their failures and frustrations through their child's school experience. This brings back powerful and terrifying emotions, which can interfere with the adult's parenting skills.

Helping individual with LD feel better about themselves and deal effectively with their feelings is a complex task. First, teachers must understand the cognitive and affective problems caused by learning disabilities. Then they must design strategies that will help the individual with LD, like every other child, to find joy and success in academics and personal relationships. Second, counselors and LD advocates must:

1. Educate yourself about learning disabilities and their impact on day to day living.
2. Recognize and accept that children with a learning disability grow up to be adults with a learning disability.
- 3 Listen carefully to what your clients are saying
4. Not assume that all individuals with histories of learning disabilities will experience emotional problems but recognize that all will be affected to some extent.
5. Understand that adults with learning disabilities can and do experience more life and vocational problems than others.
6. Help your client to find out what their strengths are. Many individuals with LD use other strengths to compensate for their disabilities and develop a variety of coping strategies, allowing them to function in everyday life.
7. Listen carefully when taking a history. An undiagnosed learning disability may, in some individuals, represent a Significant variable to explain the course of reported emotional problems.
8. Not be afraid to act. Be prepared to put in some time into the process of obtaining a diagnosis whether it be that of a learning disability or of a mental illness.
9. Offer support and empathy.
10. Provide counseling to help the individual accept and understand how their learning disability affects their life and teach strategies and techniques to work around their disability.

With increased community acceptance and recognition that learning disability are lifelong, medical, mental health and educational professionals are going to find themselves supporting many more individuals with learning disabilities.

Source.' Adapted with permission from Fact Sheet # 49 International Dyslexia Association and from Dr. Sam Goldstein, July 2000 - SamGoldstein.com monthly article.



Positive Self Esteem: A Roadmap for success

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For individuals with and without learning disabilities (LD), self-esteem is a powerful predictor of success. Positive self-esteem is as important to success in school and on the job as the mastery of individual skills. Learning disabilities, however, often pose formidable hurdles to positive self-esteem, and in turn contribute to a hard-to-break cycle of self-doubt, frustration and failure which in turn can lead to mental health issues and to possible severe mental illnesses.

What is Self-Esteem?

Self-esteem can be described as how we view ourselves in the context of our surroundings. It is shaped by how well we get along with peers and family members, and by how we judge ourselves in comparison to those around us. Whether at home, school or the work place, self-esteem also is shaped by how well we understand and respond to ever-changing interpersonal demands. But it is precisely this area – the area of interpersonal relationships - in which individuals with LD may have the greatest difficulty, thus contributing to feelings of inadequacy and low self-esteem.

Not all people with LD have problems with social competence and self-esteem, but many do, and struggling daily with the challenges posed by a learning disability can erode enthusiasm and confidence. Knowing one's assets and liabilities and feeling good about one's self can be invaluable in negotiating the sometimes tumultuous path to achievement in school, success in the workplace, and acceptance at home and in the community at large.

How Does Social Competence Affect Self-Esteem?

Building social competence is an important step in becoming a self-reliant and confident person. Socially competent people know how to easily move from person to person, or group to group, seemingly relaxed and at ease, regardless of whether they are talking or listening

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They also know how to:

- Initiate and maintain positive relationships with peers and others
- Interpret social situations, judging how to interact
- Interact without drawing negative attention to themselves
- Sustain attention on the speaker
- Contribute to conversations
- Control their impulses to draw attention to themselves, even in well-intended ways.

It is these traits that often pose the greatest challenges to individuals with LD.

What Are the Threats to Self-Esteem for Individuals With LD?

Research has shown that being diagnosed as having specific LD does not, in and of itself, negatively impact self-esteem. However, there are a number of characteristics, frequently observed in people with LD that contribute to feelings of low self-worth.

Communication style and social awareness:

- May unintentionally appear to be overly egocentric and disinterested in the opinions of other speakers (when nothing could be further from the truth)
- Has difficulty judging when it is his or her turn to participate in a conversation
- May misinterpret others' feelings
- Unaware of when his or her behaviors are bothersome or annoying
- May have problems with visual-spatial planning and self-regulation, resulting in difficulties in judgment: they may misjudge how close to stand to someone during conversation, how to assume and maintain a relaxed posture or when it might be appropriate to touch.

Self knowledge:

- Is unsure how to understand his or her personal strengths and weaknesses, or how to explain them to others
- Has trouble evaluating and reflecting on his or her behavior in social interactions

Language

- Has limited vocabulary, or has difficulty retrieving the right words for the situation
- Has trouble with topic selection
- Talks around a topic, providing extraneous, less critical information in response to a question
- When asked to expand on something, is more likely to repeat rather than clarify his or her point
- In conversation, is more likely than peers to rely on gestures
- Is unsure when to end a conversation
- Slow to process information and to be able to follow conversation in a big group.

Self-perceived social status

- Has difficulty knowing how he or she fits in to a peer group, which often results in "hanging back," being passive or "sticking out" in a crowd or trying too hard to belong
- Has limited success getting noticed in positive ways within a peer group
- Is perceived as less popular and therefore more frequently rejected or ignored by peers – sometimes resulting in further self-imposed isolation.

Self-perceived ability to effect change

- Believes that outcomes are controlled by external influences (luck, chance, fate) rather than as a result of his or her own efforts
- Assumes a posture of "learned helplessness:" believes that because he or she struggled with something in the past, there is little they can do to change a negative outcome in the future, so they stop trying and hope for the best.

What Role Do Others' Expectations Play on Self-Esteem?

Unfortunately, individuals with LD are commonly confronted with low expectations from others. They are frequently, though not intentionally, the target of spoken and unspoken messages of disappointment from peers, parents, supervisors, etc. Others' low expectations may influence the expectations individuals with LD have of themselves, thereby serving to erode self-esteem.

What Are Some Strategies for Helping Individuals With LD Build Self-Esteem and Confidence?

In their book, "The Power of Resilience: Achieving Balance, Confidence and Personal Strength in Your Life," Dr. Robert Brooks and Dr. Sam Goldstein offer parents guideposts to help children and adolescents develop the strength and skills they need to cope successfully with the challenges they face. Here are some key findings, adapted from the book that parents can do to help:

- Be empathetic. See the world through your children's eyes.
- Communicate with respect. Don't interrupt or put them down; answer their questions.
- Give undivided attention. Children feel loved when we spend on-an-one time with them.
- Accept and love children for who they are. This will allow them to feel more secure in reaching out to others and learning how to solve problems.
- Give children a chance to contribute. This communicates your faith in their abilities and gives them a sense of responsibility.
- Treat mistakes as learning experiences. Children whose parents overreact to mistakes tend to avoid taking risks, then end up blaming others for their problems.
- Emphasize their strengths. A sense of accomplishment and pride give children the confidence to persevere when they face challenges.
- Let them solve problems and make decisions. Avoid telling children what to do; encourage them to come up with solutions to problems.
- Discipline to teach. Do not discipline in a way that intimidates or humiliates your child.

The Bottom Line

Throughout one's life, positive self-esteem and confidence are critical, and often elusive, ingredients for happiness and success. Individuals with LD are especially vulnerable to attacks on their feelings of self-worth; but with help and support, they can build the self-esteem it takes to achieve future success in any arena.

Additional resources:

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Success Attributes Across the Life Span

Children with learning disabilities grow up to be adults with learning disabilities (LD). Many of the difficulties experienced in childhood continue into and through adulthood. In spite of these challenges, some individuals with LD are able to lead successful lives while others are barely able to 'keep their heads above water' emotionally, socially or financially.

Why, despite similar backgrounds and learning disabilities, does one individual end up with a rewarding career, longterm friendships, while another, experiences a life of loneliness, isolation and financial stress?

Research has shown that a set of personal characteristics, attitudes, and behaviours help lead persons with learning disabilities to successful life outcomes. Successful persons with learning disabilities are much more likely to have these characteristics than unsuccessful individuals.

What is success?

According to the Frostig Centre in California, the agency that conducted over 20 years of research in this area, success means different things to different people, at different times in a person's life. However, there seems to be a number of things that most people include when they think of success. These include good friends, positive family relations, being loved, self approval, job satisfaction, physical and mental health, financial comfort, spiritual contentment, and an overall sense of meaning in one's life.

The Frostig Centre has identified the following 'success attributes' and offers recommendations for how to help children develop them. These success attributes include: self-awareness, the presence and use of effective support systems, emotional coping strategies, pro-activity, goalsetting, perseverance.

Self Awareness

Successful people with learning disabilities understand their learning disabilities, are aware of the impact of their disabilities, including academic problems like reading and writing, academicrelated problems such as attentional or organizational difficulties and non-academic difficulties such as motor deficits, social skills, or emotional/behaviour problems. They are open and specific about their difficulties and understand how they affect their lives and are not afraid to use strategies and coping skills. They are able to see their LD as only one aspect of themselves. They recognize their talents along with accepting their limitations. In addition they are also able to find jobs that provide the best 'fit' or 'match' with their abilities.

Presence and Use of Effective Support Systems

Guidance, support and encouragement come from family members, friends, mentors, teachers, therapists and co-workers. As successful individuals move into adulthood, they attempt to reduce their dependence on others. However, they take the initiative and seek the support of others rather than wait for someone to come to their aid. They are willing to accept help when it is offered. In many instances, they are able to switch roles with people who had provided them with support in the past, finding themselves assisting and encouraging those who once helped them.

Emotional Coping Strategies

The daily struggle of living with learning disabilities and coping with its symptoms often result in individuals experiencing stress in their lives. In some cases, the stress can be so significant that it can lead to psychological difficulties such as anxiety and depression. However, successful individuals appear to have developed effective means of reducing and coping with stress, frustration, and the emotional aspects of their learning disabilities. Researchers have identified three components of successful emotional coping:

1. Awareness of the situations that trigger stress;
2. Recognition of developing stress;
3. Availability/access to and use of coping strategies.

These coping strategies can include:

- seeking counseling,
- asking others to do unmanageable tasks on the job,
- finding a mentor
- changing activities periodically so stress does not build up,
- expressing feelings,
- asserting oneself,
- utilizing peer support and encouragement,
- learning to ask for help,
- planning ahead for difficult transition,
- keeping away from negative or critical people,
- working out differences with friends, family and/or co-workers,
- using meditation/yoga,
- doing physical activities or exercises.

Pro-Activity

Successful adults with learning disabilities are generally actively engaged in the world around them. They believe that they have the power to control their own destiny and affect the outcome of their lives. They often step into leadership roles at work, in the community, and in social and family settings. They demonstrate creative self advocacy and initiative and have a willingness to consult with others while making decisions. When acting upon these decisions they also assume responsibility for their actions and resulting outcomes. They generally take responsibility for the outcome and do not blame others when things don't work out.

Goal Setting

Successful individuals set goals that are specific, realistic and attainable yet flexible so that they can be changed to adjust to specific circumstances and include a strategy to reach their goals. They have an understanding of the step by step process for obtaining their goals.

Perseverance

Many persons with learning disabilities show great perseverance and keep pursuing their chosen path despite difficulties and may be heard saying 'I am not a quitter' or 'I never give up'. However, successful individuals demonstrate an additional important ability - knowing when to quit. They may change the way they go about achieving their goal, thereby improving their chances of success. Often they try several strategies until they find one that works. Successful persons with learning disabilities appear to learn from their hardships and mistakes which they found to be necessary for growth.

How Can A Child Develop Success Attributes?

Fostering these six success attributes is one of the ways that parents can help their children with learning disabilities grow up to be more successful throughout their lives. These attitudes, behaviours and characteristics require exercise, practice and review just like any other skill children learn. At different life stages, new developmentally appropriate challenges may require parents to recycle and revisit with their children the success attributes they had worked on earlier.

To date no research tells us exactly how to teach these attributes. However, research does suggest a number of key components and areas that need to be considered in fostering success attributes at a young age.

Unfortunately, we concentrate our efforts primarily on the academic/educational areas, paying little attention to the development of these attributes in promoting positive life outcomes in persons with learning disabilities. **If** we remind ourselves that research has shown that learning disabilities persist into adulthood, and that children with learning disabilities must function in settings beyond school, then it is reasonable to direct greater efforts toward fostering the development of these success attributes, at least to the same degree that we strive to improve academic skills. Although the extent to which these attributes can be taught to, or learned by students with learning disabilities, is not completely clear, we do know that they are critical to attaining life success.

To obtain a free copy of '*Life Success for Children with Learning Disabilities: A Parent Guide*' please visit the Frostig Centre website at <http://www.ldsuecess.org/> The guide includes checklists and suggested activities to foster successful attributes **in** children with learning disabilities. The specific approach to developing these attributes is dependent upon the age, abilities, experience, interests and living environment of a given child.

Also available is a guide for teachers designed to help teachers of students with LD understand the six success attributes, provides seven guiding principles for fostering the success attributes in students and offers checklists to help determine the presence or absence of the success attributes in students. Activities and resources to assist in developing success attributes are also offered.

Adapted with permission from the Frostig Centre www.frostig.org in California, a non-profit organization that specializes in working with children who have learning disabilities in the area of research, teacher training, direct instructional services.



**LEARNING DISABILITIES
& SOCIAL and EMOTIONAL
HEALTH**

**Dr. Bill Morrison
and Patti Kirby**

Learning Disabilities
&
Mental Health

Health and Education Research Group
University of New Brunswick
Dr. Bill Norrisnn
Patti Kirby
Michelle Bourgoin

session Overview

- Mental Health... Mental Health concerns
- Emotional-Behavioural Disorders: Key Considerations
- Case Study #1: A Parent's Perspective
- Case Study #2: A Practitioner's Perspective
- Implications for Intervention and Support
- Mental Fitness

Mental Health is...

- Your sanity ...are you stable...how well you are doing in your thoughts (16)
- Whether you are sick inside...not just your body ...how you feel in your mind (12)

Mental Health is...

- A state of emotional and psychological well-being in which an individual is able to use his or her cognitive and emotional capabilities, function in society and meet the ordinary demands of everyday life.

Mental Health Concerns ...

What do mental health concerns look like?

- You can tell by their face...you can tell also how they act (12)
- At school. ... they (other youth) can't concentrate, stressed out, ...not always connected with others ...may lack motivation (16)

Mental Health Concerns ...

- A *mental disorder* is conceptualized as a clinically significant behavioral or psychological syndrome or pattern that occurs in an individual that is associated with distress or impairment in one or more important areas of functioning.

Learning Disorders (DSM IV)

Associated Features ...

- Low self esteem
- School drop out
- Difficulties in social adjustment (work/school)

(10-25%)

- Conduct Disorder
- Oppositional Defiant Disorder
- Attention-Deficit / Hyperactivity Disorder
- Major Depressive Disorder

Emotional Behavioral Disorders

Externalizing features represent extroverted behaviours including aggression, overactivity, impulse control problems and opposition. (e.g. ADHD, ODD, Conduct)

Internalizing features represent problems of an introverted nature, i.e., problems with self that include worries, fears, somatic complaints, and social withdrawal. (e.g. Anxiety, Depression)

Emotional/Behavioural Conditions ...

- **Often persist over time..** Many definitions of emotional/behavioural disturbance stipulate that an individual's condition be present over a long period of time (chronicity) and to a marked degree (severity, frequency) .
- **Impact functioning and adaptation** The goal of such stipulation is to exclude temporary or moderate behaviour problems that *may* be reactions to situational stress Of normal developmental difficulties

Emotional/Behavioural Condition

May intensify ...

- During periods of transition
- When significant environmental stress is experienced
- When minimal interpersonal support is perceived or experienced
- When learning accommodations are not provided

Emotional / Behavioural Conditions...

- May **co-exist** with each other and be interrelated.
- Individuals with more than one **co-existing disorder** are more likely to have longer lasting and more severe problems than those with only one diagnosed disorder.

A Parent's Perspective

- Comorbidity
- Challenges
- Lessons Learned

A Practitioner's Perspective

- Comorbidity
- Challenges
- Lessons Learned

Implications for Intervention/Support

- **Early identification and intervention contribute to increased opportunity for successful adaptation, personal and social growth.**
- **Accommodations should address learning needs and areas of emotional and behavioral vulnerability.**
- **Advanced planning and preparation should be undertaken prior to changes or anticipated transitions in daily routines or relationships.**

Implications for Intervention/Support

- **When possible, reduce situational stress.**
- **Problem-solving skill development should be encouraged and be applied to address areas of concern. Collaboration with others, supportive guidance or mentorship may be beneficial in this regard.**

Implications for Intervention / Support

- Recognize the misconception and misuses of labels

A common misconception is that a classification of mental disorder classifies people when actually what are being classified are the disorders that people have

- Key Helper attitude that should be evident include: a genuine interest and unconditional acceptance

Emotional / Behavioural Conditions...

- May **co-exist** with each other and be interrelated.
- Individuals with more than one **co-existing disorder** are more likely to have longer lasting and more severe problems than those with only one diagnosed disorder.

Implications for Intervention/Support

- **Case plans should include small-step changes, ensure sufficient support and be adapted as needed.**
- **Case plans should include recommendations for implementation of healthy eating and activity routines.**
- **Explore areas of strength, interest and preference. Provide opportunity for expression of these in case plan, school and Work activities.**

Implications for Intervention/Support

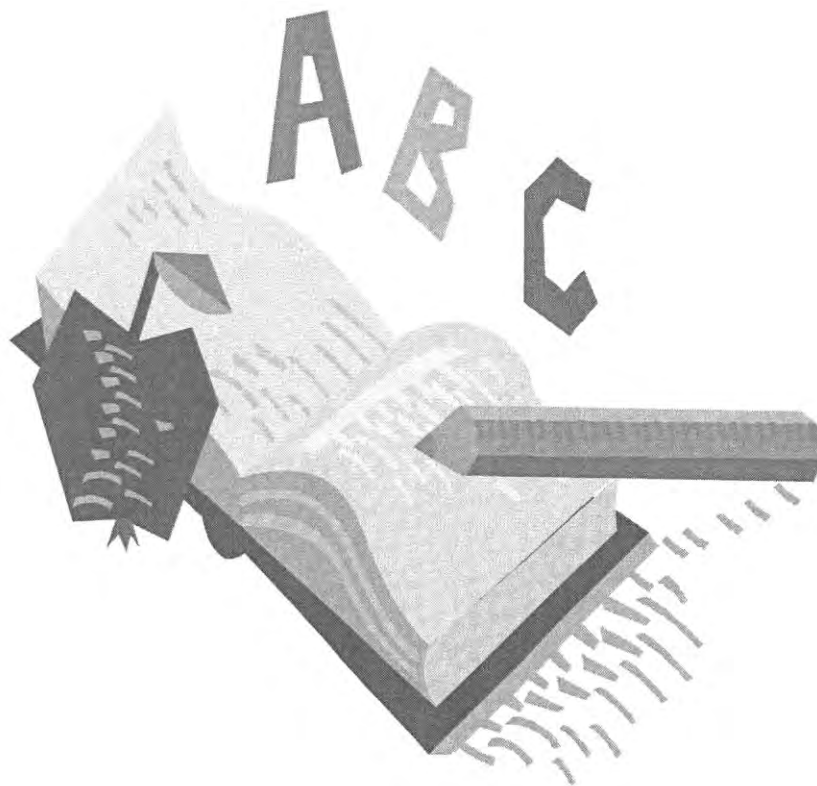
- **Small steps successes should be recognized and celebrated.**
- **Be prepared to regroup and re-plan. (Grace and Hope).**

Mental Fitness

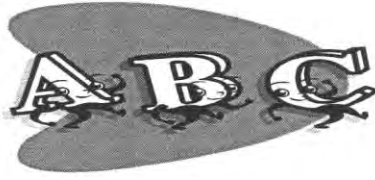
- The absence of a recognized mental disorder is not necessarily an indication of mental health ...
- **Mental Fitness** *refers to an individual's capacity to be **self-determined**, that is, his/her potential to reflect upon, formulate, and act on personal decisions that contribute to emotional and physical growth.*
- Mental fitness is fostered in environments and relationships that address important psychological needs.

Mental Fitness Needs

- **Relatedness** refers to our need for affiliation and closeness with family, peers and other significant individuals, fulfillment of this need is met through interaction with people, our memberships on groups and the support and affirmation we receive from others
- **Competency** refers to our need for understanding and using our personal gifts and strengths. Fulfillment of this provides individuals with a sense of personal achievement and accomplishment, and is met when our strengths and potential are recognized by self and others in daily activities and experiences.
- **Autonomy** refers to our need *for* personal freedom to make choices or decisions that affect our personal life direction and activities. When autonomy needs are met in conjunction with other need areas, freedom and choice are expressed in ways in which respect is demonstrated for self and others.



SECTION 4: READING 1-
DECODING and FLUENCY



DECODING AND FLUENCY

Decoding is the process of interpreting a written word, or 'cracking the code'. A person who can decode acquires fluency when reading no longer requires a conscious, deliberate effort and becomes automatic, consisting of word recognition rather than sounding out and combining syllables. If one has an LD in oral language, decoding, or comprehension, it can result in a breakdown in the reading process.

Most students with learning disabilities have problems with reading--- an estimated 80%. Often this is related to a lack of phonemic awareness. The student who cannot identify sounds in various positions in words or manipulate sounds in words may be at risk of reading difficulties. (Hutchinson 2002). Phonemic interventions must be a component of teaching to read as it has been shown to be a necessary and effective way to help students with learning disabilities.

Phonemic awareness precedes learning to read print. One needs to be able to hear speech sounds in language and tell them apart, isolate sounds, and break words into separate sounds. In order to build decoding skills, one needs to be able to match sounds to letters of the alphabet or letter combinations and blend sounds to make words.

Without learning some basic phonological skills, a person will find it very hard to become an independent, self-correcting reader (or even a good speller). An ability to read influences many facets of life: how one feels about self and others, success potential at school and work, and even social behaviour.

Fluency is an ability to read connected text with accuracy, speed, and *prosody* (appropriate rhythm, tone, and phrasing). "In addition to chunking letters together into sight words, efficient, automatic readers chunk words together into phrases to increase reading speed" (Spell Read White Paper, 15). Often people speak more fluently than they read. Fluency can be improved with quality instructional feedback from oral text readings.

Interventions to address LDs in the area of reading require programs to address a spectrum of issues. Students may struggle with one or more reading issues such as: phonemic awareness, fluency, vocabulary, and/or comprehension. Problems are so varied and individualized that no one program or approach can be fully effective in treating the needs of all students.

Educators are inundated with *commercial reading programs*. Selecting the right reading program can be an intimidating chore. After all, reading is already a complex task dependent on so many things, such as student diversity, ability, and knowledge. An effective reading program should be driven by reading research and not ideology. The Institute will emphasize direct, systematic, intensive, and sustained reading instruction.

The American National Research Council-2002 states that core reading instruction should integrate features that identify scientifically-based reading research such as phonetic awareness, phonics, fluency, vocabulary and comprehension.

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www.nifl.gov National Institute for Literacy.

Section IV Readings- Reading 1- (Decoding & Fluency)

Learning to Succeed: The Importance of Reading and Spelling (Faulkner)

Using Assessments- (National Institute for Literacy). Printed 06/27/07 from:
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Assessment Strategies & Reading Profiles-Oral Reading: Print Skills (Alphabetics)-Rate & Fluency. (National Institute for Literacy). Printed 06/27 /07 from:
www.nifl.gov/readingprofiles/MCOraiReadingRate.htm

Kay MacPhee's Supplementary Workshop Readings:

Florida Center for Reading Research- SpellRead P.A.T.

SpellRead P.A.T. -Description of Program Materials

SpellRead P.A.T. Summary of Research Evidence

Spell Read White Paper

Learning to succeed: the importance of reading and spelling

KEVIN IS 17 YEARS OLD, lives in a typical Canadian city, has all above average IQ. of 120, and is failing grade 1, Kevin cannot read or spell. This problem is not new to Kevin or his teachers. He had received special reading and spelling services in his school up to grade six but without success. Will Kevin ever learn to read?

Seventy percent of all children entering our schools become successful readers and spellers because they can naturally acquire the necessary phonological skills; Kevin belongs to the remaining 30 percent. Kevin's condition was silent as a preschooler, tolerated in grade one, accepted with concern in grade two, disabling and distressing in grade three, and, finally, became a monster in grade four.

This monster cannot go away on its own and threatens Kevin's performance in almost all future academic endeavours. Kevin's mother complains, ..He gets 100 on spelling tests but he can't spell those same words when he writes anything after the test. He can't copy homework from the board. His homework notebook is a mess; we can't read it. Kevin thinks he's stupid. Answers on his tests are short, immature and don't reflect what he knows. You can't read his writing. He can't learn his times tables. He has a long time learning to tell time and learning the months of the year. Kevin hates to read. I'm so frustrated. I don't know how to help him now. He is angry and his self esteem is so low.

It is well established that phonological abilities begin to show in our children as Preschoolers

Researchers now recognize that the absence of the natural acquisition of the phonological skills in our children, believed to be genetically controlled, (Kevin's father suffers from the same disorder), ultimately leads to a reading disorder. We now know why children like Kevin must be able to:

1. keep track of the number of sounds in a word - he reads basket for breakfast;
2. keep track of the order of sounds in a word - he reads felt for left;
3. identify the sounds in a word - he reads loud for could.

Without these three basic phonological abilities, Kevin cannot make judgment~ about sounds or manipulate sounds within any word.

Therefore, it is impossible for Kevin to become an independent, self-correcting, reader or speller. (Dyslexia, a well-known reading disorder, is characterized by the lack of two of the above phonological skills.)

It is well established that phonological abilities begin to show in our children as preschoolers and are predictors of later success in reading and spelling. For example, phonological abilities which should be apparent by age three or four are the abilities to rhyme, to alliterate, judge whether words like sun and sand start with the same sound), and to tap out the number of syllables in a

word (i.e. wig, - warn == wig + warn). Without the development of such basic phonological skills, these children are unprepared to learn the tasks of reading and spelling and, like Kevin, they are in trouble.

The ability to read is not simply the ability to read a book or message. The ability to read actually influences every facet of our lives - how we feel about ourselves and perceive others, our future academic successes, and our potential for employment. The inability to read creates low self-esteem and often leads to dropping out of school and antisocial behavior. Also, stress in parents escalates as a sense of hopelessness surrounding their child's failure to read envelops them, week by week, year by year.

However, with proper intervention, these children (and their families) can avoid trouble. Armed with recent research which clearly identifies the specific steps in phonological development, and our ability to detect problems early, intervention is both available and highly effective. Our children who express inadequate phonological development don't have to go to school unprepared. And the good news for Kevin is that reading and spelling disorders are effectively remediable at any age.

Using Assessments

Assessments in Adult Education Programs

Although the specifics vary from program to program, most of us are familiar with the general procedures for enrolling adult learners: we describe the kinds of classes our programs offer, we find out about a learner's goals, we collect demographic information, and we place the learner in an appropriate class or tutoring match.

And no matter when it might occur (during the intake itself or once the learner has been in the program for several days), at some point, that learner will take a test, probably a standardized test of silent reading comprehension.

What Kinds of Tests Are Used?

Among the most common tests used in adult education programs are the *Test of Adult Basic Education (TABE)*, the *Adult Basic Learning Examination (ABLE)*, and the *Comprehensive Adult Student Assessment System (CASAS)*.

The table below shows the results of an informal survey we conducted at the beginning of 2001. We asked State Directors of Adult Education across the country to let us know what kinds of tests were being used in their programs.

44 states responded to the survey. We list the most common tests they named in the table below

Name of Test	Number of States In Which It is Used
Adult Basic learning Examination (ABLE)	12
Adult Measure of Essential Skills (AMES)	10
Comprehensive Student Assessment System (CASAS)	21
Siosson Oral Reading Test (SORT)	7
Test of Adult Basic Education (TABE)	35
Wide Range Achievement Test (WRAT)	5
Woodcock-Johnson Assessments	6

Some Test Concepts

Standardized tests are those that are administered and scored according to set procedures. There is often a script for examiners to follow when administering the test. Tests are called "standardized" because there are definite standards for their administration. This minimizes the effect that differences among examiners may have on the learner's test performance .

- **Types of Standardized Tests¹**

- **Norm-Referenced Tests**

Developers of norm-referenced tests administer their assessment to a large number of people (the reference or norming group) in order to assess the test's reliability and to find the range of performance on a particular ability. Averages of the reference group's scores give a base to which examiners can compare results of their examinees. If a learner scores below the average for the norming group, then she/he is said to be below average in the ability being tested; if the learner scores above the average for the reference group, he/she has greater than average skill on the ability being tested. With a norm-referenced test, a learner's ability is compared to others. The *Test of Adult Basic Education (TABE)* and the *Adult Basic Learning Examination (ABLE)* are examples of widely used norm-referenced tests.

- **Criterion-Referenced Tests**

Developers of criterion-referenced tests set absolute levels of performance (criteria) of a body of knowledge or particular ability to indicate a learner's progress. Learners' are not compared to any norming group; a single grade equivalent or percentage correct needed to indicate mastery is established for all. The curriculum follows the requirements of the test.

- **Competency-Based Education and Testing**

In competency-based education, the curriculum is set out as series of competencies (criteria) to accomplish a particular educational objective. A learner's progress on a competency is assessed with a criterion-referenced test. For example, word attack instruction may be organized into units composed of specific letter and syllable combinations to be mastered. Tests are administered to assess a learner's competency of the material taught. The *Comprehensive Adult Student Assessment System (CASAS)* is an example of a competency-based curriculum where many separate skills of reading progress (for example) are identified and taught and a learner's skill level evaluated.

- **Curriculum-Based Assessments**

A curriculum-based assessment tests what is taught in a particular curriculum. In criterion-referenced tests, curriculum is developed to "teach to the test"; in curriculum-based assessment, the curriculum comes first and assessments, often teacher constructed, test whether students have learned the material.

Alternative Assessments

Interviews that give information about a learner's literacy activities at home or work, self evaluations of ability, and teacher reports all give information about a learner's progress. (For more information, please visit the "Using a Questionnaire" section on this website, which you can access by clicking on its menu item on the sidebar.)

Portfolio development and evaluation is another common assessment tool. Learner's work is collected and periodically assessed by the learner, class members, and instructors. Informal assessments are made continuously as students participate in class; listening to a learner read tells a lot about progress in word identification, rate, and fluency.

Ongoing Assessments of Instruction

Teachers assess continuously through class responses of learners and informal tests. Not only is it necessary to find out what needs to be taught, it is equally important to make certain it has been learned well enough. Teachers often make the mistake of being satisfied that learners have absorbed some instruction after *only* testing shortly after instruction has been given. Assessment of skills that have been taught need to be continuous and spiralled, returning to previous lessons to make sure learners have integrated old learning into new.

For example, silent *e* has been taught in one-syllable words and now learners are able to read a list of those words. Can they apply the understanding to those words in text? When you teach compound words, do they recognize silent *e words*? **It is often necessary to refresh a formerly-learned concept until it is thoroughly mastered - and the need to circle back can be indicated with ongoing assessments of the concepts and skills that have been presented.**

Print Skills (Alphabetic) Rate & Fluency

Oral reading can also be called "word recognition in context" and refers to the ability to read connected text at accuracy, speed, and appropriate phrasing.

For most readers, accuracy, speed, and phrasing in oral reading are strongly related to reading comprehension. In fact speaking, as *oral* reading skill increases, so too does reading comprehension. One reason for this might be that when recognition becomes **automatic** (that is, oral reading rate goes up), a reader can dedicate more cognitive resources to understanding what he or she is reading. Conversely, when a reader has to spend time decoding words (that is, oral reading goes down), that reader is devoting cognitive resources to word analysis instead of comprehension.

Adult beginning readers' fluency, as measured by their reading rate (or speed), is frequently poor^{RR} and, consequently comprehension may suffer.

The aim of reading instruction is to increase the level of silent reading comprehension. In order to be able to release all meaning of sentences and paragraphs, learners have to be fluent readers. Hesitations caused by a need to decode interrupt the flow of the author's intended meaning. Fluent reading requires that word recognition ability be automatic at particular reading level being assessed. Researchers have found high correlations between oral reading fluency and reading comprehension.

Oral Reading Rate

Why do we need to measure oral reading rate?

It is a measure of word recognition automaticity. It is the first step in an informal assessment of Fluency.

How do we measure reading rate?

Following is the process and formula that the ARCS^{RR} researchers used.

Reading rate is most often given as the number of words read correctly in one minute (wpm). It is found by a straightforward formula that can be applied to any GE level passage. Follow these steps:

1. Select a short, easy passage that is one or two GEs below the learner's present oral reading GE level. If you have a graded oral reading test, choose a passage one or two GEs below his/her Word Recognition GE. The purpose is how easily someone can read orally when she/he doesn't have to pause to decode unfamiliar words.
2. Count the words in the passage.

- 3 Have the learner read the passage once through orally so that both of you can see that there are no troublesome
4. Tell the learner to read the passage once more. but that now you are going to time the reading. The learner will may not pay any attention to punctuation, That's all right.
5. Record the time in seconds and compute the following:

words per minute= (number of words in passage » reading time (in seconds)) x 60

"...(I)t is important for teachers to assess adult readers fluency, Also. because oral reading. not silent reading, is one of important methods used to teach fluency. completion of assessment studies of ABE students' oral reading fluency (ace rate 1 should be a priority"^{RR} BUT, speed and word recognition accuracy are only part of fluent reading.

Fluency^{RR}

Attention to punctuation helps the reader to chunk words and phrases. Getting the phrasing right brings a rhythm to the understanding the rhythm helps the reader understand the author's intended meaning. Appropriate intonation is an imp of fluent reading and an indication that the reader is paying attention to meaning.

'Successful decoding requires the reader to translate printed words into their spoken equivalents, whereas successful requires the reader to connect the flow of printed text to the flow of spoken language The fluent translation of the flow the flow of spoken language enables the reader to attend to the meaning rather than to the features of the printed text. ***vital to comprehension, which is the main goal of reading.***"^{RR}

Assessing fluency:

Listening to your learners read will tell you a lot about whether or not they are comprehending a particular passage. I how bright a learner is. if she/he is not reading easily and with expression. there is not enough attention being focused When assessing fluency, select a passage at the learner's **independent reading level.**

"Pausing Scale"^{RR}

"The National Assessment of Educational Progress fluency study .. calculated speed and accuracy but performed most the basis of a four-point pausing scale. This scale provided a description of four levels of pausing efficiency with one pc to readings that were primarily word by word with no attention to the author's meaning to four points for readings that a comprehension and that paused only at the boundaries of meaningful phrases and clauses."

Developing fluency:

Developing fluency is important at any reading level: readers at any level may benefit substantially from fluency instruction

Practicing fluent oral reading at a mastered level of decoding and word meaning will aid an understanding of the close link between speech and print. Readers grow to understand that there are markers in text that help bridge some of the differences between written and spoken language. Ask readers to read aloud as if they were giving a talk or were in a play reading. audience highlights the communication conventions of spoken language.

Repeated reading. a process where the teacher models oral reading and the learner then reads the passage repeatedly measure of fluency is reached. will only be effective if there is guidance and feedback during the successive readings. reading has been shown to be effective in increasing fluency and comprehension for both adults and children. ^{RR}

Other names for "repeated guided reading oral reading from the NRP^{RR} are:

- Paired reading
- Shared reading
- Collaborative oral reading
- Assisted oral reading

Florida Center for Reading Research

Spell Read P.A.T.

What is Spell Read P.A.T.?

Spell Read P.A. T. (Phonological Auditory Training) is a reading intervention that offers instruction in phonemic awareness, phonemic decoding, spelling, reading fluency, reading comprehension, and writing. So that students' comprehension is not sacrificed by reading that is labored and inefficient, phonological automaticity is one of the program's fundamental goals and integrated into all activities. *Spell Read P.A. T.* is designed for students aged 5 to adult and targets a wide range of readers, writers and spellers who struggle with the sound-symbol system or encounter difficulty with fluency and comprehension. Instruction occurs daily for 60-90 minutes in small groups of 3-5 students and may be taught by general or special education teachers, reading specialists, psychologists, speech-language pathologists or paraprofessionals. The entire program consists of 140 highly structured lessons divided into 3 specific phases. Each lesson is composed of 35-40 minutes of phonemic and phonetic activities, (designed to develop mastery of phonemic awareness and phonics skills) followed by 15-20 minutes of share-reading, 7 minutes of free-writing, and 1-3 minutes of wrap-up. Three comprehensive sets of teacher's manuals include a scope and sequence, individual lesson objectives and clear and detailed explanations to easily guide teachers through each lesson. Instructional cards and activity books accompany each phase.

Phase A of the *Spell Read P.A. T.* intervention contains 60 lessons that introduce the 44 sounds of our language. Early lessons begin with sounds and word types that are easier to hear and manipulate, such as CV, VC words, and progress to more difficult sounds, sound combinations and word types. All students begin with Phase A, regardless of their grade or entry level; however their pacing through the program will vary considerably. A characteristic feature of the *Spell Read P.A. T.* program is the use of pseudo-words or non-words and syllables as the primary vehicle for auditory and visual phonemic activities. This is done to ensure that students are relying on the sound-symbol system they are learning rather than their visual memory of words. Phonemic activities within the program include 1) building: where single sounds are used to build a syllable or combination of different syllables; 2) blending: combining individual sounds to form a syllable or word; 3) analyzing, which involves breaking a syllable into its individual sounds; and, 4) listening: indicating whether an individual sound is in the initial, medial or final position of a spoken syllable, or, identifying a specific sound in one of those positions.

Phase B of *Spell Read P.A. T.* introduces secondary spellings or vowel variants, consonant blends, open vowels and syllabication to the two syllable level. Phase C involves the teaching of the most common clusters, the -ed and -ing verb forms, and continued development of fluency with polysyllabic words. Activities for Phase Band C are similar in structure to Phase A.

The phonemic awareness and phonics activities in each lesson are followed by share-reading and free-writing. Books are leveled according to the Fry and 5pache readability formulas, and as the levels increase, the number of polysyllabic words is also taken into consideration. To conclude the lesson, students write in their journal about what has just been read.

How is Spell Read P.A.T. aligned with Reading First?

The report of the National Reading Panel (2000) revealed five essential components of an effective reading program: phonemic awareness, phonics, fluency, vocabulary and comprehension. The *Spell Read P.A. T.* program incorporates these five critical elements with a particular emphasis on the first three. A basic underlying assumption of the *Spell Read P.A. T.* intervention is that fluency in phonological skills will free a student's mental capacity permitting an unhindered focus on comprehension and vocabulary acquisition.

Phonemic awareness activities are prevalent in the *Spell Read P.A. T.* program. Listening exercises involve phoneme isolation of initial, medial, and final sounds, segmenting a syllable or word into its individual sounds, blending a word that the teacher has segmented, and phoneme manipulation. Activities in phonemic awareness and phonics occur side-by-side to facilitate the acquisition of the alphabetic principle. The advanced phonics applications with secondary vowels, consonant clusters and polysyllabic words found in Phase Band C are a crucial part of reading and spelling instruction for older struggling readers. Activity books are aligned with instruction so that the writing of letter-sounds, syllables and words emphasizes the speech to print connection. Initially, phonemic awareness and phonics tasks concentrate on developing accuracy and then they build speed. A highlight of this program is the creative and varied array of phonemic awareness and phonics exercises that enhance student motivation while simultaneously working and reworking a skill to the point of automaticity.

Fluency is another important goal of the program and is addressed uniquely in terms of automaticity of response in all phonemic awareness and phonics activities. Speed-reading is one activity that occurs daily and consists of the student quickly reading the word or syllable cards. Another aspect of fluency work involves placing students in the correct book level so that reading flows effortlessly.

During the share-reading and free-writing portion, students are able to synthesize and apply the skills they have been learning to the stories they are reading. Each student and the instructor takes turns reading orally for a short time while the others follow along (shadow) in their own books. Literal and inferential questioning is the primary comprehension strategy of this program. Before reading begins, teachers pose questions to stimulate prior knowledge, recall events of the previous day's reading, or to prompt students to make a prediction. While students read aloud, the teacher will prompt the first sound and then say the word if a student is struggling with an unfamiliar word. In order to address potentially difficult new vocabulary during reading, teachers may read a sentence from the story and ask the students what they think is meant. After reading, by means of questioning and written response, students are asked to sequence, summarize, give a title to the chapter, or reflect on events or situations that arise in the story. Through students' writing, teachers check for general understanding of ideas or vocabulary, and return a written response to each student. The following day, vocabulary understanding is addressed in the context of reading.

Successful delivery of the *Spell Read P.A. T.* program is a high priority for the Spell Read company; therefore, instructors of the intervention are trained by the company and must have strong phonological skills, and high school level reading, spelling and writing. In order to meet students' needs, homogenous groups are formed based on word identification, fluency and comprehension scores. Teachers are encouraged to use the daily lesson planner to note concerns, errors, and objectives that need to be addressed. Instructors receive 8 days of training, in-class coaching for the first week or two, and on-going support,

Research Support for Spell Read P. A.T.

The *Spell Read P. A.T.* program was developed by Kay McPhee in 1994 and grew from her evolving knowledge of and experience with the hearing impaired and students with learning disabilities,

A study at an elementary school in Newfoundland, Canada (Rashotte, MacPhee, & Torgesen, 2001) was conducted to determine the effectiveness of the *Spell Read P.A. T.* program delivered in small groups of 3-5 students, to poor readers from grades 1-6 during an 8-week period. The school population was socially and economically disadvantaged with 75% on social assistance and 55% coming from single parent homes with low levels of adult literacy.

The sample size included 116 students in grades 1-6 selected because they were struggling with basic reading skills (roughly below the 20th percentile). Students fell in the average range of verbal ability as measured by the Vocabulary Subtest of the Stanford-Binet (Thorndike, Hagen, & Sattler, 1986). Students were randomly assigned to treatment Group 1 (n=58) or control Group 2 (n=58). Due to the limited amount of time remaining in the school year, the first part of the intervention lasted 8 weeks. Children in the treatment group received fifty minutes of daily instruction that was delivered in small groups of 3-5 students over an 8-week period, Children in the control group received their regular classroom instruction, Immediately after the 8- week intervention, an adaptation of a multiple baseline design allowed the control children to receive instruction with the *Spell Read P.A. T.* intervention and the intervention for the treatment children was stopped,

Posttest-1 results for treatment Group 1 at the end of the first 8-week (35 hour) intervention were impressive and indicate that the *Spell Read P.A. T.* program significantly impacted all grade levels, Grades were combined into 3 units: grades 1-2, grades 3-4, and grades 5-6, Effect sizes for phonetic decoding ranged from 1.67-2.20 for the 3 grade-level groups; effect sizes for the 3 phonological awareness measures ranged from .96 for grades 1-2, 1.35 for grades 3-4, and 1.56 for grades 5-6, Effect sizes for the comprehension measures were equally large showing an average of 1.48 in grades 1-2, .73 in grades 3-4, and .54 in grades 5-6, Word-level reading showed moderate effect sizes across all grades and stronger effects for word accuracy in text reading for grades 1-4. When Group-2 (the original control group) received 7 weeks of the intervention, they showed similar positive results at Posttest-2. It is important to note that growth was sustained from Post test-I to Posttest-2 for Group-I.

Outcomes for several clinical samples of children taught with the *Spell Read P.A. T.* program were reported as part of a discussion of intervention outcomes that included results from other intervention methods (Torgesen, Alexander, Alexander, & MacPhee, 2003). One of the questions explored in this paper was how much intervention is needed to bring reading skills into the average range for students who begin instruction at different levels of reading skill, In three different samples that began instruction with word level skills from the 10th to the 50th percentile, exposure to instruction with the Spell Read program produced powerful instructional effects ranging from one to two standard deviations depending on the specific reading skill being measured, Depending on the amount of instruction provided, most of the reading skills of the older students in these samples were in the average range following intervention,

For example, one of the samples began with word reading accuracy scores at approximately the 10th percentile. Sixty percent of these children qualified for free or reduced lunch, and 53% were receiving special education services. Forty five percent were Caucasian, and 55% were African American or other minorities. Their average age was 12 years. These children received an average of 100 hours of instruction in groups of 4-5 spread over a 5-month period. During the course of the intervention, these children improved from the 20th to the 75th percentile in phonemic decoding, from the 7th to the 40th percentile in text reading accuracy, and from the 7th to the 40th percentile in comprehension. They also improved from below the 1st percentile to the 9th percentile in reading fluency.

In conclusion, the content and design of the *Spell Read P.A.T.* program are aligned with current scientifically based reading research. One study involving random assignment to intervention and control groups showed that the *Spell Read P.A.T.* program, when implemented properly, can produce significant and substantial effects on reading skill for children ranging in age from grade one through grade six. Results from several clinical samples support the finding that the *Spell Read P.A.T.* program can provide instruction that is sufficiently powerful to normalize most of the reading skills of struggling readers older than 12 years of age. Currently, the *Spell Read* program is being studied as part of the largest randomized field trial of intervention methods ever conducted. For information about this field trial, see <http://www.haan4kids.oru/powcr4Kids/>.

Strengths & Weaknesses

Strengths of *Spell Read P.A.T.* :

- Multiple and varied phonemic awareness and phonics activities, often in an instructional game format, are a motivating and integral part of the program.
- The explicit, highly structured, step-by-step format, with frequent repetition and immediate feedback can be helpful for struggling readers.
- A priority of the program is the intense focus on fluency contributing to eventual mastery of skills.
- Review begins each phase to ensure a firm foundation of the previous level's skills.
- The teacher's manual is clear and easy to follow.
- The type of consistent questioning during Share Reading can be effective in guiding the students' focus to the gist of the story.
- Written responses to writing clarify whether or not students understand what they have read.
- Research studies for this program have demonstrated substantial gains across grade levels and among students with differing ability levels.

Weaknesses of *Spell Read P.A.T.*:

- None were noted.

Which Florida districts have schools that implement *Spell Read P.A.T.*?

Polk 863-534-0521

For More Information

www.spellread.com

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Lead Reviewer: Michelle Wahl, M.S.

Date Posted: December, 2003

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Please send comments about this report to Marcia L. Grek, Ph.D.: reports@fcrr.org

Description of Program Materials

It is important to recognize that the materials used in the delivery of the Spell Read P.A.T.® program represent only one part of a system that includes:

1. Spell Read P.A.T.® Program - This integrated program is based on specific skill mastery and consists of 140 sequential lessons divided into three phases of instruction. The instructor manuals and materials and student work books and materials that guide the phonemic and phonetic activities are described below. Each class also includes language-based reading and writing activities. The reading books are specifically selected from a sequential list of age-appropriate language-rich books also provided to instructors.

2. Instructor Training and Support - This includes the methodology, materials and process used to train instructors and provide ongoing support designed to ensure the success of every student.

3. Student Identification and Grouping - Specialized assessments are supplemented by standardized tests to benchmark and track each student's skills. We can also help to screen for students at risk of reading failure, and predict the pace and likely duration of instruction and group students. Students are grouped according to age, reading skills and expected duration of instruction.

4. Student Monitoring and Reporting - This involves key activities, tools and indicators (e.g., lesson plans, CVC speed reading & activity reports) that are used to track essential skill development as each student progresses through the program.

In terms of the Spell Read P.A.T.® program itself, Phase A begins with simple activities using the sounds which are easiest to master. It progresses through to the point where all ~sounds are used in a wide variety of activities and CV, VC and CVC combinations.

Phase A manuals and materials include:

• Instructor Manual	• Student Answer Key	• Consonant (C) Pack
• Instructors Kit (cards)	• Spelling Book	• CV / VC Study Packs
• Student Activity Book	• Vowel (V)Card Pack	• CVC Study Packs

Phase B introduces secondary vowels (e.g., /a_e/ is also spelled /ai/ and /ay/) and consonant blends (e.g., /fr/, /squ/), moving the students through to the two syllable level.

Phase B manuals and materials include:

• Instructor Manual	• Student Activity Book	• Secondary Vowel Pack
• Instructors Kit (cards)	• Student Answer Key	• Consonant Blend Pack
• Student Activity Book	• Spelling Book	

By the end of Phase C, the students have mastered the clusters (e.g., /tion/, /cious/) in complex activities using multi-syllabic words.

Phase C manuals and materials include:

• Instructor Manual	• Student Answer Key	• Instructor Vocabulary & Pronunciation Book
• Instructors Kit (cards)	• Spelling Book	
• Student Activity Book	• Student Vocabulary & Pronunciation Book	• Cluster Pack

Share-reading and free-writing are integral components of each phase and lesson of the Spell Read P.A.T. ® program. We provide a specific list of reading material that is -ranged in order of difficulty. Each class includes a writing activity that is used to monitor reading comprehension and foster the development of writing skills.

Summary of Research Evidence

Supporting the Effectiveness of Spell Read P.A. T.®

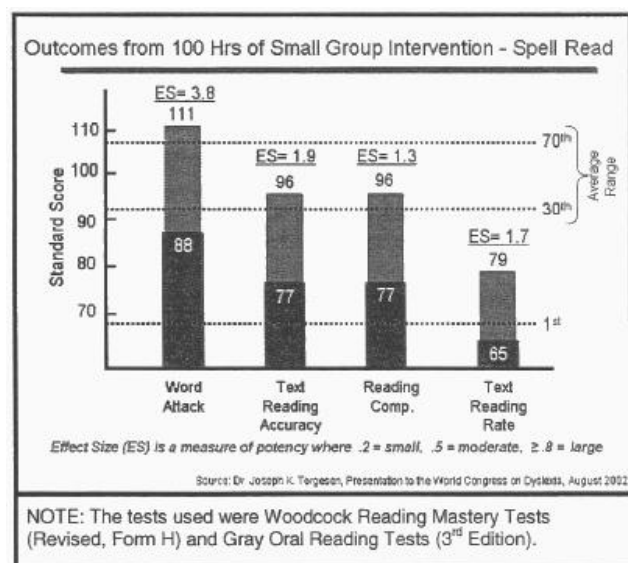
Overview: Spell Read P.A.T.® is an explicit, intensive and comprehensive reading intervention with evidence demonstrating powerful results, even with severely reading disabled students. The program integrates the essential elements of reading instruction: phonemic awareness (*sound processing*, phonics (*sound-letter relationships*)) and language-based reading and writing (*the use of language when reading and writing*). Many students who enrol in Spell Read P.A.T.® have been diagnosed with other learning disabilities in addition to their reading problems. The vast majority of students take 5 - 9 months to complete the intervention and include those aged 5 through adult.

Program Description: Each Spell Read Phonological Auditory Training (P.A.T.®) class weaves together essential elements of reading instruction into a mastery program that ensures student success from the first lesson. The program's 140 sequential lessons are divided into three phases, with Phase A beginning with the sounds that are easiest to hear and manipulate. All lessons are clearly defined in the instructor manuals and are taught in an integrated and explicit manner. The program is based on specific skill mastery, particularly in the processing of speech sounds. As a consequence, the students develop a "sound processing reflex" - meaning they are trained to automatically and effortlessly recognize and process the 44 sounds of the English language. Each class also includes language-rich reading and writing to ensure that the students also learn to use this sound processing reflex in combination with *their* language when reading and writing.

Progress Towards Understanding the Instructional Conditions Necessary for Remediating Reading Difficulties in Older Children - Torgesen, J. K., Rashotte, C. A., Alexander, A. W., Alexander, J., MacPhee, K. This article is included as a chapter in Preventing and Remediating Reading Disabilities: Bringing Science to Scale, edited by Dr. Barbara Footman (York Press, 2003)

This study examined the growth in reading skills of five groups of students. For the purposes of this summary we are going to focus on two of these groups which completed the Spell Read P.A.T.® intervention.

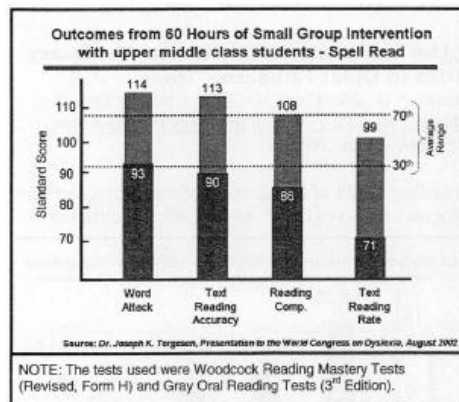
The slide on the right is taken from a presentation Dr. Joseph Torgesen made to the World Congress on Dyslexia in August 2002. It shows progress data from the first of these two sets of students consisting of 20 students enrolled in 6th or 7th grade and predominantly from working class families in suburban Baltimore. The mean age was 12 years (6th grade) and 54% were receiving special education services. The students received 100 hours of Spell Read P.A.T.®, consisting of 70 minute classes provided daily to groups of five students over approximately five months. The results of the treatment group are shown with pre-test scores (dark blue on bottom) and post-test scores (lighter blue on top).



Dr. Torgesen summarized the study results stating that *"these children, who began the intervention with word level skills around the 10th percentile, attained scores far phonemic decoding, text reading accuracy and comprehension that were solidly in the average range, while reading fluency remained an area of relative impairment. However, it should be noted that very substantial gains (at least one standard deviation) were made in all areas of reading skill, and that, with the exception of reading fluency, these children had essentially "closed the gap" in reading ability with their same age classmates. "*

The results of this set of low socioeconomic status Spell Read P.A.T.® students are compelling because they present evidence that older children who are severely reading disabled can experience significant gains in both their reading comprehension (*ability to understand what was read*) and fluency (*ability to read at a reasonable rate, smoothly and without errors*). In addition, students achieved these gains rapidly, as evidenced by the effect size scores (see definition on previous page) that ranged from 1.3 to 3.8.

A second set of students received the program after school in a clinic setting in suburban Washington (see the slide below). The 48 students were from upper middle class families, and many had previously completed training using other science-based reading interventions that are nationally recognized. The average age of this sample was 11 years (5th grade) at the time the intervention began.



This group of students took far less time to complete Spell Read P.A.T.® than the previously described group (60 hrs. versus a normal average of 120 hrs.), primarily because they entered the program with strong language skills. As a result, they rapidly bridged their newly acquired (and automatic) phonological skills with their previously developed high-level vocabulary and language skills. Students with weak vocabularies take longer to move their reading fluency into the average range. This is because, once they complete Spell Read P.A.T.®, they then use their newly acquired reading skills to help "close the gap" in their vocabulary and language skills.

Power4Kids Reading Initiative

Spell Read P.A.T.® is one of only four programs selected for inclusion in the prestigious Power4Kids clinical trial, a \$9.6 million project sponsored by the Haas, Hewlett, Kellogg and Rockefeller Foundations, the Heinz Endowment, the National Institutes of Health and the U.S. Department of Education. This randomized comparative controlled longitudinal clinical trial is the largest scientific evaluation of reading programs ever undertaken in the United States. It has involved about 800 3rd and 5th grade students in approximately 50 schools in and around Pittsburgh. In addition, the scientific advisory board guiding this landmark project includes many of North America's most respected reading researchers. The illustration on the next page provides some sense of the unprecedented team that was assembled to oversee this remarkable project. For more information, visit the Power4Kids website at www.power4kids.org

DEFINITIONS

Percentile:

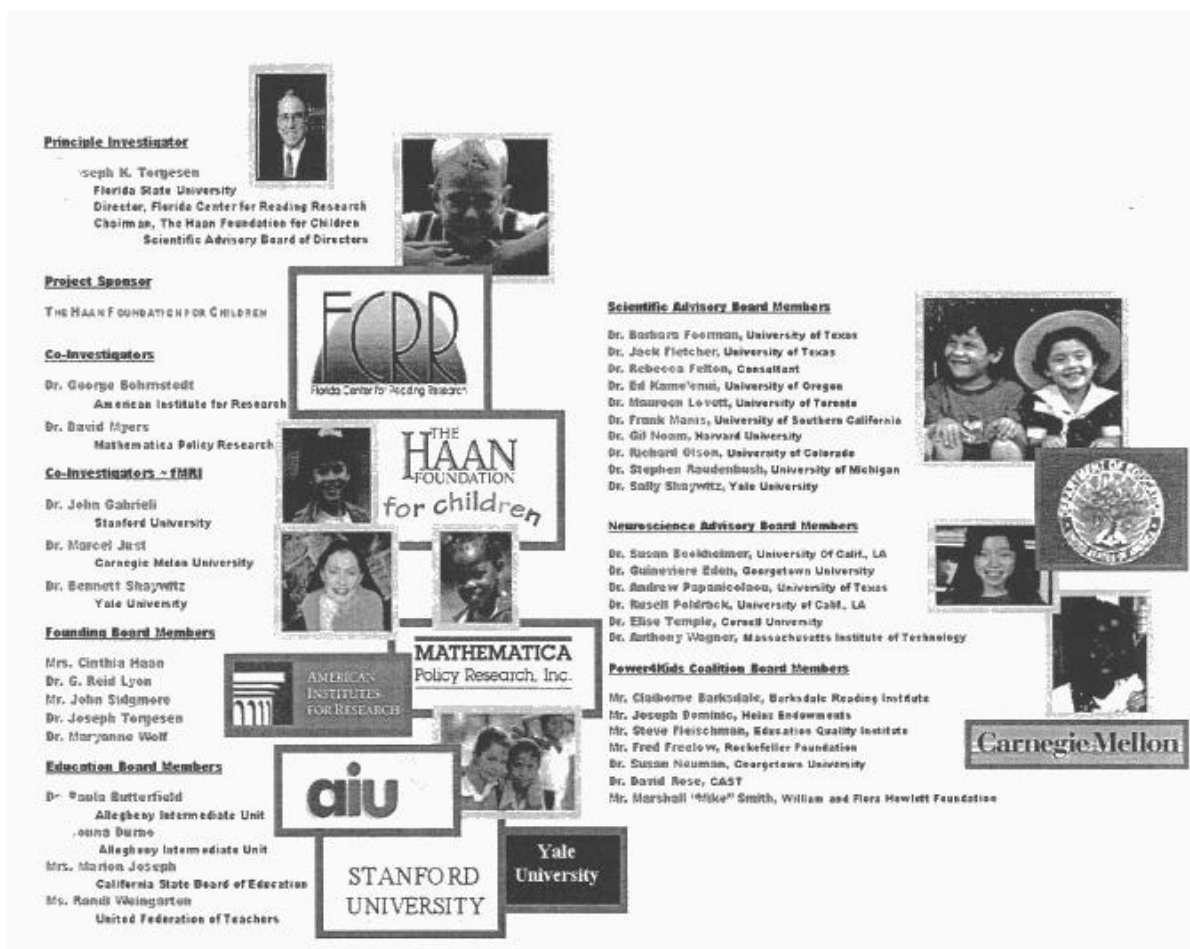
How a student ranks relative to a random sample of 100 same-age peers. If a student reads at the 10th percentile then he/she reads better than 9 and worse than 90 of those same-age peers.

Standard Score:

This measure is similar to percentile, ranking the student relative to his/her same-age peers. A standard score of 100 is equal to the 50th percentile. The "average" range is from a standard score of 92 - 108 (which is equal to the 30th - 70th percentiles).

Effect Size:

This measures potency, or the speed with which the student's scores improve from the beginning to the end of the intervention. According to researchers, an effect size (ES) of .2 is small, .5 is medium, and .8 or greater is large.



The Effectiveness of a Group Reading Instruction Program With Poor Readers in Multiple Grades - Rashotte, C A. MacPhee. K..Torgesen. J K. Learning Disability Quarterly, Spring 2001 (Volume 24. No. 2. Page 119)

This clinical study produced the first published data documenting the effectiveness of the Spell Read P,A.T.® program. The study was conducted from January to June of 1999 in an elementary school in St. John's, Newfoundland. It involved 117 students in 1st through 6th grades, The key findings were that Spell Read PAT.®:

- Made a Significant impact on the reading skills of deficient readers in grades I to 6,
- Improved reading skills were shown after only 34 hours of Spell Read P,AT.® instruction and the growth in reading skills was not grade specific,
- Was effective for both moderately and severely deficient readers and when delivered in groups of 3 to 5 students
- Enabled newly trained certified teachers and paraprofessionals to be equally effective.

In addition to the extent and breadth of gains, the pace of skill improvement was also quite rapid -ee Effect Size scores presented on the next page), even though students had completed less than one third of the Spell Read P.A. T.® program (34 hours).



Measure (Outcomes after only 34 hours of instruction)	Effect Size	(across grades 1-6)
	Average	Range
Woodcock Word Attack (<i>ability to read unfamiliar words</i>)	1.86	1.67 - 2.20
Woodcock Letter-Word (<i>ability to read real words</i>)	.54	.42 - .64
GORT-3 Word Accuracy (<i>ability to read a paragraph accurately</i>)	.75	.38 - 1.15
Woodcock Comprehension (<i>ability to comprehend when reading</i>)	.91	.43 - 1.44
GORT-3 Comprehension (<i>ability to comprehend when reading</i>)	.92	60 - 1.51

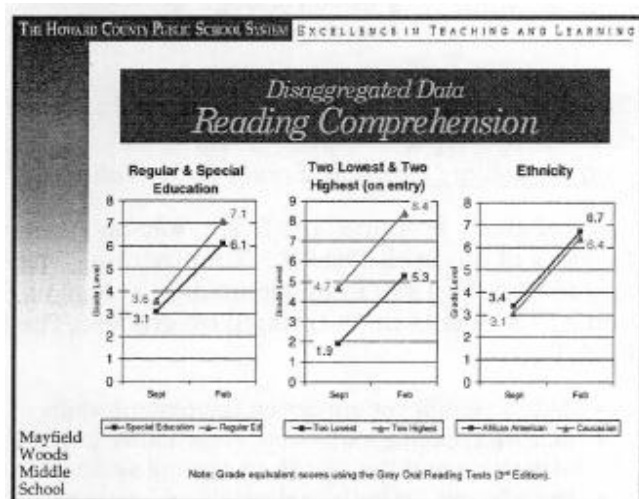
Note: Effect Size is a generally accepted measure of potency (the pace at which the student skills improve) where .2 = small, .5 = medium, ~ .8 = large.

Florida Center for Reading Research. Spell Read P.A.T.® Report: The Florida Center for Reading Research (FCRR) reviews reading curricula and materials, prepares brief reports based on the findings from the reviews and posts them on their website for use by teachers, administrators, and school district level personnel. Their goal is to assist school personnel in making informed decisions as they select instructional methods for reading. To read the report on Spell Read P.A.T.®, please visit <http://www.fcrr.org/FCRRReports/PDF/spellreadpat.pdf> The following is an excerpt from that report:

In conclusion, the content and design of the Spell Read P.A. T. program are aligned with current scientifically based reading research. One study involving random assignment to intervention and control groups showed that the Spell Read P.A. T. program, when implemented properly, can produce significant and substantial effects on reading skill for children ranging in age from grade one through grade six. Results from several clinical samples support the finding that the Spell Read program can provide instruction that is sufficiently powerful to normalize most of the reading skills of struggling readers older than 12 years of age.

Source: FCRR Report on Spell Read P.A.T.®, November 2003

The FCRR report refers to the work Spell Read P.A.T.® has been doing with struggling readers older than 12 years of age. The slide at the right presents the student data in terms of the grade level performance of the students, as presented by the school in which the study was conducted. The value of these data is the extent to which they illustrate that the pace of student progress is not dependent on factors other than the effectiveness of the instructional method being used by the teacher.



SpellRead White Paper

Preproduction DRAFT - March 28, 2007

SpellRead: Every Student Reading Efficiently *Table of Contents*

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Spell Read: Every Student Reading Efficiently

Summary

SpellRead is an intensive and highly specific one-year reading intervention that enables struggling readers to reliably develop phonological automaticity, together with reading fluency and comprehension. SpellRead is designed for students who have not been able to build robust connections between their oral and written language abilities through the core curriculum. Backed by independent research, SpellRead combines rigorous phonemic and phonetic activities with active reading and writing to develop automaticity, fluency, vocabulary and reading comprehension. SpellRead is aligned with the current reading research and selected as one of only four reading intervention programs to be included in the Power4Kids study (Torgesen et al., 2006; Wahl, 2003).

This paper explains SpellRead's distinctive features and research-based design. The key elements are summarized in the following statements taken from the paper:

- SpellRead is designed to effectively bridge the oral language - written language divide. (Page 6)
- SpellRead builds a robust connection between phonology, oral language and reading in a way that makes sense to students. This means beginning with sounds, not with letters. (Page 12)
- [SpellRead] students master the sounds in order from easiest to most difficult through activities that work and re-work phonological skills to the point of automaticity. This skill work is done in a variety of engaging ways that avoid the perception of repetition and maintain a high degree of student time-on-task. (Page 12)
- Without phonological automaticity, the word-identification process remains inefficient and students develop other idiosyncratic compensatory strategies for remembering or decoding words. (Page 13)
- When automaticity is accomplished, students are freed to focus their energy and attention on vocabulary building, comprehension, and retention rather than having it consumed in the process of lifting words from the page. (Page 14)
- Phonological automaticity and reading fluency are necessary but not sufficient conditions for reading comprehension because decoding printed words *at the word level* and making meaning of them *at the language level* involve two different sets of skills (Page 18)

- SpellRead's Active Reading sessions are designed to utilize students' current oral language abilities in the process of making meaning of the high-interest texts that they read and discuss together. Through Active Reading students develop appreciation for text through extensive and ongoing experiences in reading, hearing, and discussing books at their reading level, with explicit instruction about concepts and vocabulary. (Page 19)
- As they work through the Writing Connections portion of each SpellRead lesson, students' spelling relies first and foremost upon phonology, with visual memory playing a secondary role. (Page 19)
- SpellRead's comprehensive instructional approach strengthens two integrated sets of essential reading skills: The ability to identify words accurately and confidently based on phonological automaticity and fluency; and the ability to form meaning once the words are recognized, based on vocabulary development and comprehension strategies. (Page 21)

1. Meeting a Critical Need: Closing the Opportunity Gap

Reading scores of U.S. public school students, which have remained relatively stable from 1992 through 2005, reveal that a majority of students lack solid reading skills. Specifically, in 2005,

- fewer than one-third (31%) of fourth and eighth graders could demonstrate an overall understanding of a text by making inferences, drawing conclusions, making connections to their own experiences and to other readings, and identifying some of the devices that authors use in composing text - the *Proficient* level on the National Assessment of Educational Progress (NAEP).
- 36% of fourth graders and 27% of eighth graders performed below the *Basic* level, indicating that they could not consistently demonstrate an understanding of the literal meaning of what they read, much less make relatively obvious connections between the text and their own experiences, extend the ideas in the text by making simple inferences, or draw conclusions based on the text.
- over one-fourth (27%) of 12th graders scored below *Basic*, meaning that they were unable to recognize the sequence of plot elements, retrieve information from a highly detailed document, connect document information to real-life contexts. Or make simple inferences from explicit details in a document (National Center of Education Statistics, 2006; 2007b).

Adults in the U.S. do not fare much better. Results for the prose literacy section of the 2003 National Assessment of Adult Literacy (NAAL), administered to a nationally representative sample of 216 million U.S. adults showed that

- only 13% of adults surveyed could perform complex and challenging literacy activities (*Proficient* level);
- another 44% could perform moderately challenging literacy activities (*Intermediate* level);
- 29% could perform simple and everyday literacy activities (*Basic* level); and
- 14% could not demonstrate more than the most simple and concrete literacy skills (*Below Basic* level) (National Center for Education Statistics, 2007a).

A. The Opportunity Gap

While little has changed since 1992 in terms of the proportions of students and adults who master reading to the level of proficiency compared with those who do not, what has changed, and continues to rise rapidly, is the level and complexity of literacy skill demanded by participation in society and the labor market in the 21st century. The *opportunity gap* continues to widen between those with adequate levels of literacy and those without.

For example, 12th graders who scored only at the *Basic* level or below on the NAEP, along with adults who scored at *Basic* or *Below Basic* on the NAAL, will have great difficulty reading and comprehending texts like loan applications, employee benefits documents, tax forms, vehicle warranties, insurance policies, computer user manuals, and many newspapers (Daggett 2003). Compared to their counterparts in past economic eras, many more 21st-century workers will need to be able to

- access information from a wide variety of sources;
- select, comprehend, organize, interpret, analyze, synthesize, and evaluate information;
- communicate effectively by writing, speaking, and representing information;
- accomplish tasks using information, system technologies, and personal and interpersonal resources;
- produce and apply new usable knowledge;
- shift between working independently and working collaboratively as part of a problem-solving team;
- self-regulate and monitor their own thinking and learning; and
- examine multiple perspectives on problems and solutions (Smith et al., 2000).

As school systems continue to adjust to these demands, students in middle school and high school will be expected to read more difficult texts, do more with texts of different types, and handle larger amounts of reading (Smith et al., 2000). In the meantime, low reading scores are correlated with high dropout rates. In 1998, 22% of White students, 44% of African American students, and 46% of Latino students did not graduate from high school on time - proportions that are unacceptably high in an economy with fewer low-skill jobs available. Nationally, researchers estimate the overall high school graduation rate to be between only 66.6% and 71% (Alliance for Excellent Education, 2006; Barton, P.E., 2005; Greene, 2002; Sum et al., 2003; Swanson & Chaplin, 2003).

B. Reading Intervention to Close the Gap

Corresponding large national data sets are not available to estimate the percentage of U.S. students or adults who can use oral English language proficiently. It is probably fair to assume, however, that larger proportions of the population speak and understand oral language better than they read and comprehend written language.

To the extent that the opportunity gap begins as a disparity between a student's oral and written language, SpellRead is designed to effectively bridge the oral language - written language divide. SpellRead enables poor readers to attain reading fluency and writing skills that match their oral language abilities, so that they are ready to benefit from texts and instruction that will further increase their vocabulary, content-domain knowledge, and reading comprehension.

II. Oral Language Development is Natural- Reading and Writing are Not

Oral language includes receptive language (the ability to listen to and make sense of English speech) and expressive verbal language (the ability to speak and make oneself understood in English), which children develop naturally during their earliest years. Many students who can speak, listen, communicate, think, and understand do not learn to read efficiently by third grade. Speech develops naturally, while reading and writing must be explicitly taught and learned through conscious, applied effort (Lyon & Chhabra, 2004; Shaywitz & Shaywitz, 2004). When children in the earliest grades do not receive adequate explicit, systematic, and comprehensive instruction that enables them to master the multiple skills and processes involved in reading, they can fall and remain behind. These skills include abilities to

- hear, replicate, and manipulate *phonemes* - the separate sounds in words,
- associate sounds with letters (*phonics*, the alphabetic principle),
- automatically and fluently read words (including nonsense words),
- build vocabulary, and
- understand what they read (reading comprehension) (National Reading Panel, 2000).

Students who have fallen behind in these skills can be misdiagnosed as learning disabled, but most often the cause of poor reading performance is difficulty with *phonological* coding - the ability to link individual phonemes with their alphabetic spellings, not visual deficits or problems with meaning or language structures. Unless intensive, supportive intervention measures are taken students who have fallen behind will remain inefficient readers.

While early intervention in grades *K-2* is optimal, evidence abounds that concentrated, systematic intervention designed to foster phonemic awareness in older struggling readers is effective at any age and can significantly reduce the occurrence of reading disability diagnoses and help the majority of struggling readers close the oral- written language gap and be ready to maintain grade-level performance. Effective, intensive intervention over the course of a school year is cost effective because it lessens the numbers of students assigned to special education, among many other benefits. (Blachman, 2000; Blachman et al., 2004; Brady & Moats, 1997; Foorman & Torgesen, 2001; Harm, McCandliss, & Seidenberg, 2003; Hirsch, 2003; Liberman & Shankweiler, 1986; Lyon, 1998; National Reading Panel, 2000; Moats, 1999, 2004; Shaywitz &

Shaywitz, 2004; Snow, Burns, & Griffin, 1998; Stanovich, 1986; Tallal, 2000; Torgesen, 2002a; 2002b; Torgesen & Mathes, 1998; Scanlon et al., 2005; Vellutino, Scanlon, & Spearing, 1995; Vellutino et al., 1996; Vellutino & Scanlon, 1998; Vellutino, Scanlon, & Tanzman, 1998).

SpellRead's instructional program design is based upon the understanding that intricate, automatic, and efficient orchestration of multiple neurological processes and sub-processes make both oral language and reading possible. SpellRead's intensive intervention trains the brain to build connections between its phonological and oral language systems so that students are able to read and write at the level at which they already speak and listen.

From this point, when students encounter a word in text that is already part of their oral-language lexicon - a word that they have heard and for which they have semantic and syntactic connections (they know the word's meaning and usage) - they are able to read the word because to see it is to "hear" it. When they encounter a new word through their oral environment, they are able to "see" the word; to mentally visualize its spelling or all approximation of the spelling, and can then associate it with its meaning and usage more quickly. This enables students to move forward academically, continuing to build all four important types of vocabulary; listening, speaking, reading, and writing vocabularies (Ehri, 1998; Pikulski & Chard, 2005).

A. Oral Language is Brain-Based

Humans are uniquely adapted to use complex language and have been doing so for thousands of years through specialized brain organization and vocal tracts. Systems for encoding the elements of human speech into written languages, on the other hand, are relatively recent inventions, dating back only several millennia. Even today, while all people groups in the world have oral language, there are a few who continue to be without written language, having not yet invented or adopted a system for encoding their speech into symbolic visual representations (Brady & Moats, 1997; Liberman, 1999),

A superficial view of speaking and listening might categorize these activities as primarily motor and acoustic. We use motor processes of the lungs, throat, lips, mouth, and tongue to produce the sounds of speech and we use the aural/auditory capacities of the ears to perceive these sounds, But the functions by which speech sounds become language - syntax (grammatical structures) and semantics (meaning) - are processes of the brain, not of the eyes or ears,

Perception of speech is easy, not because the process is simple, but because the human brain is so well adapted to this complex task. When we listen to another person speak in our own language, our short-term memory attends to and processes words and word sequences, holding them long enough to search for information stored in long-term memory that will help us attach meaning to the speech we hear. When we formulate our own speech - or think our own thoughts privately - we utilize phonological systems in the brain to "hear" the words in our minds, whether or not they are then actually spoken aloud.

Thus, language is a major vehicle for thinking. The degree to which complex receptive and expressive vocabulary is acquired affects the degree to which critical thinking can *evolve*, since deliberate thinking involves "hearing" words in one's mind as they are used to construct explanations, analyses, syntheses, evaluations, interpretations, arguments, and questions (Boroditsky, 2001; Bowerman & Levinson, 2001).

In spoken interactions the focus is on whole words and meanings, so phonemes must be combined at a rate sufficient for working memory to process whole words and word sequences, accessing their meaning from long-term memory. Therefore, the individual sounds of speech that combine to produce words are overlapping, co-articulated, and not consciously noticed. We say "Look at the big dog," chunking the sounds together into successions of words, rather than recognizing strings of separate sounds - "/L/- /oo/-/k/-/a/-/t/-/th/-/e/-/b/-/i/-/g/-/d/-/o/-/g/./

If speaking was executed like spelling, it would move so slowly that the listener's working memory, which can only process about five to seven chunks of information at once, could not obtain meaning from the many separate phonemic parts. Instead, efficiently co-articulating the sounds as words in speech allows for fluidity in communication.

Therefore, since efficient speech communication and understanding do not require any conscious awareness of the underlying system of arranged and rearranged articulatory gestures producing the phonemes that form words, children with intact neurological systems acquire spoken language fairly effortlessly within their social milieu. There is no need to focus on anything beyond the words and their meanings. Motivation to learn stems from the desire to communicate, and the articulatory gestures of speech themselves are used with automaticity - no attention is necessary (Lieberman, 1999; Lyon, 1998; Moats, 1998).

B. Reading is Also Brain-Based

While the phonology for reading written language is laid down through the learning of speech, nothing in the process of mastering speech requires the child to pull individual words apart into their component phonemes or to become aware of the alphabetic structure through which oral language can be represented. In fact, ... nature has provided a conundrum here: What is good for the listener is not so good for the beginning reader. Although spoken language is seamless, the beginning reader must detect the seams in speech, unglue the sounds from one another, and learn which sounds (phonemes) go with which letters. (Lyon, 1998, p. 15)

Therefore, the elements of written language must be explicitly introduced, systematically recognized, and repeatedly manipulated through practice during instruction in reading and writing. And while some children gain facility with the phonologic system of reading and writing quickly, many others do not (Blachman, 2000; Brady & Moats, 1997; Lieberman, 1999; Snow, Burns, & Griffin, 1998).

Just as speaking and listening are only superficially motor and auditory processes, so reading and writing are only superficially visual. Visually perceived sequences of letters are translated by the brain into sounds, syllables, and words that link encoded language with oral language, so that the

words that are read are "heard" in the mind and connected to their meanings (Liberman, 1999). Reading, therefore, is

... a multi-component process subsumed by several functional brain networks, each recruited for a specific purpose: phonologic processing, orthographic processing, morphologic and semantic processing, and syntax and discourse processing. As the brain learns to read, the component processors must be educated to perform specific functions well so that smooth, automatic functioning of the reading brain is possible. Well-designed lessons will include a number of components: explicit teaching about letters, speech sounds, phonics and spelling, vocabulary, and comprehension, integrated into a coherent, systematic progression. (Moats, 2004, pp. 841,842)

Phonology, linguistic awareness, and language proficiency are primary to the reading process, while visual and tactile-kinesthetic pathways are secondary. As Moats (2004) observes, "to teach reading ... is to teach language processing by ear, by voice, by eye, and by hand Once children learn to notice the internal details of the spoken word, they are more likely to be successful at mapping print to speech" (pp. 840, 842).

The following table contrasts some essential characteristics of oral language and reading and writing:

Oral Language	Reading and Writing
Based on phonology. A finite set of meaningless articulatory gestures - sounds - can be combined in infinite ways to produce syllables, words, sentences, syntax, meanings	Based on phonology. A finite set of meaningless graphemes - letters - can be combined in infinite ways to represent sounds in syllables, words, sentences, syntax, meanings.
Brain-based function - only superficially motor and auditory	Brain-based function - only superficially visual.
Develops naturally.	Must be taught.
Easy to learn.	Difficult to learn.
Speech is language.	The alphabetic principle only <i>refers</i> to language - represents it, encodes it.
Units of any particular language are human-contrived artifacts.	Alphabetic symbols are human-contrived artifacts
Does not require awareness of separate phonemes	Requires awareness of separate phonemes and their various graphic representations.

III. SpellRead: Bridging Oral and Written Language

Given the similarities, differences, and relationships between oral and written language noted above, SpellRead is designed to actively, deliberately, and intensively engage students in a process that starts and moves from their oral language to written language. Every 60-minute SpellRead class includes *Linguistic Foundations* (35 minutes), *Active Reading* (19 minutes), and *Writing Connections* (six minutes). Phonemic and phonetic activities are followed by time devoted to active reading and free writing using language-rich books that have been carefully selected and sequenced based on vocabulary, difficulty level, and interest.

SpellRead's multi-component lesson structure is designed in line with what is known about teaching the brain to read (Moats, 2004). SpellRead intervention works and reworks skills in a scaffolded progression of instruction that builds sustainable fluency and comprehension gains upon which students can move forward to develop further vocabulary, content-domain knowledge, and comprehension skill.

A. Phonemic Automaticity: Hearing the Sounds

Individual sounds, or *phonemes*, are the building blocks of language. The English language has only 44 separate phonemes, which can be combined and ordered in infinite ways to produce hierarchical arrangements of syllables, words, phrases, sentences, and syntax that ultimately convey ideas and meaning (Liberman, 1999).

While learning to speak does not require conscious awareness of the individual sound segments in words, learning to read relies on *phonemic awareness* - the ability to notice, reproduce, and manipulate these individual sounds so that they can then be represented by letters. Phonemic awareness developed to the point of automaticity lays the critical foundation for reading skill development. Without phonemic automaticity, reading, spelling, and vocabulary skills are slowed and students fall and remain behind in their academic growth.

Phonological aptitude, which underlies phonemic awareness, is distributed across the population in a normal curve just as are talent in music, athletic coordination, height, or eye color. Some children are able to hear, identify, reproduce, and manipulate phonemes early and with relatively minimal instruction, while many others require additional intensive and explicit instruction over time to acquire aspects of language that their peers accomplish much sooner. Children who do not master phonemic awareness by first grade are at risk of having difficulty learning to read. Older students and adults who are poor readers typically continue to demonstrate limited phonemic awareness (Bashir & Scavuzzo, 1992; Brady & Moats, 1997; Nation & Snowling, 2004; Moats, 2004; Shaywitz, 2003; Snow, Burn & Griffin, 1998; Torgesen & Mathes, 1998; Vellutino, Scanlon, & Tanzman, 1998; Vellutino, Scanlon, & Lyon, 2000; Winkler, 2006).

Phonological difficulties are neurological in nature and have no association with intelligence. Biological factors, including childhood ear infections, interact with and are influenced by experiences so that the ease with which a child develops phonemic awareness depends upon a

combination of genetic and environmental factors. For example, vocabulary size plays a role in phonemic awareness. The larger a child's vocabulary in the early school years, the more likely the child is to have developed a more refined within-word discrimination ability - the ability to hear the different sounds in words and to compare words to each other based on sounds within the words (Ehri et al., 2001; Foorman & Torgesen, 2001; Goswami, 2001; National Reading Panel, 2000; Metsala, 1999a; 1999b; Metsala & Walley, 1998; Moats, 1999; Snow, Burns, & Griffin, 1998; Walley, Metsala, & Garlock, 2003).

SpellRead builds a robust connection between phonology, oral language, and reading in a way that makes sense to students. This means beginning with the sounds, not with letters. Because many of the 44 separate sounds of English can be represented by more than one letter or combination of letters, SpellRead does not teach that "letters have sounds," since in fact they do not. Nor does SpellRead make use of intermediary rules that are not necessary for learning sounds. The focus is always on the sounds.

SpellRead students are taught first to listen to each of the 44 English phonemes and to become proficient at identifying, replicating, and manipulating those sounds. Students master the sounds in order from easiest to most difficult through activities that work and re-work phonological skills to the point of automaticity. This skill work is done in a variety of engaging ways that avoid the perception of repetition and maintain a high degree of student time-on-task. As students gain automaticity with sound recognition and manipulation, they accelerate rapidly, building confidence, so that they can successfully learn to associate the sounds with letters that represent them.

Research has demonstrated that teaching from sound to print is more effective than teaching from print to sound. However, phonemic awareness instruction is most effective when it is closely linked to systematic instruction in phonics, decoding, and spelling (Moats, 2004). Recognizing, manipulating, and then spelling the sounds is effective because in and of themselves sounds are "ephemeral, short-lived, and hard to grasp, whereas letters provide concrete, visible symbols for phonemes" (Ehri et al., 2001, p. 255).

B. Phonics: Reading and Spelling the Sounds

The alphabetic principle, or *phonics*, is the system by which 26 letters (graphemes), alone and in combinations, represent the 44 basic phonemes of the English language, combining in infinite ways to encode words and meanings. Explicit instruction in phonics helps students understand that print represents the sounds of the language and establishes the phonological processing system that connects written words to their pronunciations so that the written words are "heard" in the mind.

Learning this coding system is not a simple process, however, because a regular one-to-one correspondence between letters and phonemes does not always exist. For example, when students hear and identify the "a.e" sound in a word like *game*, they must recall whether the sound is spelled "a_e," "ai," or "ev," connecting auditory processing of phonemes with visual processing of spelling patterns (Ehri, 1999; Harm, McCandliss, & Seidenberg, 2003; Moats, 1999; National Reading Panel, 2000; Scarborough et al., 1998; Snow, Burns, & Griffin, 1998; Torgesen & Mathes, 1998).

C. Automaticity: Achieving Efficiency

SpellRead's foundational premise is that *phonology* (phonemic awareness and phonics together - the reader's "sound system"), developed to the point of automaticity, is the critical factor that enables efficient readers to effortlessly recognize and manipulate each of the individual sounds of language. Automatic phonemic/phonetic processing bridges auditory, visual, and semantic areas of the brain, linking the neurological activity of decoding written language to the reader's oral language processing abilities.

Without phonological automaticity, the word identification process remains inefficient and students develop idiosyncratic compensatory strategies for remembering or decoding words. These can include slowing reading rate, pausing, looking back, reading aloud, re-reading, sounding out, rhyming, analogizing to known sight words, contextual guessing, and jumping over words more often than do efficient readers. Such mechanisms do not build the necessary phonological connections in the brain, and are useful only if the student is motivated to work hard to make meaning of a text and is free to slow down to employ these strategies (Walczyk & Griffith-Ross, 2007).

For most inefficient readers, these strategies divert attention and effort to the word recognition process and away from building vocabulary and comprehension. Further, the compensatory skills of inefficient readers become overwhelmed in the upper elementary grades as vocabulary, language, and concepts become increasingly complex and texts become less predictable, causing these students to fall and remain behind. Rather than reading more, such students often read less, hindering opportunity to become more efficient (Ehri, 1999; Moats, 2004; National Reading Panel, 2000; Shaywitz & Shaywitz, 2003; Stanovich, 1986; Torgesen, 1997; Torgesen & Mathes, 1998; Torgesen et al., 2003).

Fluent word-level skills, as demonstrated in the ability to automatically read lists of simple pseudo-words accurately and quickly, are, along with vocabulary and content-domain knowledge, the most reliable predictors of reading comprehension (Hirsch, 2003; Fuchs et al., 2001; Pikulski & Chard, 2005). SpellRead provides the explicit intensive, targeted work on word-level skills that many students need in order to activate and build the appropriate processing circuits in the brain. Students who complete the 105 SpellRead lessons learn to

- automatically recognize and manipulate the 44 sounds of the English language;
- demonstrate mastery of
 - 18 vowel sounds and their 19 secondary spellings,
 - 26 consonant sounds and their 8 secondary spellings,
 - 37 consonant blends,
 - 16 clusters, and
 - verb endings;
- attack multi-syllabic words easily;
- bridge auditory and visual vocabularies;
- read with fluency and comprehension; and
- create writing portfolios that demonstrate growth.

Once a student recognizes sounds and spellings automatically, the brain's visual-phonological preceptors work together to turn letters into words, and words into meaning, so much so that it is not possible for the reader to deliberately suppress the process of word recognition. This is similar, for example, to the impossibility of deliberately seeing with "double vision." because the brain translates the visual perceptions of two eyes into one image automatically. When automaticity is accomplished, students are freed to focus their energy, attention, and working memory on vocabulary building, comprehension, and retention rather than having it consumed in the process of lifting words from the page (Brady & Moats, 1997; LaBerge & Samuels, 1974; Liberman, 1999; Moats, 1999; Pikulski & Chard, 2005; Snow, Burns, & Griffin, 1998; Walczyk, Marsiglia, Johns, & Bryan, 2004).

Because efficient readers have automated the decoding process, they can read lists of unconnected words, including nonsense or pseudo-words, quickly and accurately. Words that have been encountered and decoded successfully a number of times become recognizable by sight as whole words, their spellings and meanings fully bonded to their pronunciations in the reader's memory. These words are then read as single unified wholes rather than as sequences of separate letters. These "sight words" are stored in and retrieved from the reader's word memory bank or *lexicon*. Sight-word learning is not a matter of memorizing shapes or visual features of words; it is an alphabetic, phonological process based upon repeated experiences with decoding a word (Ehri, 1995; 1999; Ehri et al., 2001; Shaywitz & Shaywitz, 2004).

Sight-word learning is assisted not only by sensitivity to orthography (common spellings of phonemes), but also by sensitivity to the *morphology* of English. Morphology includes the system of prefixes and suffixes that change the meanings of root words according to common patterns, e.g., "ing" or "ed" at the ends of verbs, "un" at the beginning of adjectives or adverbs (Archer, Gleason, & Vachon, 2003; Curtis & Longo, 1999; Eden et al., 2004; Lyon, Shaywitz, & Shaywitz, 2003; Moats, 2004; Ramus et al., 2003; Scanlon et al., 2005; Snow, Burns, & Griffin, 1998).

Automaticity does not rely on guessing words from context. -While context provides information that assists skilled readers with the usage of a word (e.g., "spring" meaning jump, water, or metal coil), or the pronunciation of a word (e.g., "read" sounding like "red" or like "reed"), it is not used by efficient readers for word identification (Brady & Moats, 1997; Moats, 1999; Snow, Blitts, & Griffin, 1998; Walczyk, Marsiglia, Johns, & Bryan, 200-1).

The Linguistic Foundations portion of each SpellRead class provides 35 minutes of focused phonemic/phonetic lessons characterized by fast-paced, kinesthetic, auditory, and visual approaches and active student engagement as students work to reach benchmarks for mastery and automaticity. Students work with syllables and words by using vowel and consonant cards, which reinforce the connection between sounds and their spellings and serve as a powerful precursor to writing and spelling activities. SpellRead lessons introduce only one new sound at a time, and students master the sound by

- hearing it in multiple spoken syllables,
- replicating it,
- distinguishing it as the initial, medial, or final sound in spoken syllables,
- recognizing it in written form, and
- using it in conjunction with previously learned sounds through various practice activities.

D. Fluency: Reading with Accuracy, Prosody, and Speed

Phonemic and phonetic automaticity are significant predictors of the ease with which - students will acquire fluency - the ability to read connected text with the accuracy, speed, and *prosody* (appropriate rhythm, intonation, and phrasing). In addition to chunking letters together into sight words, efficient, automatic readers chunk words together into phrases to increase reading speed. Fluency can be assessed as students read aloud, through use of informal reading inventories, miscue analyses, pausing indices, running records, and reading speed calculations. Fluency is strengthened by instructional practices that include quality feedback and guidance through oral readings of text, and is positively correlated with reading comprehension (Blachman et al, 2004; Foorman, Breier, & Fletcher, 2003; Hook & Jones, 2002; LaBerge & Samuels, 1974; Lyon, 1998; Moats, 1998; 1999; National Center for Education Statistics, 2005; National Reading Panel, 2000; Snow, Burns, & Griffin, 1998; Torgesen & Mathes, 1998).

Each daily SpellRead session includes a 19-minute Active Reading segment during which students take turns reading aloud from authentic, engaging, high-interest texts including both trade books and leveled readers that match the group's instructional level, age, and interests. In SpellRead *Active Reading*, students are provided with books appropriate to their fluency and comprehension levels, and then seamlessly move into increasingly challenging materials as their skills improve. Trade book libraries in the

SpellRead program include a variety of genres and characters, topics that reflect social diversity, and themes that are relevant to students' lives. SpellRead students are grouped according to their similar reading skill levels, and instructed daily in a group of no more than five students who remain together throughout the year. In Active Reading, the teacher and each student take turns reading through each book only one time. Because the books are matched to the skill and fluency *level* that all students in the group share, and because the teacher models prosody, promotes discussion in a conversational manner, and supports each reader's performance, students do not struggle to read aloud.

For example, the teacher offers quick assistance if a student cannot read a word and helps students to read with inflection to convey meaning when they appear to be focused only on reading with speed. Each book is read only once so that students are free to enjoy the experience of reading the text together, discussing its meaning, learning new concepts and vocabulary, and moving on to the next book, rather than having the perception of being drilled on reading skill.

Students' oral reading fluency continues to develop as students move through the Active Reading texts. These are trade books, which are carefully selected and sequenced by vocabulary, language, complexity and interest level - not phonetically controlled "decodable" texts. The

reading skills and fluency developed through Active Reading transfer to classroom texts, pleasure reading at home, and reading passages on standardized tests.

E. Vocabulary: Gaining the Power of Language

Vocabulary is the link between the word-level processes of phonics and fluency and the meaning-making process of comprehension. By fourth grade students are expected to have "learned to read" and now must "read to learn," encountering increasingly more complex texts and an explosion of thousands of new words each year, including many more academic and literary words that reach beyond their ordinary everyday oral language interactions. Students actually possess four vocabulary lexicons - the words they use when speaking or writing and the words they understand when listening or reading (Chall, 1983; Chall & Jacobs, 2003; Lehr, Osborn, & Hiebert, 2004).

Although students' individual oral vocabulary size when they enter school varies depending upon factors like socioeconomic background and prior experience, a student who has learned to read efficiently by third grade will add 2,000 to 3,500 distinct new words to her vocabulary each year. At a rate of two to three new words per day, students can only be explicitly taught about 400 new words per year in school through pre-instruction in vocabulary words prior to reading them in a text and exploration of the relationships among words and word structure, origin, and meaning. Students and adults learn most of their new words incidentally through multiple exposures to new terms in authentic contexts, including increasingly complex oral language environments and a variety of texts; efficient readers simply do so at a much faster pace. (Chen & Vellutino, 1997; Foorman & Torgesen, 2001; Hart & Risley, 2003; Hirsch, 2003; Lehr, Osborn, & Hiebert, 2004; Lyon, 1998; Moats, 1999; Nation & Snowling, 2004; National Reading Panel, 2000; Snow, Burns, & Griffin, 1998; Stahl, 2003).

During SpellRead Active Reading, selected vocabulary is presented before reading and the story is discussed before, during, and after reading, building critical thinking and oral language skills. As students become more efficient readers, they acquire increased ability to gain and use new words more quickly because a word that they've heard and a word that they read become the same thing to them; "seen" in the mind when it is heard and "heard" in the mind when it is read.

When Spell Read students encounter a new word, they can recognize it phonetically and link it to the language lexicons already stored in memory. As in the familiar proverb about the value of giving a fish versus teaching the skill of fishing, Spellread builds reading efficiency and thereby provides students with the tools to continue to gain wide-ranging vocabulary at a steady rate rather than concentrating on memorizing a limited, discrete list of words.

F. Comprehension: Reading for Meaning

Fluency, vocabulary, and content-domain knowledge together create the "three-legged stool" of reading comprehension - the ability to understand, analyze, evaluate, compare, make inferences and predictions, and draw conclusions from texts (Hirsch, 2003). Reading comprehension is the ultimate aim of SpellRead instruction.

Phonologic automaticity and reading fluency are necessary but not sufficient conditions for reading comprehension because decoding printed words *at the word level* and making meaning of them *at the language level* involve two different sets of skills. It is possible, for example, for an inefficient reader to derive meaning from a text, through laborious compensatory processes, and for another reader to read connected text fluently without attending to the meaning or being able to recall afterwards what the text was about - a process known as "word calling" (LaBerge & Samuels, 1974; Stanovich, 1986; Walczyk & Griffith-Ross, 2007). Rather,

... when reading is flowing at its best, for example in reading a mystery novel in which the vocabulary is very familiar, we can go along for many minutes imagining ourselves with the detective walking the streets of London, and apparently we have not given a bit of attention to any of the decoding processes that have been transforming marks on the page into the deeper systems of comprehension. (LaBerge & Samuels, 1974, p.314)

As students read aloud through the Active Reading books, SpellRead teachers model thoughtful, interactive conversation about what is read and teach students to use graphic and semantic organizers that allow students to write or draw relationships between ideas, characters, or events. Teachers also lead vocabulary-building activities, offer feedback, and modulate student inflection and speed as they read to ensure that the meaning of the text is clear.

During the Active Reading portion of a SpellRead lesson, the teacher demonstrates and explicitly teaches students to apply specific comprehension strategies, including:

- scanning to preview text,
- summarizing
- detecting sequence,
- determining main idea,
- predicting,
- drawing conclusions,
- making inferences,
- visualizing,
- creating concept maps,
- thinking aloud,
- re-reading confusing parts,
- questioning during reading,
- monitoring accuracy,
- using prior knowledge,
- applying personal experience,
- using basic story structure, and
- using quotes, notes, and comments.

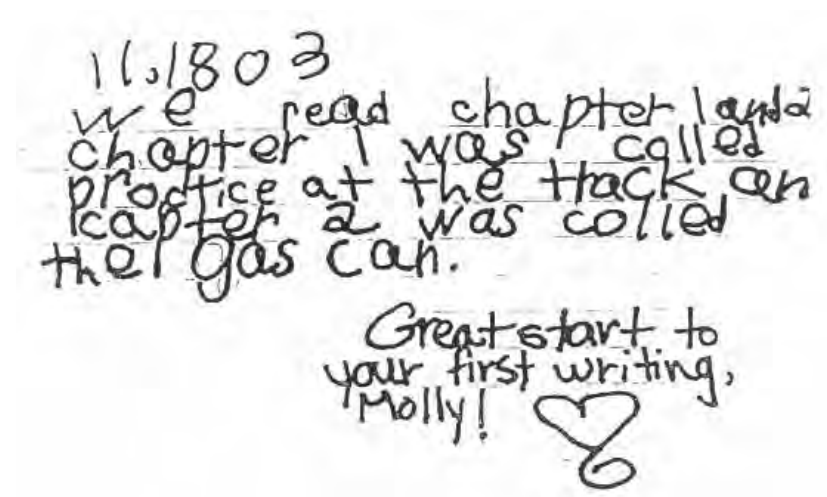
Cognitive engagement is heightened as students discuss their own views and consider alternative interpretations of the texts they read (Lyon, 1998; Moats, 1999; Snow, Burns, & Griffin, 1998; Walczyk & Griffith-Ross, 2007). SpellRead's Active Reading sessions are designed to utilize students' current oral language abilities in the process of making meaning of the high-interest texts that they read and discuss together. Through Active Reading students develop appreciation for text through extensive and ongoing experiences in reading, hearing, and discussing books at their reading level, with explicit instruction about concepts and vocabulary.

G. Writing: Capturing Oral language on Paper

When students have frequent, regular opportunities to write about what they read, the teacher can gain insight into their levels of reading comprehension (Brady & Moats, 1997; Moats, 1999; Snow, Burns, & Griffin, 1998). SpellRead instruction develops students' writing skills in tandem with their reading skills. As they work through the Writing Connections portion of each SpellRead lesson, students' spelling relies first and foremost upon phonology, with visual memory playing a secondary role. Spelling errors offer SpellRead teachers a wealth of formative assessment information about students' phonological skills and guide teachers to know what further instruction, feedback, or practice to provide.

At the conclusion of each daily SpellRead session, students write for six minutes in response to a prompt about the text they've read. This provides practice with encoding oral language into written language. During the six minutes, students simply write so that they become comfortable expressing their thoughts in writing as they would orally - without concern for mechanics, spelling, or grammar. Spelling, grammar, and writing conventions are increasingly encouraged and it;' prove as students progress through the program.

For example, Molly is a third-grade student with an above-average verbal IQ. Below is her writing sample from November 18. Her thoughts on the story were disjointed and out of sequence. Even though Molly wrote for the full six minutes, her entry is very brief, indicating that she struggled to get the words on paper.



Only three months later, on February 13, Molly's writing has become more organized and detailed, demonstrating higher levels of comprehension, vocabulary, and spelling.

Molly Oh - I love this, Molly!
The garilla ran
away and Annie ran
after it. Jack ran
after both of them
and found them in a
tree. Annie did every
thing the garilla did
then the garilla took
a tree branch and
went to a different
tree. When Annie tried
to she fell then it
started to rain so Jack
went to get the umbrella
but when he was run-
ning it got dark and
he couldn't find them.

Over the course of the SpellRead program, students build skill in effective written communication, using their growing sound/symbol knowledge to get their thoughts on paper, learning appropriate use of writing conventions, and creating writing portfolios, which demonstrate their growth.

IV. SpellRead's Carefully Designed Instruction

SpellRead students participate in daily, carefully scaffolded small-group lessons for 60 or 90 minutes per day. Each session includes direct instruction and practice in phonemics and phonetics, spelling, active reading and writing, vocabulary acquisition, and comprehension strategies. This comprehensive instructional approach strengthens two integrated sets of essential reading skills: The ability to identify words accurately and confidently based on phonological automaticity and fluency, and the ability to form meaning once the words are recognized: based on vocabulary development and comprehension strategies.

SpellRead's program design is characterized by the following research-validated characteristics of effective reading intervention (See, for example, Blachman et al., 2004; Brady & Moats, 1997; Ehri et al., 2001; Felton, 1993; Foorman, Breier, & Fletcher, 2003; Foorman & Torgesen, 2001; Harm, McCandliss, & Seidenberg, 2003; Moats, 1998; 1999; 2004; National Reading Panel, 2000; Shaywitz & Shaywitz, 2004; Snow, Burns, & Griffin, 1998; Vellutino, Scanlon, & Tanzman, 1998):

- Meticulous **scaffolding**, including lessons and materials that are predictable, patterned, and sequenced from easy to more difficult, as well as teacher modeling of the thinking processes required by the lessons.
- Systematic **reading and writing** activities specifically designed to enable students to fully utilize their oral language when reading and writing.
- **Small-group instruction**, which is more effective in most cases than one-to-one tutoring.
- **Daily instruction over the school year**. SpellRead students typically spend more time in reading and writing activities than students receiving regular classroom instruction.
- **Working and reworking of skills** in an instructional setting that is supportive both cognitively and emotionally, providing a breadth of activities that allow practice, encouragement, feedback, and positive reinforcement.
- **Ongoing assessment** that informs instruction.
- **Ongoing expert professional support** available to SpellRead teachers throughout the year.

A. Meticulously Scaffolded and Sequenced Instruction

Students can become independent, self-regulated, efficient learners through instruction that is deliberately and carefully *scaffolded*. Scaffolds are external instructional supports that are temporary, used during initial learning, and are carefully removed as the skills become internalized and automatic. Scaffolds are used to reduce complex sets of skills, breaking them into manageable chunks that are 'more easily mastered. This allows skills to become internalized and subconscious through use, freeing working memory for new tasks at hand (Bruner, 1990; Collins, Brown, & Newman, 1990; Ellis & Worthington, 1994; Mean') & Knapp, 1991; Rosenshine, 2002; Vygotsky, 1978).

SpellRead teachers scaffold student learning by reducing and managing variables to which students must pay attention at any one time. Only one new concept, sound, or activity is introduced at a time, and then students work actively with the new element in a variety of ways, including combining it with what they have already learned through prior lessons, so that skills are worked and reworked without boring repetition or "drill and kill" methods. In this way, SpellRead instruction deftly facilitates the gradual release of responsibility from the teacher to the student through carefully designed sequences of activities and lessons. As students master each sound and skill, they *move* on to the next.

SpellRead's 105 carefully designed sequential lessons are presented in three phases: A, B, and C.

- Phase A - 50 lessons designed to introduce the 44 English phonemes and their primary spellings, up to the one-syllable level.
- Phase B - 30 lessons designed to introduce the secondary spellings of vowel sounds, consonant blends, and two-syllable words.
- Phase C - 25 lessons designed to teach clusters, verb endings, and multi-syllable words.

Phase A. Phonemic awareness is built through activities that require phoneme isolation, identification, categorization, blending, segmentation, or deletion. Phase A provides the foundation for the SpellRead program, training the auditory processing function of the brain to hear and manipulate the 44 sounds of English so that students develop a "sound processing reflex" - automatically and directly recognizing each sound without needing to make intermediate associations with rules that can introduce an extra step, divert attention, and hinder automaticity.

The 44 phonemes are introduced orally and in combination with cards that show the ways in which they are most commonly represented in text. Students learn to clearly and accurately identify each individual sound and create the association between the sound and its most common representation in print.

Because learning 200 letters/combinations would be much more arduous than learning the 44 phonemes of English, SpellRead differs from reading intervention approaches that introduce rules in a way that can contribute to the reliance on compensatory (inefficient) skills and can badly confuse students. Consider, for example, the "long and short vowel sounds" rule. Vowels ("o") are typically taught as having long sounds when they appear in open-syllable words ("go") and short sounds when they appear in closed-syllable words ("hot"). Yet there are many exceptions to that rule ("most") – and words like "to" not only break the long-vowel rule but represent a completely different and new sound ("oo"). Therefore, SpellRead makes distinguishing and spelling the 44 sounds (in their most common forms) up to a one syllable level, the central focus of Phase A.

Students are introduced first to the sounds that are easiest to hear and manipulate, gradually progressing to sounds that are more difficult to process and manoeuvring them into consonant-vowel, vowel-consonant and consonant-vowel-consonant combinations. The eight secondary spellings for five of the primary consonant sounds are also taught in this phase.

The ability to read lists of unconnected pseudo-words quickly and accurately is a reliable indicator of decoding automaticity at the word level (Brady & Moats, 1997; Compton & Carlisle, 1994; Johnson, 1993; Metsala, 1999a, 1999b; Wale Bowers, & Biddle, 2000). SpelRead Phase A is taught almost exclusively using pseudo-words – phonetically accurate nonsense words that follow the patterns of English - as the primary vehicles for building accuracy and speed. Through this method, students learn to automatically recognize the sounds and their spellings rather than relying upon visual memory of real words, which would quickly become overwhelmed as they tackle grade-level texts with multiple new words on each page. This ability is empowering for students in that they come to realize that the syllables within very large words are all, in and of themselves, "nonsense words" and that now they can access words that they previously found intimidating.

In Phase A, a lesson typically begins by introducing one new phoneme. The teacher repeats the new sound frequently, using a variety of words or syllables so that each student hears the sound, replicates the sound, and distinguishes and visualizes where they hear the sound by pointing to its position on a "word line". For example:

(Write "m. ")

TEACHER: Tell me this sound.

(If the students do not know this sound, take an Initial-Sound Listening Card and run your finger along the word line, while you say the following.;

TEACHER: This is a word line. I will say a word that contains this sound at the J beginning. Listen for the sound at the beginning of the word

(Point to the initial position)

TEACHER: moo ... moo.

(Run your finger along the word line as you say the word)

TEACHER: What sound do you hear at the beginning?

(Point to the initial position)

STUDENT: /m/

TEACHER: Yes, this sound is /m/. It is at the beginning, in the initial position. This I sound flows. Say it with me: /m/ .. /m/.

STUDENT: /m/ .. /m/

Pass [rn] to each student.

TEACHER: Point to the sound and say it

(Do this as a round, allowing each student, in turn, to respond orally.)

STUDENT: /m/

TEACHER: Yes, it is /m/. This is how you write /m/

(Write "m. "if students have difficulty producing a pure consonant sound -for example, saying /mu/ as in "mud, " instead of /m/ -encourage them in the following manner.)

TEACHER: This sound flows.

(Then run your writing hand over your opposite arm saying, and slightly prolonging, the /m/ sound. Have the students imitate your hand motion while saying/m/, to give them the feeling that the sound is continuous, flowing.)

By the end of Phase A students are able to confidently and automatically read and manipulate all 44 sounds and their secondary consonant spellings. Mastery is demonstrated by reading lists of one-syllable words and pseudo-words with speed and accuracy.

Phase B. Phase B builds on this foundation, teaching secondary spellings, consonant blends, syllabication, and auditory/visual automaticity to the two-syllable level. Phase B also begins the transition back into real language and is taught using a combination of pseudo- and real words. Students are introduced to consonant blends and secondary vowel spellings while working toward automaticity with two- and three-syllable words.

Phase C. Phase C continues the development of fluency with polysyllabic words and introduces the most common clusters (morphemes, such as "tion" in invention or –ed and -ing endings of verbs) as well as pronunciation and spelling of verb forms. Phase C is intensely language oriented and taught almost exclusively with real words, to which students take their cumulative word-level knowledge from phases A and B and apply it. Pseudo-words are used only to develop automaticity with verb endings.

Success at each lesson and phase of the SpellRead program is dependent on mastery of the preceding lessons and levels. As students' word-level skills, fluency, automaticity, vocabulary, and comprehension develop, the emphasis, content, pacing, and complexity of reading instruction modulates over time. As word-reading efficiency is gained, the contribution of active decoding effort decreases (because it has become automatic) and the contribution of background knowledge, vocabulary, and broader language skills increases. Following one year of intensive SpellRead intervention, students have the word-level skills, automaticity, and confidence to be able to participate in regular classroom instruction and to build further vocabulary and content-area knowledge.

Materials and Activities. Each SpellRead phase includes carefully designed materials that are clear, concise, consistent and sequenced from easy to more difficult, focusing on one new concept at a time while building upon and reinforcing previous concepts. One of SpellRead's principal techniques is to minimize auditory and visual distractions, enabling students to focus solely on sounds and language. As a result, the materials and activities are all highly specific and free of all unnecessary elements. For example:

- Teacher's Guides provide overviews, objectives, materials lists, and pacing with lessons that follow a consistent pattern so that teachers and students can focus their attention on the skill targeted by the lesson.
- Student Activity Books provide controlled, sequenced, targeted practice with sounds and spellings and opportunities to work and rework previously learned skills.
- Answer Keys allow students to own their own progress through self-checking and self-monitoring.
- Card Packs are used by students at every level to provide tactile, sensory reinforcement that promotes sound-letter associations and develops fluency.
- Trade Books engage students at their appropriate levels with motivating, readable, and varied text.

Using these materials, Spell Read students practice sounds by listening, building, analyzing, blending, synthesizing, spelling, visualizing, pronouncing vocabulary, practicing syllabication, reviewing, and mastering Card Packs.

In SpellRead activities, students are encouraged to point to each sound as they read it. This technique strengthens the auditory process by bringing focus and attention to the individual sounds and the order in which they are heard. Students point with the index finger of their writing hand, pointing directly beneath each sound as they read it, then sweeping, or blending, sounds together to read syllables or words in their entirety. The sweep starts and ends where the sound starts and ends.

B. Daily Small-group Instruction Over the School Year

SpellRead students are placed in small homogenous groups of no more than five students with one teacher and these groups remain stable over the course of the school year. Grouping students in this way allows the instructor to attend to individual needs, monitor student learning, and provide positive reinforcement of success, which develops student confidence and encourages a high degree of student participation. Students receiving SpellRead intervention instruction usually spend more time in reading and writing activities than students receiving regular classroom instruction.

SpellRead may be taught by general or special education teachers, reading specialists, psychologists, speech-language pathologists or paraprofessionals. SpellRead instructors demonstrate strong phonological abilities themselves and participate in small amount of on-line and 42 hours of live training in how to implement the program, with ongoing expert support available to them throughout the year.

At the end of the year as they exit Spell Read, most students are able to read multi-syllable words typically presented in grade level texts, have expanded their vocabulary, are able to comprehend content-area information, and are participating academically in the regular classroom curriculum. Most will continue to need scaffolding and support to build further vocabulary and content-domain knowledge to grade-level expectations through a program like *Kaplan Text Connections*.

C. Working and Reworking Skills in a Supportive Instructional Setting

SpellRead students have substantial opportunity to develop and practice skills in an instructional setting that is both cognitively and emotionally supportive and provides encouragement, feedback, and positive reinforcement. Regular review is embedded throughout the lessons, reinforcing mastery of the known while adding one new element at a time. Because students work with individual answer keys, they receive extensive personalized feedback and have recurring opportunities to correct errors and strengthen skills.

D. Ongoing Assessment and Professional Support

Regular formative assessment data about student progress, which can be used to inform instruction, is available to SpellRead instructors daily through SpellRead's online Instructor Support System (ISS). The ISS is an easy-to-use tracking system that gathers, manages, and reports student information in a user-friendly format. The ISS reports 'weekly progress on critical skills and enables SpellRead instructors to customize instruction through the early identification of individual student needs. The ISS updates each student's profile with each administration of formative or standardized assessments and outlines students' strengths and weaknesses. The weekly report tracks class information, student attendance, lesson reached, review completed, books read, reading fluency rate, total hours of student participation, and any behavior issues.

If a student is identified as making inadequate progress, an individualized remediation plan is developed for that student. The individual student and group summary data can be rolled up into school-wide and district-wide reporting as required, tracking the performance of all students and subgroups of students within a school, district, or state on both standardized testing and program-specific requirements, with reports tailored to fit specific criteria. In addition, the ISS can generate award certificates for students, outlining the student's specific accomplishments.

Expert support coaches, readily available to SpellRead instructors via telephone and email, help instructors to analyze the ISS data and to adjust their instruction accordingly.

E. Evidence of SpellRead's Effectiveness

Results from several clinical trials, taken together, provide robust evidence that the SpellRead program is effective in helping students with a variety of risk factors to become fluent, accomplished readers. SpellRead instruction significantly improves the phonemic, phonics, accuracy, comprehension, and spelling skills of struggling readers of all ages across diverse populations. The foundation of phonological automaticity laid through SpellRead enables effortless word identification, allowing readers to focus on vocabulary development and making meaning from text. This was demonstrated by the fact that students who participated in SpellRead treatment groups continued to grow in comprehension skills after SpellRead instruction had ended (Cornwall, 1998; Rashotte, 2001; Rashotte et al., 2001; MacDonald & Cornwall, 1995; Torgesen et al., 2003; Torgesen et al., 2006; Wahl 2003).

F. Essential Conditions for Success

In order to ensure effective implementation of the SpellRead program, sufficient time, fidelity to the instructional design, regular monitoring of student progress, and adequate teacher training and support must be present.

Sufficient Intervention Time. It is vital that the full program of SpellRead instruction be implemented on a regular basis. The intensive, systematic, and focused instruction required by the full SpellRead design must be provided consistently, and for a sufficient duration, so that all students move through all phases of the program.

Fidelity to the Instructional Design. SpellRead groups should contain no more than five students. grouped according to word-level reading ability as discerned through diagnostic test results. Sessions should be conducted in a quiet space free from distractions and each SpellRead session should include all three components: linguistic foundations, active reading, and writing connections.

Regular Monitoring of Student Progress. SpellRead instructors enter specific formative assessment data into the ISS each week, ensuring that students are mastering the intended sequence of skills. These data are used to guide ongoing instruction.

Sufficient Teacher Training and Support. Spell Read instructors possess strong, efficient auditory processing. phonological, reading, and writing skills. Training, materials, and support should ensure that every teacher understands the Spell Read methodology and rationale and is equipped to deliver the highest quality of instruction to students. Building-level knowledge of the program and support from principals, classroom teachers, parents, and support staff are also necessary to guarantee the program's success.

Glossary of Terms

Automaticity: The state in which accurate processing of information can occur while conscious attention is directed elsewhere.

Grapheme: Print symbol (alphabet letter or combination of letters) that systematically represent the component sounds of the language.

Lexicon: One's mental store of vocabulary terms, meanings, and pronunciations.

Morpheme: The smallest meaningful linguistic unit in the grammar of a language.

Morphology: The study of the structure and form of words in a language, including inflection, derivation, and the formation of compounds.

Orthography: Spelling; the method of representing spoken language by letters/graphemes.

Phoneme: A unit of sound that makes a difference to meaning and is represented by a letter or letters of an alphabet.

Phonemic Awareness: The insight that every spoken word can be conceived as a sequence of phonemes. Key to understanding the logic of the alphabetic principle and thus to learning phonics and spelling.

Phonology: The sound structure of speech and, in particular, the perception, representation, and production of speech sounds, including words, syllables, and phonemes.

Pragmatics: The ways in which members of a speech community bridge the gap between sentence meaning and the speaker's meaning.

Semantics: The ways in which language conveys meaning.

Syntax: The rules and patterns by which words or other elements of sentence structure are combined to form grammatical sentences.

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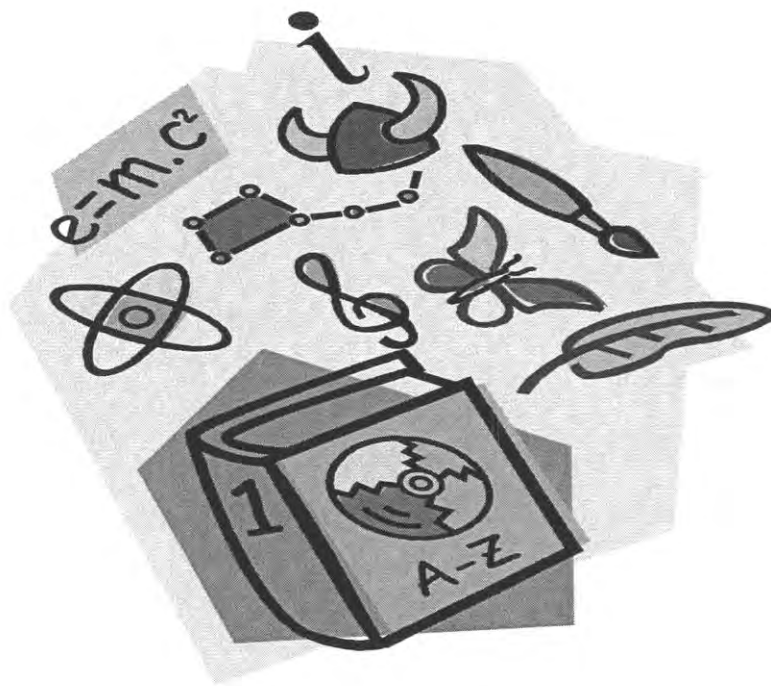
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READING I: DECODING and FLUENCY

**Kay MacPhee
and Debbie Savage**



SECTION 5: READING II - COMPREHENSION

COMPREHENSION

Some individuals with LOs have been exposed to a number of different instructional programs intended to help them 'catch up'. Others have had little formal reading instruction since early grades and now, as adults, are expected to read to learn. Years of frustration and struggle in reading leads an individual to avoiding all reading activities because they read slowly and have little or no comprehension. It's critical that appropriate reading instruction is available throughout the school years as individuals with LDs do not always acquire skills in the normal developmental stages.

There are many specific techniques instructors can use to help students with LDs acquire reading skills. Although it's crucial to be able to decode the printed word, competent decoding does not always ensure fluent reading and adequate comprehension skills. A certain reading speed is needed to allow comprehension to happen. Many students with reading disabilities succeed during the pre- reading period in learning how to 'unlock' the words, but may lack the ability to extract meaning from the printed page.

Once a student learns how to decode words, they need to read quickly and fluently to remember and understand what they've read. It is critical that teachers teach students how to use strategies to comprehend what is read.

Reading comprehension is essential for independent reading and success. In today's world, advanced literacy skills are needed for most jobs. They are a prerequisite for advancement in many training or employment situations as well as to conduct daily living activities. An adult with low literacy skills is especially vulnerable for under-achievement, under-employment, and threats to personal safety.

Efficient, fluent reading requires a number of separate skills: the ability to recognize a large number of words at a glance; the ability to figure out words we have never seen before; and, the ability to use the context to make the whole process of recognition or assembly go faster. Many of us are born with the ability to learn to do all of these things quickly and easily. Students with learning disabilities often have special difficulty with one or more essential skills.

Reading is a process. Pre- reading skills are needed to develop an awareness and appreciation of the printed word. Students should be taught how to read and comprehend factual information that includes a sequence of events and details. They must also be taught to compare and evaluate information that they read. Preparing students with LDs to extract themes from what they read is an important skill as it doesn't come naturally. In order to compare and evaluate, a reader has to find the main ideas from the text and isolate the sequence of events and theme. For comprehension, a reader must evaluate what they read. Then, they must compare and contrast what they read, in order to solve and verify statements. Adults with a comprehension deficit need explicit strategies and procedures to learn these complex, subtle skills.

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WEB RESOURCES:

www.alphaplus.ca AlphaPlus. (Resources for Adult Literacy Programs).
Arsupport5@alphaplus.ca Online Alpha Route Program.

www.nald.ca National Adult Literacy Database.

www.nifl.gov National Institute for Literacy.

Section V Readings- Reading 11- (Comprehension)

Easy Reading for Adults (LLNB)

Kim Tackaberrv's Supplementary Workshop Readings:

Precision Reading with Below Average Readers in Sr High school-(RF)

Learning to Read Against All Odds- (Freeze & Cook)

Bringing Literacy Within Reach (an excerpt) ---(LDAC)

You Don't Outgrow It- (Marnell Hayes)



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Written and produced by Easy Reading for Adults, a Summer Youth Employment Project of the Government of Canada;
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TITLE	Grade Level	# of pages
BIOGRAPHICAL		
Gabe Acquin: An Indian Chief (Craigs & Howroyd) I	2	17
Martin Aitken and His Pewter Shop (Craigs & Howroyd)	2	17
Lord Beaverbrook (Craigs)	3	17
Dr. Everett Chalmers (Craigs)	3	13
Leo LeBlanc: A Farmer and a Painter (Howroyd)	2	13
Alden Nowlan: Writer and Poet (Howroyd)	1	17
Jonathan Odell: A Fredericton Loyalist (Howroyd)	2	15
John Gyles and the Micmacs (Craigs)	1	22
Boss Gibson: The Father of Marysville (Craigs & Howroyd)	2	22
HISTORICAL		
Christ Church Cathedral (Craigs)	3	9
The Duel (Kilburn)	2	21
The First Loyalist Winter (Howroyd)	2	12
Fredericton Exhibition: Old and New (Craigs)	2	13
The Fredericton Internment Camp (Craigs)	1	25
The Fredericton Market (Howroyd)	2	22
The Hartt Shoe Factory (Kilburn)	3	21
The Kindness Club (Craigs & Howroyd)	2+	13
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McCain: A big company in a little town (Craigs)	2	16

Indian legends		
Glooscap and the First Indians (Craigs)	1	16
Malabeam: An Indian Heroine (Craigs)	2	12
Fiction		
A Basket of Words (Craigs)	1	9
Dinner for Five Cats (Howroyd)	1	17
Ellen's Home (Craigs)	1	15
Hermie: The Army Worm (Craigs & Howroyd)	1	21
The Earth is Flat (Kilburn)	1	22
You are in a Box (Kilburn)	1	29
MISCELLANEOUS		
Fiddleheads in the St. John River Valley (Craigs)	2	10
The Fredericton Express (Craigs)	2	17
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**READING II:
COMPREHENSION and
STRATEGIES**

Kim Tackaberry



MARNELL L. HAYES

LCNB-Adult Literacy & Learning
Disabilities Institute: Best Practices for
Success - August 2007

Chapter 4

Helping Others Understand About Learning Disabilities

Since 1967, I've been helping others learn about the frustration of learning disabilities through my simulation workshop, "Try a Learning Disability on for Size." I've done it for hundred of groups, including parents, teachers, school administrators, college teachers, civic teachers, civic groups, and national and international conventions of professionals in the field of learning disabilities. I've even done it for the President's Committee on Employment of People with Disabilities and the National Network of Learning Disabled Adults. Once the Texas Governor's Committee on Employment of the Handicapped set up a simulation workshop on a variety of handicapping conditions for the press. A disabled veteran's group ran a wheelchair obstacle course, a group had special goggles to simulate types of visual impairments - and I was there to make sure that the broadcast and print media reporters learned about learning disabilities from the inside as well.

I have helped others use simulations to help normal learners experience the difficulties you and I go through daily. I've seen imitations of my original workshop all over the country, and while I might be somewhat annoyed that I'm not given credit, I can be glad that perhaps some parent is learning why his son cant stay on the line when he writes his name or some teacher understands why a student just can't keep from moving her lips when she reads.

You may be able to use some simple simulations to help those who are important in your life understand what it's like to be learning disabled. While you may not be able to simulate the exact learning disability you have, if you can help a person who learns normally go through a variety of simple tasks with a simulated learning disability, he or she can more easily understand how it IS that you are so capable in some areas and must struggle so much In other areas.

A simple task I like to begin with is a mirror tracing task. With a fine-point felt-tip pen, draw a few swirling lines on a piece of paper, or copy the figure below.

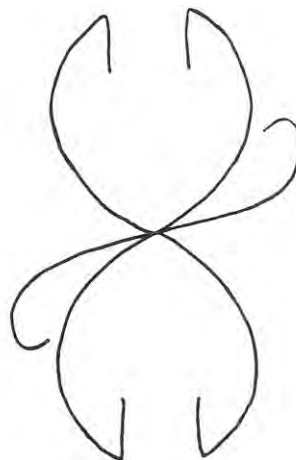


Figure 1

Set up a mirror at the top of the paper - either a small mirror on a stand or prop up a mirror with a few books. Hold up a piece of cardboard at the bottom of the page so that the design cannot be seen directly, but only in the mirror. I usually cover the design with a piece of tracing paper, but if you don't have one, just have your "victim" attempt to trace the design with a pencil so that his markings will be easy to tell from the original design. You will want to hold the cardboard shield carefully so that the person doing the tracing cannot see the paper except in the mirror.



Figure 2

After your victim struggles for a while, ask for his or her name to be written at the top of the page. You'll find that many people cannot locate the top and can't even produce all the letters in their own names correctly! The struggle most people experience with this task is rather like that of a person with dysgraphia, a severe written language problem, or those of us with eye-hand coordination problems.

Another good simulation is to use a story with all the vowels left out. You might use something like the story found on page 67 at the end of this chapter.

Tell your friend or family member to read the story aloud. As the reader tries to work out the words, you should have the full story with the vowels included in front of you so that you can supply the words he or she can't figure out. Keep urging the reader to hurry up and to read with expression. After the story is (; 'hed or when the reader gives up, talk about the feeling of having difficulty with a simple task that others find easy. This is a children's story, yet adults will have trouble with the vowels left out even though they may have been reading fluently for years and years.

The story in plain English, for you to use to cue your friend or family member, appears on page 68 at the end of this chapter.

Another good way to stimulate a reading problem is to use some written material that is printed backwards. You can use the story "Three Billy Goats Gruff," which I have included on page 66 near the end of this chapter. It is already printed backwards. Or you can use other material of your own choosing. It may be more fun to use your own material because you can select something very familiar to your audience, but make it hard for them. You might choose a written joke from a magazine, a typed letter from a family member or possibly a memo from work.

Here's how to do it. Take the material you have selected and make a clear copy of it on a photocopy machine. Now you will need to make a transparency. If you don't have access to a photocopy machine that makes transparencies, go to a copy center. Have the copy center make a transparency for you from the material you selected. (The cost is probably under a dollar.) Then make a copy of the *wrong* side of the transparency, and you will have the material written backwards like the story on page 66 near the end of this chapter.

Ask your audience to try to read the material from right to left. Don't let anyone hold the paper up to the light or use a mirror! Most people, even very good readers, find reading this backwards material very difficult and slow. After struggling with it themselves, they are more understanding of those of us who read poorly and slowly.

If you can't read my version of the "Three Billy Goats Gruff," just hold the page up to a mirror. You'll find it much easier!!

One way to simulate some of the confusions that many of us have with directions is to play "Simon Says" with left-right, up- down, and backwards-forwards reversed. It works like this: Ask, the person or people who are experiencing the simulation to stand facing' you. Tell them that they are to follow your directions when you say "Simon says," but that all of the directions are reversed.

For example, if you say, "Simon says, 'Take three steps backwards,'" the person should take three steps *forward*. If you say, "Simon says 'Raise you right hand,'" the person should raise his or her *left* hand. Of course, if you say "Take three steps backwards" or "Raise your right hand" without first saying "Simon says," they should do nothing. They will have to remember to listen for "Simon says" *and* remember to reverse all the directions at the same time. I think they will be a little more understanding in the future!

You can also give arithmetic directions but change the meanings of the directions. Tell them that when you say "plus," they are to subtract; when you say "minus" they are to add; "times" means "divided by" and "divided by" means "times." You may want to use pencil and paper or you may want your audience to work the problems in their heads. Don't give them very much time. Here's an example:

"3 plus 1, minus three, divided by 2, times 5." (Reversed: $3 - 1 + 3 \times 2 \div 5$)

The answer should be 2. You can make up more problems but write them down and work them out carefully ahead of time or you won't be able to tell if your students are getting them right!

I use a number of other simulations in my workshop, of source, but some of them are a little difficult to do if you don't have special equipment. However, with these few tricks I have shared with you, you can help someone close to you understand how difficult some things are for you. Just feeling those frustrations for a little while often makes a person begin to look at things from your point of view and may make him or her more willing to continue to try to learn more about the frustrations of a learning disability.

Three Billy Goats Gruff

Once there were three billy goats who lived across a ravine from a lovely green meadow of delicious green grass. The billy goats wanted to get the grass. But under the bridge across the ravine lived a ferocious troll!

One day the littlest billy goat, Little Tiny Goat Gruff, said, "I'm not afraid!"

So he began to walk tripbety-tripbety-tripbety across the bridge. Suddenly a loud voice said "Who's that going across my bridge?"

"It is only I, Little Tiny Goat Gruff!"

"Well," said the troll, "I'm going to come up there and gobble you up!"

"Oh, no," said the billy goat. "I'm little and tiny. Why don't you wait for my brother, Middle-sized Billy Goat Gruff. He's ever so much bigger and tenderer and juicier than I am."

"Oh, all right," said the Troll. "You may pass."

So the little billy goat crossed to the meadow, and began to eat the tender green grass...

And so goes the story. At the end, of course, Great Big Billy Goat Gruff fights the troll and knocks him into the river at the bottom of the ravine, and the Three Billy Goats Gruff may now cross the meadow as often as they like!

Th Stry f th Thr Lttl Pgs

nc pn tm thr wr thr lttl pgs wh lvd wth thr mthr n lttl hs n th wds. n d thr mthr sd t thm, "ts tm y wnt t nt th wrld n yr wn."

s th thr lttl pgs wnt t t bld thr hss. Th frst lttl pg fnd sm strw, s h blt hs hs f strw. Th scnd lttl pg fnd sm stcks, s h blt hs hs f stcks. Th thrd lttl pg fnd sm brks, s h blt hs hs f brks.

n dy th wlf cm lng. H knckd n th frst lttl pg's dr nd sd, "Lttl pg, lttl pg, lt m cm n." nd th lttl pg sd, "n, n, nt b th hr f m chnn-chn-chn." S th wlf hffd, nd h pffd, nd h blw th hs n, nd h t th lttl pg ll p.

H knckd n th dr nd sd, "Lttl pg, lttl pg,,lt m cm n." nd th lttl pg sd, "n, n, nt b th hr f m chnn-chn-chn." S th wlf hffd, nd h pffd, nd h blw th hs n, nd h t th lttl ph ll p.

Thn th wlf cm t th hs f th thrd lttl pg. H knckd n th thrd dr nd sd, "Lttl pg, lttl pg, lt m cm n." nd th lttl pg sd, "n, n, nt b th hr f m chnn-chn-chn." S th wlf hffd, nd h pffd, nd h pffd, nd h hffd, bt h cldnt blw th thrd lttl pg's hs dw.

Th wlf clmbd p n th rf f th hs, nd bgn t clmb dn th chmny. Th lttl pg hrd hm, nd pt bg pt f wtr n th fr. Whn th wlf cm dn th chmny, h fl nt th pt. Th pg pt ld n th pt, nd sn hd wlf stw fr dnnr!

Th nd

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The Story of the Three Little Pigs

Once upon a time there were three little pigs who lived with their mother in a little house in the woods. One day their mother said to them, "It's time you went out into the world on your own."

So the three little pigs went out to build their houses. The first little pig found some straw, so he built his house of straw. The second little pig found some sticks, so he built his house of sticks. The third little pig found some bricks, so he built his house of bricks.

One day the wolf came along. He knocked on the first little pig's door and said, "Little pig, little pig, let me come in." And the little pig said, "No, no, not by the hair of my chinny-chin-chin." So the wolf huffed, and he puffed, and he blew the house in, and he ate the little pig all up.

Then the wolf came to the house of the second little pig. He knocked on the door and said, "Little pig, little pig, let me come in." And the little pig said, "No, no, not by the hair of my chinny-chin-chin." So the wolf huffed, and he puffed, and he blew the house in, and he ate the little pig all up.

Then the wolf came to the house of the third little pig. He knocked on the door and said, "Little pig, little pig, let me come in." And the little pig said, "No, no, not by the hair of my chinny-chin-chin." So the wolf huffed, and he puffed, and he puffed, and he huffed, but he couldn't blow the third little pig's house down.

The wolf climbed up on the roof of the house, and began to climb down the chimney. The little pig heard him, and put a big pot of water on the fire. When the wolf came down the chimney, he fell into the pot. The pig put the lid on the pot, and soon had wolf stew for dinner.

The End

**Precision Reading with
Below Average Readers in
Senior High School**

By

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June, 2002

Precision Reading with Below Average Readers in Senior High School

Introduction

The value of Precision Reading as an efficient remedial reading intervention for 21 Senior One (Grade 9) students in a western Canadian Francophone high school was explored in this study. The project was facilitated by the support of the divisional administration, the educational leadership of the principal, the professional commitment of the resource teacher, the dedication of a teaching assistant, and the informed consent of the students and their parents. The project was made possible through the generous support of Manitoba Education, Training, and Youth, the Franco- Manitoban School Division, and College Louis-Riel.

Precision Reading

Core strategy. Precision Reading is a short daily remedial reading activity developed by Freeze (see Freeze, 2001 a, 2001b; Updike & Freeze, 2001). In a nutshell, the "core strategy" in Precision Reading involves students in: (i) reading the same passage aloud to their teacher for one minute every day for seven to ten school days, (ii) graphing their improved fluency (speed and accuracy) and reduced errors (word miscues) at each reading, and (iii) daily automaticity training for their passage error words. When one passage is mastered, another is begun. All passages are drawn from classroom reading materials, on curricular topics, at the level of the student's grade placement. The passages are reproduced in one of three special Precision Reading formats and presented to the student using a specified routine. The three levels of formatting include changes to the following: font, margins, spacing, paragraphing, paragraph headings, and sentence structure. The intent of the reformatting is to make a passage look less intimidating to a reluctant reader without changing the substance of the text. It is not intended to simplify important concepts, remove vocabulary, or change the author's meaning. The routines followed at each Precision Reading session are short, highly scripted, one-on one, teacher-student interactions. While the routines may vary depending on the "support strategies" added to the core strategy to meet the needs of individual students, their purpose is constant - to motivate, support, and reinforce the reader in his or her repeated readings of a grade level passage until preset criteria for greater speed, accuracy, and understanding are met consistently and the student has recovered, at least, to grade level in reading fluency, word knowledge, and passage comprehension.

The core strategy in Precision Reading is a combination of the methods of repeated readings (Samuels, 1979) and precision teaching (Formentin & (sapo, 1980). The method of repeated readings emerged from the teaching implications of automaticity theory and is modeled on the repetitive corrected practice used to train athletes and musicians. Applied to reading, it consists of rereading a short, meaningful passage until a satisfactory level of fluency is reached (Samuels, 1979). The purpose of repeated readings is to provide the practice necessary to make reading automatic, enabling the reader to concentrate on passage comprehension rather than word-by-word decoding. There is strong evidence that the method of repeated readings is effective in increasing word recognition, fluency, and comprehension (Blum & Koskinen, 1991; Dowhower, 1994; Samuels & Farstrup, 1992).

In the Precision Reading core strategy, the repeated readings are measured and graphed using a precise, authentic, direct, daily, measurement method derived from precision teaching. The number of words read and the number of miscues made in one minute of reading are counted

and graphed each day for seven to ten days for each passage. The advantages of this type of measurement include: (i) authenticity - student learning is measured directly, frequently, and in detail during real learning experiences and the students are actively engaged in the measurement process (Lindsley, 1990; Pike & Salend, 1995), (ii) completeness - the focus is on increasing accuracy and rate of response and errors are specified and corrected immediately (West, Young & Spooner, 1990), and (iii) clarity – the results are easily understood and communicated to students, educators, and parents (Lindsley, 1990; West, Young & Spooner, 1990; White, 1986). Precision teaching has been effective in producing a wide variety of learning gains in students of varying ages and abilities (White, 1986). The specific method of measurement used in Precision Reading is based on the single subject changing criterion design (see Alberto and Troutman (2003).

Support strategies. While a student's Precision Reading program always includes the core strategy, it also may involve a variety of individual "support strategies" designed to assist students with word memory problems, cognitive impairments, or very low initial reading skills. The support strategies utilized in Precision Reading are derived from a variety of sources. They include methods such as the silent pre-reading strategy, the five second delay procedure, and the Precision Reading of sight word lists developed by Freeze (2001 a), the sight word association procedure developed by Bradley (see Bos & Vaughn, 1994), echo pre-reading adapted from Heckelman's neurological-impress method (see Tierney, Readence & Dishner, 1990), aspects of the language experience approach to teaching reading based on the work of Stauffer (1970), and the first stage of Fernald's (1988) multisensory visual, auditory, kinesthetic, tactile training.

Comprehension strategies. When necessary, a student's Precision Reading include a "comprehension strategy" designed to help him or her build a comprehensive set of reading comprehension skills. Retelling, as conceptualized by Howell and Nolet (2000), 3repeat questioning developed by Freeze (2001 a), and reciprocal reading, a strategy based on the work of Palinscar and Brown (1984, 1986) and Howell and Nolet (2000), are the main reading comprehension strategies employed in Precision Reading.

Complementary strategies. Finally, the method includes a large number of complementary strategies intended to promote the generalization and transfer of students' reading skills from the short daily one-on-one Precision Reading sessions into general classroom instruction. The complementary strategies for classroom instruction utilized in Precision Reading are drawn from a very wide variety of sources including Beuhl (1995), Freeze (2001 a), Kagan (1994), Taylor, Harris and Pearson (1988), Tierney, Readence and Dishner (1990), and *Success for All Learners* (1996), a Manitoba Education, Training, and Youth curriculum document. In general, they represent strategies designed to differentiate instruction in the language arts by appealing to students' different learning styles (Dunn & Dunn, 1978), thinking styles (Gregoric, 1982), and multiple intelligences (Gardner, 1983) and by utilizing hands-on and cooperative learning activities (Johnson & Johnson, 1989). The complementary strategies reinforce vocabulary development, concept development, time-on-task reading, reading enjoyment, and motivation to read.

Research support for Precision Reading. In addition to encouraging research findings with respect to repeated readings (Blum & Koskinen, 1991; Dowhower, 1994), precision teaching (White, 1986), and many of the support, comprehension, and complementary strategies incorporated into Precision Reading (Block, 1997; Bas & Vaughn, 1994; Howell & Nolet, 2000; Tierney, Readence & Dishner, 1990); there is direct research support for the method. In three

separate studies with small groups of children at the elementary grade levels, Precision Reading has been shown to be effective with reluctant readers, low achievers, students with learning disabilities, students with cognitive disabilities, at-risk students, and students with social emotional problems (Freeze, 2000; Freeze & Cook, 2001; Updike & Freeze, 2001).

Handbook. The *Precision Reading: Instructors' Handbook* (Freeze, 2001 a) is included in this report as Appendix A. This handbook provides very detailed information with respect to the origins, purpose, rationale, and method of Precision Reading as implemented in this project. It contains separate chapters on the core, support, comprehension, and complementary strategies as well as detailed descriptions of passage formatting procedures, graphing techniques, and the instructional routines for each strategy.

Method

Purpose

The purpose of this study was to assess the efficacy and practicality of the Precision Reading method of remedial reading instruction with Senior One (Grade 9) students receiving Resource Program support due to below average reading skills. The high school resource teacher and I wanted to see if Precision Reading, which had shown promise with younger students in English language schools, would enhance the functional literacy skills of below average readers in their first year of senior high school in a Francophone school. Our hope was that Precision Reading might provide the motivation for these students to begin to read more regularly, demonstrate to them that they can develop greater reading competency, and help them begin to see themselves as successful readers after years of less than wholly successful reading interventions in elementary and junior high schools. In addition, through careful assessment, monitoring, and documentation of the Precision Reading program, we wished to obtain some insight into the potential strengths and weaknesses of this approach applied to this population.

Subjects

Students. Twenty-one students attending a special education resource program, located at an urban secondary school, participated in the Precision Reading program and this study. The criteria for placement in the school program included: (i) below average reading skills in previous grades, (ii) at-risk for academic success, (iii) prior receipt of resource support for reading difficulties at the junior high level, and (iii) inadequate content vocabulary development for their grade placement. The study included all of the eligible Senior One students in the program during the 2001-2002 school year except one who elected not to participate in the study.

Twelve male and nine female students participated in the study. All students were enrolled in the regular high school Senior One program in an urban Francophone high school in a western Canadian provincial capital. Most of the students in the study were of Metis (mixed French and Aboriginal) heritage.

Procedure

Context. The Precision Reading program was implemented in the resource program classroom by a teaching assistant trained in the method. I coached the teaching assistant regularly throughout the study. The teaching assistant was supervised, day to day, by a trained and experienced special educator. The resource program is a regularly scheduled credit course for Senior One students who are at risk academically. The students attend fifty minute classes four times per week. The resource program provides the following services to these students: (i) academic testing, (ii) learning strategies instruction and skill development in areas of weakness through individual and small group tutoring, computer assisted instruction, and guided independent learning opportunities, (iii) assistance with school assignments and exam preparation, (iv) tracking of academic progress with respect to attendance, assignments, tests, and socialization, and (v) targeted remedial interventions such as Precision Reading.

Passage Selection. The passages were selected by the resource teacher, in collaboration with subject area teachers in Social Studies, Science, and French Language Arts. The passages were drawn from classroom reading materials on curricular topics the students were studying. The use of passages drawn from grade level classroom materials is an essential element of Precision Reading. This provision ensures students transfer their reading skills from the resource room to the regular classroom, provides remedial reading activities that are seen as relevant and helpful by the student, and demonstrates to the students that they can read grade level materials fluently and intelligently, thereby restoring their confidence in their ability to learn and our ability to teach.

Precision Reading passage formats. The passages were put into the level two Precision Reading format to take into account the low reading levels of the students. Level two reformatting involved: (i) increased spacing between lines, (ii) increased spacing between words and between letters within words, (iii) increased font size, (iv) narrowed margins, (v) increased paragraphing, and (v) the addition of a line-by-line cumulative word count at the right margin of each passage. Excerpts from a typical passage, before and after reformatting, are shown in Figure 1. The reformatting not only makes the passages look less intimidating and more accessible to the students, it reduces the difficulty level without changing the content. It is a cosmetic change, rather than a substantive one. All students were graduated from level two to level one formatting at their fiftieth Precision Reading session. Level one formatting simulates the spacing, font, margins, and paragraphing of grade level texts.

Passage reading. On 90 school days, from mid October to the end of May, each student read a short passage designed to improve his or her vocabulary knowledge (word recognition and understanding), reading fluency (speed and accuracy), and reading comprehension (passage understanding). Previous research into Precision Reading has shown that the frequent (daily), consistent, and scheduled implementation of the method over several months is essential to the success of the intervention. Each student in the study read the same passage at each Precision Reading session for ten days, always starting at the beginning of the passage and always for only one minute. A timer was used to time the readings. The teachers provided encouragement and verbal positive reinforcement for any improvements in the students' reading accuracy or rate. The purpose of the one minute repeated readings of the same passage over ten days was to provide the structured repetitive practice necessary to make reading automatic. Automaticity enables the reader to concentrate on passage comprehension rather than word-by-word decoding. This approach also motivates the students, as they see their improvement (i.e., more words per minute with fewer errors), day by day, over ten days. After ten days, a new passage is started and the entire process is repeated. Nine passages were completed in the study.

Figure 1

An excerpt from a Precision Reading passage, used in the study, in level one format (top) and level two format (bottom).

La resistance nee de Riviere-Rouge

La colonie de Riviere-Rouge etait situee	12
approximativement sur l'emplacement actuel de la ville de	20
Winnipeg. Elle etait habitee en grande partie par des Metis et	31
par quelques colons anglophones. Les Metis etaient d'origine a	40
la fois europeenne et autochtone (dans la plupart des cas, leurs	51
ancestres etaient des Francais et des Amerindiens).	58

La resistance de Riviere-Rouge

La colonie de Riviere-Rouge etait situee	12
approximativement sur l'emplacement actuel	16
de la ville de Winnipeg. Elle etait habitee en	25
grande partie par des Metis et par quelques	33
colons anglophones. Les Metis etaient d'origine	39
a la fois europeenne et autochtone (dans la	47
plupart des cas, leurs ancestres etaient des	54
Francais et des Amerindiens).	58

Note: Complete passages ranged from 345 to 478 words. To preclude a ceiling effect, they were designed to exceed what the students reasonably might be expected to read in one minute after ten repetitions.

Miscue record. As each student read aloud, his oral reading miscues (error words) were recorded by the teaching assistant using a running record (Block, 1997). Miscues included: (i) word mispronunciations, (ii) words inserted into the text, (iii) word omissions, (iv) word part omissions, (v) word repetitions, (vi) word part repetitions, (vii) words read haltingly, and (viii) words read with a hesitation of more than two or three seconds.

Following Freeze's (2001 a) method, there was constructive corrective practice of the error words for a minute before and after each repeated reading. During corrective practice, the words were presented to the student on cards and practiced as whole words. All error words from previous readings of the same passage were presented to the student in the same order in which they had been misread. The student was allowed one and a half seconds to say a word correctly. If the student did not say the word correctly within one and a half seconds, he or she was told the word and then asked to read it from the card. This approach encouraged the student to memorize unknown words as automatic sight vocabulary (as strategies such as word analysis and decoding are precluded by the one and a half second time limit) and to place it in long term memory through rehearsal. With some students, word acquisition

was facilitated through the use of one or both of two support strategies: (i) silent pre-reading and (ii) the precision reading of sight word lists (see Chapter 3, pp. 67-68, 70-72 in Appendix A, Freeze, 2001 a). The silent pre-reading support strategy typically was used to help students progress after a long weekend or other interruption to their daily practice. The precision reading of sight word lists support strategy was used with two students who made a lot of errors and who read very slowly compared to their peers in the study.

Graphing. At the conclusion of each one minute Precision Reading session, the teacher or teaching assistant recorded the total number of words read by the student and his or her total number of miscues on a graph. The graphs were intended to monitor each student's progress and to provide motivational feedback to him or her. To illustrate, one student's graph for successive re-readings of one passage over ten sessions is shown in Figure 2. The total number of words read and the total number of oral reading miscues (errors) at each one minute daily session are reported for ten repeated readings of the same passage by the same student. Notably, the student increased the number of words read in one minute from 63 to 141 words and reduced reading errors from 12 words to 1 word over ten sessions of one minute, rereading the same passage. Whole word corrective practice of miscues was implemented before and after each session. The individual performances of all students in the study, with respect to total words read and errors made at each one minute Precision Reading session, were recorded and graphed daily for all passages throughout the school year. In addition, the particular error words of each student at each session were recorded. Finally, the students' performances on successive passages were recorded throughout the study. To illustrate, the cumulative record of one student in the study is reported in Figure 3.

Figure 2
Typical graph used in Precision Reading.

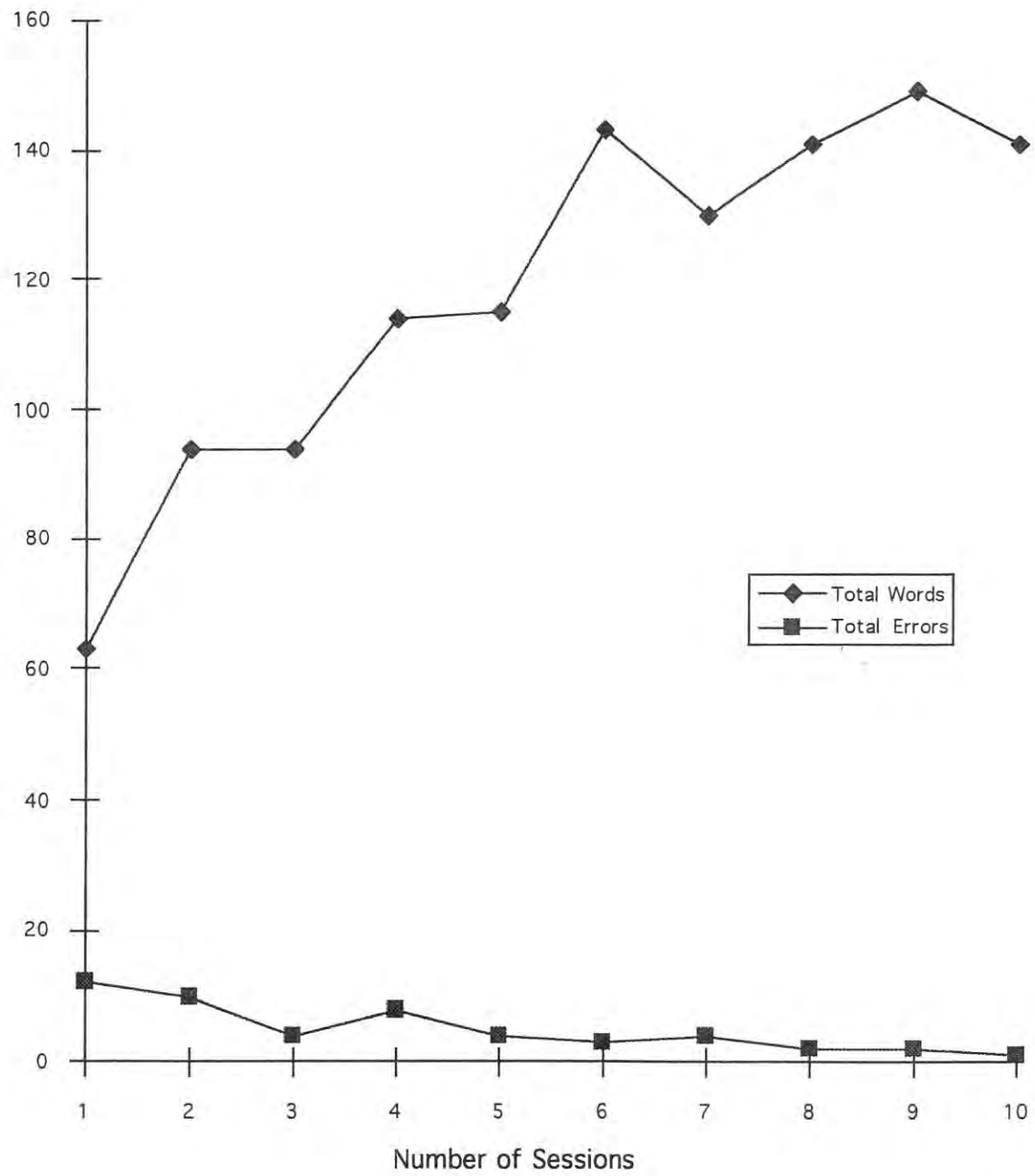


Figure 3

Typical cumulative record of one student's achievement in Precision Reading over 90 sessions (i.e., 9 passages).

Student: <u>M. Étudiant</u>		Teacher: <u>Mme. Professeur</u>		Grade: <u>S1</u>		
Precision Reading: Start date: <u>29/10/01</u> End Date: <u>15/05/02</u>						
Before		Reading Assessment Information				After
Test de Rendement pour Francophones (TRF)			Test de Rendement pour Francophones (TRF)			
Vocabulaire - Équivalent scolaire = 7.1			Vocabulaire - Équivalent scolaire = 9.3			
Compréhension Vocabulaire - 78%			Compréhension Vocabulaire - 90%			
Passage Title	Dif	First Reading Words	Errors	Best Reading Words	Errors	Comments
1. Les Loyalistes	E	63	12	149	2	
2. La nécessité d'un gouvernement	E	84	7	145	6	
3. Les débuts	E	94	7	174	0	
4. La question des écoles du Manitoba	E	92	4	121	2	
5. La résistance de Rivière-Rouge	M	108	4	159	0	
6. Cellules	M	101	2	141	1	
7. La formation des ions	M	103	2	163	0	
8. Trois Chevaux	H	73	2	155	0	
9. Des rats et des hommes	H	76	4	144	0	

Note: In the "Dif" column the difficulty levels of the grade level passages are E = easy, M = Moderate, and H = Hard for the grade level. The difficulty level depended upon subject area, vocabulary and sentence structure, and the students familiarity with the content.

Data Sources

Permission was obtained to access the students' Precision Reading files. The students' files contained pre-tests (given in October, 2001) and post-tests (given in May, 2002). Each of their files also contained: (i) the passages they read, (ii) graphs of their repeated readings for each passage, (iii) the error words cards they practiced, and (iv) a cumulative record of their Precision Reading sessions from October to May. These data were accessed in June, 2002. The students also were interviewed at that time. Finally, the teaching assistant who implemented the Precision reading program with the students in the study was interviewed.

Results

Twelve male and nine female ($n = 21$) Senior One (Grade 9) Francophone high school students participated in the study. Two students who received Precision Reading instruction at the school were left out of the study. One of these students elected not to participate in the study, while the other was at a different grade level. With the exception of four students, all 21 participants completed 90 sessions of Precision Reading based on the repeated reading of 9 passages (i.e., ten repeated readings of each passage). Two of the four exceptions completed 80 sessions (8 passages) and two completed 70 sessions (7 passages) due to temporary absences from school.

Pre-test to Post-test Comparisons

Did Precision Reading bring about an overall improvement in the students' reading over the school year? To answer this question, the students' were compared reading the same passage on their first day of Precision Reading and again near the end of the program. The students were pre-tested during the period of Oct. 29 to Nov. 19, 2001. The students were post-tested nearly 7 months later on May 28, 29, or 31, 2002.

The students read an average of 125.7 words in one minute at the pre-test. They made an average of 6.5 errors per minute. At the post-test, they read an average of 179.9 words in one minute with an average error rate of 0.1 words per minute. In other words, on average, they read 54.2 more words per minute and their error rate fell from just over 5%, or one miscue in every twenty words, to less than a tenth of a percent (0.08%) or an error rate of only one miscue in 10,000 words.

Since such an educationally significant improvement in fluency might have occurred due to the dramatic improvement of only a few students, the Wilcoxon matched-pairs signed-ranks test (Siegel, 1956), with alpha set conservatively at .01, was used to determine the statistical significance of the changes in reading speed and accuracy from the pre-test to the post test. This test was selected because of the fact that matched pairs of observations of the same students at two different times on the same reading task were available. Consequently, each student acts as his or her own control, obviating the need for a control group. In addition, the Wilcoxon test assesses both the magnitude and the direction of change in each pair of observations. In other words, if a notable number of students in the study failed to improve or if only a few regressed, this test would indicate no significant change overall. This is because the test compares all pairs of observations between the pre-test and post-test sets, rather than comparing only the means of the pre-test and post-test sets of scores. As a result, it is less

Table 1
Improvements in Fluency (Reading Speed and Accuracy) of Senior 1
Precision Reading Students

Student	Words per Minute			Errors Per Minute	
	Pre	Post	Gain	Pre	Post
01	134	188	54	7	0
02	154	196	42	5	0
03	109	134	25	4	1
04	107	158	51	15	0
05	70	107	37	12	0
06	97	153	56	8	0
07	63	154	91	12	0
08	154	236	82	9	0
09	129	208	79	7	0
10	158	245	87	3	0
11	129	173	44	9	0
12	126	173	47	3	1
13	145	212	67	5	0
14	127	174	47	4	0
15	112	154	42	10	0
16	143	197	54	2	0
17	132	159	27	4	0
18	139	210	71	10	0
19	166	202	36	2	0
20	112	178	66	2	1
21	134	167	33	3	0
Means†	125.7	179.9	54.2	6.5	0.1

† All means rounded to the nearest tenth.

wasteful of the data than other tests. It has a power-efficiency of 95% with respect to the t-test, upon which the Wilcoxon test is based.

The results of the statistical comparisons indicated a statistically significant improvement in words read per minute ($p \leq .01$) and a statistically significant reduction of errors ($p \leq .01$) from pre-test to post-test on the same passage. This finding is supported by a comparison of the students' pre-test and post-test scores on the *Test de Rendement pour Francophones (TRF)*. On the vocabulary subtest, the mean grade level equivalency of the pre-test group: was 8.0, or one year behind their grade placement. On the post-test, the students mean grade equivalency was 9.8 or at their grade placement.

In only five minutes per day of remedial Precision Reading over 90 school days, the students in the Precision Reading program had improved almost two grade levels and, more importantly, had recovered to grade placement level in reading. Additionally, an informal assessment of the students' word knowledge, conducted near the end of the study, using a list of 170 grade level subject area content words, showed a mean word knowledge of 96% with no student achieving less than 88%.

While it is possible that some other unknown variable accounted for the students' improvements in reading, it is more likely that it was the Precision Reading program, especially as none of the Precision Reading students were receiving any other form of remedial reading instruction during the study. Furthermore, all the participants changed in the same positive direction with the greatest gains made by those students who were initially most behind in their reading skills.

However, were the gains in fluency obtained at the expense of passage comprehension.? To answer this question, the students were asked comprehension questions in three areas immediately after the post-test passage reading. They achieved mean scores of 81% in the identification of the main idea of the passage, 83% in correctly ordering a sequence of three events or facts from the passage, and 79% with respect to the recall of details from the passage. Interestingly, a few students accounted for most of the comprehension difficulties in each area, suggesting that some students needed greater support for the development their comprehension skills. In the future, this could be achieved by adding a comprehension support strategy (see Chapter 5, Freeze, 2001 a, in Appendix A) to the daily Precision Reading routine of such students.

Table 2
Mean Improvements in Fluency (Reading Speed and Accuracy) of
Senior 1 Precision Reading Students for all Passages

Passage	Dif ^a	Words per Minute			Errors Per Minute	
		1st ^b	Best ^c	Gain	1st ^d	Best ^e
01	E	125.7	187.1	61.4	6.5	1.1
02	E	114.3	168.8	54.5	5.1	1.6
03	E	145.8	194.7	48.9	4.0	0.5
04	E	132.5	174.0	41.5	2.4	0.1
05	E	139.9	186.8	46.9	1.8	0.3
06	M	128.2	177.3	49.1	0.9	0.3
07	M	137.1	188.8	51.7	0.9	0.2
08	H	128.5	202.5	74.0	1.0	0.1
09	H	122.5	187.3	64.8	1.1	0.1
Grand Means		130.5	185.3	54.8	2.6	0.5

Notes: All means and grand means rounded to the nearest tenth.

^a Dif = Difficulty level of passage (E = Easy, M = Moderate, H :: Hard) at the Senior 1 (Grade 9) level.

^b 1st = mean of total words read in one minute at first reading of each passage by all students.

^c Best = mean of total words read in one minute at best (typically, the tenth or ninth repetition) reading of each passage by all students.

^d 1st == mean number of errors per minute at first reading of each passage by all students.

^e 1st = mean number of errors per minute at best reading of each passage by all students.

Pre to post comparisons within passages

Did Precision Reading increase the fluency (speed and accuracy) of students' reading consistently throughout the study? To answer this question, the mean number of words read and errors made at the first and best readings of each passage for all students (see Table 2) were compared using the t-test (Robson, 1994) with alpha set conservatively at .01. On average, the students improved on every passage with an average gain of 54.8 words per minute in reading speed. In fact, every student improved on every passage throughout the entire remedial instruction program, providing consistent daily positive reinforcement for improvements in reading fluency. This characteristic of Precision Reading not only provides the students with motivation and clear proof that they can overcome their reading difficulties with practice, it also places them within a daily reading context characterized by consistent success experiences.

In addition, error rates were consistently reduced throughout the program. The average number of errors on the first reading of the first passage, at 6.5 errors per minute, was substantially reduced over the course of the program so that the average number of errors on the first reading of the ninth passage was only 1.1 words per minute. Put another way, the rate of errors at the first reading of previously unknown grade level material was reduced from an average of approximately 1 error in every 20 words to approximately 1 error in every 111 words. Furthermore, there were consistent reductions in the average number of errors per minute on each passage from the students' first to their best readings, as shown in a comparison of the two right hand columns in Table 2.

The results of the statistical comparisons indicated a statistically significant overall improvement in the mean number of words read per minute on all passages ($p \leq .01$) and a statistically significant reduction in the mean number of errors ($p \leq .01$) from pre-test to post-test on all the passages. Taken together with the other findings, this finding is important, as it suggests that the incremental improvements in reading fluency obtained through the daily Precision Reading of passages drawn from a spectrum of subject areas and difficulty levels at grade level eventually added up to improved reading fluency for these below average Senior 1 students. As a group, they recovered to grade level with higher levels of fluency, very high levels of general word knowledge, and high levels of passage comprehension.

Student and Teaching Assistant Interviews

Nineteen students who received Precision Reading instruction agreed to be interviewed and were asked five general and twelve specific questions in individual face-to-face interviews conducted by the researcher. The questions and a summary of the students answers, illustrated by quotes in some instances, are reported in this section. The comments of the teaching assistant, with respect to each question addressed to the students, follows the students' comments.

1. Do you like or dislike Precision Reading? Why?

Thirteen students answered "Yes" to this question. The following quotes from four different students typified the reasons why they liked Precision Reading:

"It helps me read faster with not that many mistakes."

"It motivates me. It makes me read better."

"It helps me to learn words by practicing over and over and helps me to remember."

"It helps me with my reading in class. Sometimes if I see a word that comes up, I try to read the word just like in Precision Reading."

Five students were ambivalent about Precision Reading. Typically, they said it was "ISO so", "Okay", or "Not bad". While most of these students felt that it had helped them to improve their reading, they indicated that didn't like to miss out on classroom activities while doing Precision Reading. The following two quotes are indicative of these respondents.

"Its not bad. I don't mind it. It helped me a little bit. It gets you to correct your mistakes, like if I get a word wrong the next time I won't get it wrong and eventually I get no mistakes."

"Its all right. Its not that bad. I like the stories. It helps me to read better. It comes in between my classes. Sometimes we're doing something fun and I miss a part of my class – two minutes away from class."

Only one student said "No" to this query. He said Precision Reading was boring and he didn't like the repeated readings.

The teaching assistant said she liked Precision Reading, as is indicated in the following quote:

"I liked it a lot. I enjoyed it. Because I see progress in a lot of students. Because it works, I see the difference. They read more words per minute, there's not as much hesitating, they seem to enjoy it too. I got to know the students a lot better."

2. Has Precision Reading changed how you read? How?

Fourteen students replied "Yes" to this question. Two others thought their reading had changed "a little bit". Two students thought their reading had remained unchanged. Fifteen students indicated that Precision reading had helped them to read more quickly. Seven said they read with greater understanding. Three students said they knew more words. Three others indicated they made fewer mistakes. Two students thought they hesitated less while reading. One student said he read more clearly and another said she more smoothly. One student said Precision reading had improved her spelling and another said it helped her to picture what she was reading in her mind.

With respect to this question, the teaching assistant was asked if Precision reading had changed how she thought educators should help low achieving readers. She responded:

"Precision reading should be continued next year. It helped a lot. Personally, I think you should start at an early grade – 7 and 8 students. I think it would help all kids with low reading."

3. Do you read more or less since beginning Precision Reading? Why? When do you read? Where do you read? What do you read?

Nine students said they read more since beginning Precision Reading. These respondents indicated they had increased the amount of reading they did at home and at school. Most read more in their classes and in their room at home after school or before bedtime. They liked a variety of reading materials including novels, magazines, sports books, and comics. They mentioned the following genres: novels (e.g., action/adventure, mystery, horror, fantasy, science fiction, romance, historical fiction), biographies (e.g., sports figures, pop culture icons, historical figures), and factual books (e.g., sports, fashion, music).

Six students indicated that they continued to read as much as they did before beginning Precision Reading. In general, their reading patterns mirrored those described above in terms of when, where, and what they liked to read. Four students indicated that they had never liked reading and that they continued to avoid reading.

With respect to this question, the teaching assistant made the following comments:

"A lot of them told me they read more at home. To me, it seems they enjoy reading more now. We took passages from their classes, they recognized them and said they understood them better due to Precision reading."

4. Has Precision Reading helped or hindered your school achievement? How? In what ways? In what subjects?

Thirteen students said Precision Reading had helped their school achievement. The following quotes typify their comments.

"When I read, I understand more and I can answer questions more easily."

"I understand what I read in class...If I read aloud I don't mumble any more because other people understand what I'm reading."

"Some questions - I know the meaning better."

"I understand my text books better."

"It prepared us for what we were taking in class."

"If I have to read a book for a book report, I understand more what I'm reading about,"

"I read faster, I get my work done more quickly."

Six students did not think Precision Reading had either helped or hindered their school achievement.

The teaching assistant was unsure if Precision Reading had helped or hindered the students' school work. She had not seen their report cards and she had not consulted with their teachers in social studies, science, or French language arts. While she knew the students made the connections between their Precision Reading passages and their assigned readings in class, she was unsure if that translated into higher marks.

5. Has Precision Reading changed your attitude towards reading in general? How? Why?

Eleven students indicated that Precision Reading had changed their attitude towards reading in general. Their comments included:

"I can just pick up a book and start reading. Before, I'd get stuck on the words. It helps you read faster and understand the words."

"Before, I used to hate reading. Now I like it more."

"Usually I used to read one page per night. Now I read a whole chapter. "

"I like to read more because I know more vocabulary, so I don't get stuck in the middle of a book."

"I feel more motivated to read, but I still don't read that much."

Eight students responded "No" to this query. None elaborated on this reply.

In answer to this question, the teaching assistant said:

"Yes, because I've seen the difference - the change. I believe in it. "

Specific Questions

The students answers to the first six specific questions about Precision Reading are summarized in Table 3. Interesting comments in response to the questions about improvements to their understanding and memory included the following:

"I have a better understanding of descriptions. What I read is more fluent in my mind."

"Yes, but it depends on the subject matter. In general, better."

Table 3
Students Perceptions of Six Specific Outcomes of Precision Reading

Questions	Response		
	Yes	No	NA†
As a result of doing Precision Reading, do you....			
1. know more words?	16	3	0
2. read more smoothly?	18	1	0
3. read more quickly?	18	1	0
4. make fewer mistakes?	18	1	0
As a result of doing Precision Reading, has your....			
5. understanding of what you read improved?	16	3	0
6. memory for what you read improved?	16	2	1

† NA = No answer

"Not really, I had a pretty good understanding before."

"Before I didn't understand much of what I read, now I remember it."

"We just started to read a text. I remember everything about it because I reread it more than once."

"I read things over and over and picture things in my mind"

"Now I understand what most of the words mean. Before I wouldn't remember. I'd have to read it over and over and over to remember. Now, it's better, I just have to read it once or twice."

"If I read the text more than one time, then I won't stutter."

With respect to Question 1 in Table 3, as to whether the students knew more words, the teaching assistant said:

"Yes, because a lot of words they asked me what they meant and I was able to tell them. They know more words now."

With respect to Question 2 about reading more smoothly, the teaching assistant said:

"Oh yes. They read without hesitating. It sounds so much better when they read. There is no hesitation. There is a nice flow. I can tell they are comfortable reading."

In response to Question 3, about reading more quickly, the teaching assistant stated:

"Yes, the graphs show that."

In response to Question 4 in Table 3, about making fewer reading mistakes, the teaching assistant made the following comments:

"Oh yeah, I kept all the [error word] cards from every passage. The number of cards is less on the later passages, which were harder. Also, the graphs show they made fewer mistakes."

When asked about whether she thought the students' understanding of what they read had improved (i.e., Question 5), the teaching assistant noted:

"Yes, they ask a lot more questions after they read it. I've asked them comprehension questions and they understood."

"I asked them comprehension questions to check comprehension on passages six and nine. Their comprehension was good. I asked three questions and most got 3 out of 3."

Finally, the teaching assistant commented on the students' memory for what they had read:

"After ten times [repeated readings], they remember more and make less mistakes."

Students' Strategies with respect to Unknown Words

In the seventh specific question, the students were asked what strategies they employed when they came to a word they didn't know. The strategies they felt they did and did not use are reported in Table 4.

The teaching assistant made the following observations about the ways the students approached unknown words:

"Usually, they stop and look at it for a while, and then I help them out. Common error patterns are mispronouncing words and adding them in. They say vowel and consonant sounds wrongly. When they add a word, it usually makes sense in the context of the sentence. They also substitute meaningful words. Mostly, they have problems with word forms such as singular and plural, and word endings such as 'ent'."

When asked what had been the most important strategy in improving their reading (specific question # 8), 0 students said it was learning to memorize words. Eight students indicated that learning to sound out words was most important. Seven students thought seeing word parts was the most important learning strategy that had helped improve their reading. Several students said that more than one strategy had been important, but they all preferred memorization over either sounding out or seeing word parts.

The teaching assistant thought that the most important factor in improving the students' reading was that they learned to memorize the words.

Students' Perceptions of Precision Reading

The ninth specific question asked the students if Precision Reading had been a practical strategy for improving their reading. Eighteen thought that it had, but one said it had not been practical for her. The following comments were made in response to this question.

"Reading faster helps you read faster at other times."

"Yes because it helps you read more."

"Yes, because it helps me a lot in every aspect of my reading and understanding what I read."

"It helps you improve your skills."

"Sure, it helps me practice reading."

"It wasn't too time consuming. Only takes a minute and thirty seconds. You can do it at any time."

The teaching assistant was asked if Precision Reading was efficient and practical for her as an instructor. She responded:

"Yes. You do it every day. It takes three minutes per student."

"I see the difference. It works. It helps them read."

Table 4
Students Perceptions of Their Reading Strategies for Unknown Words

Strategy	Response		
	Used	Not Used	DK†
Ask someone	15	3	1
Sound it out	14	4	1
Use the context	11	4	4
Guess	10	8	1
Look it up in the dictionary	10	8	1
Re-read it	9	0	10
Analyze word parts	5	1	13
Skip it	3	13	2

† DK = "Don't know" or no answer.

At this point, the teaching assistant was asked what, if any, Precision Reading support strategies had been employed with the students. She responded:

"All used the 'silent pre-reading' strategy from time to time. especially after a long weekend or if they'd been absent. Usually after a long weekend they're more comfortable reading it [a passage] if they do silent pre-reading. The silent pre-reading worked well."

"I used the 'precision reading of sight word lists' strategy with two students. I used it because they had a lot of mistakes and they hadn't got up over' 30 words per minute. I though the precision reading of sight word lists worked really well for those two students."

The tenth question queried the affect of Precision Reading on the students attitude and motivation with respect to reading. Nine students felt Precision Reading had had a positive impact. They said:

"I feel more motivated."

"NOW, since it has helped me to understand more things, it motivates me to read more."

"Yes, lots. I'll pick up a book any time of the day. Now, I like to read. I never used to be a reader."

"Yes, positive on reading and school in general."

"Yes, I prefer reading now. I like reading better than before. I read a lot more."

"A little bit. It helped me a lot in certain classes."

Others (10) felt it had not affected them. Only two students offered explanatory comments:

"I've always loved to read. No affect on motivation."

"I always liked school and reading."

With respect to student motivation, the teaching assistant said:

"They're more motivated to read. They like reading more. "

In addition, the students were asked if there were any disadvantages or drawbacks to Precision Reading. Eighteen students found none. One student said:

"Only that it cuts into my class time."

The teaching assistant identified two drawbacks to Precision Reading:

"You have to do it every day - long weekends and when they're sick, it is a drawback."

"I didn't like taking them out of their classrooms. I think a lot of them didn't like missing a couple of minutes of class time."

Finally, the students were asked how Precision Reading might be improved. Most did not offer any comments or suggestions other than that it was "okay" the way it was. Some (8) made comments or suggestions, as follows.

"If I did it more often. It's a good reading practice."
"Change the passage more often - less repetitions."
"Read more at home."
"Try to use puzzles to teach word meanings."
"More variety in subject matter of passages."
"Make passages more interesting."
"Make a game of it [Le., scrabble, password, etc.]."
"Test reading comprehension after each passage."
"I think it's excellent."

The teaching assistant suggested starting earlier in the year (i.e., in September, instead of October and November).

Discussion

Limitations

There are several limitations inherent in this study. First, the sample, drawn from a single high school at only one grade level, precludes generalization of the results of this study to other students. Second, the students may have been overly enthusiastic about Precision Reading due to the novelty of being in a research study and testing a new method. Finally, while the positive impact of Precision Reading on the students' reading skills was demonstrated, the implications of this for their school work was inferred rather than directly observed.

Future research

Suggestions for future research can be derived from this study. More research into Precision Reading is needed. Longitudinal studies over several years may prove insightful. In addition, studies including students with a wider range of reading problems, including students with cognitive disabilities, and at a wider range of grade levels, should be considered. Word and passage comprehension should be assessed early in the program and appropriate support and comprehension strategies should be introduced for the minority of individual students who need them. Finally, some changes to the research design employed in this study should be considered: (a) student motivation and self-esteem, with respect to reading, should be measured more directly before and after the intervention, (b) an ecologically valid and sensitive approach to the assessment of the generalization of reading skills beyond the Precision Reading passages to other reading activities in the classroom should be developed, (c) subject area teachers' perspectives on Precision Reading should be assessed, and (d) the impact of Precision Reading on reading comprehension should be assessed using a standardized instrument before and after the intervention.

Conclusions

The results of this exploratory study into the usefulness of Precision Reading with Francophone Senior One students provide strong support for the method as implemented. Precision Reading appears to be a very effective and practical method of improving the teaching of remedial reading to low achievers who have not learned to read at grade level in spite of years of schooling and access to traditional remedial reading programs. Precision Reading certainly provides a new element of hope with respect to the remedial instruction of below average readers.

It is recommended that the school and school division seek to explore the potential of Precision Reading further. More study of Precision Reading with below average readers at other grade levels should be considered. Precision Reading may represent a practical, user friendly, and cost-effective potential solution to the problem of low reading achievement. A larger, longitudinal study involving a more diverse and randomly sampled group of students reading below grade level, drawn from a larger spectrum of grade levels, in a greater number of classrooms, at a number of schools within the division would provide insight into the potential long term positive impact of Precision Reading on the perennial problem of below grade level reading underachievement. In the long run, savings can be anticipated if the widespread use of Precision Reading proves to reduce the demand for other more expensive and time consuming remedial reading programs. Additionally, better readers are likely to be better students with fewer academic and behavioural problems, resulting in higher academic achievement in a more positive learning climate across the board. If the findings of this and related studies (see Freeze, 2000, Updike & Freeze, 2001) continue to be replicated, Precision Reading may provide a generic solution to low achievement in reading; efficacious for students ranging from non-disabled marginal underachievers, to students with learning disabilities, to students with mild to moderate cognitive impairments, to students with severe behaviour disorders. Such an intervention could provide an inclusive enhancement to traditional reading instruction, enabling all students in the regular classroom to experience high academic success whenever reading is a prerequisite.

Footnotes

1 n = 13, some students were not pre-tested on the TRF prior to the commencement of the study.

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**LEARNING TO READ AGAINST ALL ODDS:
USING PRECISION READING TO ENHANCE LITERACY IN
STUDENTS WITH COGNITIVE IMPAIRMENTS, EXTREME
ACADEMIC DEFICITS, AND SEVERE SOCIAL, EMOTIONAL,
AND PSYCHIATRIC PROBLEMS**

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Abstract

The purpose of this study was to assess the efficacy and practicality of precision reading, a constructive reading intervention, with students with cognitive impairments, extreme academic deficits in reading, and severe social, emotional, and psychiatric problems. As precision reading had shown promise with students with low achievement, learning problems, and learning disabilities (Freeze, 2000; Freeze, 2002c; Updike & Freeze, 2001), it was hoped that it might enhance the literacy skills of students with more severe disabilities who had experienced little success with either traditional reading instruction or prior remedial reading interventions. The usefulness of precision reading for seven students in a self-contained special education learning assistance and behavior support program, located at an inner city elementary school in a western Canadian city was explored. The students in the study made statistically and educationally significant gains of between 0.9 and 1.1 years, in grade equivalency scores, on a standardized reading test in the areas of oral reading fluency, word recognition, and passage comprehension after five minutes of precision reading per day over thirty weeks. In addition, they made observable gains in self-confidence, motivation, and attitude. Recommendations for the use of precision reading with students with severe academic deficits in reading and negative attitudes towards learning are discussed. Limitations in the efficacy of precision reading also are reported. Overall, precision reading appears to be a powerful new tool educators can use to help the most difficult to reach and teach students to read. This research was funded generously by the Sister Bertha Baumann Research Awards of St. Amant Centre.

Introduction

Rationale

Students with extreme academic deficits in reading, especially those with intellectual disabilities, routinely are excluded from full participation in the language arts programs of regular classrooms. For example, they may be placed on pre-packaged or individualized remedial programs with reduced academic demands and lowered expectations and standards for achievement (Cosden & Abernathy, 1990; Giangreco, Baumgart, & Doyle, 1995). They may be supported by a pull aside teaching assistant in the classroom (Pickett & Gerlach, 1997) or through small group instruction in a "pull out" setting by a resource teacher or reading specialist (McLesky, Henry, & Hodges, 1998; Schwean, Saklofske, Shatz, & Falk, 1996). In some instances, students may attend learning assistance, behaviour adjustment, or special education classes, in a "pull apart" setting on a part-time or full-time basis (Fuchs & Fuchs, 1994-1995).

Remedial reading programs frequently curtail curricular content to reduce academic difficulty and compensate for students' inability to read rather than teach reading (Ebeling, Deschenes, & Sprague, 1994). Ultimately, they may lead to exclusion for years as the student progresses, or rather fails to progress, through school (Lyon, 1995). This failure is especially likely when students' reading problems are compounded by cognitive disabilities and social, emotional, or psychiatric disorders. For example, students' reading deficits may lead to frustration with academic work, low achievement, low motivation, negative attitudes towards school, and rebellious behaviours (Buchanan & Wolf, 1986; deBettencourt, Zigmond, & Thornton, 1989; Hoffman et al., 1987). Their attitude and aberrant behaviours often are seen as the problem, rather than as evidence of their frustration with reading. With this construction of the problem, disciplinary measures may emerge as the reasonable course of action, while calls to improve remedial reading interventions may seem doomed to failure with such recalcitrant students.

Often, such students are given different work to do and a different place to do it. Typically, remedial reading interventions locate the student in reading materials that are deemed to be at their level, of high interest, and with low vocabulary demands (Cheney, 1989; Schumm & Strickler, 1991). Normally, they are focused on the acquisition of reading skills that were mastered at a younger age and at a lower grade level by their peers. This programming results in remedial reading programs that are very distant from the materials, skill demands, and curricular content of the regular classroom program of learning in subjects such as language arts, social studies, and science. The goal of recovering these students to grade level and full inclusion in the learning of the regular classroom too often is sacrificed in favour of accommodations that compromise their educational outcomes in very serious ways. Consequently, despite good intentions, contemporary approaches to remedial reading intervention tend to further isolate students from the learning of the regular classroom. at great expense to their self-esteem, academic achievement, and inclusion.

An inexpensive, effective, expeditious, and practical reading intervention, using the same reading materials as their peers without special needs in the regular classroom and enabling them to rapidly recover to grade level in reading, while at the same time covering concurrent curriculum topics. would be a valuable resource for educators supporting inclusive practices. The purpose of this study was to assess the efficacy and practicality of such an intervention with students diagnosed with mild to moderate impairments in cognitive functioning, extreme academic deficits, and severe social, emotional, and psychiatric problems.

Precision reading (Freeze, 2002a; Freeze, 2002b) is a five minute daily constructive reading strategy that has been shown to be effective with students with low academic achievement and mild learning disabilities in inclusive classrooms, helping them to recover two grade levels in all aspects of reading in 90 to 130 five minute daily sessions over four to six months (Freeze, 2000, 2002c, 2002d, 2003; Updike

& Freeze, 2001). It was hoped that it might prove to be a successful reading intervention for more disabled and maladjusted students and consequently provide an academic foundation for their inclusion in regular classroom instruction. *Repeated readings*. The core precision reading strategy is a combination of the methods of repeated readings (O' Shea, Sindelar, & O' Shea, 1987; Samuels & Farstrup, 1992; Weinstein & Cooke, 1992) and precision teaching (Lindsley, 1990; West, Young, & Spooner, 1990). The method of repeated readings, originally developed by Samuels and Laberge (1983), is based on the teaching implications of automaticity theory in reading (Howell & Nolet, 2000; Rasinski, 1990; Samuels, 1994; Stanovich, 2000), and is modeled on the repetitive corrected practice used to train athletes and musicians. Applied to reading, it consists of rereading a short, meaningful passage until a satisfactory level of fluency is reached. The purpose of the repeated readings is to provide the practice necessary to make reading automatic, enabling the reader to concentrate on passage comprehension rather than word-by-word decoding. Reading fluency, the main measure of reading automaticity, is a topic of renewed interest in current research (Levy, 1993; Levy, Nicholls, & Kohen, 1993; Kuhn & Stahl, 2003; Wolf & Katzir-Cohen, 2001). Some theorists argue that automaticity in reading (i.e., fluency) contributes significantly to: (a) fluency generalization (Weinstein & Cooke, 1992); (b) word acquisition, comprehension, and retention (Herman, 1985; Samuels, 1994; Stanovich, 2000); (c) passage comprehension (Howell & Nolet, 2000; O'Shea, Sindelar, & O'Shea, 1987; Samuels, 1994; Stanovich, 2000); (d) reading enjoyment, engagement, and independence (Blau, 2001; Freeze, 2000, 2000c); and (e) phonological awareness (Catts, 1993). In addition, there is direct evidence that the method of repeated readings is effective in increasing word recognition, fluency, and comprehension (Blum & Koskinen, 1991; Dowhower, 1994; Levy, 1993; Levy, Nicholls, & Kohen, 1993; Rasinski, 1990; Samuels & Farstrup, 1992; Weinstein & Cooke, 1992).

It may be that students with cognitive disabilities find a highly supportive, structured, and repetitious approach to remedial reading, with the emphasis on fluency, whole word acquisition, word knowledge mastery, and repeated passage comprehension training. Student may find this approach easier than approaches that require the decoding of letters, blends, and word parts which are mediated by the awareness of complex phonological patterns and phonics rules, amid attempts to simultaneously construct meaning and deconstruct text.

Precision teaching. In precision reading, students' repeated readings are measured using a precise, authentic, direct, daily, measurement method derived from precision teaching (Pike & Salend, 1995; West, Young, & Spooner, 1990). In a nutshell, the number of words read and the number of errors made in one minute of oral reading by a student are counted and graphed each day for seven to ten days for each passage. The advantages of such precise measurement include the following: (a) authenticity, (b) completeness, (c) engagement, (d) corrective feedback, and (e) clarity. Authenticity is achieved by measuring students' performances directly, daily, and in detail during real learning experiences using concurrent classroom reading materials. Completeness is obtained because the focus is on repeated practice designed to help students quickly increase reading rate, decrease errors, acquire and retain new words and their meanings, and construct passage meaning. In addition, students are motivated by their active engagement in the measurement process and rapid progress towards fluency and understanding. Through positive corrective feedback, their errors are specified, corrected immediately, and then practiced to mastery. Daily and long term records are easy to understand and communicate to students, parents, and other educators. *Components of precision reading*. Precision reading includes the following five components: (a) the core strategy - used at every session to increase fluency and word knowledge; (b) formatting procedures - to make grade level reading materials accessible to low achievers by changing the format and structure, but not the vocabulary, of the reading materials; (c) one or more support strategies - to enhance the effectiveness of the core strategy for students with cognitive disabilities, small sight vocabularies, word comprehension and retention problems, and very low reading achievement; (d) comprehension strategies - to support understanding once students have obtained sufficient automaticity and word knowledge to attend to the construction of meaning, rather than the deconstruction of text; and

(e) complementary strategies which enhance, extend, and generalize reading skills in the classroom. These components, as implemented in this study, are explained more fully in the methods section.

Purpose. We wanted to see if precision reading would enhance the literacy of students who had experienced little success with traditional reading instruction and prior remedial reading interventions. Our hope was that precision reading might provide the motivation for these students to begin to learn to read, demonstrate to them that they could develop reading competencies, and help them begin to see themselves as readers. In addition, through careful assessment, monitoring, and documentation of the precision reading program, we wished to obtain some insight into the potential strengths and weaknesses of this approach applied to this at-risk population. Finally, while beyond the scope of this study, we hope that precision reading will provide a foundation for inclusion for students with extreme academic deficits and very challenging behaviours.

Method

Subjects

Seven students attending a special education learning assistance and behaviour support program, located at an inner city elementary school, agreed to participate in the precision reading program and this study. The criteria for placement in the school program included: (a) mild to moderate cognitive disability, (b) severe to profound behavioural problems which can result in the student being a danger to himself or others, and (c) the need for the student to be in a secure and highly supervised educational setting.

The study included all of the students in the program during the academic school year. One student, who left part way through the year, was excluded. Another student who arrived part way through the year was included. All seven participants/were boys between the ages of 8 and 13 years. A summary of the students' 'disability labels and descriptors is provided in Table 1. All diagnostic labels and descriptors were drawn from current psychological and psychiatric

Table 1
Subjects' Disability Diagnoses and Descriptors

Pseudonym	Labels and Descriptors
Dan 10 years male	Alcohol Related Neurodevelopmental Disorder Attention Deficit Hyperactivity Disorder Oppositional Defiant Disorder Mild cognitive disability Profound hyperactivity Behaviour problems Academic delay - 3 years
Abe 10 years male	Learning Disability Attention Deficit Hyperactivity Disorder Conduct Disorder Mild cognitive disability Behaviour problems Academic delay - 4 years
Bob 11 years male	Partial Fetal Alcohol Syndrome Attention Deficit Hyperactivity Disorder Profound Auditory Language Deficit Moderate cognitive disability Behaviour problems Academic delay - 5 years
Jim 11 years male	Fetal Alcohol Syndrome Serious Emotional Disturbance Moderate cognitive disability Behaviour problems Academic delay - 4 years
Carn 13 years male	Prader- Willi Syndrome Visual Impairment Moderate cognitive disability Behaviour problems Academic delay - 7 years
Ian 9 years male	Fetal Alcohol Syndrome Attention Deficit Hyperactivity Disorder Moderate cognitive disability Behaviour problems Academic delay - 4 years

Pseudonym	Labels and Descriptors
Ian 9 years male	Fetal Alcohol Syndrome Attention Deficit Hyperactivity Disorder Moderate cognitive disability Behaviour problems Academic delay - 4 years
Ed 8 years male	Fetal Alcohol Syndrome Bipolar Disorder Attention Deficit Hyperactivity Disorder Emotional Disturbance Autism Spectrum Disorder Sensory Integration Dysfunction Moderate cognitive disability Behaviour problems Academic delay - 3 years

assessments and were consistent with American Psychiatric Association definitions drawn from the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) (American Psychiatric Association, 1994). The terms moderate and mild, used in relation to cognitive disability, were based on Grossman's classifications (1983). From a more contemporary perspective, all students in the study required "pervasive" supports as defined by the American Association on Mental Retardation Ad Hoc Committee on Terminology and Classification (1992). Pervasive supports are service-based student supports that are controlled predominantly by others, monitored constantly by professionals, required in all or nearly all settings, and needed on a continuous basis. To put such support needs in context, all the participants in this study had been affected by one or more of the following traumatic life experiences: (a) poverty; (b) prenatal exposure to alcohol, drugs, and/or solvents; (c) housing problems; (d) frequent school changes; (e) exposure to family violence; (f) exposure to alcohol and drug abuse; (g) sexual victimization; (h) gang involvement; (i) parental abandonment; and (j) frequent primary care giver changes. As a result, all had experienced, and continued to experience, significant social, community, and family issues (Streissguth, Barr, Kogan, & Bookstein, 1996), and received pervasive supports in the school, home, and community.

Research Design

The research design involved the use of repeated measures on multiple baselines, utilizing a single subject changing criterion design across subjects and reading passages. A pre to post comparison using the Wilcoxon matched pairs signed-ranks test, a nonparametric statistic suitable for small "n" studies in which each subject acts as his or her own control (Siegel, 1956), was implemented to assess growth in reading speed, accuracy, word recognition, oral reading fluency, passage comprehension, and the maintenance of gains over time.

Generalization was assessed by comparing students' scores on the subtests for word recognition, oral reading, and reading comprehension of the *Brigance Diagnostic Comprehensive Inventory of Basic Skills (Revised)* (Brigance, 1999), before and after the intervention. According to Glascoe (1999), test-retest reliability and inter-rater reliability correlations for these subtests range from 0.70 to 0.98 (averaging around 0.85), the subtests are fairly highly and positively inter-correlated for internal consistency, and they are highly correlated with other norm-referenced tests covering similar reading skills. However, there is no indication that the norm group used to standardize the test included students with cognitive disabilities, a common problem in standardized tests.

Finally, individual participant interviews were used to assess the popularity of the intervention with the students.

Intervention

Instructional context. The learning assistance behaviour support program was staffed by a special education teacher and three teaching assistants. The teacher had ready access to clinical assistance from a divisional Child Guidance Clinic (i.e., psychologist, psychiatrist, occupational therapist, speech and language pathologist, reading clinician, physiotherapist, social worker, etc.).

As these seven students might have posed a danger to their peers, they were bussed separately and had a teaching assistant on the bus with them. The students were given a breakfast when they first arrived (e.g., toast, cheese spread, milk, etc.) and a hot or cold lunch at noon (e.g., soup, meat or egg sandwiches, milk, etc.). They did not use the school playground, library, gym, or community pool at the same time as other students in the school.

The classroom contained an in-class library, reading centre, listening centre, math manipulatives activity centre, video centre, music centre, aquarium, kitchenette, quiet room, and other features normally found in an elementary classroom in a Canadian school (e.g., blackboard, overhead, bulletin boards, etc.). However, the classroom was a low stimulation environment (e.g., low light, low noise, uncluttered furnishings, covered bulletin boards, undecorated walls, curtains on shelves, etc.) due to the presence of students with acute sensory sensitivities and attention problems.

Instructor training. Early in the school year, the teacher and teaching assistants were trained to do precision reading by one of us (Freeze) acting as an educational consultant. Specifically, they were taught to reformat grade level passages to make them accessible to the participants, implement the daily core strategy including the word practice routine, add support strategies for memory and comprehension as needed, record and graph student achievement, and maintain long term records. The consultant met with the educators regularly during the year to monitor and support implementation.

Passage selection. The core strategy in precision reading involved the students in the daily repeated reading of short passages drawn from age appropriate curriculum materials in core subject areas such as language arts, social studies, and science. The passages were selected by the teacher to represent age appropriate curriculum content and the interests of each child on an individual basis. The passages were drawn from classroom reading materials linked to the curricular topics the students were studying at the time. It is important to understand that the passages selected were at the level of each student's age appropriate grade placement; in all cases, far above their reading grade equivalency.

Reformatting. The passages were put into level three precision reading formats to help make them accessible to students with extremely low reading skills. Level three reformatting involved: (i) increased font size, (ii) increased spacing between lines, (iii) increased spacing between letters within words, (iv) narrowed margins, (v) restructured sentences (such that compound and complex sentences were split into simple sentences), (vi) re-paragraphing (to break longer paragraphs into shorter ones), and (vii) the addition of a line-by- line cumulative word count at the right margin of each passage. Excerpts from a typical passage, before and after reformatting, are shown in Figures 1 and 2. The idea of precision reading reformatting is to make a passage drawn from age appropriate grade level materials more accessible to the student by making it look less intimidating and read more easily without removing content vocabulary or changing the substance of the original.

Repeated readings. To further support students with cognitive disabilities and reading deficits, an approach based on repeated readings

Figure 1

**A typical precision reading passage used in the study,
as yet unformatted.**

Sharks!

Sharks live in water. There are over three hundred and fifty different kinds of sharks. The smallest shark, called a dwarf shark, can fit in your hand. The biggest shark, the whale shark, is as big as a bus. All sharks have fins on their backs and skin that feels like sandpaper because it is made up of small teeth called denticles. Sharks must swim all the time, since they sink to the bottom of the ocean if they stop swimming. Sharks are good hunters and eat other fish. Sharks do not have ears but they feel the sound on their skin. They can smell and hear other fish in the water. Sharks do not have good eyesight, but they have big sharp teeth. People have one row of teeth, but sharks have two, three, four, or five rows of teeth! Their jaws are very strong too! Most sharks do not eat people, they eat fish. Sharks try to stay away from people, because some people hunt sharks to eat.

Note. This passage is at approximately the early grade 4 level of difficulty (Fry, 1977).

Figure 2

An excerpt from the same passage in level 3 precision reading format

Sharks!

Sharks live in water. There are over	7
350 different kinds of sharks. The smallest	14
shark is called a dwarf shark. A dwarf	22
shark can fit in your hand, The biggest	30
shark is the whale shark. It is as big as a bus.	41
All sharks have fins on their backs.	49
Their skin feels like sandpaper. Their skin is	57
made up of small teeth called denticles.	64
Sharks must swim all the time. If they ...	72

Note. This passage continued to the end in similar format, Reformatted, it is experienced by the student at about the Grade 1 level of difficulty (Fry, 1977), although no vocabulary was deleted.

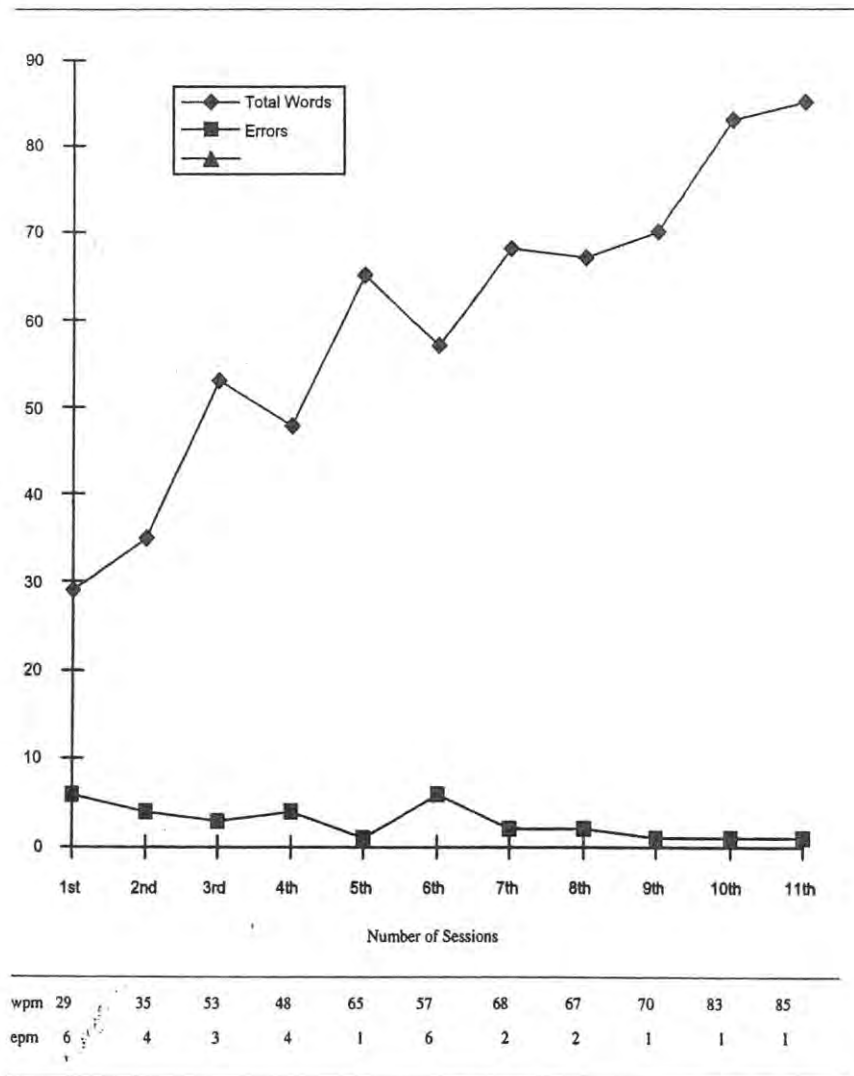
(Blum & Koskinen, 1991; Dowhower, 1987, 1994; Herman, 1985; O'Shea, Sindelar, & O'Shea, 1987; Samuels, 1997; Samuels & Farstrup, 1992) was used in the core strategy of precision reading. Every day, from mid October to early June, each student read the same passage on successive school days for at least seven days, always starting at the beginning and always for only one minute. After the seventh day, use of the passage continued to day ten or until the student had at least doubled the number of words he read in one minute, compared to his first reading on day one, while reducing his errors to no more than two. In a few cases, students read passages for more than ten days to achieve these criteria. Typically, a new passage was started every seven to ten school days. A concealed stopwatch was used to time the readings because the students found a visible digital timer distracting. The instructors provided encouragement and verbal positive reinforcement for improvements in the reading rate and accuracy of the students.

Miscue record. As each student read aloud, his oral reading miscues were recorded by his teacher or teaching assistant using a running record (Block, 1997). Miscues included: (a) word mispronunciations, (b) words inserted into the text, (c) word omissions, (d) word part omissions, (e) word repetitions, (f) word part repetitions, (g) words read haltingly, and (h) words read with a hesitation of more than two or three seconds.

Word practice. After the first reading of a passage, whole word corrective practice for the student's error words ensued for a few minutes before and after each subsequent repeated reading of the same passage. During corrective practice, the words were presented to the student on cards (10 cm wide by 8 cm high) and practiced as whole words. All error words from previous readings of the same passage were presented to the student in the same order in which they occurred in the passage. The student was allowed one and a half seconds to say a word correctly. If the student did not say the word correctly within one and a half seconds, he was told the word and then asked to read it from the card. Two additional types of miscues received a different treatment. When the reader inserted one or more words into the text, an arc or bridge was drawn in pencil linking the words on either side of the insertion, on the student's copy of the passage, to remind him to refrain from an insertion at that point. Additionally, words that were known by the students were circled in pencil on the student's copy of the passage to remind him to read it. After correct reading at three consecutive sessions, these pencil lines were removed.

Graphing. At the conclusion of each precision reading session, the teacher or/teaching assistant recorded the total number of words read by the student and his total number of miscues on a graph (Lindsley, 1990; Pike & Salend, 1995; West, Young, & Spooner, 1990; White, 1986). The graphs were intended to monitor each student's progress and to provide motivational feedback to them. To illustrate, the graph of a student in the study is shown in Figure 3. The graph shows his precision reading of one passage over eleven sessions. The total number of words read and the total number of oral reading miscues (errors) at each one-minute daily session are reported for eleven repeated readings of the same passage. Notably, he increased the number of words he read in one minute from 29 to 85 words and reduced his reading errors from six words to one word over eleven one minute, daily, repeated readings of the same passage. The individual performances of all students in the study, with respect to total words read and errors made at each session, were recorded and graphed daily for all passages throughout the school year.

Figure 3
Typical precision reading graph



Note. wpm = words per minute; epm = errors per minute.

Support strategies. While the students' precision reading interventions always included the core strategy (i.e., repeated readings plus word practice), a variety of strategies designed to support students with cognitive impairments and low initial reading skills were implemented on a student specific basis. The support strategies used in precision reading are derived from a variety of sources. They included methods such as silent prereading, the five second delay procedure, and the precision reading of sight word lists developed by Freeze (2002a), as well as the sight word association procedure developed by Bradley (Bos & Vaughn, 1994), echo pre-reading adapted from Heckelman's (1986) neurological impress method, aspects of the language experience approach based on the work of Stauffer (1970), and an adaptation of the first stage of Fernald's (1988) multisensory visual, auditory, kinesthetic, and tactile training.

Additional support strategies designed to amalgamate reading with movement in a complementary sensory environment were developed and added to the precision reading core and support strategies (Doctor, 1998; Dunn & Dunn, 1978). For two students, word card practice was integrated with their occupational therapy sessions. A bean bag word game, a popular addition for all students, was especially important for two non-readers. Words from each student's miscue list were written on two-inch wide masking tape and taped to opposite sides of bean bags. Depending on the activity needs of the student, he was instructed to toss the bean bag down a short flight of stairs or throw it down a hallway in a bowling motion. The student then ran to retrieve the bean bag and read the word on its top side. This strategy addressed the needs of students with excessive amounts of energy. Another strategy combining reading and movement was the survivor challenge. It was played in the gymnasium using some of the students' word cards. The class was divided into teams. In turn, each team member was instructed to crawl, with the tops of his feet dragging on the floor, using only his elbows to pull himself forward. In this manner, the students raced to the end of the gym where a group of word cards were laid out on the floor. Each student had to find a word he recognized, read it and then run back to tag the next member of his team to take his turn. This movement addressed the needs of some students with proprioceptive nervous system dysfunction, which is common in students who have suffered prenatal exposure to alcohol or drugs (Streissguth, Barr, Kogan, & Bookstein, 1996).

The first stage of Fernald's multisensory training was adapted for these students. The students donned exfoliating bath gloves, which have a rough texture, and used the pads of their index and middle fingers to spell their error words on the top of their thighs or on the inside of their opposite arm. Stubborn error words were written, one at a time, on overhead transparencies and then displayed, enlarged, on a screen. Each student then used a small flashlight to trace over his error word with a beam of light, while his peers chanted the word.

Visual tracking difficulties are common in students who have been exposed to alcohol and drugs prenatally (Halvarson-Tanner, 1990), those with sensory integration dysfunction (Kranowitz, 1998), and in children who are visually compromised. In this study, students with visual tracking difficulties used guides to support their reading. For example, some students moved clear plastic guides with a highlighted edge under each line of print as they read it. Other students used guides made of coloured construction paper from the top down, covering what they had already read. In both approaches, the guides did not obscure what remained to be read on a page, allowing the students access to contextual clues such as upcoming sentence and paragraph endings.

Comprehension strategies. When necessary, the students' programs included precision reading comprehension strategies designed to help them build a comprehensive set of reading skills. Retelling as conceptualized by Howell and Nolet (2000), 3repeat questioning developed by Freeze (2000a), and reciprocal reading (Palinscar & Brown 1984, 1986; Howell & Nolet, 2000) were the main strategies employed. These strategies were implemented during regular language arts instruction.

Complementary strategies. Finally, the precision reading approach to constructive reading intervention includes a large number complementary strategies intended to promote the generalization of reading skills from the short, daily, one-an-one core sessions to general classroom instruction. Throughout the year, language arts instruction in the class was infused with eight precision reading complementary strategies: (a) independent reading in the form of DEAR (Drop Everything And Read), a form of uninterrupted, sustained, silent reading (Freeze, 2001; Tierney, Readence, & Dishner, 1990); (b) choral reading (Tierney, Readence, and Dishner, 1990) by the entire class, using an overhead projector to project precision reading passages and popular song lyrics onto a screen; (c) chapter book readings by the teacher to the students; (d) challenge reading (Freeze 2002a) in which students counted the pages they had read to achieve a target number and win prizes; (e) a home reading program involving books, magazines, and newspapers from the classroom that engaged both the students and their parents; (f) programmed reading involving predictable passages and workbooks with precision reading comprehension and spelling activities; and (g) environmental and functional vocabulary development using street signs, safety symbols, menus, store catalogues, bus schedules, picture-word cards, etc. In addition, at the end of each school day, they either read on their own, read to each other, or read to an adult. They visited the school library once every six days. All elements of this program were drawn from the core, support, comprehension, and complementary strategies of precision reading as described by Freeze (2002a).

Results

The core, support, comprehension, and complimentary strategies used with each student and the pre and post scores of each student on the *Brigance Diagnostic Comprehensive Inventory of Basic Skills (Revised)* subtests for word recognition, oral reading, and reading comprehension (Brigance, 1999) are reported in Table 2.

Overall Improvement

Did precision reading bring about an overall improvement in the students' reading over the course of the intervention? To answer this question, the student's scores on the word recognition, oral reading, and passage comprehension subtests were compared, pre-test to post-test, using the Wilcoxon matched-pairs signed-ranks test (two tailed, $\alpha \sim .05$). The Wilcoxon (Siegel, 1956), a nonparametric test, was selected for all the statistical comparisons due to the small number of participants, the ordered metric scale of the measurements, and because matched pairs of observations of the same students at different times were available. This statistic is also appropriate as it allowed each subject to act as his own control.

In order to make pre to post comparisons understandable to the educators involved, the students' subtest performances were converted into grade equivalency scores in accordance with the scoring and reporting recommendations of the *Brigance Diagnostic Comprehensive Inventory of Basic Skills (Revised)*. Since two levels of reading achievement on the subtests (i.e., pre-primer and primer) preceded grade one and numerical standard scores were needed to make statistical comparisons, the pre-primer level was given a value of 1, the primer level was made equal to 2, the grade one level equaled 3, the grade two level equaled 4, and so forth. Students who did not register on a subtest (i.e., scored below the pre-primer criterion) were given a score of zero.

Word recognition. As a group ($n = 7$), there was a statistically significant improvement, pre-test to post-test, in word recognition ($p = .014$), with a mean of 13.3 words read correctly on the pre-test and 24.1 words read correctly on the post test. In terms of educational significance, the students made an average gain of 1.1 grade levels in word recognition, improving from a score of 1.7 (pre-primer) to 2.8 (primer). Students ranged from below the pre-primer level to the grade 1 level on the pre-test and from the below pre-primer level to the grade 4 level on the post-test.

Oral reading. There also was a statistically significant improvement ($p = .034$) in oral reading for the group ($n = 7$), with a mean pre-test standard score of 1.0 (pre-primer level) and a mean post-test score of 2.1 (primer level), representing a gain of 1.1 grade levels. Students ranged from below the pre-primer level to the grade 1 level on the pre-test and from the below pre-primer level to the grade 3 level on the post-test.

Passage comprehension. Mean gains in passage comprehension also were statistically significant ($p = .034$) for the group ($n = 7$). There was an improvement of .09 grade levels from a mean pre-test standard score of 1.7 (pre-primer) to a mean post-test score of 2.6 (primer). Students ranged from below the pre-primer level to the grade 1 level on the pre-test and from the below pre-primer level to the grade 4 level on the post-test.

These gains were achieved after 5 minutes of precision reading, core, and support strategies per school day over 30 weeks. Concurrent precision reading support, comprehension, and complimentary strategies were infused into the daily language arts program of the class. The results for individual students are summarized in Table 2.

Increased Fluency

Did precision reading increase the fluency (i.e., speed and accuracy) of students' reading consistently throughout the year? To answer this question, two kinds of comparisons were made. First the students' mean number of words read in one minute at their first and at their best reading (typically on their seventh to tenth repeated reading) of the same passage were compared for passages attempted at three times - early, mid-way, and late in the school year. Second, the students' mean percentage of misread words was compared at their first and at their best reading of the same passage at three times - early, mid-way, and late in the school year.

Consistent increases in speed. There were statistically significant increases in the mean number of words read in one minute from the students' first to their best precision reading trial for passages attempted early ($p = .014$), mid-way through ($p = .022$), and at the end of the precision reading intervention ($p = .022$). The numbers of words read in one minute, at their first and best trials on the same passage, early, mid-way, and late in the school year, are reported for all students in the study in Table 3.

Table 2
Summary of Results

Student	Pre Assessment	Strategies	Post Assessment
Dan 10 years male	<i>Oral Reading</i> Upper Grade 1	<i>Core Strategy</i> Level 3 formatting	<i>Oral Reading</i> Upper Grade 3
	<i>Word Recognition</i> Grade 2	<i>Support Strategies</i> - echo pre-reading - silent pre-reading - five second delay procedure	<i>Word Recognition</i> Grade 4
	<i>Passage Comprehension</i> Upper Grade 1		<i>Passage Comprehension</i> Grade 4
	<i>Reading Behaviour</i> - resistant - reluctant		<i>Reading Behaviour</i> - self-confident - peer leader
Abe 10 years male	<i>Oral Reading</i> Pre-Primer	<i>Core Strategy</i> Level 3 formatting	<i>Oral Reading</i> Lower Grade 2
	<i>Word Recognition</i> Grade 1	<i>Support Strategies</i> - echo pre-reading - silent pre-reading	<i>Word Recognition</i> Grade 2
	<i>Passage Comprehension</i> Lower Grade 1		<i>Passage Comprehension</i> Lower Grade 2
	<i>Reading Behaviour</i> - resistant - reluctant		<i>Reading Behaviour</i> - eager - motivated

Note. Oral reading, word recognition, and passage comprehension grade equivalency scores obtained on subtests of the *Brigance Diagnostic Comprehensive Inventory of Basic Skills* (Brigance, 1999). Reading behaviour assessments were based on teacher's reports.

Student	Pre Assessment	Strategies	Post Assessment
Bob 11 years male	<i>Oral Reading</i> Below Pre-Primer	<i>Core Strategy</i> Level 3 formatting	<i>Oral Reading</i> Primer
	<i>Word Recognition</i> Pre-Primer	<i>Support Strategies</i> - echo pre-reading - silent pre-reading - five second delay procedure	<i>Word Recognition</i> Grade 1
	<i>Passage Comprehension</i> Primer		<i>Passage Comprehension</i> Lower Grade 1
	<i>Reading Behaviour</i> - overwhelmed - confused		<i>Reading Behaviour</i> - excited - enthusiastic
Jim 11 years male	<i>Oral Reading</i> Lower Grade 1	<i>Core Strategy</i> Level 3 formatting	<i>Oral Reading</i> Lower Grade 2
	<i>Word Recognition</i> Grade 1	<i>Support Strategies</i> - echo pre-reading	<i>Word Recognition</i> Grade 2
	<i>Passage Comprehension</i> Upper Grade 1		<i>Passage Comprehension</i> Upper Grade 2
	<i>Reading Behaviour</i> - overly dependent on sounding out words - unenthusiastic		<i>Reading Behaviour</i> - self-confident - eager - motivated

Student	Pre Assessment	Strategies	Post Assessment
Cam 13 years male	<i>Oral Reading</i> Below Pre-Primer	<i>Core Strategy</i> Level 3 formatting	<i>Oral Reading</i> Below Pre-Primer
	<i>Word Recognition</i> Pre-Primer	<i>Support Strategies</i> - echo pre-reading - silent pre-reading - five second delay procedure	<i>Word Recognition</i> Primer
	<i>Passage Comprehension</i> Pre-Primer		<i>Passage Comprehension</i> Pre-Primer
	<i>Reading Behaviour</i> - resistant - reluctant		<i>Reading Behaviour</i> - interested in print and literacy
Ian 9 years male	<i>Oral Reading</i> Below Pre-Primer	<i>Core Strategy</i> Level 3 formatting	<i>Oral Reading</i> Below Pre-Primer
	<i>Word Recognition</i> Below Pre-Primer	<i>Support Strategies</i> - echo pre-reading - five second delay procedure	<i>Word Recognition</i> Primer
	<i>Passage Comprehension</i> Upper Grade 1	- bean bag activity - Word card practice integrated with occupational therapy	<i>Passage Comprehension</i> Upper Grade 2
	<i>Reading Behaviour</i> - violent refusal		<i>Reading Behaviour</i> - willing participant

Student	Pre Assessment	Strategies	Post Assessment
Ed 8 years male	<i>Oral Reading</i> Below Pre-Primer	<i>Core Strategy</i> Modified Level 3 formatting	<i>Oral Reading</i> Below Pre-Primer
	<i>Word Recognition</i> Below Pre-Primer	<i>Support Strategies</i> - echo pre-reading - five second delay procedure	<i>Word Recognition</i> Below Pre-Primer
	<i>Passage Comprehension</i> Below Pre-Primer	- adapted Fernald method - bean bag activity - Word card practice integrated with occupational therapy	<i>Passage Comprehension</i> Below Pre-Primer
	<i>Reading Behaviour</i> - violent refusal		<i>Reading Behaviour</i> - willing participant - interested in paint and literacy

Note. During the study, Ed did not become engaged with the core or support strategies.

Consistent increases in accuracy. There were statistically significant decreases in the mean percentage of miscues in students' one-minute passage readings from their first to their best trial early in the year ($p = .014$), in the middle of the intervention ($p = .014$), and late in the year ($p = .014$). The numbers of error words read at their first and best trials on the same passage, early, mid-way, and at the end of the precision reading intervention are reported in Table 4.

Increased reading fluency in the face of increases in passage difficulty. It is noteworthy that the gains described above and reported in Tables 3 and 4 were achieved in spite of the increasing difficulty of the passages attempted by students as they progressed through the year. All passages were drawn from grade, placement curriculum materials. However, as reformatted, the early passages became accessible to these students at the grade one level of difficulty even though they retained the ideas and vocabulary of their grade of origin. By the end of the year, the students were attempting passages at the Grade 4 level of reading difficulty after reformatting. Fry's readability graph (Bas & Vaughn, 1994) was used to estimate the reading difficulty of the passages before and after reformatting.

Generalization

In order to determine if improvements within passages accumulated and transferred across passages over time, two comparisons were made. First, the mean number of words read at initial precision reading trials for early and late passages were compared. Second, the mean percentage of errors at initial precision reading trials for early and late passages were compared. These comparisons are important. If the students' initial readings of the later, harder passages were quicker and at least as accurate as their initial readings of the earlier, easier passages, then the students likely had generalized their reading skills.

Table 3
Number of 'Words Read per Minute at Students' (n = 6) First and Best
Readings of the Same Passage, at Early, Middle, and Late Stages of the
Precision Reading Intervention

Name	Age	Early Passage		Middle Passage		Late Passage	
		1st	Best	1st	Best	1st	Best
Dan	10	56	137	71	122	65	145
Abe	10	30	73	44	150	48	93
Bob	11	24	101	35	64	33	53
Cam	13	21	102	38	72	50	150
Ian	9	31	64	31	37	40	57
Ed	8	0	0	0	0	0	0
Mean		27	79.5	36.5	74	39.3	83
Standard Deviation		18.1	46.6	22.9	54.8	22.1	58.1

Notes. 1. All names are pseudonyms. 2. Data refer to number of words read in one minute. 3. During the study, Ed did not become engaged with the precision reading core or support strategies. 4. Jim joined the program after the middle of the year and consequently could not be included in this table.

Table 4
Percentage of Errors at Students' (n = 6) First and Best Readings of
the Same Passage, at Early, Middle, and Late Stages of the Precision
Reading Intervention

Name	Age	Early Passage		Middle Passage		Late Passage	
		1st	Best	1st	Best	1st	Best
Dan	10	3.6	0.7	71	122	65	145
Abe	10	30	73	44	150	48	93
Bob	11	25	101	35	64	33	53
Cam	13	24	102	38	72	50	150
Ian	9	13	64	31	37	40	57
Ed	8	0	0	0	0	0	0
Mean		27	79.5	36.5	74	39.3	83
Standard Deviation		18.1	46.6	22.9	54.8	22.1	58.1

Notes. 1. All names are pseudonyms. 2. Data refer to percentage of words misread in one minute. 3. During the study, Ed did not become engaged with the precision reading core or support strategies. 4. Jim joined the program after the middle of the year and consequently could not be included in this table.

There were statistically significant increases in the mean number of words read at the students' initial precision reading trials for early and late passages ($p = .022$). They read an average of 27 words on the first trial with their early passages and an average of 39 words on their first trial with their later passages (see Table 3). This success was achieved in spite of the increased difficulty of the later passages and, as there was no statistically significant difference in the percentage of errors on early and later passages, no decline in reading accuracy.

Observations

There were some interesting observations made during the study. For example, for six of the seven students, there was a genuine desire to participate in precision reading in spite of years of failure in traditional remedial reading programs, as well as prior negative attitudes towards reading. Second, the concept of being timed was confusing for some students. To help overcome this difficulty, the students were shown videotapes of timed sporting races from television to teach the concept. Finally, the language experience approach (Freeze, 2002a; Stauffer, 1970) to the development of reading passages was attempted, as a support strategy with some students, without success during the intervention.

Student Perceptions

The students were asked several questions in individual face-to-face interviews. The questions were: (a) Do you like precision reading? Why? (b) Has precision reading helped you become a better reader? How? (c) Do you read more since beginning precision reading? What?

Students liked precision reading. All seven students answered the first question in the affirmative. Abe said, "It helps you learn to read." He said he liked, "putting my graph higher". He also said, "I like when the mistakes go low." He explained that, "It is cool to read, because you can help your mom read." He also noted, "It's good when you're older to know how to read – helps you get a job - if you want to be a policeman it helps to know how to read. Bob said he liked precision reading, "Because I did good". I just want to read my books and my cards." He said he liked it, "When I can do a story." He also said he liked it when the "graph goes up" and the "mistakes go down". Bob also remarked that he "Got to read to the principal." Carn said he liked precision reading, "Cause it's fun to learn how to read". He said, "You get to see how high you go" and "You get to read different stories." Carn also said he liked to pick the stories. Dan said he liked precision reading, "Cause it's fun and you learn." He said, "I like that the graph gets higher every day." Ed simply said, "Cause it's fun. It's good." Ian said he liked precision reading, "Because I like reading." Jim said he liked it because, "It's easy." However, he said he didn't like being timed.

Students felt precision reading had helped them become better readers. All seven students said "Yes" in response to the second question. Abe said, "I'm a better reader because of precision reading." He also said, "I read books now. I didn't used to read books. Now I try at reading." Bob did not elaborate on his positive response. In answer to the question of how precision reading had helped him become a better reader, Carn said, "The words are bigger than in books." Dan said, "Cause the stories get harder and harder and I'm learning more and more words." Ed said, "I know more words. It's great." Ian knew precision reading had helped him become a better reader, "Cause when the graph goes up you get a prize." Jim said, "It helped me become a better reader," but he did not say how.

Students said they read more. Six students responded in the affirmative to the third question. Jim, however, said "No", but he offered no further comment. Abe said, "I read lots of things." Both Abe and Bob said they read more at school, but that they *did* not read more at home. Carn said, "I read more precision reading, but I don't read more at home." Dan said he now reads, "*Goosebumps* and little books."

He said he was reading *Harry Potter* at home. Ed said, "Yes, *Sharks, Fish, Bus.*" He also said he read at home this year, but 11.6t last year. Ian said he read "lots more" than last year. He said he had, "Just started reading at home." Jim said he read more at home. However, when asked what he read there, he said, "Don't know".

Precision reading appears to have been popular with these students. They clearly attributed their reading gains to precision reading. None were receiving any other form of reading instruction at school or at home during the intervention. The teachers and teaching assistants implementing precision reading in this study also were very enthusiastic about the method.

Post-study Results

The classroom teacher continued to use precision reading after the study ended. While we were unable to track all of the students beyond the year of the study, we can report on the outcomes of continued precision reading for three of the most at-risk students in the study. Ian, who had made gains only in word recognition during the study, made substantial gains in all areas (one grade level in each of the tested areas) in the year following the study and continues to make promising progress at the time of writing. Bob made gains of one grade level in word recognition, one grade level in passage comprehension and 2 grade levels in oral reading in the year following the study. Ed, who did not become engaged with precision reading during the study, has now begun precision reading, but only after two years of intensive language development and environmental word play.

Limitations

There are several limitations inherent in this study. First, the lack of a control group and the small sample size drawn from a single school program preclude generalization of the results to other students with cognitive impairments. Second, the relatively large number of statistical comparisons, made during data analysis, increases the possibility of finding a statistically significant difference where none exists in reality. However, this concern is mitigated by the fact that almost all statistically significant findings were at a very high level of significance (i.e., p values well under 0.05) and the fact that the individual precision reading performance records of the students were verified by standardized testing. In other words, the statistically significant findings were validated by educationally significant growth in the students' reading skills. Of course, it is unknown how these students might have benefited from other forms of instruction, although their prior lack of success suggests that precision reading may offer a new tool for the reading teacher's toolbox of strategies. It is also unclear which aspects of precision reading were effective. It may be that some components of the program contributed more than others to the outcomes observed. Third, the students may have been overly enthusiastic about precision reading due to the novelty of being in a research study and testing a new method. However, the length of the study mitigates against the novelty effect. Finally, given the paucity of research on precision reading with students with cognitive disabilities, the results of this study should be accepted optimistically but cautiously. Studies of precision reading with other populations with reading deficits are needed.

Discussion

The results of this exploratory study into the usefulness of precision reading with students with cognitive impairments provide strong support for the method under certain circumstances. However, the findings are not unambiguous. While four of the students in the study made impressive gains in all the areas assessed with the standardized test, two made gains only in word recognition. While one of these two continued precision reading and made impressive gains in the year following the study, the fate of the

other is unknown. In addition, one student was never engaged successfully in the intervention during the study. Consequently, it may be that precision reading is most useful with students who are at least at the pre-primer level of reading competency in word recognition prior to beginning a precision reading program. In other words, for students with cognitive impairments, begin precision reading only if they have acquired a small sight vocabulary of high frequency or environmental words.

Future research

More research into precision reading is needed. Longitudinal studies over two or more years may prove insightful. In addition, studies including students with a wider range of cognitive disabilities should be considered. Strategies to adapt the method for students lacking reading readiness should be explored. Efforts also should be made to provide teachers with a bank of passages in precision reading format that reflect provincially mandated curricular topics and a variety of student interests across subject areas at different grade levels. As well, strategies to implement precision reading with students who are frequently absent or who change schools frequently need to be developed. Finally, some variables outside the scope of this study should be explored. They include: (a) the impact of precision reading on self-esteem, academic motivation, and self-efficacy, (b) the generalization of reading skills beyond the precision reading passages to other reading activities at school and at home, (c) parental perceptions of precision reading, and (d) the potential impact of precision reading on academic inclusion and achievement for students with cognitive impairments, severe academic deficits, and extremely challenging behaviours. The study of a more diverse and representative sample of students, reading below grade level, across the ability-disability spectrum, drawn from a broader range of grade levels, classrooms, and schools, and compared to a control group, would provide insight into the potential long term positive impact of precision reading on the perennial problem of reading under achievement

Conclusion

Precision reading appears to be a very effective and practical method of improving the teaching of reading to some students with mild to moderate cognitive impairments and severe behaviour problems, who have not learned to read in spite of years of schooling and access to traditional remedial reading programs.

In the long run, precision reading may provide a generic solution to low achievement in reading; efficacious for students ranging from nondisabled marginal underachievers, to students with learning disabilities, to students with mild to moderate cognitive impairments, to students with severe behavior disorders (see Freeze, 2000, 2000c, 2002d, 2003; Updike & Freeze, 2001). Such an intervention could provide an inclusive enhancement to traditional reading instruction, able to meet the need for improved reading instruction for a wide range of students in the regular classroom. However, precision reading is a constructive strategy, not a complete reading program. It is designed to be used in conjunction with a comprehensive and balanced program of language arts and instruction in the content areas.

At the very least, precision reading provides a new element of hope with respect to the reading instruction for students affected by prenatal exposure to alcohol or drugs. More study of precision reading with cognitively impaired students should be undertaken, given the promise of this new approach to reading instruction for some of our most hard to reach and teach children.

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READING

Efficient, fluent reading requires a number of separate skills: the ability to recognize a large number of words at a glance - just the way we recognize thousands of faces or voices; the ability to figure out words we have never seen before by blending the sounds represented by the symbols into a whole and the ability to use the context to make the whole process of recognition or assembly go faster. Most of us are born with the knack to learn to do all of these things fairly quickly and easily. Students with learning disabilities may have special difficulty with one or more of the essential skills.

1. Their difficulties may be with word recognition. It may be the case that the word does not look at all familiar. In this they are like people who say of someone they failed to recognize, "I don't remember ever seeing him before" . Or, they may be like the people who say, "I don't recall the name but the face is familiar," remembering the look of the word, but not what it says. For many, this problem is especially striking when they try to learn function words -little words like *who*, *of*, *the* - pronouns, prepositions and articles that do a grammatic job rather than carry meaning. But since function words make up such a large proportion of a text. the inability to read them seriously handicaps the reader.

2. In some cases the difficulties are with sounding out the letters or letter patterns and blending the sounds together to make a word. The difficulty may stem from a failure to learn the sound-symbol relationships. It may be an inability to analyze a word into its component parts or an inability to blend the separate components into a whole or to recognize it once it has been blended.

3. In some cases the problem is neither the decoding nor word recognition; the problem is understanding the text. Students with language disabilities may have difficulty with vocabulary, grammar, and with the concepts in the text. If the text is not well understood, it is hard to make use of context as an aid to decoding and recognition.

These students may have to have special help with one or more aspects of the reading process - help that is more intensive than is the case with other students. The instruction may have to take place in smaller steps, include more repetition, more attention to keeping the student motivated and, above all, more sensitivity to the likelihood of long-standing problems of frustration and discouragement. The teaching approaches that the literacy tutor has learned may have to be modified slightly. Though a whole language approach makes reading relevant, stresses meaning, and encourages writing, most students with learning disabilities must also have careful, explicit, systematic instruction in phonics. There are excellent, well-sequenced, well-organized programs on the market. But for most students with learning disabilities, supplemental materials are necessary. These should be lively, make repetition palatable, be chosen to help students' weaknesses and take advantage of their strengths.

Problems that may interfere with smooth and easy learning include problems of attention, memory, language, and visual-spatial skills. Some of the difficulties that can occur are discussed below.

Attention

In addition to the general principles discussed earlier in this section, the following points will help students with attention problems in reading:

Comprehension and memory

Some students report that when reading aloud (and even when reading silently) all of their effort goes to decoding, and they fail to understand or remember much of the content. The following strategies help:

a) Construct reading lessons so that the focus is always on meaning. This can be done from the outset even for students with minimal reading skills, or as part of phonics activities. Use pictures, stickers, etc., to create "context". Make up questions, directions to be followed and treasure hunts (see sample materials at end of this chapter). Later read texts that require following directions: recipes, card tricks, crafts, driver's education manual.

b) Encourage the student to engage with the material; to ask questions before beginning to read and to look for specific details. Teach the use of clues to the content: title, chapter summaries, pictures and what went before. Until the student can do this on his own, provide questions to research. For example, if the student is reading a newspaper article on the GST, ask him to find out what kinds of goods will not be taxed. If he is about to read an article about Canadian scientists, suggest that particular attention be paid to a few questions, e.g., *"Who was the discoverer of insulin? How many years did it take him?"*

c) Encourage visualizing after a description. *"Close your eyes and try to see it."*

d) Use texts with lots of dialogue, as well as movie and play scripts. These make it easier to attend to content. A catalog of TV and play scripts is available from:

Script City, 8033 Sunset Blvd., Hollywood, CA. 90046

Seek out short stories that feature conversation. These make good texts for an adult reader with skills at the Grade 4 or Grade 5 level.

Self-instructional techniques

Help student delay impulsive responding - perhaps by learning some self-instructional techniques. Depending on the student's needs, he might have a checklist that he could consult as he begins to do an assignment. The following are samples:

a)	Read instructions carefully	_____
b)	Ask teacher to clarify anything that is confusing or ambiguous	_____
c)	Be sure to put name and date at top of page	_____
d)	Use spelling reference book or dictionary to check spelling of words you are uncertain about	_____

a)	Read title and try to guess what article is about.	_____
b)	Read first sentence in each paragraph and try to get an overview of -- content	_____
c)	Read article once for general sense	_____
d)	Reread to try to attend to facts, details, names of characters	_____
e)	Retell story to yourself, consulting article to fill in missing details	_____

a)	Identify task: Ask yourself: What am I supposed to do?	_____
b)	Plan: Figure out how to get it done.	_____
c)	Take inventory: Am I following my plan?	_____
d)	Check: How did I do?	_____
e)	Correct: Look for errors.	_____

Mental problem solving

Some students, when asked questions about the text that require them to combine details or make inferences, are quick to say "I don't know" or to give the first answer to pop into their head. They need to discover that when answers are not immediately obvious they can find the answers in their own heads by rearranging the facts mentally. To encourage mental problem solving, play word games like *Twenty Questions*, *Botticelli* or board games like *Clue*. Also useful for developing "thinking skills" is *Thinklab* from SRA (*Junior Thinklab*, though designed for children, has activities that would be fun for adult beginning readers). (Also see resource section.)

Structure

Use as much structure as possible in lessons - a timetable that lists the activities in order and time to be spent on them, for example:

9:00	-	9:15	Review of short vowel sounds
9:15	-	9:30	Spelling dictation
9:30	-	9:45	Reading from novel
9:45	-	10:00	Independent writing
10:00	-	10:10	Coffee break

Visual aids

For students who have trouble attending to language, use visual aids to help focus attention: drawings, diagrams, maps, charts, graphs.

Verbal directions

Some students cannot attend visually, but need to be talked through everything. They don't notice where things are, how a page should be laid out or procedures for turning on the computer, for example. They need verbal directions to accompany demonstrations or to highlight things other students notice automatically.

Memory

Memory has many components, each of which may be separately impaired. A student may have an excellent memory for events in his life, for people and places but very poor ability to remember what words look like. Students with learning disabilities may have problems with immediate memory span, problems with verbal memory, memory for sequences (words in series, lists), making associations and problems with word retrieval. Each of these difficulties can have an impact on learning in general and on reading in particular.

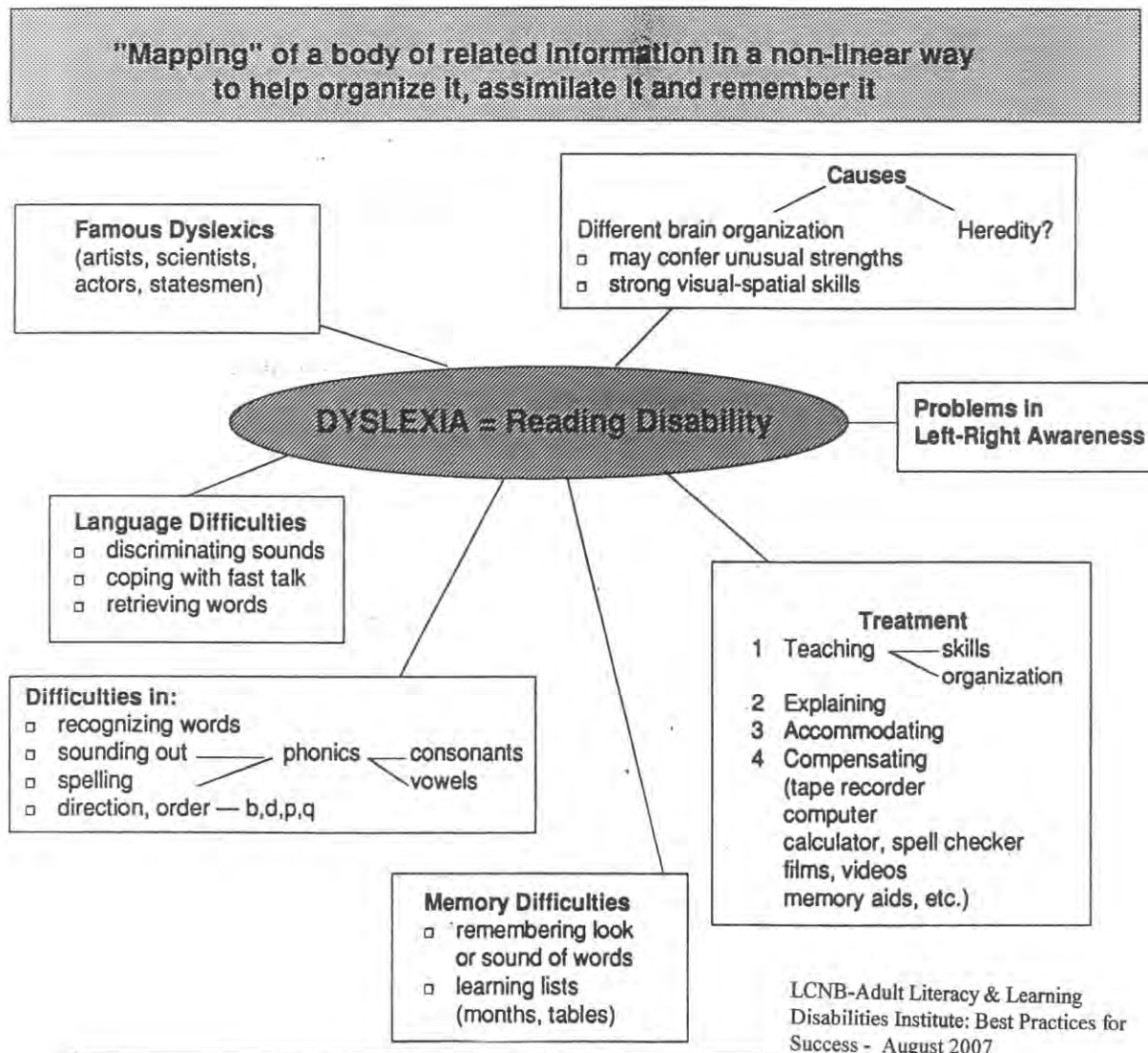
Immediate memory span

1. Some students miss part of, or misperceive, explanations or directions. It is as though spoken language goes by too quickly to be registered and remembered. The tutor needs to be sensitive to this problem and be sure to:

- a) slow up speech,
- b) provide information in shorter chunks,
- c) repeat as often as necessary,
- d) where suitable, accompany oral directions with written directions,
- e) make sure the student understands that he has this problem and learns to ask for repetition and clarification where necessary,
- f) encourage the student to use a tape recorder in classes where there is to be lecture or discussion, so that lessons can be replayed and assimilated in smaller portions.

2. Problems in immediate memory span may affect reading comprehension. The student is unable to hang on to details in a densely-packed sentence, especially where there are non-predictable items like names and numbers.

- a) Rewrite texts using shorter, simpler sentences.
- b) Teach the student to look for specific information, to highlight important details so that they can be found quickly and easily.
- c) Teach the student to read the paragraph once for general sense and a second time for details.
- d) Give lots of reading assignments right from the beginning that require reading for meaning so that the student never gets into the habit of "word calling".
- e) Encourage the student to enhance recall by:
 - rehearsing - saying it over and over, reviewing, writing it out;
 - visualizing;
 - making a drawing; and
 - semantic mapping or word webs - ways of making lots of associations that will serve as reminders for each other. (See example of semantic map below.)



Verbal memory and word retrieval

Some adults with learning disabilities will have difficulty in verbal memory for words and sequences and word retrieval. The student may have trouble learning and remembering new words (names of people, labels for new concepts, the "name" of a new sight word).

Some students seem to need much more repetition than usual to stamp in a skill or make an association between two items (e.g., a letter and its sound). A very common problem for students with learning disabilities is learning lists - as children they had trouble learning the alphabet, the days of the week, the months of the year, multiplication tables. (Many adults with learning disabilities report that they are still unable to recite the months of the year; still don't know multiplication facts.) A student may say he "knows" the word, has it on the tip of his tongue, but can't access it when he needs it.

1. Provide plenty of repetition in a palatable way when new words are introduced. Find ways to incorporate new words into a game (e.g., of a bingo or lotto type). Use it in conversation. The tutor might use several steps before asking the student to produce the word, for example:

- a) Make comments or ask questions that include the name. (e.g., *"Do you remember where Frederick Banting lived?"*)
- b) Create a mnemonic or memory aid that will give some kind of sound association (here are some strategies that worked for students: one remembered the name of his doctor - Guttman, by saying that he looks after his gut; one remembered the name of her psychologist - Golick, by saying, "It sounds like Garlic"; another by rhyming it with "alcoholic")

2. Teach rehearsal strategies, for example: sub-vocally repeating something over and over until the information is consolidated; Writing something out over and over, while saying it aloud. Remind the student that the more a word is used, the easier retrieving it will be. Have him "file" it mentally in as many forms as possible: visualize it - its written form, its meaning; listen to its sound (repeat it aloud or subvocally); rhyme it with another word; make an association to something ridiculous or scatological.

3. Teach retrieval strategies. When there's a word on the tip of your tongue:

- a) Relax. The needed word may pop into your head.
- b) Pay attention to the associations that occur as you search for the word. Focusing on one of these may trigger the word sought.
- c) Go through the alphabet. Sometimes the initial letter "pops out" and the name is retrieved.

4. Use multiple choice to allow the student to demonstrate his knowledge. For example, ask, *"Which of these discovered America?"*

- a) John Cabot b) Christopher Columbus c) Jacques Cartier

5. For learning lists:

- a) Learn in small chunks - say three at a time, gradually adding one or two more each time the sequence is mastered.
- b) Set list to a tune. Just as pre-schoolers learn the alphabet more easily when taught the ABC song, and school children learn to spell Mississippi by means of a rhythmic chant, so adult learners are aided by rhythm, rhyme and melody.
- c) Use mnemonics - silly, short verbal devices that take a bunch of unrelated words that have to be learned and turn them into a memorable image. There are several types:

Acrostics - sentences in which the first letter of each word is the first letter of one of the things you have to remember. The following are some examples:

- To remember the months of the year, there are two sentences:

Jack Frost Moves Away Most Junes.

Just After Swimming Otto Nearly Died.

- To remember the planets and their position in relation to the earth (Mercury, Venus, Earth, Mars, Jupiter, Uranus, Neptune, Pluto), sing, to the tune of Swanee River:

My Very Educated Mother Just Served Us Nine Pizza pies.

- To remember the spelling of words like wOULD, cOULD, and shOULD, students refer to them as *Oh yoU Little Devil* words.

- Provinces and territories of Canada can be recalled by:

Nice Northern Place Nestled Quietly Over Many States

Always Befriending Neighbouring Yankees,

standing for, Newfoundland. Nova Scotia, Prince Edward Island,
New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan,
Alberta, British Columbia, Northwest Territories, Yukon.

Acronyms - Each letter in a word represents one of the items in the list, e.g. to remember the Great Lakes (*Huron, Ontario, Michigan, Erie and Superior*), the acronym is *HOMES*; *WASPLEG* is the acronym for the seven deadly sins (*Wrath, Avarice, Sloth, Pride, Lust, Envy, Gluttony*).

Rhymes - These are good for remembering all kinds of facts. Some useful ones include:

*Every perfect person owns
Just two hundred and six bones.*

*I'm giving you a fact my friend
It's short, but still it's weighty
The angles of a triangle
Sum always to 180.*

(Thanks to Barbara Achenbaum, author of
Geometry in Rhyme, unpublished.)

The Nine Parts of Speech

1. *Three little words you often see are articles - a, an, and the.*
2. *A noun's the name of anything, as school, or garden, hoop, or swing.*
3. *Adjectives tell the kind of noun as great, small, pretty, white, or brown.*
4. *Instead a/nouns, the pronouns stand, her head, his face, your arm, my hand.*
5. *Verbs tell of something to be done. to read, count, sing, love. jump, and run.*
6. *How things are done the adverbs tell, as slowly, quickly, ill, or well.*
7. *Conjunctions join the words together, as men and women, wind or weather.*
8. *The preposition stands before a noun as at or through the door.*
9. *The interjections show surprise, as ah! how pretty, oh! so wise.*

The whole are called the parts of speech

Which reading, writing, speaking teach.

(See the resource section for suggestions of books containing ideas for mnemonics.)

Once a list is learned by heart help make it flexible by having students answer questions about the position of the elements as well as their names. This can be with and without the list in front of them. For example, if the months have been learned, a series of follow-up questions might be:

- What month comes just before March?
- What comes after December?
- What two months start with A?
- What month has the fewest letters in its name?
- What month gets an extra day during Leap Year?
- When is Hallowe'en?
- What month comes between August and October?

Working Memory

The following strategies will help students who find it hard to keep track of several things at once, who forget assignments and who forget what they are doing or are talking about if they get sidetracked:

1. Provide structure in the form of written schedules, syllabus and guidelines for each assignment, so that the student has something to consult to remind him of what will happen next and what he is supposed to do when.
2. Encourage the use of an appointment book or agenda to write down the week's activities and to fill in birthdays, anniversaries and special holidays throughout the year. (This gives good writing practice, occasion to learn to spell words that have personal importance, as well as a review of the calendar which some adults with learning disabilities still have not mastered).
3. Encourage the use of an address book and have the student fill in addresses and phone numbers of friends and family members. Again this involves lots of alphabetizing, consulting the phonebook, careful copying, relevant phonics instruction, and provides a practical aid.

Language

Language problems include:

- a) problems in discrimination of speech sounds;
- b) the verbal memory problems mentioned above;
- c) difficulty acquiring spoken vocabulary and standard grammar (one expert referred to it as having a "tin ear" for language);
- d) sometimes slurred or cluttered speech;
- e) difficulty organizing verbal sequences;
- f) difficulty at getting outside spoken language in order to relate it to print (appreciating that words are composed of a series of sounds in time and that these are mapped onto the left-right arrangement of letters in a word), (little facility for rhyming, difficulty blending sounds to make a word).

Poor discrimination of speech sounds

Some students will have difficulties in discriminating speech sounds. This problem may manifest itself in mispronunciations and confusion of words similar in sound. Students may have particular difficulty identifying:

- a) the components of consonant clusters (rr, *pi*, *-nd*, *-st*, etc.), (may say or spell *artist* as *artiss*; *spend* as *send*; *planted* as *panted*; *train* as *chane*);
- b) the order of consonants that follow each other in rapid succession (may say *mazagine*; *psychogolist*; *aks* for *ask* - for Caribbean students this last item is a dialectal variation, not a misperception).
- c) confuses the sounds of lowest intensity *-flth*, *vlth*; - *saysfing* for *thing*; *muvver* for *mother*. (Again, this may be a dialectal variation).
- d) may miss or misperceive unstressed syllables in unfamiliar words, or sequence of consonants in middle of word. (Pronounces *Mulroney* as *Maroney*; hears *aristocracy* as *atrocit*).

Impact on reading: Word sounded out may not match student's internal image of the spoken word and is therefore not recognized. For these students the tutor should practice vocabulary building - emphasizing and making salient hard to hear parts of words.

Vocabulary building can be done through conversation, word games, looking at pictures, reading aloud, generating lists and making semantic maps. The aim is to enrich language generally; get the student thinking about words and recognizing the need to hear and remember the word exactly. Although oral vocabulary work (crucial to all academic and vocational activities) has an ultimate impact on reading, this can be enhanced by introducing the written form of spoken words and drawing attention to the role of the individual letters, especially those that represent the hard-to-hear parts of words. Colour and capitals can be used to highlight important letters, or syllables, e.g. *fasT*, *pLant*, *astRonaut*, *Feb-Ruary*, *PsychoLOGist*.

Sequence of Sounds

Adults with learning disabilities may have difficulty appreciating the sequence of sounds in a word. The student may have great difficulty with phonic instruction because he cannot understand how the word can be decomposed into component parts. He perceives it as a unitary whole.

1. Work first on dividing words into (spoken) syllables. Use word groups like *but*, *but-ter*, *but-ter-fly* to help the student recognize the different number of parts in each. Tutor and student can tap out the syllables in each.
2. Help the student identify the separate components of Consonant- Vowel-Consonant (CVC) words, through games of transformation in which one letter is changed at a time to make a new word, e.g. *bat*, *cat*, *can*, *cap*, *cup*, *cut*, *nut*, *not*, etc.
3. Read poems, make rhymes, play rhyming games. (See *Playing With Words* in resource section.)
4. Read aloud tongue twisters and use them as reading texts, e.g., *Peter Piper picked a peck of pickled peppers*. Try to record and have available on video some of the silly Sesame Street segments that are based on a letter's sound. Have the student create his own tongue twisters. (*Wonderful Willy wondered whether to wear his washable waterproof waders in such wicked weather.*)

Remembering sound-symbol associations

The following strategies will help students who have difficulty remembering sound-symbol associations:

1. Use key words for initial sound. If possible, incorporate the shape of the letter (*S for snake*).
2. Provide interesting practice. For example:
 - a) Create texts with pictures that give context.
 - b) Elicit words (*List all the words you can think of beginning with S, list all the fruits you can think of beginning with P*, etc.)
 - c) Use tongue twisters as texts.
 - d) Create tongue twisters and write them out.

3. Where the sound-symbol relationship to be learned is based on combinations of two or more letters, make sure the student has the order straight. Most of these combinations are arbitrary with no articulatory cues to order. Try:

a) highlighting order using colour or print variations.

b) numbeering (*Ielfg. 3h'l-as I•n ei.g h)t*;

c) drawing attention to the order verbally or with fill-in-the-blanks activities;

d) finding a memory aid (I was **WED** on *WED*nesday);

e) setting a tricky spelling to music. (One student learned the spelling of **eight** by singing the spelling, **e-i-g-h-t**, to the tune of the refrain in *B-i-n-g-o.*).

4. Teach words in "families" (e.g., *an, man, fan, ban, can, ran, pan, tan, span, clan*). It is helpful to learn "phonograms". These are word endings that begin with a vowel and to which beginning consonants can be attached. They include the following:

-ack, -all, -ain, -ake, -ale, -arne, -an, -ank, -ap, -ash, -at, -ate, -aw, - ay, -eat, -ell, -est, -ice, -ick, -ide, -ight, -ill, -in, -ine, -ing, -ink, -ip, -ir, -ock, -oke, -op, -ore, -or, -uck, -ug, -ump -unk

5. Teach grammatical endings, their form and their meaning. Help the student to see, hear and appreciate the differences in *farm, farmer, farms, farmed, farming*. Teach prefixes and suffixes that expand the meanings of root words (e.g., prefixes **dis, con, ex, sub**; suffixes *er, or, able, or, ed, tion*).

6. Teach reading and spelling simultaneously. (Encourage the student to learn the spelling of new words he finds in texts).

Word recognition / phonetic spelling

Many students have difficulty remembering the way words look, they fail to recognize them and spell them phonetically. Try the following teaching strategies:

1. Teach through all the senses:

a) Have the student write a word several times in the air to enlist his kinesthetic memory. (In severe cases, tutors may want to try a tracing technique introduced by Dr. Grace Fernald - see resource section).

b) Have the student write it and spell it aloud simultaneously three to five times.

c) Highlight the position of the individual letters by creating work sheets. (See example at end of this chapter.)

2. Stress key words that have to be learned by sight. Work on them through flash cards, build them into lotto or computer games. For students with severe difficulties in this area, work through several stages:

a) After a word has been introduced, have student pick it out from among several, e.g. *Danger* - "Which one says *Danger*?"

Poison **Danger** **Help**

b) Later make the choices more similar.

Danger **Dagger** **Dangle**

c) Fill in the blanks: D _ n _ er; Da _ _ er; D _ ng _ r; _ a _ _ e _ ; etc,

d) Ask questions about the word (with the word visible). How many letters? How many consonants? How many vowels? Can you find a word in DANGER that describes a feeling? Can you find a person's name? How many words can you make using the letters in DANGER (*an, red, nag, rag, ran, read, dear, dean, den, end, rage, anger, and, gear, etc.*)

5. Have the student close his eyes and visualize the word on a sign in a dangerous place. The idea is to engage him with the word and its structure in ways that will make it memorable. If it seems like a lot of effort to put into learning one word, remember that the activities themselves are valuable, giving practice in visual precision, in noticing the structure of words, giving practice in phonic activities and generally engaging the student with print.

Function words

Some students have great difficulty reading function words. For example, they may confuse *when/went; who/how; a/the; off/or; for/from*.

1. Since these words do not trigger a clearcut meaning as for example *elephant*, try to make them salient and meaningful; highlight their characteristics. Give assignments like these:

a) Circle all the "*the*" in a newspaper article

b) Fill in the blanks with the right word (e.g. *off/for: A kilo _ _ ham; Two _ _ _ a penny, etc.*).

2. With access to a computer program that makes crossword puzzles you can create a program especially for your student, having him fill in words whose structure he needs to work on.

Limited vocabulary / problems with syntax

When reading, a student may frequently meet words and sentence structures that are not in his own repertoire.

Impact on reading: Reading comprehension difficulties.

1. In giving directions and explanations, use words in the student's vocabulary.

2. Avoid "difficult" syntax: passive sentences, relative clauses, sentences with too many embeddings and ambiguous sentences. Examples of sentences that may be hard to process:

a) "*Before you do the first three pages of the phonics book, read the story on page 16.*" (Order of mention does not equal order of events.)

b) "*It would be several days before John had realized that his friend had left town.*" (As above)

c) "*Not only Bill, but many of his friends, had failed to realize that there were to be no more payments.*" (Too many negatives.)

d) "*The old man, observed by the children, had not appeared for several days.*" (Passive construction)

3. Systematically work on vocabulary and syntax. (Word games, discussion, readings, introducing varied sentence structures and helping student see what they mean.) Engage student with language.

4. Teach "signal words":

- a) continuation signals (*and, next, similarly*)
- b) change-of-direction signals (*although, however, on the other hand*)
- c) sequence signals (*first, second, third; until, during*)
- d) illustration signals (*for example, similar to, in the same way as*)
- e) emphasis signals (*above all, a key feature, should be noted*)
- f) cause, condition, or result signals (*because, for, if, in order that*)
- g) spatial signals (*between, beside, middle*)
- h) comparison/contrast signals (*or, more than, much as*)
- i) conclusion signals (*as a result, consequently, finally*)
- j) fuzz signals (*almost, maybe, nearly*) ,
- k) non-word emphasis signals (*exclamation point, underline, italics*)

5. To make the task of reading easier, rewrite texts that might be of interest to help the student understand them, avoiding the hard to decipher syntax (passives, embedded sentences, unusual stylistic variation) and changing vocabulary where necessary. (See example at end of this chapter.)

6. Seek out the easy-to-read classics. Many books have already been rewritten at an easier level.

7. Vocabulary building - encourage use of a dictionary and thesaurus. If the student has access to a computer and word-processing, make liberal use of the built in thesaurus.

8. Use reading texts and workbooks designed for ESL students. These systematically introduce and provide practice in structures that the student with learning disabilities may have failed to learn.

Visual-spatial disabilities

Through writing - simply practicing words, writing grocery lists, or through creative expression - students focus their attention on the structure of words, their sounds and spelling patterns. They thereby reinforce phonic skills and ultimately the capacity for effortless and automatic word recognition. But many students with visual-spatial problems find writing particularly arduous and avoid it as much as possible.

When a student is unable to write by hand effectively, it is evident in the product. Writing is illegible, with faulty letter formation, a mixture of manuscript and cursive writing, upper and lower case letters within the same word and poor spatial organization. Words are inconsistent in alignment, size, and slant. Writing contains misspellings, reversals, words repeated or omitted. This may be due to a number of different kinds of underlying problems: problems in motor planning, problems in visual or motor memory, poor proprioception (faulty feedback from nerves and muscles), and problems in visual-motor integration. To reduce the physical stress of writing for those with fine motor problems:

1. Try a variety of writing implements: automatic pencil with fine point; felt marker (to increase friction and give more control); a plastic triangular pencil grip helps some with fine motor problems to know where to put their fingers; some get a better grip when the pencil is pushed through a foam ball.
2. Some adults report that they find printing easier than cursive writing. When they print, their work is faster and more legible. Suggest that a student who is having difficulty writing, try printing.
3. Provide lined paper for students with poorly aligned handwriting. Some students might find it helpful to use paper with raised lines that has been designed for children learning to write. (*Modern Education Corporation - Right Line Paper*)
4. Teach letter formation. Many adults have not learned how to form some of the letters or how to join them in cursive writing. Some avoid capital letters because they only know how to make lower case. Some students cannot learn by copying from a model but need to trace the letter in order to remember its form. Some are helped with verbal cues, e.g., "up, down and around". Others can copy a letter but are unable to revisualize it in order to make it with no model present. To facilitate writing for those with problems in revisualization, make sure a model is available. Keep visible a list of lower and upper case letters in the script the student is using.
5. Typewriters, electric typewriters, and word processors are all helpful in removing the drudgery from letter formation. It is essential though that someone teach the use of the technology to the student who may be intimidated by it. For some students with visual-spatial problems, typing is not easy to learn. Keyboards are helpful even to students who use the hunt and peck method. However, there are good computer programs that make it fun to learn touch typing. (See resource section.)
6. In some provinces, if learning disabilities have been diagnosed, students are given grants to purchase or lease computers.
7. Let the student know that there are many situations where accommodations for slow writing will be made. In most community colleges and universities, students identified as having learning disabilities are now allowed extra time on exams or are allowed to tape or dictate their exam.

Losing place when reading

Some students lose their place when reading, especially when going from one line to the next.

1. Encourage the student to use his finger to help him keep track of his place or a ruler or marker, held under the line, to help him stay on the right line.
2. Some students find the use of a flat magnifying bar, moved along over the line of print, helpful in keeping their place.
3. There is evidence that some students who complain of losing their place and of distortions on the page when they read, are helped by coloured plastic overlays placed on their book. Different students respond to different colours so it may be worth experimenting with plastic sheets of different colours.
4. Try large print books (available at most libraries for people with impaired vision) for students who seem to have difficulty following a line of print.

Poor visualization skills

Reading comprehension may suffer because the student has a poor capacity to visualize from verbal descriptions in text.

1. Help the student to practice visualizing - turning words into pictures. Read a variety of descriptions - of people, places, actions, events - and have him demonstrate an appreciation of details by matching description to a picture, retelling, drawing a picture, etc. Use adjectives of colour, size, direction. Vary verbs. Help students appreciate the differences among *ambling*, *loping*, *strolling*, *pacing*, *stalking* - instead of *walking*, for example.
2. Help the student to understand and use maps, charts, and graphs. These may be available to clarify a text or he may find that creating them helps to make a text more understandable or more memorable.
3. Create texts that direct the student to solve a visual-spatial task. This can be an assignment that calls for manipulating objects or one that calls for answering questions about an illustration. (See example at the end of this chapter.)

4. If the student still has a faulty sense of left and right, work on this with drill and practice.

Work through several stages:

- a) use a cue at first (e.g. *ring on left hand; R written on back of right hand*). Work on identifying side (*right or left - "Raise your right hand", "Touch your left ear", etc.*);
- b) then try turning in direction indicated;
- c) indicate right and left on another person; right and left on page; right and left side of objects;
- d) identify direction of turns marked on a map;
- e) identify whether right or left on actual and pictorial representations of hands, feet, shoes, gloves, in various orientations.

5. Text adventure games for computers provide lots of useful reading practice while the student is having fun. They encourage reading, require some typing and attention to spelling, as well as visualizing, understanding and using spatial terms (*left, right, in, out, upstairs, downstairs, etc.*). Key words are repeated over and over again. (Games are available at many different reading levels. Designed for children, but still fun to use for someone with beginning reading skills are: *Animal House, Dragon's Keep, Where in the World is Carmen Santiago?* More difficult, but still manageable with limited reading ability are: *Zork, Source, Hitchhiker's Guide to the Galaxy, Perry Mason*)

Compensatory techniques

It is important to remember that some students, because of the severity of their disabilities, will not be able to become efficient readers or competent spellers. It will be important to give them techniques and strategies to help them compensate for their disabilities and function in a literate society.

1. Teach the use of a tape recorder for taking notes and for producing reports, notes and the like.
2. Encourage students to get books on tape - available for purchase at many bookstores. These are made available at minimal cost for students identified as dyslexic by the CNIB.
3. Encourage student to develop skill in another medium, e.g., photography, film making, drawing.
4. Use media other than print to expand horizons: tapes, films, videos, film strips and the like.
5. Help student develop a protective vocabulary of words essential to safety, words to recognize in a restaurant, street names, etc.
6. Help student learn how to explain his disability and become a good advocate for himself.

Some general principles to remember in teaching reading

1. Make sure that the student does not have an uncorrected visual problem. If student complains of visual fatigue, blurring, etc., have him see an eye doctor.
2. Make sure lighting is appropriate. This may differ from student to student. Some students like bright lighting. Others mind the glare, are particularly uncomfortable with fluorescent lights and prefer to read in dim light. In rooms with fluorescent light, some students are helped by wearing a visor to cut down on glare. Use of a book stand to put the book in a more vertical position can help to lessen glare on the page.
3. To help a student whose reading is slow and laboured get the feeling of greater fluency, assign a short text to be read over and over till it is easy and effortless. To make this kind of activity fun, use written versions of tongue twisters, speeches from plays, words to popular songs and interesting poems.
4. To help students for whom memory and comprehension of text is a problem, encourage and engage in:
 - a) advanced discussion. This can be used to:
 - set the stage for the general theme (based on title or pictures or whatever has gone before), or
 - clarify new vocabulary that is in the text.
 - b) students monitoring their own comprehension. Does it make sense? If it is not a library book, underline key words, make notes in the margin, talk back to the book - out loud or in writing.
 - c) summarizing through talk, notes, charts or semantic mapping after reading.



SECTION 6: WRITTEN EXPRESSION

WRITING

Writing reinforces reading. A balance of reading and writing practice must be in place for student progress. Students with LDs may read well enough to get by; but poor writing skills propel them towards a literacy program. The lack of writing skills hampers an individual with an LD in school, at home, in training programs, and at work.

Written expression requires skills in handwriting, spelling, and composition, not to mention memory. Although expression of one's thoughts and feelings may be more important than the mechanical aspects of writing, illegible handwriting, misspellings, grammatical errors, and poor organization can make it difficult for a reader to understand the meaning of a written page.

In the area of written language, adults with LD may be poor or inefficient readers, unable to decipher print quickly and accurately. This deficit is often accompanied by a lack of ability to spell or remember the exact graphic composition of words. They may also have poor handwriting skills.

Students want to share their ideas. Unfortunately, capturing them on paper is not natural for many individuals with LDs. They may freeze, forget their ideas, or fight the pencil. Writing problems may be interfering with learning, instead of helping. Handwriting should not be stressed at the expense of other important skills, such as those necessary to speak, listen, read, spell or compose well.

There are several writing *barriers*: spelling, mechanics, usage, idea creation, and handwriting. Teachers and tutors need to ask if there are other ways the student can learn, or if there are ways to write more efficiently, and how writing assignments can be changed to help student learn most.

Dysgraphia refers to a writing disability. Individuals who struggle with writing often have extremely poor penmanship. They may write with an awkward, inconsistent slant. Most individuals with an LD prefer to print rather than struggle with cursive writing. Many find copying from the board difficult and have difficulty with certain letters, fonts, and spacing. They may have frequent spelling errors, inconsistent spelling, and reversed letters. Students with *dysgraphia* often have a cramped and unusual grip, strange wrist, body, and paper positioning. They often have difficulty with sentence structure, poor grammar, and omit words. Their compositions lack organization and the development of ideas.

People with writing disabilities can benefit from a variety of tools. Computer software like *Inspiration*, a graphic organizer, encourages pre-writing strategies. Other students benefit from a digital recorder or a scribe in class. For many, copying notes is too time-consuming and photocopies help ensure the message is not lost. These accommodations reduce a student's anxiety and enables concentration on their ideas rather than getting words on paper.

A **laptop** is a necessary tool to assist with daily writing needs if a student has been identified with *dysgraphia*. Spell Check decreases the overall demands of the writing task and encourages the student to wait until the end of the writing task to worry about spelling.

In the past, cursive instruction focused on developing a stylish and uniform handwriting. Most students with LDs are more comfortable with manuscript 'printing' and never move on to smooth cursive writing. With **electronic word processing equipment** and increasing reliance on

keyboarding (typing) skills, there is less emphasis on handwriting as technology becomes a welcome alternative for putting thoughts into written form.

Speech-recognition assistive technology is also popular as students can dictate papers rather than type them. These programs allow dictation directly into word-processing programs, where voice-command editing takes place. This tool increases speed and efficiency and allows students to focus on complex thoughts and ideas and fuels increased vocabulary and fluency.

SOURCES:

Gay, G. Mnemonics, Learning to Learn: Thinking and Learning Skills. Toronto: Learning Resource Disabilities Center.

www.snow.utoronto.ca/Learn2/introll.html

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Gersten, Russell, Baker, Scott & Edwards, Lana. Teaching Expressive Writing to Students With Learning Disabilities. Oregon: University of Oregon.

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Jones, Susanne (2002). Six Effective Ways of Teaching Spelling. Urbana, Illinois: Team Prairie.

Moats, L.(2000). Speech to Print: Language Essential for Teachers. Paul Brookes Publishing Co., Baltimore, MD.

Section VI Readings- Written Expression

[The Writing Road: Reinvigorate Your Students' Enthusiasm for Writing](#)

(Regina G. Richards 2004). From LD online website at:

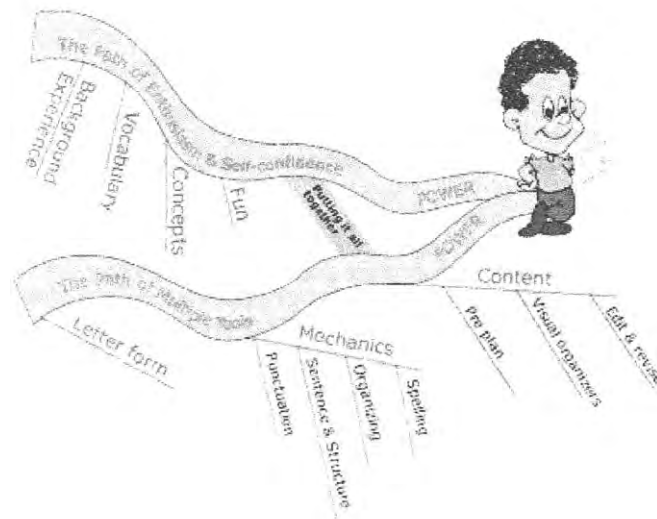
www.ldonline.org/article/5608?theme=print

(Other handouts to be given at workshop)

The Writing Road: Reinvigorate Your Students' Enthusiasm for Writing

By: Regina G. Richards (2004)

The road to writing consists of two distinct but related paths. Students who successfully travel these paths often have had teachers and/or parents assisting them to safely navigate their way. Successful navigation frequently results in reinvigorating students' enthusiasm for writing.



The path of enthusiasm and self-confidence

Students on this path approach writing with an excited feeling and interest in the topic. While they know the task has many components, they also have confidence that they have tools to use in dealing with each component, one small part at a time (chunking).

Students not on this path approach a writing task with the feeling that it is boring, uninteresting, and/or overwhelming. These students have difficulty establishing a purpose and consequently struggle to develop and organize their ideas. They may be coping with inadequate language skills or writing expectations that are beyond their automatic skill level.

One such student, in elementary school, describes his feelings about writing in the following passage.

"Writing was definitely the worst task of all. It was just way too hard to remember all the things he needed, like periods and capital letters. And then it was almost impossible to think about how to spell words when he was busy trying to think about the story So Eli figured it was easier to write just a few sentences. His teachers complained, but Eli just kept writing very short stories. After all, teachers didn't understand what it was like to struggle and struggle to write, and still have the paper turn out sloppy and full of mistakes.." ¹

"Research demonstrates evidence of significant failure to develop students' positive beliefs and motivation towards writing in many of today's writing programs. Students who experienced a limited amount of written language success often force writing with a hurried pace, a lagging confidence, and a lingering malaise. Furthermore, the students remain ambivalent about writing. Although many students acknowledge that writing is important and directly related to success in school and life, the thought of writing too often evokes negative reactions such as feelings of anxiety and dread, lack of control, and avoidance."²

The path of multiple tools

Students' feelings of self-confidence, or its lack, greatly influence their ability to manipulate multiple components simultaneously and successfully. The task of writing places many demands on a person's working memory system: one must constantly switch attention between multiple goals and subtasks. Mel Levine in his book for teenagers describes writing as "the awesome juggling act". Under a picture of a boy juggling eight balls, each containing a necessary component for writing, he states, "To juggle/ he has to keep all of these balls in the air at the same time. To write well, you have to keep all of the parts of writing in your memory while you are writing." Efficient writers need good working memory/ patience, persistence and flexibility.'?

Students successfully navigating The Path of Multiple Tools perform these processes effortlessly and painlessly. They are able to coordinate the multiple demands required, using tools, i.e., strategies. They systematically move through each of the subskills required for written performance, often simultaneously.

Struggling to progress down this path is a result of having incomplete tools, or being inefficient in using tools already developed. These inefficiencies greatly interfere with the higher order aspects of written expression, the integration of ideas and clear expression. For many, this decreased effectiveness leads to avoidance of writing. A student must write to progress because practicing writing contributes to greater automaticity in the subskills. As a consequence, students who actively avoid writing miss out on critical practice of many subskills. However/ it is also relevant to realize that practice without a feeling of success, or rote practice without feedback, leads to frustration rather than skill development.

Avoiding the avoidance of writing

If a student has not yet developed competence using one or more writing subskills, it is necessary to provide explicit instruction, examples/ and practice before expecting the student to use those skills in an integrated manner while writing. Multisensory techniques encourage a student to simultaneously use visual, auditory, and tactile/kinesthetic strategies and help reinforce the connectedness between the subskills. If skill development is difficult or delayed, the use of compensations may be appropriate, and in many cases essential.

Three basic skills clusters are essential for efficiency in written expression.

- Use of letter form, spacing and lines
 - A student needs to easily and automatically place letters efficiently on the page. Struggles in these areas require remedial assistance and/or compensations.
 - Remedial assistance may include re-teaching manuscript or cursive letter form, using well sequenced multisensory instruction. Use of a vertical plane, such as a whiteboard, is valuable to assist initially with directionality.
 - Compensations may include keyboarding skills.

- Use of writing mechanics within the process of written expression
 - Such skills include, but are not limited to, spelling, capitalization, punctuation, sentence structure, and grammar.
 - Because the process of writing places great demands on a student's active working memory system, any subskill which lacks automaticity may drop out when the student focuses on content. This leads to frustration for students, parents, and teachers because the student may be able to perform that same subskill in isolation.
 - To enhance active working memory, each individual subskill needs to be as strong as possible: the more automaticity, the less demand on active working memory. Conversely, the less automatic the skill, the greater demand on active working memory.⁴
- Organized use of content: clearly expressing basic ideas, with elaboration
 - Writing efficiency and elaboration of ideas depend upon a student's ability to integrate the basic mechanical skills with foundational processing skills related to letter form and space, thus allowing the student to focus on content.
 - Organizational strategies can help minimize the student's tendency to approach writing as an erratic and impulsive activity. These include pre-organization plans and strategies as well as visual organizers.

"The atmosphere that is most conducive for this journey of learning to write well is one that is free: Free of undue pressure, sustained or high stress, and instead, suffused with a degree of pleasurable intensity."⁵

Leading students down the path of enthusiasm and self-confidence

As teachers and/or parents, we need to help students learn the joy of producing good sentences that represent their ideas and feelings. The challenge is being able to convey that writing can be fun even though it involves many demands. Because practice and repetition are critical, we need to encourage students to write, regardless of their skill level or comfort with language. To do so, we provide background experiences related to the concepts and vocabulary while also stimulating enthusiasm related for the topic.

Priming

Providing students with background information and experience with the concepts prior to beginning the writing task "primes" the brain to anticipate critical features or ideas that will be forthcoming. Examples of priming are presenting the objective of the lesson in advance, reading a fun related story or enjoying role playing a related situation.

Some priming strategies to use prior to a writing activity include:

- Place a humorous or thought provoking notice on your bulletin board to elicit a discussion.
- Use a prop to introduce the concepts within the topic.
- Create experiences/activities related to the topic so that students develop some prior knowledge.

- Develop a group or individual **KWL** chart. This is a large chart with three columns: **K** for "What do you know?" **W** for "What do you want to know?", and **L** for a "What have you learned?" The L column is completed after discussion or research.
- Provide a picture prompt, role-playing situation, or song, integrated with any of the above strategies.
- Ask for expectations related to what students expect to discover about the concept or events.
- Develop a group visual organizer identifying specific components of the task or brainstorming concepts related to the activity.

Vocabulary

Our brains are biologically programmed to first attend to information that has strong emotional content. Providing hooks to create excitement, identify key information, and provide experience with the topic help set the stage and prime the student to focus on the critical aspects.'

Understanding the relevant related vocabulary is critical to being able to successfully express one's ideas. Also, providing experience with critical vocabulary related to the topic is another aspect of priming.

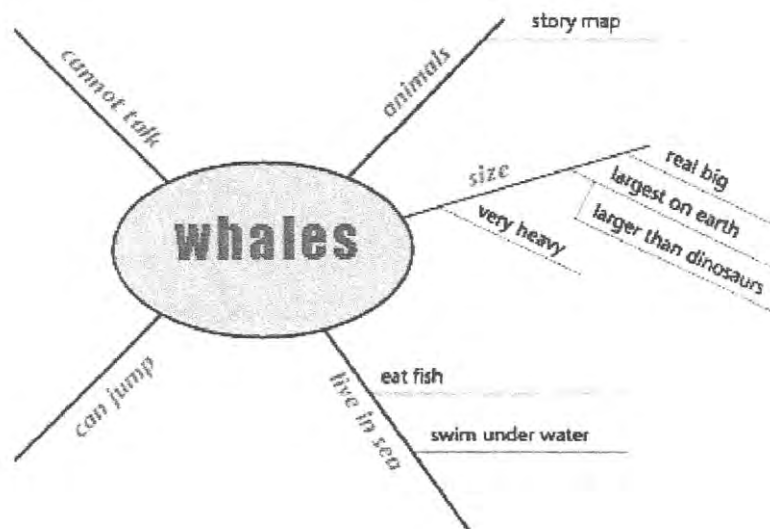
Estimates indicate that students learn "approximately 3000 to 4000 words each year, accumulating a reading vocabulary of approximately 25,000 words by the end of elementary school and approximately 50,000 words by the end of high school." "Children with learning disabilities tend to have lower vocabularies mainly through lack of exposure to challenging books and not through differences in abilities."⁸ Therefore, students who avoid reading and writing activities are at a significant disadvantage.

Children with learning disabilities need to work on vocabulary in group activities with their peers. When students experience difficulty, the vocabulary tasks and instruction should be restructured, presented in a different matter and/or different contextual format. Effective instruction, especially for these students, involves both direct instruction and direct teaching of words as well as vocabulary acquisition through incidental learning.

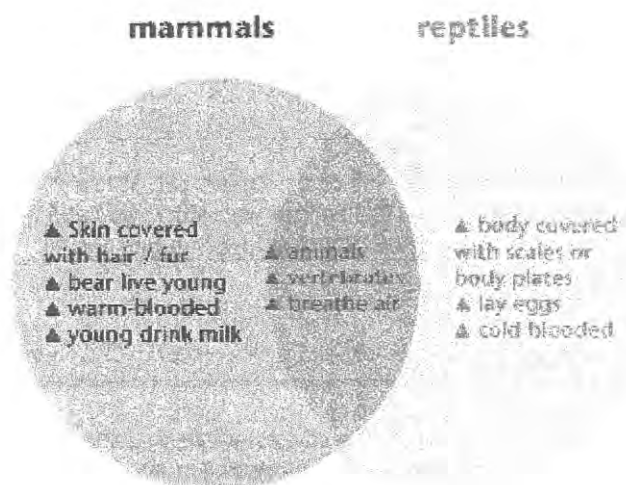
Key principles characterizing effective vocabulary instruction include:

- Emphasizing both definitional and contextual information about a word.
- Engaging the child in deep processing about each word, including generating information that ties the new word to already known information. It is critical that students learn to generate rich connections that help them relate new vocabulary words to knowledge they already have.
- Teaching words in clusters or themes rather than in isolation: learning vocabulary requires repetition and rich support (connectedness with meaning and different contextual situations).
- Ensuring that vocabulary instruction is interactive, multisensory, and that students are actively engaged.

Examples of some types of graphics:



A basic visual organizer about whales illustrating main ideas and supporting details. This was created by a student and provides a format to use in beginning to write. Richards, Regina G. LEARN: Playful Strategies for All Students, 2001, page 77, (www.retctrpress.com)

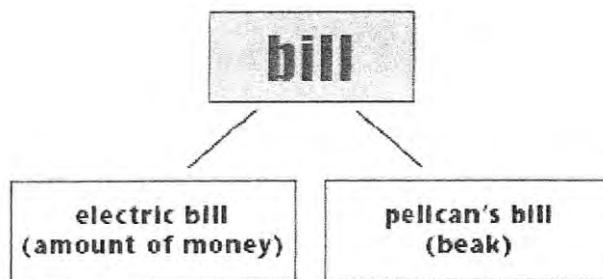


A Venn diagram illustrating the differences between mammals and reptiles as well as the similarities (in the center portion). Richards, Regina G. LEARN: Playful Strategies for All Students, 2001, page 47, (www.retctrpress.com)



Is Mr. Magic losing his hair or hare or both?

The figure with Mr. Magic presents a representation of the words **hair** and **hare** in a visual graphic form. Some students may prefer to draw their own cartoons to represent the meaning. Richards, Regina G. LEARN: Playful Strategies for All Students, 2001, page 43, (www.retctrpress.com)



A simple mind map for the word **bill**. The word **bill** can refer to an electric bill or a pelican's bill. Students may enjoy a related riddle to help focus their memory: What happened to the pelican who stuck his head in the light socket? Answer: He now has an electric bill. Richards, Regina G. LEARN: Playful Strategies for All Students, 2001, page 42, (www.retctrpress.com)

Leading students down the path of multiple tools

The more that explicit (direct) instruction is provided, the better equipped the students will be in using the various subtasks required for writing. Students benefit immensely from teacher demonstration and modeling. They need to be exposed to many examples of good writing as well as examples of inefficient written expression, with discussion about the variables of each.

Successful writers integrate the following subskills:

1. General Subskills

- Use background knowledge.
- *Have* goal direction and understand the task's purpose.

2. Mechanical Subskills

- Have fairly efficient letterform so that the mechanics of writing do not interfere with thought processes (for some students this is extremely difficult and keyboarding compensations are necessary for longer written tasks).
- Use strategies for planning, writing, and editing.
- Have sufficient knowledge and use of writing mechanics for the task, including capitalization, punctuation, and spelling (the demands at this level will increase as the students sophistication increases).

3. Contextual Subskills

- Move smoothly from planning and organizing into composing.
- Organize thoughts cohesively and with elaboration.
- Understand the function of writing as well as the needs of the audience.

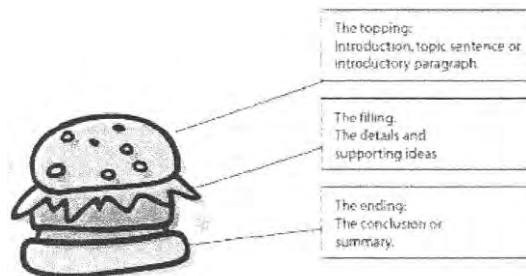
Visual organizers

Many students benefit from visual organizers to organize thoughts and ideas cohesively. These can be drawn by hand or created using a computer program. Some programs allow students to add sound bites and picture clips. Two examples of graphics to help students relate to and understand how information is organized are the dinosaur model and the hamburger model.

The Dinosaur Model: Using a dinosaur to represent the main components of a paragraph, story, or report. Richards, Regina G. *The Source for Dyslexia & Dysgraphia*, 1999, page 241. (www.linguisticsystems.com)

Graphic organizers are effective for students, especially those who prefer to conceptualize information visually and/or who may struggle organizing language. Some reasons include:

- Organizers illuminate the organization or structure of concepts/ideas and show relationships.
- Organizers demonstrate in a concrete way how information is structured and related.
- Organizers help students brainstorm the components of a task or details of a concept and then organize these into a more cohesive framework.
- Organizers encourage students the process information using higher order thinking skills such as cues to recognize key information, decision making, consolidating information, identifying main idea and supporting details, and making choices related to how to format information.



The Hamburger Model: Using a hamburger to represent the main components of a paragraph, story, or report.

- The topping: Introduction, topic sentence or introductory paragraph.
- The filling: The details and supporting ideas.
- The ending: The conclusion or summary

View a sample visual organizer

Visual organizers can be used in a variety of situations. Richards, Regina G. *The Source for Learning and Memory*, 2003, page 209. (www.linguisystems.com)

Proofreading

Mnemonics (memory tricks) provide useful strategies for the task of proofreading. It is valuable for students, especially those with some struggles, to proofread in stages, focusing on one component at a time. Strategies are critical because they encourage the student to stop periodically and check the work in a step-by- step fashion. **COPS** and **C-SOOPS** are strategies that encourage focus on primary subskills. **STOPS** is a slightly more advanced proofing strategy. Selection of a particular strategy will depend upon the focus for that given lesson and the age of the students.

Editing

• COPS

- o Capitalization
- o Organization
- o Punctuation
- o Spelling

• C-SOOPS

- o Capitalization
- o Sentence Structure
- o Organization
- o Overall format
- o Punctuation
- o Spelling

• STOPS

- o Sentence Structure
- o Tenses
- o Organization
- o Punctuation
- o Spelling

Proofreading strategies encourage the student to stop at the end of the work, go back, and check in a systematic step-by-step manner. Richards, Regina G. *LEARN: Playful Strategies for All Students*, 2001, page 91. (www.retctrpress.com)

Feedback

Research findings suggest that verbal feedback during and after a learning task are key elements in the error-correction process. There is much value in verbal feedback and discussing a learning process. However, interfering too soon or too often in the learning process can undermine information acquisition and retention. Monitoring student progress through direct teacher assistance is one of the most important roles of the teacher. Learners need ways to know if they are on track. Teachers need to tell students what they are doing well and ask provocative questions to stimulate further learning. Students enhance their metacognitive skills (their ability to think about what they are doing) by using self feedback checklists after different portions of the writing task. A program and sequence of visual organizers developed by LHQ includes a self-feedback component at the end of each organizer.¹¹ Examples from organizers for elementary grades follow:

Two Examples of Self-feedback Components to Add to Visual Organizers

Form 1	
Did I use correct • capitalization • punctuation • spelling	
Did I write neatly? • Do my subject and verb agree?	
I made _____ changes/corrections!	

Form 2	
Did I use correct:	
• Spacing • Capitalization • Punctuation • spelling	• Do I have my name, date, title? • Did I write neatly? • Do my sentences make sense? • Did I stick to my topic?
I made _____ changes/ corrections!	

Putting it all together

Students need to develop strategies that give them power to succeed in written expression tasks. As they enhance their automatic use of subskills and develop motivation and enthusiasm for the task, their writing will be reinvigorated. A useful mnemonic to remind students to use an organized process is the word, **POWER**.¹²

- POWER: P is plan

This stage includes a variety of priming activities and development of an experiential background, with the goal of establishing enthusiasm for the topic. It also involves discussing the basic format and type of writing required by the task, followed by determining the steps needed to complete the task. The student plans the focus of the task.

- POWER: O is organize

The goal of this stage is to dissect and describe the parts of the task. Visual organizers are extremely valuable at this stage. Younger students may focus on three primary parts: beginning, middle, and end. Older students may add components such as characters, setting, identification of a problem, development of the solution, and a theme.

The basic criteria for teachers to consider are:

- Begin in a more concrete mode and progress to more abstract.
- Begin with fewer components to include and progressively add more.
- Begin with a smaller task or chunk and progressively increased the size.

- POWER: W is write

Students write their paragraph/ paper, elaborating the ideas developed in the stage above. Younger students may start with pictures. It is critical to include both teacher feedback and self-feedback at this stage.

- POWER: E is edit

In the editing stage, students focus on a single component at a time. They proofread the paper multiple times, each time with a different focus. This is an area that is often the most difficult for many students with learning challenges because they tend to "read" what they intended rather than what they actually wrote. A great deal of scaffolding, modeling, and directed instruction is necessary to help students develop appropriate skills.

- POWER: R is revise

Many students attempt to avoid the revision stage. However it is critical that they learn this is a valuable component of the written expression task. Again, scaffolding, modeling, and directed instruction are very useful in helping them understand how to enhance their writing. Encouraging them to use their self-feedback form to record the number of changes they have made provides a concrete record of their progress in revising and enhancing their written products. Of course, changes need to be appropriate and add to the quality of the paper.

Conclusion

In summary:

- Encourage students to practice writing
- Ensure that students practice the appropriate subskills to a level of automaticity
- Encourage students to use a staging or process approach, focusing on small chunks at a time
- Encourage students to have fun with their writing
- Encourage students to double check that their writing communicates their message effectively

Other useful information

- **How Difficult Can This Be? - FAT City** (video) Lavoie, Richard
- **Mapping Inner Space: Learning and Teaching Visual Mapping** Marguiles, Nancy, Maal, Nusa, Wheatley, Margaret J.
- **Memory Foundations for Reading: Visual Mnemonics for Sound/Symbol Relationships** Richards, Regina G.
- **The Source for Dyslexia and Dysgraphia** Richards, Regina G.
- **When Writing's a Problem** Richards, Regina G.

This technique is recommended by research

Graphic organizers have been recommended as a practice with solid research evidence of effectiveness for individuals with learning disabilities by the Council for Exceptional Children - the Division for Learning Disabilities (DLD) and the Division for Research (DR). To learn more, please read **Current Practice Alert: A Focus on Graphic Organizers: Power Tools for Teaching Students with Learning Disabilities**.

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9. *Kidspiration* - visual organizers for grades K-3; *Inspiration* - visual organizers for grades 6 to adult. (www.inspiration.com)
10. Richards, Regina G. LEARN: Playful Strategies for All Students, page 74-75. (www.retctrpress.com)
11. Fisher, Linda & Tucker, Heidi. *Learning Headquarters' Building Multiple Paragraph Essays, Grades 4-8*, 2002.
12. Richards, Regina G. LEARN: Playful Strategies for All Students, page 75. (www.retctrpress.com)

The Writing Road: Two Paths Converging © Regina G. Richards



WRITTEN EXPRESSION

Margaret Harriman



SECTION 7: ACCOMMODATIONS FOR LD



ACCOMMODATIONS

Accommodations are alterations in the way tasks are undertaken, to allow students with LDs to complete the same assignments as others. They do not alter assignment content, nor give students an unfair advantage. They do not alter assessments or change what a test measures. Students who are accommodated are assessed on the same curriculum as the rest of the class. Accommodations 'level the playing field' and make it possible for students with LDs to show what they know without being impeded by their disability.

In the learning forum, a positive attitude and open mind are important. Focusing on a student's unique abilities and strengths is supportive. Barriers can be overcome when flexibility and common sense come into play. Approaching tasks with patience, imagination, flexibility, and with an ability to create a climate of trust and openness, will help to decrease the number of difficulties in instruction.

Accommodations vary depending on specific needs and disability type. Even students who appear to have the same LD may require quite different accommodations for learning. The accommodations suggested in this book are reasonable options, designed and intended to increase student success in a classroom setting. Most students use a combination of learning strategies to compensate for their disabilities. Instructors need to ask the student what works best, so that together they can decide to accommodate, modify, and/or remediate. The student's psycho-educational assessment should pinpoint particularly good choices.

POSSIBLE CLASSROOM ACCOMMODATIONS

- Test and exam accommodations:
 - Time-and-a-half
 - Quiet room
 - Oral exam
 - Reader
 - Scribe
 - Spelling Exemption (for other than post-secondary)
 - Laptop to type exams and the use of Spell Check.
 - Variation of test format: open book, a key box (word choice), and shorter tests in lieu of exams in consultation with instructor
- A note-taker: Point-form notes, full notes, keywords and phrases
- Outlines of instructors' lectures
- Reduced course load: Course counselling, course substitution, and exemptions from second language, spelling
- Tutor support:
 1. Study buddy (to keep on task, to outline)
 2. Tutor (to edit and review material)
 3. Research assistant (to provide library support)
 4. Coach (to organize, mentor, monitor agendas, and act as timeline assistant)
- Kurzweil 3000 Scanner (Text to voice software, reading scanner)
- E-texts
- Preferential seating
- Digital recorder
- Taped books
- Laptop computer, Palm Pilot, Calculator
- Dragon Naturally Speaking (Voice to Print Software)
- Inspiration (Brainstorming, Webbing Outline software)

SOURCES:

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Reiff, H. (2007). Self-Advocacy Skills for Students with Learning disabilities: Making It Happen In College and Beyond. Dude Publishing, Port Chester, NY.

Tilton, 1.(2005). Teachers Toolbox for Differentiating Instruction. Covington Cove Publication, Shorewood.

Passing the GED: A Complete preparation for the High School Student Equivalency Examination. New Revised Canadian Edition. Agincourt, Ont.: GAGE Educational Publishing Company, 1995.

WEB RESOURCES:

Deshler D., Schumaker, J. Making Learning Easier: Connecting To What Students Already Know. Teaching Exceptional Students. Vol 33, No 4. 82-85.
www.dldcec.org/teachinghow-tos/content/default.htm

Effective Instruction for Adults With Learning Disabilities. Pennsylvania: PENN State University, OTAN Resource Library. www.otan.us

Ross-Kidder K.(2002). The GED and Students With LD and / or ADHD
www.ldonline.org/ldindepth/adult/transitionsGED.html

Accommodations in the Workplace. www.ccrw.org/en/jancana.htm (CA)

Multi-Sensory Program by Jo-Anne Gross. www.remediationplus.com

Section VII Readings- Accommodations for LDs

[LD and the Law-Right to Reasonable Accommodation for a Disability \(LDAC\)](#)

[LD in Depth- Employment \(LDAC\)](#)

The Learning Disabilities Association of Canada LD and the Law

Current Canadian Human Rights Laws

LDANB / TAANB
203-403 Regent Street
Fredericton, NB E3B 3X6
T: 506-459-7852 F: 506-455-9300
E: Idanb@nald.ca

The Right to Reasonable Accommodation for a Disability

The Duty to Accommodate

The duty to accommodate refers to the legal obligation to take appropriate steps to eliminate discrimination resulting from a rule, practice or barrier that has - or can have - an adverse impact on individuals with disabilities. (A similar duty applies to other areas such as reasonable accommodation for religious differences.) Efforts to accommodate are required up to the point where the person or organization attempting to provide accommodation would suffer "undue hardship" by doing so.

"Accommodation" is the adjustment of a rule, practice, condition or requirement to take into account the specific needs of an individual or group. To some degree it involves treating individuals differently. Different treatment to adjust for a disability is legally required if the accommodation is needed to ensure that the person has the opportunity to participate fully and equally.

In the employment, educational and other fields, accommodations help to give capable people who do not fit a particular "norm" a fair chance to succeed personally and professionally, and contribute within their peer group and to society. Accommodations are intended to prevent a disability from becoming a determining factor in the assessment of a person's knowledge and skills. Although educators and employers need to offer accommodations based on systematic application of policies and good practices, each person who has a disability usually requires individualized accommodation. The severity of a disability varies among individuals and each person responds to and succeeds differently with a disability. Every situation is unique and must be assessed individually.

The duty to accommodate is written into, for example, the *Canadian Human Rights Act* and is commonly included in the human rights statutes of provinces and territories. This legal duty applies to work, education and access to public services and other areas and activities. (See Human Rights Legislation That Prohibits Anti-Discrimination.) Because of rulings made by higher courts, the duty to accommodate now applies everywhere in the country, even *if* the human rights statute of the particular province or territory does not stipulate the duty explicitly.

Employers, educational institutions (including schools, colleges and universities), as well as public agencies and others, have a legal obligation to provide *reasonable accommodation* that promotes equity for people who have learning disabilities. That body of human rights law includes legislation and the equality rights guaranteed for individuals with disabilities by section 15 of the *Canadian Charter of Rights and Freedoms*. Judicial interpretations of the aforementioned written laws have reinforced the rights of all people in Canada who have disabilities, including learning disabilities. (See the summaries of the *Grismer* and *Meiorin* judgments in Case Summaries.)

Persons with learning disabilities usually require accommodations in educational or work situations. Barriers may also exist in other situations, for example when a person tries to gain adequate access to certain public services. Learning disabilities may affect an individual's capacity to receive, process and communicate information in traditional formats. A person with a learning disability may have varying degrees of success reading, writing and doing mathematical tasks that may be required in employment, research, study, writing of papers and exams, and so on. Appropriate accommodations can ensure that a person's learning disabilities will not restrict or limit that person's educational success or productivity in the workplace.

For a menu of the kinds of accommodations one could or should find in a workplace, visit the website of the **Canadian Human Rights Commission** (<http://www.chrc-ccdp.ca>) Click on and review the document *Barrier-Free Employers: Practical Guide for Employment Accommodation for People with Disabilities*. It also has links to many related resources for information and advice.

Many of the accommodations appropriate in a workplace would also help in an educational environment. Additional examples of accommodations obtainable in colleges and universities (and generally relevant in many kinds of schooling) may be found by reviewing two documents on the website of a Canadian organization called **Reach** (www.reach.ca). These are *Navigating Law School. A Practical Guide for Students Who Have Disabilities* and *A Framework for Action - Law School, Education Equity and Students with Disabilities*. Accommodations that may be appropriate for some students with learning disabilities include being allowed more time to take courses, do research, write essays or write examinations.

Following are some sites with information on accommodations.

Education Accommodations

Canadian site

<http://snow.utoronto.ca/best/accommodate/learning.html>

US sites

http://www.teachingld.org/teaching_how-tos/content/default.htm

<http://www.Idonline.org/teaching/index.html>

Employment Accommodations

Canadian site

<http://ccrw.org/en/jais.htm>

US site

<http://janweb.icdi.wvu.edu/>

In deciding whether a boss or a school has tried hard enough to accommodate for a learning disability, the concept of "undue hardship" is key. In order to establish a lawful exemption from the duty to accommodate, the employer or educational institution must prove that accommodation of the needs of an individual or a particular class of individuals would impose undue hardship on the organization or on the people who would have to accommodate those needs, considering factors such as health, safety and cost.

An employer must accommodate the disabilities of employees, prospective employees, and clients or customers. An educational institution must accommodate the disabilities of students and prospective students (and also the institution's employees). It is not enough to assume that providing accommodation will be too costly in terms of dollars or staff time. The person or organization responsible for providing accommodation must consider options for providing accommodation and try to find one suitable for the individual who needs the accommodation. This will not necessarily be the costliest accommodation, unless that is the only appropriate one and the accommodator would not suffer undue hardship by providing it. The employer is in the best position to determine how to accommodate employees without undue hardship and therefore bears the responsibility for doing so. Similarly, an educational institution should be expected to know more about accommodation options for a student than the student or the student's family (although the family sometimes knows more).

The legal responsibility to make accommodations for someone with a disability does not stop when minor hardships are encountered.

Courts have mentioned many factors relevant to an assessment of whether hardship is undue in a work setting, including:

- financial cost
- disruption of a collective agreement
- disruption of services to the public
- the morale of other employees
- interchangeability of the workforce and facilities
- the size of the employer's operation (because this may relate to the employer's ability to bear the cost and adapt the workplace),
- safety
- interference in the operation of the employer's business
- the overall economic climate.
- In deciding whether hardships are excessive or "undue" in a school, college or university setting, a court or a human rights tribunal may look at factors such as:
 - the financial resources required to provide an accommodation
 - the degree and kinds of effects that accommodations will have on other students
 - the impact of accommodations on the educational program itself
 - unusual risks, if any, that accommodations may pose for staff or other students, including other students who have a disability.

On the surface, it seems that educational accommodations for students with disabilities would almost always be legally required. Whether undue hardship would be hard or easy to prove depends partly on how higher courts will interpret the responsibilities of educational authorities and governments to ensure adequate resources and budgets. This area of law is not yet well developed. We must recognize, however, that many accommodations cost very little.

In the educational realm at all levels, accommodation for a learning disability can take many forms, including:

- altering teaching methods and the ways that teaching material is presented and distributed
- having enough trained staff to permit competent and consistent individual assistance to the student
- providing technical aids and/or note takers
- adjusting examination schedules
- adjusting testing methods.

At the post-secondary level, accommodation can also involve rethinking the factors to be taken into account in deciding which applicants will be admitted to a department or faculty, including the appropriate weight to be given to each factor.

In the education system at all levels, accommodations do not compromise academic integrity or standards because the same requirements are expected of all students. Rather, accommodation can ensure that students with special needs are given a fair opportunity to achieve these standards. Accommodation facilitates flexibility and recognizes that some students may achieve the same results in different ways.

The person needing accommodation (and/or a family or advocate assisting that person) also bears some responsibility. The individual's disability and need for accommodation should be brought to the attention of appropriate personnel in a manner and time span that permits the accommodator (e.g. teacher, school, school board) a reasonable opportunity in terms of knowledge and timeliness to comply with its obligation to provide accommodations. In an employment situation, it is prudent to assume that an employee with a disability who is adversely affected by an employment practice or rule has a responsibility to tell the employer about the discriminatory problem, and to cooperate by accepting a reasonable solution if the employer proposes one that would fulfil the duty to accommodate.

Fighting a Failure to Accommodate

Until very recently, there was a strong tendency by courts and human rights tribunals to emphasize the differences between intentional discrimination and "unintentional," "indirect" or "systemic" discrimination that resulted from policies or practices that did not seem to be discriminatory. However, the recent trend in Canada seems to be for judges to rule that what matters most is whether the results of actions, practices, policies or legislation amount to discrimination or a violation of equality rights. In the employment field, for instance, case decisions increasingly now tend to hold that an employer accused of failure to accommodate will lose the case unless the employer can prove that it:

- initiated an offer to accommodate a disability when the disability became known
- explored different accommodative options seriously
- made serious efforts to put into place an accommodation that would not cause it undue hardship, rather than assuming that accommodation was too difficult to achieve.

If you are contemplating launching a human rights case because of a failure to accommodate for a learning disability, you should visit the websites of two organizations with considerable experience in fighting litigation on disability matters. These are:

ARCH: a legal resource centre for persons with disabilities

(<http://www.archlegalclinic.ca>)

Council of Canadians with Disabilities

(<http://www.ccdonline.ca/>)

In a 1997 Supreme Court of Canada case involving disability rights under section 15 of the *Canadian Charter of Rights and Freedoms (Eaton)*, Mr. Justice Sopinka stated the following pertaining to accommodation for younger students:

... [The decision-making body must further ensure that its determination of the appropriate accommodation for an exceptional child be from a subjective, child-centered perspective, one which attempts to make equality meaningful from the child's point of view as opposed to that of the adults in his/her life. As a means of achieving this aim, it must also determine that the form of accommodation chosen is in the child's best interests It is recognition of the actual characteristics and reasonable accommodation of these characteristics which is the central purpose of s. 15(1) in relation to disability

(See Section 15 and Section 1 of the Canadian Charter of Rights and Freedoms)

Accommodation is not merely a courtesy - it is required by law. A student or employee who has been denied accommodation can file a complaint under a human rights statute. The commission or agency handling the complaint may determine that the failure of, for example, the educational institution or employer to provide accommodation appears to be discrimination on the basis of disability. If so, the commission or agency may try to arrange a settlement between the complainant and respondent(s) and/or may refer the case for a hearing by a specialized tribunal, board or human rights court. (See Lodging a Complaint with Human Rights Commissions and Agencies.)

The person who needs accommodation should keep a record of the efforts and requests made to obtain accommodation, and the responses received. Such records may prove necessary in future meetings of, for example, educational officials, or in a future human rights tribunal hearing or court case. (See Tips for Community-based Advocates.)

The Learning Disabilities Association of Canada

LD In Depth

Employment

Workplace Accommodations and Best Practices

Best Practices and Accommodations for Various Learning Disabilities

As an employer, you may be vaguely aware of what a learning disability is, and the obligation to provide appropriate accommodations, but you may not know how to match an accommodation with a candidate's specific need. The following list provides a description of the major types of learning disabilities, along with workplace examples, and solutions in modifying the interviewing process. Solutions offered may in fact be helpful to all employees or candidates, regardless of ability.

Employers must:

- be willing to enter into a mutual agreement in offering accommodations;
- be willing to explore all the options in the types of accommodation needed; and
- make sure that the accommodation and/or solution is mutually satisfactory.

Persons with learning disabilities must:

- tell employers what their specific needs are;
- suggest the kinds of accommodations that will meet their specific needs; and
- enter into a partnership with the employer, whatever the agreed-upon accommodation.

Information Processing Problems

1) Auditory Perception Problems:

Difficulties in receiving and/or processing accurate information from their sense of hearing. This may be characterized by an inability to hear one sound over background noises or hearing the difference between similar sounds and/or sounds in order. There may be difficulty in remembering a series of commands or instructions or in retrieving stored information.

Examples:

- difficulties hearing verbal instructions or questions if there are other noises in the room;
- slowness in responding to verbal questions or instructions;
- poor information sequencing; and
- poor listening skills.

Solutions:

- reduce background noises (telephones ringing, noisy machinery or background conversations);
- allow sufficient time for instructions or questions to be repeated;
- let candidates sit near interviewer(s), speak slowly and deliberately, allow time for the candidate to process information;
- provide written copy of instructions;
- whenever possible provide a copy of the questions;
- demonstrate exactly what needs to be done, rather than describing the task; and
- encourage note taking.

2) Visual Perception Problems:

Difficulties taking in and/or processing information from the sense of sight which may be characterized by difficulties in seeing specific images or picking out an object and/or in seeing things in the correct order and/or in seeing the difference between two similar objects such as "v" and "u". There may also be difficulties perceiving how far or near objects may be.

Examples:

- incapacity to find key information provided in written form;
- inability to pick out one line of print from another;
- interferes with the ability to read, compute, or complete an inventory or a budget;
- interferes with a person's ability to read as quickly as others;
- difficulties filling out an application form; and
- may be clumsy. trip or bump into things.

Solutions:

- provide a room with minimal physical distractions;
- provide a written exam in an alternative format such as on tap
- provide voice-activated computers for written material:
- give verbal instructions;
- provide a talking calculator;
- provide information on tape; and
- give time to complete the task.

3) Academic problems

Difficulties in the ability to use language and to express oneself in reading, writing, spelling, and/or mathematics. There may also be difficulties sounding out letters, confusing words that sound similar, and expressing thoughts on paper.

Examples:

- not able to write exams;
- frequent spelling and grammar mistakes;
- unreadable penmanship, poor spelling; and
- unable to do simple calculations.

Solutions:

- provide information on tape;
- provide a computer and/or spell checker;
- allow extra time for written tests;
- allow a reader to read test questions aloud;
- provide verbal instructions that are clear and simple;
- demonstrate exactly what needs to be done;
- put the information on tape;
- use a colour pen to highlight key information or instructions;
- allow assistive technology (such as audio and visual aids, word processors, spell checkers, proofreading computer programmes, voice-activated computers, calculators, tape recorders) to enhance performance;
- allow more time for reading and writing; and
- preview information in order to prepare for interview.

4) Motor, temporal and organizational problems

Difficulties in moving one's body to achieve its goals, perception of time and space, and the sequencing of information.

Examples:

- difficulty in using the hands while writing;
- showing a lack of organization in written work;
- arriving late or unusually early;
- inaccurate movement such as clumsiness, awkwardness or stiffness;
- confusion between left and right;
- difficulty telling time; and
- tendency to reverse letters and numbers.

Solutions:

- use timers or verbal response as reminders;
- map information;
- allow extra time for travel between interviews;
- use alarms or bells, etc. to signal changes;
- use visual cue to indicate change;
- allow candidate to work at their own pace; and
- allow extra time to process information.

5) Attention Problems

Difficulty sustaining attention during a long period of time characterized by distractibility, inconsistent performance and/or problems focusing on details.

- difficulties hearing verbal instructions or questions if there are other noises in the room;
- slowness in responding to verbal questions or instructions;
- poor information sequencing; and
- poor listening skills.

Solutions:

- reduce background noises (telephones ringing, noisy machinery or background conversations);
- allow sufficient time for instructions or questions to be repeated;
- let candidates sit near interviewer(s), speak slowly and deliberately, allow time for the candidate to process information;
- provide written copy of instructions;
- whenever possible provide a copy of the questions;
- demonstrate exactly what needs to be done, rather than describing the task; and
- encourage note taking.

2) Visual Perception Problems:

Difficulties taking in and/or processing information from the sense of sight which may be characterized by difficulties in seeing specific images or picking out an object and/or in seeing things in the correct order and/or in seeing the difference between two similar objects such as "v" and "u". There may also be difficulties perceiving how far or near objects may be.

Examples:

- incapacity to find key information provided in written form;
- inability to pick out one line of print from another;
- interferes with the ability to read, compute, or complete an inventory or a budget;
- interferes with a person's ability to read as quickly as others;
- difficulties filling out an application form; and
- may be clumsy, trip or bump into things.

Solutions:

- provide a room with minimal physical distractions;
- provide a written exam in an alternative format such as on tape;
- provide voice-activated computers for written material;
- give verbal instructions;
- provide a talking calculator;
- provide information on tape; and
- give time to complete the task.

3) Academic problems

Difficulties in the ability to use language and to express oneself in reading, writing, spelling, and/or mathematics. There may also be difficulties sounding out letters, confusing words that sound similar, and expressing thoughts on paper.

Examples

- easily distracted by background noises during an interview;
- difficulty paying attention to verbal instructions or questions, sometimes not remembering or understanding verbal information; and
- fidgeting, need to be on the move (feet/pencil tapping).

Solutions:

- give clear directions in small single units, rather than one long installment;
- repeat all information several times until understood;
- allow person to get up and move around at intervals; and
- allow extra time.

6) Social Skills Problems

Difficulties in assessing one's impact on others, acting impulsively and not having the ability to judge non-verbal body language.

Examples:

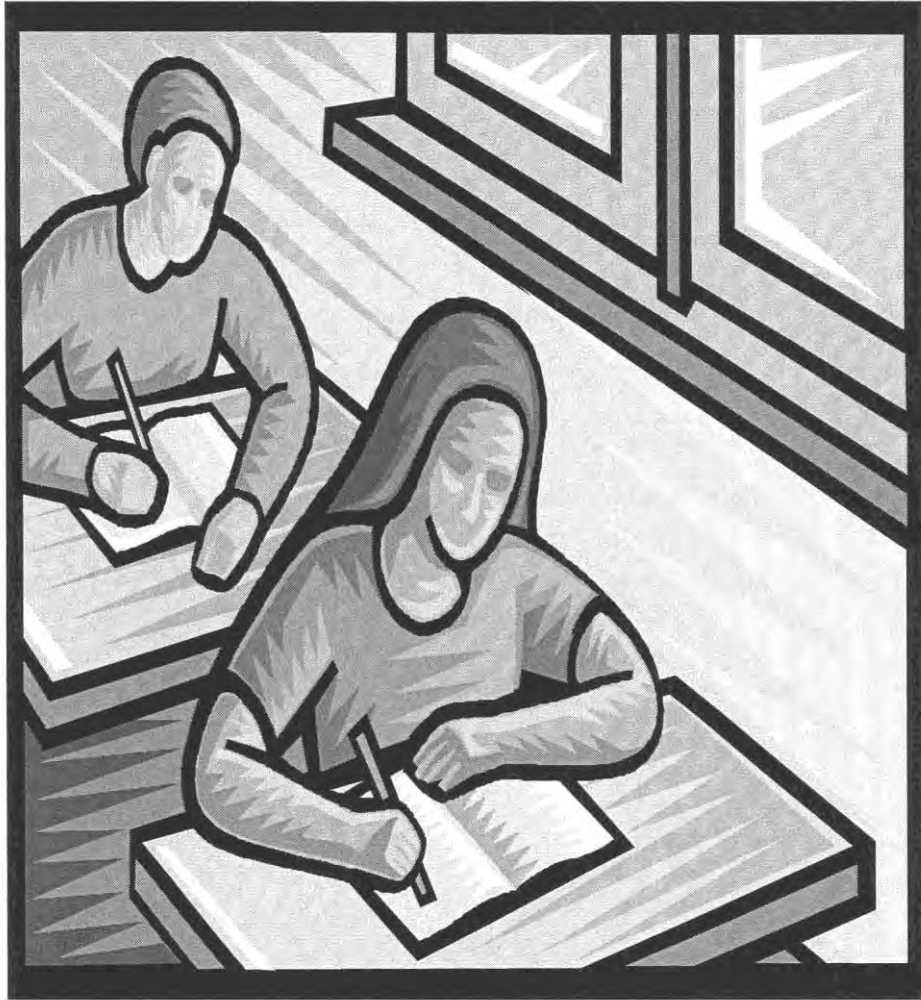
- standing too close;
- inappropriate body language and/or talking too loudly or too softly; and
- inability to read facial expressions, body gestures and/or tone of voice.

Solutions:

- avoid sarcasm, say what you mean;
- don't expect hints, body gestures to convey information;
- allow extra time;
- maintain eye contact; and
- paraphrase information to convey the message.

Persons with learning disabilities will not require all of the above accommodations but employers can assist employees by identifying and mutually agreeing upon appropriate accommodation based on their strengths and weaknesses.

Source: Barriers free Interviews and Competitions, published by Learning Disabilities Association of Canada (1998)



ACCOMMODATIONS: PREPARING FOR GEDs

Dr. Lex Wilson

SECTION 8: ASSISTIVE TECHNOLOGY





ASSISTIVE TECHNOLOGY

If LDs are identified, those with them are entitled by law to certain accommodations in school, university, and in the workplace.

Students with LDs struggle with academic achievement throughout school. By introducing assistive technology, students are empowered to build on their strengths, thus allowing them more opportunities to be successful.

The partial summary of current assistive technology found in this manual, including hardware and software, provides a good resource on what's available for LD students.

The technology can be tailor-made for a student's personal needs and is designed to assist in the learning process by reinforcing mastery of subject material by allowing a student to work efficiently and as independently as possible. The latest products are user-friendly, cheaper, faster, and increasingly more accurate.

ASSISTIVE TECHNOLOGY CONTACTS

Technical Resource Center

Kings Regional Rehabilitation Centre, Nova Scotia

James Roy, Assistive Technology Consultant

trc@nsnet.org www.nsnet.org/atc

Phone: 902-538-3103

Fax: 902-538-7022]

Learning Disabilities Association of New Brunswick (LDANB)

www.nald.ca/ldnb

Phone: 506-459-7852

Fax: 506- 455-9300

NB Easter Seals March of Dimes (NBESMD)

Andrew Lavigne Rehabilitation Technology Program Coordinator

crdd@nbnet.nb.ca

Phone: 506-458-8739

Fax: 506-457-2863

Neil Squire Society

440 Wilsey Road, Suite 104, Fredericton NB E3B 7G5

nb.info@neilsquire.ca

Phone: 506-450-7999

Fax: 506-453-9681

Charles Levasseur, Moncton

charels@neilsquire.ca

Phone: 866-851-9101

Fax: 506-854-7509

Stan Cassidy Center

180 Woodbridge St. Fredericton NB

Assessment and recommendation of strategies and assistive technology for difficulties with spoken and written communication, including reading and writing.

Lise Bleau, OT

R3lbleau@health.nb.ca

Phone: 506-452-5396 Fax: 506-44-4379

<http://www.rivervalleyhealth.nb.ca/english/progserve/specialized-rehabilitation.htm> ⁷

University of New Brunswick

Andrew Daley Technical Advisor to Students with Disabilities

Phone: 506- 477-3301

Fax: 506-453-3569

www.unb.ca

ADTI Consulting

Andrew Daley, Assistive Technology Consultant
840 Main Street U-1
Woodstock, NB.
E7M 2G1
Phone: 506-894-2415
Fax: 506-325-2243

Connect NB Branch (CNBB)

Alan Norman, E-Learning Coordinator
connectnb@nbnet.nb.ca www.cnbb.nb.ca
Phone: 506-444-4283
Toll-Free: 877-444-0510
Fax: 506-444-4058

Assistive Technology Websites

List provided with permission of the Student Accessibility Centre, UNB, Fredericton NB. Phone (506) 453-3515 www.unbf.ca/studentaccessibility/ (Special thanks to Andrew Daley).

Portable Word Processors

- AlphaSmart: http://www.alphasmart.com/pdf/struggling_student.pdf
and http://www.alphasmart.com/pdf/writing_skills.pdf
- DreamWriter: <http://www.dreamwriter.com/>
- Quickpad: <http://www.quickpad.com/>
- The Writer: <http://www.keyboardinstructor.com/ecm/Home.html>

Spell Checkers

- Franklin Electronic Publishers: <http://www.franklin.com>
- Free Dictionaries and Thesaurus online:
<http://www.cieverkeys.com/ck.html?p=home&os=>
- Dictionary and Thesaurus: <http://www.wordweb.co.uk/>
- YakYak T - Online spelling and writing tool: <http://www.yak-yak.com/>

Screen-Reading Software

- eBook Reader - <http://www.adobe.com/products/ebookreader/>
- Brousealoud - <http://www.browsealoud.com/downloads.asp>
- CAST eReader - <http://www.cast.org/udl/index.cfm?i=2ll>
- Co:Writer with Write:Outloud - www.mayer-johnson.com/software
- EMonocle Reader - <http://www.ionsystems.com/emonocle>
- Hal - <http://www.dolphinuk.co.uk/products/hal.htm>
- HELP Read - <http://helpread.net>
- JAWS - http://www.freedomsci.com/fs_products/software_jaws.asp
- Kurzweil - http://www.kurzweiledu.com/products_klaaa.asp
- Microsoft Reader Software - www.microsoft.com/reader/default.asp
- OpenBook - www.freedomsci.com/fs_products/software_open.asp
- Readplease - <http://www.readplease.com>
- TextHelp! Read and Write - <http://www.texthelp.com/front.asp>
- Text Talkster - <http://www.webspeakster.com/texttalkster.htm>
- Web Chatter - <http://www.code-it.com/webchatter.htm>
- WindowEyes - <http://www.gwmicro.com>
- WYNN - <http://www.freedomscientific.com/WYNN/products.asp>

eBook Sites

- Stockton-San Joaquin County Public Library has an outstanding list of free e-book sites. <http://www.stockton.lib.ca.us/ebooks.htm>
- Galaxy Library (some free downloads) - <http://www.galaxylibrary.com/>
- U of Adelaide - <http://etext.library.adelaide.edu.au>
- The Internet Public Library - <http://www.ipl.org/div/books/>
- Recording for the Blind and Dyslexic, Inc. - <http://www.rfbd.org>
- American Printing House for the Blind - <http://www.aph.org/>
- Library of Congress, National Library Service for the Blind and Physically Handicapped - <http://lcweb.loc.gov/nls>

Word Prediction

- * CoWriter - <http://www.donjohnston.com>
- * Word Q - <http://www.wordq.com>
- * Read and Write Gold - <http://www.texthelp.com>
- * Wordsmith - <http://www.texthelp.com>
- * Soothsayer - <http://www.ahf-net.com/sooth.htm>
- * WriteAway 2000 - <http://www.is-inc.com/>
- * Aurora - <http://www.aurora-systems.com/>

Reading Pens

- Quicktionary Reading - <http://www.wizcomtech.com/index.php3>
- Dr. Paul Gerber at Virginia Commonwealth University did a study on the use of these pens with students and adults at a metropolitan literacy center, found at <http://www.aelweb.vcu.edu/word/gpen.doc>

Concept Mapping

- Inspiration and Kidspiration - <http://www.inspiration.com/>
- eGems Collector Pro - <http://www.egems.com/>
- DraftBuilder - <http://www.donjohnston.com/catalog/draftbuilderd.htm>
- Conceptdray MindMap - <http://www.conceptdraw.com/en/products/mindmap/main.php>
- SmartDraw - www.smartdraw.com/specials/mindmapping.asp?type=13054&id=13054
- Smart Ideas - <http://www2.smarttech.com/st/en-US/Products/SMART+Ideas/MindManager> -
- www.iaresearch.com/store/Products/MindManager6/MindManager6.htm

Speech Recognition

- ViaVoice - <http://www-4.ibm.com/software/speech>
- Dragon Naturally Speaking - <http://www.dragonsys.com>
- iListen - <http://www.macspeech.com>
- Microsoft Office XP provides speech recognition software, which can be installed through the tools menu - <http://www.microsoft.com>

Math Software

"10 Tips for Software Selection for Math Instruction" by Dr. Beatrice Babbitt gives guidelines for choosing software. Online at:

www.ldonline.org/ldindepth/technology/babbittmathtips.html

Some Good Web-Sites for LD and Assistive Technology (AT)

<http://www.nationaltechcenter.org/matrix/default.asp> National Center for Technology Innovation (NCTI).

www.ed.sc.edu/caw/toolboxvendors.html Web Toolboxes for Educators.
www.landmarkcollege.org/natlinst/assistivetech/writing/tech.htm
Landmark College.

<http://www.gatfl.org/ldguide/default.htm> Georgia's Assistive Technology Project: *Learning Disabilities and Assistive Technologies*.

<http://www.ldonline.org/> LD Online.

<http://www.frostig.org/pdf/ATguide.pdf> Schwab Foundation for Learning.

<http://www.washington.edu/doit/Brochures/Technology/atpwld.html>
University of Washington.

www.ldonline.org/ldindepth/technology/customizingtechnology.html
Customizing Technology Solutions for College Students with Learning Disabilities by Joan M. Bisagno and Rachael M. Haven.

<http://www.ataccess.org/resources/lowcostnocost/lcncdemos.html> The
Alliance for Technology Access

WEB RESOURCES:

www.ccrw.org/en/iancana.htm Accommodations in the Workplace. (CA)

Deshler D., Schumaker, J. Making Learning Easier: Connecting To What Students Already Know. Teaching Exceptional Students. Vol 33, No 4. 82-85.
www.dldcec.org/teachinghow-tos/content/default.htm

Effective Instruction for Adults With Learning Disabilities. Pennsylvania: PENN State University, OTAN Resource Library. www.otan.us

Gross, Jo-Anne. Multi-Sensory Program. www.remediationplus.com

Ross-Kidder K.(2002). The GED and Students With LD and / or ADHD
www.ldonline.org/ld_indepth/adult/transitions_ged.html

Section VIII Readings- Assistive Technology

[Barouch Chars Workshop Outline and Power Point presentation](#)

ASSISTIVE TECHNOLOGY

Computer Solutions for Special Needs



Barouch Chai

MICROCOMPUTER



MICROCOMPUTER Science Centre Inc.

#26 -5155 Spectrum Way, Mississauga ON, Canada L4W 5A1

Tel (905) 629-1654 TDD 905 629 4369

Fax (905) 629-2321 Toll Free: 800 290 6363

WEB <http://www.microscience.on.ca> Email: sales@microscience.on.ca

Biography

Barouch Chai

President and CEO of MICROCOMPUTER Science Centre, Inc.

Since 1980, MICROCOMPUTER Science Centre Inc. has been providing Special Needs users with necessary adaptive technology to gain "Independence through Technology". Our "Complete Solutions" approach, a combination of State of the Art Adaptive Technology with Training Support helps Special Needs to achieve their goals and better their lives.

Our goal is to put a computer solution on the desk of every Special Needs user in the country.

As President and CEO of MSC. Barouch has spent much of his time working with nonprofit organizations supporting the special needs community.

1975 - Masters degree in Computer Science from University of Toronto (M.A.Sc.)

- 1971- Engineering degree from the Technion Institute of Technology in Israel (B.Sc.)



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WEB <http://www.microscience.on.ca> Email: sales@microscience.on.ca

Kurzweil- Curriculum Integration **Workshop**

- **Intro**

- About MSC (full solutions, training, service, system)

- **About K3000**

- Origin-Klaaa
- Installation in Colleges and Universities
- Meant for all ages

- **Main Toolbar**

- Saving formats
 - Cloze docs
- Print
 - Doc.
 - Highlights
 - Notes

- **Definitions vs.**
Synonyms.(recollection)

go to new doc. and type "Recollection" Get def. and syn,-
what do you notice?

- Spell-spelling tests

• Reading Toolbar

- Mode (continuous, self paced, word-by-word)
- Unit (sentence, paragraph, line-when to use)
- WPM 170 too fast

• Study Skills

- Highlights (legend for colours)
- Important notes -> Extract -> manipulate -> study notes read back to you
- Also used for multiple choice, true/false, circle/underline

• Footnotes

- hidden notes, review questions at end of chapter

• Sticky Notes

- can be customized (font, size, colour)
- Teacher can make notes ie. main character
- Student can make notes

• Text Notes

- Fill in the Blanks and short answer
- Show "Fill in The Blanks" and explain how it works

***BRING UP TIME TRAVEL QUIZ**

• Voice Notes

- No grammar or spelling to worry about

• Bubble Notes

(BRING UP TIME TRAVEL BUBBLE NOTES)

- New to the program
- Can put in questions (multiple choice, short answer, true/false)

- **Reading Language**
- **Read The Web**
- **Magnify Spoken Word**

Kbook High Speed Scanning



Topics to be covered include:

- What is Kurzweil 3000?
- Scanning
 - Decisions
 - Flat bed scanners
 - Sheet fed scanners
 - High speed scanners
- Product Reviews
 - Kurzweil 3000
 - CapturePerfect
 - Automater
- File formats and file management
- Q&A



Question: what is Kurzweil 3000?

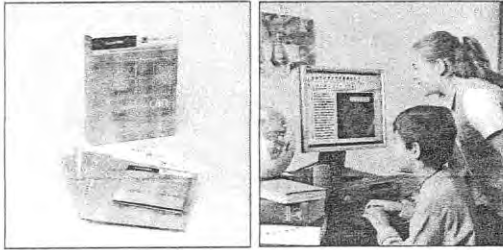
Answer: a curriculum independent reading, writing, and study tool.



Kurzweil reading technology from the past and...



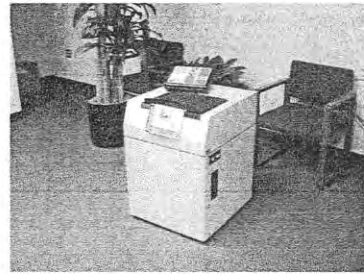
...present



Kurzweil Educational Systems



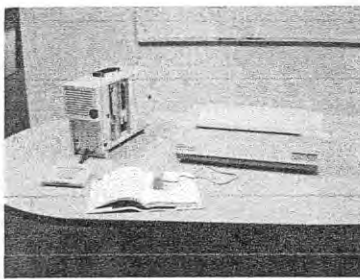
Kurzweil Reading Machine 400



Kurzweil Educational Systems



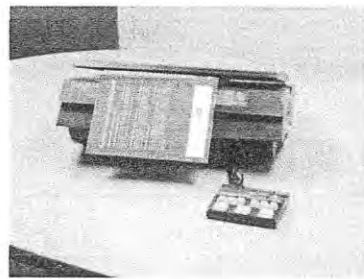
Kurzweil Personal Reader



Kurzweil Educational Systems



Kurzweil Reading Edge



Kurzweil Educational Systems



Scanning

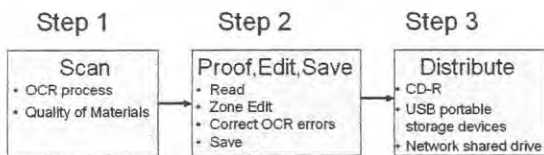


Scanning Decisions

- Why and when scan?
- What is scanned?
- Which scanner?
- Where is scanning done?
- Who scans?



Creating Scanned Curriculum



Step 1: Scan Print Materials



Scan Tool

- Requires Kurzweil 3000 Professional
- Scanner software installed and connected
- Place document page face down on scanner
- Click Scan button to initiate scan



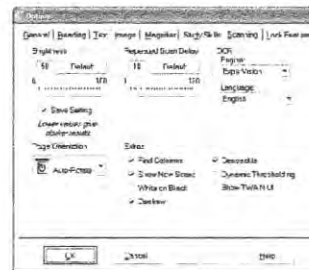
Scan Menu Options



- Insert, Delete and Rescan Pages
- Color and Black and White
- Double Sided
- Two Page Mode
- Scan Repeatedly
- Scanner Setup



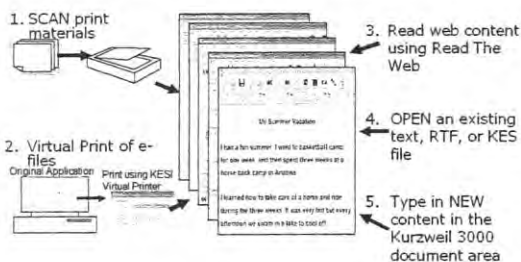
Scanning Options



- Brightness
- Repeated Scan Delay
- OCR Engine
- OCR Language
- Page Orientation
- Find Columns
- White on Black
- Despeckle



Ways to get curriculum into Kurzweil 3000 to read and learn



Scanning

Flat bed versus sheet fed



Flat bed scanners

Let's take a look



Flat Bed Scanners



- Affordable
- Portable
- Small size
- Scan speed range 10-45 seconds per page
- Single side scanning only



Sheet Fed Scanners



- Medium priced ~ \$300-\$500
- Ability to scan unsupervised
- Single or double sided scanning capability, depending upon model
- Consider sheet feeder capacity when buying

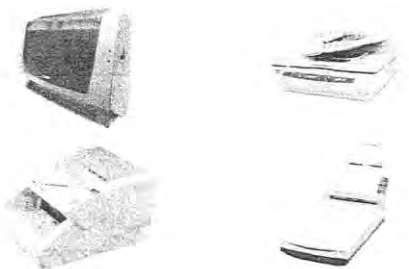


High Speed Scanners

Duplex Rules!



High Speed Scanners



Kurzweil Intelligent Systems



Canon DR-2580C (DUPLEX)



- Available from www.doxtek.com
- Priced at \$630 (\$1,130 with flatbed)
- 50-sheet capacity sheet feeder
- Portable
- 25 ppm B&W

Kurzweil Intelligent Systems



Canon DR-7080C (DUPLEX)



- Sheet feeder convenience AND flat bed scanner for bound documents
- \$4,815 (list \$7,995) www.doxtek.com
- 100 sheet capacity

Kurzweil Intelligent Systems



Canon DR-9080C (DUPLEX)



- Very high speed – 100 ppm
- 500 sheet capacity feeder
- Incredible value @ \$5,740 (list \$9,975)
- Perfect for District or University use

Kurzweil Intelligent Systems



Fujitsu fi-4220 C2 (DUPLEX)



- 50 Page ADF
- Flat bed scanner
- Reasonably priced at \$1,199 (list \$1,995)
- 25 ppm
- Can scan up to 14" long documents



Product Reviews

Let's take a look at:
 -Kurzweil 3000
 -CapturePerfect
 -Automater

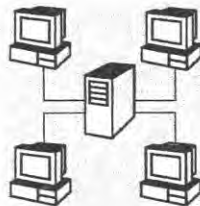


File Management

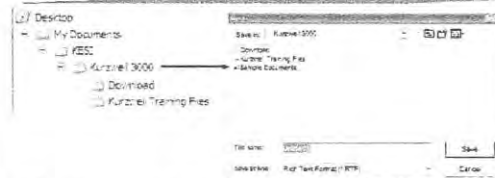
Copy to removable media such as CD's



Copy to Shared Drive on Network



File Management Continued



Other Document Output Options:

- Email
- Print
- Audio File



Q&A



Kurzweil 3000 Resources

- Documentation – User Guide, Tutorial, Help
- Active Learning and Study Strategies Book
- Web site - <http://www.kurzweiledu.com>
- Resources page – Lesson Plans, Funding and Grants, Research Studies
 - Customer Support page – Knowledge Base, List Serv Sign Up
 - Product & Services page – Professional Development and Training information



Kurzweil Educational Systems

Thank You!





Kurzweil 3000 Network v10



Discussion Points:

- ☐ Getting to know Kurzweil 3000
 - Professional / LearnStation
 - Standalone / Network
- ☐ Hardware and Software Requirements
- ☐ Installation and Review of the Network Version
 - Server and Client
- ☐ License Management
 - Installation and License-to-Go
- ☐ Diags, Extras, and Utilities



Getting to know Kurzweil 3000

- ☐ Integrated scan and read software that provides struggling students with multi-sensory access to reading material and tools for reading, writing and learning.



Licenses and Platforms

- ☐ License
 - Professional
 - Learn
- ☐ Platforms
 - Stand Alone
 - Network





Professional License



☐ Digital Library Tools

- Scan
- Virtual Print
- Open

☐ Learning Tools

- Reading
- Writing
- Study Skills
- Online



LearnStation License



☐ Learning Tools

- Reading
- Writing
- Study Skills
- Online

Standalone versus Network

☐ Standalone Version

- Windows or Macintosh
- Licenses are installed on individual computers; students must log in at same computer



☐ Network Version

- Windows or Macintosh (LAN)
- Floating license allows students to log in from any machine where K3000 client is installed
- License-to-Go permits license sharing



Version 10
License
To Go!



Platforms

- ☐ Windows or Macintosh
- ☐ Stand-alone and Network versions



Version 10
License
To Go!

Hardware & Software Requirements

Basic Requirements

- ❑ Network Qualification
 - Static IP Address
 - Local Area Network
 - Windows NT-based server (if Novell LAN)
 - NT (service pack 6) 2000 Pro
 - 2000 Server
 - XP Home
 - XP Pro
 - 2003 Server

Hardware & Software Requirements

❑ http://www.kurzweilledu.com/products_k3000win_hardware.asp

- ❑ For Engine and Administrator computer:
 - Processor - 300 MHz (or faster)
 - Memory - 64MB
 - Hard Disk Space - 300MB (depending upon the various options you select)
 - Operating System - Windows® 2000, Windows 2003 Server, XP
 - CD Drive
 - Floppy Disk Drive or USB

END

Microcomputer Science Centre Inc.



Your #1 Source for Adaptive Technology

Microcomputer Science Centre Inc.

- 25+ Years Experience serving the Special Needs Community
- Extensive product offerings for special needs individuals through nationwide network of contacts
- Keeping up with technology is first at MICROSCIENCE - after all, it is our outstanding client care that we are so well known for.



WHAT WE DO:

- We keep our clients current on all new programs in their specific area of interest.
- We work with your financial situation and help you through the funding process.
- We tailor-make each system to your personal requirements and your individual needs.
- We provide training on all systems we install as well as technical support.



Assistive Device Trials . . .

- At Microcomputer Science Centre we believe having an opportunity to try various assistive technologies, **before purchases** are made, will ensure that your money is spent wisely and you will find the tool that best lets you do your job.
- We work closely with each Computer System to ensure that all assistive devices, components, hardware and proprietary software, work smoothly together.



Kurzweil 3000 for Windows V10



Kurzweil
EDUCATIONAL SYSTEMS

A Cambium Learning Corporation Company

Kurzweil Educational Systems

- Provides the user the tools they need:
 - Access to printed or electronic information
 - Visual & auditory feedback
 - Quick access to word meanings, syllables, homophones
 - Customizable test accommodations
 - Study skill tools



Bringing the printed word to life™



Kurzweil 3000 V10 Features...



Kurzweil Educational Systems
Product Overview
Kurzweil 3000 for Windows
Version 10

Kurzweil 3000 Version 10 . . .

... contains an exciting set of features, many of which are the direct result of requests from customers like you.



DOCUMENT OPTIONS



A CAUTION: Learning Technology Company

Change Sticky & Text Note Properties

Version 10 gives flexibility to change properties in sticky notes & text notes:

- Font Size
- Text Colour
- Reading Order



DOCUMENTATION



A CAUTION: Learning Technology Company

More Documentation Tools

"How To Videos" give quick overviews of major Kurzweil 3000 features

Online Help offers full text search to find the right help information



Many New Sample Documents

Wide range of curriculum, subject based and grade level material represented in the collection - including elementary school worksheets for math and language arts to a high school history textbook chapter



APPLICATIONS USED OUTSIDE KURZWEIL 3000



Kurzweil 3000 Taskbar

Use Taskbar with word processing (eg. MS Word), Email, and other programs to access key Kurweil 3000 features, such as Speak, Lookup, and Spell.



Talking Calculator

Full Function talking Calculators:

- Standard
- Statistics
- Business
- Scientific



Reading Toolbar for Mozilla Firefox

- Kezi Reader Toolbar is now within the Firefox browser
- Read command is accessible through the right mouse button popup
 - Useful when a browser window hides toolbar



Other Notable Features

- **Easy Web Access –**
Support for Internet Explorer and Mozilla Fire Fox



- **Audio File Creation –**
Create MP3 and WAV files for listening while on the go

REFERENCE



Animated GIF Pix Dictionary Support

This new feature gives support for animated GIF files such as the American Sign Language (ASL) animations available from Vcom3D Inc.



Expanded Reference Access

- Online access to Merriam-Webster's Medical Dictionary



- With Bookshare.org account Version 10 adds newspaper and magazine access



SCANNING



Override OCR Feature

- Users gain great flexibility in the scanning process
- Enables unrecognized text (e.g. unusual fonts or large text) to be converted into zones that can be read



Header/Footer Editor

- Mark areas of an image document so that Kurzweil does not read them.
- Students will not be interrupted by hearing chapter headings and page numbers.



SHARING CURRICULUM RESOURCES



Share Lists and Dictionaries

Teachers and students can easily use the same Pronunciation and Word Prediction Dictionaries and Vocabulary lists by list importing and exporting capabilities.



Kurzweil 3000 Universal Library

- Teachers can place tests or class materials in the Universal Library.
- Easy way for teachers to distribute test and assignments
- Students open and save documents directly from the File menu in Kurzweil 3000.



STUDY SKILLS



Extract Selected Note Types

- Enables quick creation of study guide outline
- Extract different types of annotations:
 - Bubble
 - Footnote
 - Sticky
 - Text
 - Bookmarks
 - Highlights



New Highlighter Colours

- More colour highlighters means more ways to distinguish information and more ways to extract precise notes.
- New Colours:
 - **Grey**
 - **Orange**



Ability to Move Footnote/Bubblenotes

What if you want to move a Footnote or Bubble Note to open in a different location? (is it covering or blocking text?)

It's now possible to move by selecting and dragging the note's marker to a new location.



TEST TAKING



Save Toolbars & Feature Locks

When you open a document with saved toolbars, the toolbar remains displayed until you restart Kurzweil or you open another document that has a different set of saved toolbars.



New Circle Text Feature

- Useful for test taking in choosing the correct answer
- Allows you to circle words in an image file



Advanced Test Taking Features

- New Text Circle Tool can be used for marking answers
- Complete any test
 - multiple choice
 - fill-in-the blanks
 - true/false
 - short answer
 - essay



USER INTERFACE CHANGES & ENHANCEMENTS

Toolbar Toggles

- A narrow coloured bar that runs along the left side of each toolbar
- Click on them to quickly show and hide toolbars at any time



Customizing Toolbars

- Customize which icons appear on each toolbar
- Control icon size and toolbar position



Find Bar

- The Find Bar is used to search for words in the document
- The dialog does not cover up the text on the screen



Speaker Box Location

- Speaker Box is located in the Reading toolbar for quick access to change reading voice
- Change voices without going into Tools/Options
- Keeps students focused without getting lost in menus



New Toolbar Size Option

- New Size Option for the Main & Study Skills toolbars
- Choice to make icons Larger or Smaller
- Choose Large to have the icon caption describing the icon



WRITING

Check Spelling as You Type

- Red underlining alerts you to misspelled words as you type
- Gives students an instant "heads up" that a word may be misspelled



Flexible Writing Tools

- As students type, the software speaks each letter or word
- Quickly recognize and correct spelling mistakes
- Underlines misspelled words in red
- Audible spell checker
- Customizable word prediction.



NETWORK FEATURES



Remote License-to-Go

- Provides a method for network users to use Kurzweil 3000 without being connected to the network.
- Set for a specified amount of time (an hour, overnight, one week, a year)
- License-to-Go can grant a license to any laptop enabling usage of Kurzweil 3000 in or out of the classroom



Broadcast Feature

- Broadcast Feature Locks from Server (Network Only)
- Server Administrator disables, enables or leaves "as is" selected Kurzweil 3000 features on multiple client computers



New Taskbar

- Simply drag & drop the text directly into the Kurzweil Taskbar.
- Drag any amount of text onto the Speak icon
- The Lookup and Spell icons can have only single words dropped on them



Other New Features

- **Broad Access to Electronic Files –**
Supports formats such as DOC, PDF and DAISY
- **Picture Dictionary & ASL Animation Support -**
Provides an alternative way to communicate and teach the meanings of words



License-to -Go ...

"I work in a number of schools and I like the License-to -Go feature because I always have access to Kurzweil 3000 on my laptop whenever and wherever I need it. I can also show parents, teachers and administrators how Kurzweil 3000 can help their students both at and after school. "

Debra Reichard
Assistive Technology Specialist



ESL STUDENTS...

"Hearing text read aloud by the computer is exceptionally important for ESL students, who rarely receive enough spoken input. Kurzweil 3000 reads word-processed documents, e-mail, scanned text, even Web pages. And it has excellent study tools: students can look up words in a glossary, highlight text, and create notes and save it all into a built-in word processor for later review."

Dr. Elizabeth Hanson - Smith Professor Emeritus,
California State University, Sacramento, CA



High Speed Scanning

- MSC is offering a **High-Speed Scanning** service to convert textbooks into digital format for special needs students.
- MSC will provide a copy of the book on CD in Kurzweil or text format within **7 days or less.**



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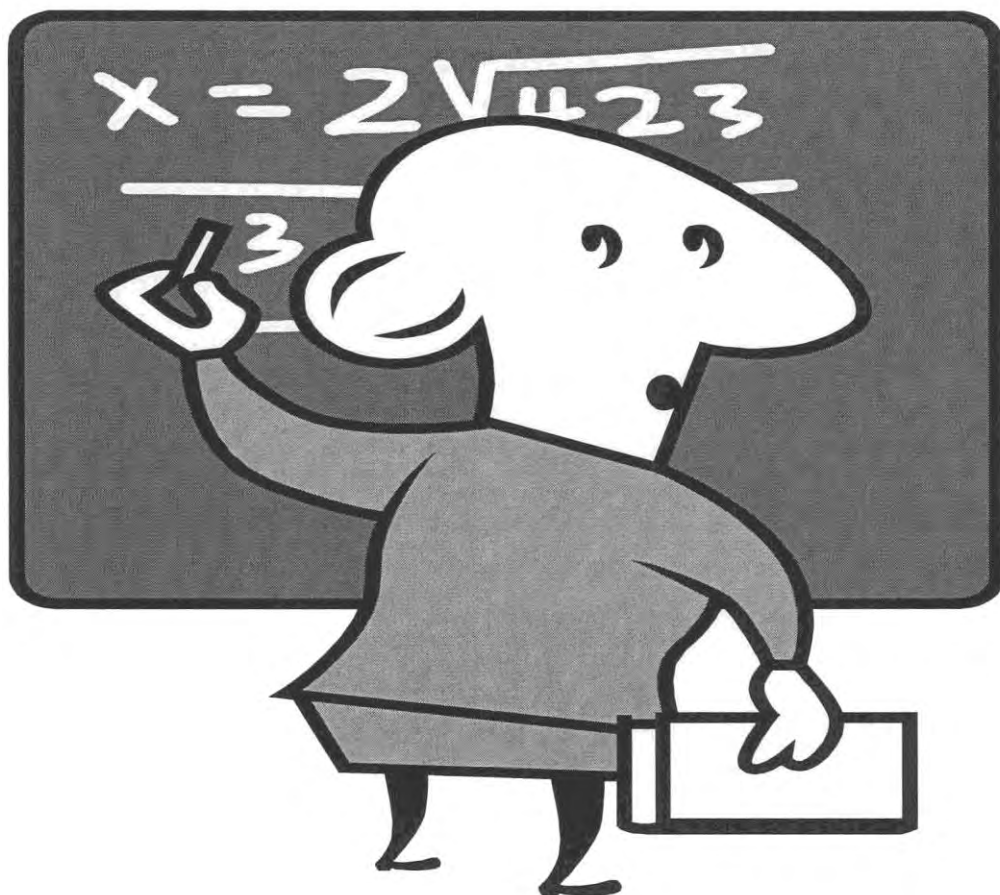
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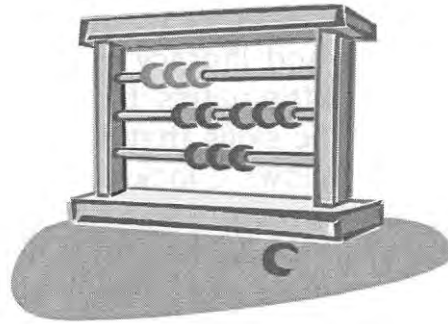
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SECTION 9: MATH and LEARNING DISABILITIES



MATH

Math learning disabilities are common, significant, and require serious instructional intervention. Without intervention, students are at risk of shutting down as they are 'success deprived'. Constant failure causes havoc with a student's self-esteem. Eventually, students will avoid math altogether. It should be noted that some students develop a fear or phobia of math either because of negative experiences in their past, inconsistent educational experiences, or lack of self-confidence. Sometimes a math phobia can cause as much difficulty as an LD, as those who are afraid to even attempt math are often unaware of their real strengths.

"Many individuals who struggle in Math have difficulty with: memorizing basic facts; confusion or reversal of numbers, number sequences or symbols; difficulty copying problems, aligning columns; and difficulty reading or comprehending word problems" (Bender 2004).

Adults who struggle in this area may be able to perform math operations one day, but draw a blank the next. They struggle and are unaware of their mistakes. As a result, adults with a Math LD may fear money and cash transactions, as they are unable to do simple cash back, tips, taxes, surcharges and discounts. It is hard to balance their checkbook as they are unable to grasp the concept of credit and debit. As a result, they fail at financial planning and budgeting which creates daily living nightmares.

Math disabilities range from mild to severe. They manifest themselves in a variety of ways. Most common are difficulties with efficient recall of basic arithmetic facts and written computation. *Dyscalculia* is a common term used for disabilities in arithmetic and mathematics. Difficulty with mathematics is common and the extent to which one can be affected varies in each individual. Problems in this subject area should be considered no less important than problems associated with spoken and written language. Both types of difficulties indicate a need for intensive and extensive intervention

for students with learning disabilities. Tutors need to appreciate the correlation between numeracy and literacy skills when teaching individuals with LDs. Those aspects of mathematics that involve reading and writing need to be identified. The specific skills that a student needs in math can be identified in an assessment. It allows a look at the general quantitative skills that an adult is expected to have by high school and attempts to match them with specific skills that the student with LD has or has not yet attained. Students with math disabilities need many repeated experiences and varieties of concrete materials to make these connections strong and stable.

The American National Research Council-2002 states core math instruction should integrate features that identify scientifically-based math research such as understanding, computing, applying, reasoning and engaging.

Students who have average ability but are failing in Math should be screened and tested for a Math disability. If they are identified, they are entitled by law to certain accommodations in school, university, and in the workplace.

The increasing acceptance of calculators and other accommodations refocuses teachers and students on the real issue at hand: processing information for the purpose of problem-solving. A delicate balance must be struck in working with students with LDs: acknowledging their barriers, strengthening their inconsistent skills, and helping them develop strategies.

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Section IX Readings- Math and Learning Disabilities

Characteristics of LD-Appropriate Instruction. (NIFL) *Bridges to Practice: A Research-based Guide for Literacy Practitioners Serving Adults with Learning Disabilities* (1999). At: <http://ldlink.coe.utk.edu/characteristicsofld.htm>

Math Strategies (from Learning Disabilities Training: A New Approach- Effective Instructional Methods) (Literacy Link South Central). Available for purchase online at: <http://library.nald.ca/item/5781> (Permission from Lorette Chiasson)

Kim Tackaberry's Supplementary Workshop Reading: The Magic of Patterning by Kim Calder and Patricia Burchby

CHARACTERISTICS OF LD-APPROPRIATE INSTRUCTION

From Bridges to Practice: A Researched-based Guide for Literacy Practitioners Serving Adults with Learning Disabilities, 1999

Research on intervention practices has yielded twelve characteristics of effective instruction, or LD-appropriate instruction, for adults with learning disabilities, LD-appropriate instruction directly addresses learning difficulties that may result from a learning disability and should be used any time you know or suspect that you are teaching adults with learning disabilities. In short, LD-appropriate instruction is characterized as:

Click on each characteristic for more detail

1. Structured - involves systematically teaching information that has been broken into manageable pieces. Connected - shows the learner how information in and among units and lessons are linked to the learning process-and to the learner's goals. Informative - involves making sure that the learner is informed about how the learning process works, what is expected during the instructional situation, and how she can improve learning and performance. Explicit - involves providing detailed explanations and models to the learner about how to approach, think about, perform, and evaluate learning and performance. Direct - is characterized by high rates of teacher or tutor leadership and control during the initial stages of information acquisition, followed by careful monitoring of the learner's performance as she gradually assumes control of and masters the information. Scaffolded - involves the frequent use of connected questions and collaboratively constructed explanations to create a context for learning that is based on the learner's prior knowledge. Intensive - involves helping learners to maintain a high degree of attention and response during instructional sessions that are scheduled as frequently as possible. Process-sensitive - involves re-shaping the activities within the instructional sequence to take into consideration various cognitive barriers that might inhibit learning. Accommodating - involves providing specific and general adaptations that are legally required to reduce or eliminate the impact a learning disability might have on successful learning and performance. Evaluated - involves adapting instruction based on an assessment of the learner's progress and his or her response to previous attempts at instruction. Generalizable - involves using activities before, during, and after information has been mastered both to ensure continued application of the information and to increase the learner's success outside of the literacy setting.
2. Enduring - means that the program providers acknowledge and commit the time necessary to ensure that learners master the information and use it to increase their successes in life.

A detailed description of each of these characteristics follows.

Structured Instruction

Structured instruction involves systematically teaching information that has been chunked into manageable pieces. Many adults with learning disabilities have difficulty processing large amounts of information, such as complex concepts and multistep procedures. Information should be broken into smaller "chunks" and/or steps, then these chunks should be taught systematically in sequential stages designed to promote mastery at each level.

Small steps are more readily accomplished and will help keep the learner engaged. However, it is critical that you help the learner make connections within the smaller units of information. Carefully define the immediate task, and verbally and visually break it into as many steps as necessary to "chunk" it into manageable tasks.

Once the information is chunked, your teaching structure should consider the diverse learning characteristics of a variety of adults. Teaching approaches that emphasize unstructured exploration, discussion, or group investigation during the early acquisition of new skills or information are not likely to be successful. Adults with learning disabilities may not have the questioning strategies and background knowledge required to independently organize new information in ways that help them understand and remember it.

Once information has been introduced, the learner should have structured opportunities to practice applying the information. Good practice is a balance between repetition and varied applications that allow the learner to explore the different ways in which a skill can be applied. Practice provides the learner with opportunities to develop automaticity in skill performance and to think about new skill or knowledge and its application. Begin a practice activity by demonstrating and completing the task; then gradually shift responsibility to the learner. Verbally walk through steps required to learn the task as the adult works, and gradually shift the responsibility of talking through the task to the learner.

Connected Instruction

Connected instruction shows the learner how information in and among units and lessons are linked to the learning process and to the learner's goals.

To help the learner see the relevance of learning a particular skill or information, explain how the objectives of a current lesson relate to the previous lessons. Provide a transition to the current lesson verbally and visually, showing how a specific unit or lesson fits into the overall plan for accomplishing learning goals. The unit maps created during the planning phase can supply a road map for what has been learned and what will be learned. When this map is constructed and expanded with the learner (it can be posted on the wall or kept in a folder or notebook), it can be used to draw attention to connections in and between the information that has been learned. It can also be used to review and discuss progress.

Informative Instruction

Informative instruction involves making sure that the learner is informed about how the learning process works, what's expected during the instructional situation, and how he or she can improve learning and performance.

The learner may not have developed the self-monitoring and self-evaluating strategies to track his or her learning progress. Therefore, you should keep the learner informed of when, where, how and under what conditions learning or performance occur. You should cue critical points for goal setting, monitoring goal attainment, and gaining commitment throughout all stages of instruction.

Communicate to the learner each session's organization and expectations. Begin each instructional session by taking 2 to 3 minutes to construct a visual organizer with the learner. Reiterate current goals and subgoals, and ask questions, giving the learner an opportunity to

put the Information in his or her own words. You can avoid confusion and ambiguity if the learner knows what is expected and how to accomplish it.

The learner needs to understand that if he or she is performing a skill correctly or incorrectly, particularly during the early stages of learning and practice. Feedback can help the learner better understand his or her skill performance; however, many adults with learning disabilities are sensitive to feedback because it often indicates failure. Therefore, stress that feedback does not always mean failure, rather it is like coaching.

Inform the learner about his or her performance as it is happening. Tell the learner what was done well and why, as well as what was done incorrectly, and why and how to improve it. You can prompt the learner to reflect on his or her performance and to give self-feedback for your comment. Good feedback does not have to wait until the learner has completed a task or asked for help and does not simply tell the learner how to perform the skill-good feedback challenges the adult to be reflective about his or her performance.

Explicit Instruction

Explicit instruction involves providing detailed explanations about models to the learner about how to approach. Think about, perform, and evaluate learning and performance.

Adults with learning disabilities need a significantly greater amount of detail than other learners do. therefore. You need to make each learning step apparent through detailed explanations. Learning of information cannot be left to chance: everything must be explained, and multiple models of correct performance must be provided. The learner needs to receive clear explanations, be shown how to link new information to previous knowledge, and be shown how to think about, use, and manipulate Information.

The first step of explicit instruction is to create an advance organizer to foster an awareness of the overall topic, or big picture, of the information that the adult can expect to learn. The second step is to shift the focus to smaller parts, while always relating the smaller parts back to the bigger picture, as reflected through the advance organizer. The learner can benefit from a description of what he or she should do as well as model of how performance should 'look.'

As you model, describe your thinking and your performance. Good learners are conscious of both their thinking about their actions and the impact of their actions on tasks. Before asking the learner to perform a task, therefore, explain and demonstrate correct performance. It is unrealistic to expect the learner to independently "discover" correct performance. However, you can lead the learner through explicit guided discovery using scaffolded questioning.

Explicit instruction also ensures that the learner does not begin practicing a procedure incorrectly and then have to unlearn the procedure.

Finally, explicit instruction concludes with checks and reviews to ensure that the learner has mastered individual Pieces of information as well as the bigger picture, and the relationship among these.

Direct Instruction

Direct instruction is characterized by high rates of teacher or tutor leadership and control during the initial stages of information acquisition, followed by careful monitoring of the learner's performance as he or she gradually assumes control of and masters the information.

You should provide direct, face-to-face instruction and guidance to ensure that the learner has acquired the correct information and is thinking about and using the information correctly. This type of step-by-step leadership should guide and show the learner how to effectively learn and perform.

The learner should avoid Independent work until he or she thoroughly understands what will be practiced. However, YOU should carefully arrange practice activities to ensure appropriate levels of guided-to-independent practice and feedback. You should monitor the learners progress frequently to ensure that the learner is not incorrectly practicing what has been taught. Although you assume the initial responsibility for guiding a learner's performance, you should gradually turn over the control to the learner as he or she progresses.

Scaffolded Instruction

Scaffolded instruction involves the frequent use of connected Questions and collaboratively constructed explanations to create a context for learning based on the learner's prior knowledge. The learner's prior knowledge can be used as a foundation to which new information can be linked.

Scaffolded instruction ensures that what the learner already knows is used as a guide to determine the next step for instruction. Scaffolded instruction is direct and interactive teaching that provides guidance through questioning. Following questioning, you should prompt the learner to ask and answer questions about the task to gain information about how she or he is thinking about it. This interactive questioning creates a context that can be used to make instructional decisions about what and how to teach.

Your critical questions provide new Information based on the learner's responses. You should ask additional questions to clarify, and then continue to interactively shape learning. To provide scaffolded instruction, however, you should have an expert understanding of the critical information and all its component parts that the adult is expected to learn and to weave into his or her background knowledge. Your questions and responses are carefully shaped by this expert knowledge.

Intensive Instruction

Intensive instruction involves helping learners to maintain a high degree of attention and response during instructional sessions that are scheduled as frequently as possibly.

Instruction should occur frequently and demand a high degree of learner attention and response, as well as your evaluation and feedback. literacy programs should offer instruction as often as possible, and instruction that is offered should fully engage learners' attention. Intensity also involves frequent exposure and opportunities for practice. Excessive drilling is rarely the answer, but frequent practice and application of a skill is essential for learners to master and generalize information. It is rarely enough for a learner who is practicing a basic skill in learning

to read to have the opportunity to practice this skill only once or twice a week. Practicing something new once a week is like learning it over again every time.

Intensity during instruction is achieved by a progressive pace, frequent question/answer interactions, and frequent activities that require a physical response (for example, point, write, raise your hand, repeat). Intensity can be achieved through reflective or open-ended activities if the activities are focused on an outcome, engage interest, and maintain the learner's attention.

Process-Sensitive Instruction

Process-sensitive instruction involves reshaping the activities within the instructional sequence to take into consideration various cognitive barriers that might inhibit learning.

Activities and instructional sequences should be sensitive to the information-processing demands of the task and to the range of information-processing characteristics of adults. The broad sequence of teaching procedures should take into consideration a variety of information-processing demands, including acquiring, storing, and retrieving information, and demonstrating competence.

For example, instructional activities that enhance information processing include prompting meta-cognition, reducing memory load, modeling, prompting verbal elaboration and rehearsal, teaching strategies that show adults how to evaluate tasks, select and use needed skills, and checking accuracy.

Additional examples are as follows:

1. If the learner has difficulty acquiring information, he or she is likely to have difficulty distinguishing important from the unimportant information or checking for understanding. These difficulties are likely to prevent the learner from fully profiting from observing, listening, or reading. To address this, you can cue important information, incorporate frequent checks for comprehension, questioning, and paraphrasing. If the learner has difficulty storing information, he or she is likely to have difficulty committing information to memory or recording information in notes. To address this you can help learners build mnemonic devices or develop cue cards for remembering critical information. If the learner has difficulty retrieving information that has been acquired and stored, he or she is likely to have difficulty during instruction linking learned information to required tasks, knowing when to use specific skills and strategies, answering questions, or finding information in notes. To address this, you can:
 - teach the conditions for using information, help the learner identify or create links between tasks and know information, frequently review how tasks and know information relate, provide organizers that show context and relationships, and
 - provide direct practice in applying information to a variety of tasks and situations.
2. If the learner has difficulty demonstrating what has been learned, he or she is likely to have difficulty during instruction constructing sentences, paragraphs, editing, completing assignments, and taking tests. To address this, you can model and shape correct ways to demonstrate competence, provide alternate ways to express what has been learned, or provide task monitors to ensure assignment completion.

Accommodating Instruction

Accommodating instruction involves providing specific and general adaptations that are legally required to reduce or eliminate the impact of a learning disability on successful learning and performance.

Accommodations are legally required adaptations that reduce or eliminate the impact of information-processing difficulties on learning and the consequences of the difficulties on the adult's life. Specific instructional practices that characterize process-sensitive instruction may be judged a legal accommodation.

Legally required accommodations are provided at each stage of learning. They are directly related to the nature of the disability and should be determined from the evaluator's report of the learner's diagnostic test results. In addition to using specific, legally required accommodations for a learner based on results of the learner's diagnostic evaluation, you may find it helpful to routinely include general accommodations that reduce information-processing barriers at each stage of instruction. For example, it is helpful if the learner has an opportunity to process the same information in multiple ways - visually, auditorally, interactively, and physically. For the learner, this means that the information is heard, visually displayed, discussed and acted on through the completion of notes, tables, organizers, or other methods that engage the learner in actively thinking about the information.

Evaluated Instruction

Evaluated instruction involves adapting instruction based on an assessment of the learner's progress and his or her response to previous attempts at instruction.

Evaluation, either formal or informal, should begin the moment a goal is set. Because they are embedded in the instructional process, evaluation activities should provide information about what the adult is learning, how he or she is learning, and which instructional procedures need to be adapted or revisited. Sometimes instructional procedures simply need to be more thoroughly implemented or intensified. At the earlier stages of instruction, evaluation is as simple as regularly checking to be sure that desirable and realistic goals have been set. As instruction progresses to describing and modeling and to prompting practice and skill performance, evaluation should be embedded in all activities to determine if instructional procedures and sequences are working. The learner may not always be aware of difficulties he or she is having or how to express concerns. Regular evaluation can determine whether the learner understands tasks and performance requirements. This information can then be used to adjust instruction.

The Guidebooks

There are four guidebooks in the *Bridges to Practice* series. The purpose of the series is to help Literacy programs and their practitioners (teachers, tutors, volunteers, and program leaders) learn How to develop or improve services to adults with learning disabilities.

Guidebook 1: Preparing to Serve Adults with Learning Disabilities, PDF Format (750 KB)

Topics include:

- Understanding learning disabilities
- Legal issues related to adults with learning disabilities
- Systems and program change
- Resources for learning

Guidebook 2: The Assessment Process. PDF Format. (819 KB).

Topics include:

- Introduction to assessment
- Screening for learning disabilities
- Selecting screening instruments
- Systems and program change

Guidebook 3: The Planning Process. PDF Format (3 MB)

Topics include:

- Preparing to develop the instruction plan
- Determining a curriculum
- Developing the instructional plan
- Selecting instructional materials
- Systems and program changes

Guidebook 4: The Teaching Learning process. PDF Format (2.3 MB)

Topics include:

- The challenge of teaching adults with learning disabilities
- Creating an appropriate learning environment
- Making instructional adaptations and accommodations
- Two frameworks of LD Appropriate instruction
- Collaborative teaching/tutoring
- Summary: Characteristics of LD-Appropriate instruction (See excerpt Preceding)
- Systems and program change

Available In print format for \$150 from Academy for Educational Development, 1825 Connecticut Ave, NW. Washington DC 20009: telephone 202-884-8186

MATH STRATEGIES

**An Excerpt Used by Permission from
" Learning Disabilities Training: A New Approach"**

Provided by: Literacy Link South Central, Ontario

National Literacy Secretariat (2003)

Mathematics

The information-processing model provides numerous perspectives for examining the math difficulties of students with learning disabilities. Weaknesses in selected components of information-processing may affect math performance. For example:

Attention deficits: learners have difficulty tracking the steps in algorithms or problem-solving.

Visual-spatial deficits: learners lose their place on the worksheet. Students have difficulty differentiating between numbers (e.g. 6 and 9), coins, the operation symbols, and clock hands.

Auditory-processing difficulties: learners have difficulty doing oral drills and are unable to continue counting from within a sequence.

Memory problems: learners are unable to retain math facts or new information, forget steps in algorithms or multi-step word problems.

Motor disabilities: learners write numbers illegibly, slowly, and have difficulty writing numbers in small spaces (i.e. write large)³³

Research has shown that when practitioners develop skills in readiness (understanding numbers), computation, and problem-solving by using various adaptations, accommodations and different approaches, all learners can benefit regardless of a disability.³⁴

Inherent in the three keys areas (number readiness, computation and problem solving) are math concepts that will facilitate the greatest amount of knowledge acquisition across the content being taught. These concepts include: addition, subtraction, multiplication, and division; place value; fractions; estimation; probability; volume and area; and word-problem solving. The important concepts should be taught to mastery, rather than briefly covering numerous math skills superficially.³⁵

sufficient for obtaining fluency, (b) distributed over time, (c) cumulative as more skills are learned, and (d) varied to promote generalization.

- Varying reinforcement styles: there should be less focus on right or wrong answers and more focus on positive recognition of completing the steps, regardless of the outcome. Encourage learners to self-chart their progress. Have them keep track of how many and which facts are mastered and how many more there are to go. Include monitoring student progress on a frequent basis, teaching math skills to mastery and teaching generalization³⁶

Integrated in the instructions techniques are the use of both direct instruction and a collaborative approach. The rule when using these two approaches is to engage learners in collaborative approach, only after they have received direct instruction in the mathematics and the objectives for the group activity.

"Therefore, "lesson instruction" consists first of direct instruction, and then the cooperative learning activity. Cooperative learning can be used as the "guided practice" time when students engage in tasks to practice introduced skills."³⁷

Examples of math collaborative learning activities

Numbered Heads collaborative approach: After each team member numbers off, students discuss the answer to a question. Then, in a large group, the teacher calls a specific number and group to answer the questions.

Math example: Discuss the answer to a mental computation problem. Apply the definition of a rule previously introduced to problems; explain the application of the rule.

Round the Table collaborative approach: Students work on problems jointly by passing the problems around the table for each member's response.

Math example: Pass a worksheet with multiplication facts for each member to answer a problem. Pass problems for each member to compute the next step of an algorithm.³⁸

MATHEMATICS CHARACTERISTICS	POTENTIAL STRATEGIES	POTENTIAL ACCOMMODATIONS
Uses a calculator or counts on fingers for answers to simple problems, e.g., 2×5 .	Make use of regularities in the number system such as 2, 5, 10's, show short cuts to memorizing the multiplication table i.e. $2 \times 5 = 10$ then $5 \times 2 = 10$. Build on existing knowledge and work from what learners know: $2 \times 6 = 12$ then $3 \times 6 = 12 + 6 = 18$. Encourage them to use calculators but help them build their estimating skills, so that they can recognize if an error has been made while inputting the numbers if the answer seems incorrect on the calculator. Provide frequent practice but in small doses (two -15-minute sessions per day). Have them chart their progress.	Use calculators and hand held talking calculator, and allow extra time in testing.
Can't do math in his/her head and writes down even simple problems. Has difficulty making change.	Build in real-life manipulative to do basic math problems. Provide them with strategies to make change. Show that math problems can be approached in many different ways - adding or subtracting. Use a multi-sensory approach. Try to learn as many ways as possible of solving a given type of problem, so that if they forget one way, they will have an alternative. For example, $3 \times 4 = 2 \times 4 + 4$. A game-oriented approach to fact learning may be productive. For example, using number cards or dice pick a sum (addition) or a product (multiplication) and see how many different cards or dice can be used to create that answer. Practice with real money, writing down the problems and responses as they do them.	Pocket-sized addition and multiplication tables and list, of frequent formulas, and reference sheets of fraction to decimal conversions. Access hand held calculators
Confuses math symbols. Misreads numbers. Doesn't interpret graphs or tables accurately. May make careless mistakes in written work. Has trouble maintaining a chequebook,	Help them become aware of this challenge- encourage the review of work and double- checking of information. Have learners practice tracing numbers that they reverse or misread. Build in self-monitoring strategies. In most cases they understand the concepts but make mistakes with their calculations. Encourage learners to circle the symbols.	Use matrix paper to keep numbers aligned, and develop a list of common errors made to use when checking over their work. Enlarge the symbols. Access talking calculators or on screen computer calculator programs with speech synthesis. Use large display screens for calculators. Use computer software.

Leaves out steps in math problem-solving and does them in the wrong order. Can't do long division except with a calculator. Has trouble budgeting.	Teach problem-solving steps to use with each math problem: read and understand the problem, look for the key questions and recognize the important words; select the appropriate operation; write the equation and solve it. Help them chunk the information into smaller units. Use mnemonics for long division to help remember the steps. Model manipulation so that learners understand that math problems can be looked at in a number of ways. Use real-life situations to understand the meaning. Continually model that concrete materials can be moved, held, and physically grouped and separated - this provides more vivid teaching tools than a pictorial diagram or grouping.	Allow extra time; reduce the number of problems to avoid overloading memory and attention span. Provide photocopied outlines for budgeting.
Doesn't translate real-life problems into the appropriate mathematical processes. Avoids employment situations that involve this set of skills.	Have learners practice the operations needed and have them make up their own word problems from number statements. This helps learners to understand how the language is structured Highlight the key words, numbers and/or calculations. Alter instruction i.e. give the answers and allow the learner to explain how the answer was obtained. Help the learners with auditory disabilities visualize the word problem i.e.; if the problem mentions two cars at different prices, have them draw the cars with the prices.	Use pocket sized addition and multiplication tables and list of frequent formulas, reference sheets of fraction to decimal conversions. Have guides that list the various math symbols and their meaning (both symbol and written).

Notice that some of the most effective accommodations do not require any significant changes, technology or resources. Obviously what works for each adult will be based on individual needs, but in most cases a simple solution works.

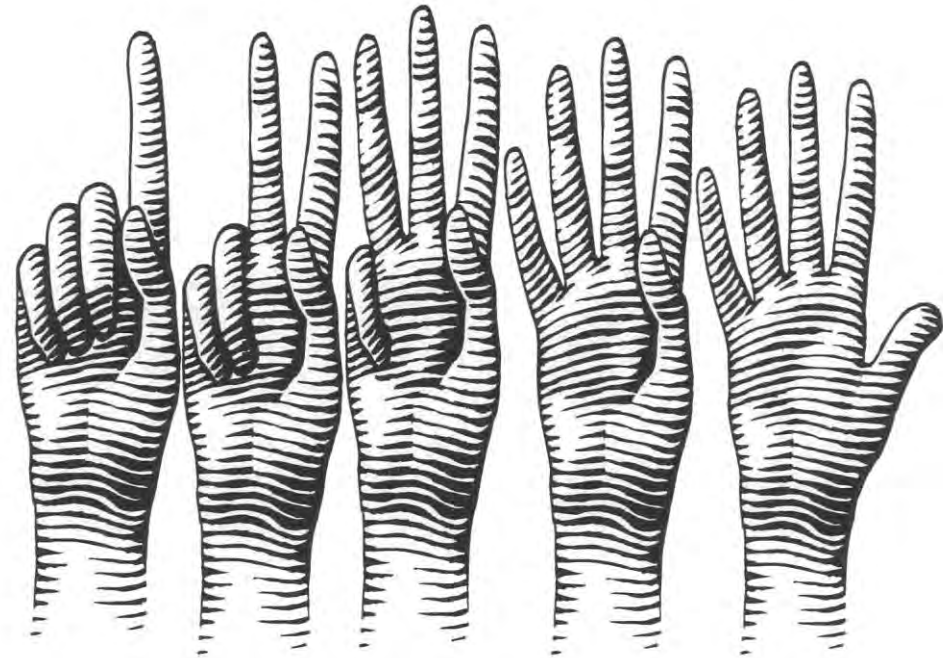
MATH and LD:



STRATEGIES

Lawrence Ethier

MATH and LD:



CHISANBOP FINGER MATH

Kim Tackaberry

CHISANBOP

The Magic of Patterning

by
Kim Calder & Patrice Burchby

"When I first met Ryan, he looked like any other seven year old boy. He had a mischievous grin, high energy, and though he was somewhat shy at first, he proved to be quite a character. I soon learned however, that there was a serious side to Ryan as well. Before long, I saw plenty of frustration, helplessness and even fear. Ryan is severely learning disabled."

My first math lesson with Ryan was a shock. He had little math knowledge at all. He could not count using manipulatives, nor could he count by rote memory. It was as if the whole math world was one huge blank for Ryan. At that point, I began to teach Ryan, Chisanbop. For Ryan, this was the beginning."

*Patrice Burchby, Teacher,
Pinehills Academy*

Ryan's difficulty with math was one manifestation of a learning disability (LD).

To teach Ryan mathematical skills, a method called Chisanbop was used, because it allows the series of number patterns to develop while solving the problem of memorizing a myriad of basic facts.

CHISANBOP

History

Chisanbop is a Korean word

meaning, 'finger calculation method.' The method is based on the abacus system, which dates back to ancient Asia. Records indicate, however, that Sun Jin Pain developed Chisanbop in Korea, during the 1950's (Lieberthal, 1978).

Finger Value

Students begin by learning finger values. On the right hand,

"The children can 'see' and 'feel' the value of the numbers, which for our students, seems to speed and solidify their learning."

each finger has a value of one and the thumb has a value of five. On the left hand, each of the fingers holds a value of ten, with the thumb having a value of fifty. To show the value of a number, students press their fingers on the desk. For example, to show a value of six, the student presses the thumb and forefinger of the right hand ($5 + 1$).

Computation

Once students have learned to represent numbers by pressing, they can add and subtract with accuracy and speed. For example,

$$8 - 2 = 6.$$

Student presses 8.

Student lifts 2 fingers counting

"1, 2"

Student "reads" the value of 6 remaining fingers pressed.

For more advanced computation, students learn patterns of pressing. Students begin to 'feel' the patterns and can multiply and divide quickly and efficiently.

Curriculum

Chisanbop can be used in many areas of the mathematics curriculum, both at the elementary and junior high school levels.

1. Numeration

We have found Chisanbop useful when teaching numeration, as it illustrates the place value of ones and tens. The children can 'see' and 'feel' the value of the

numbers, which for our students, seems to speed and solidify their learning. For example, to represent the number 34, the child would press three 'tens' fingers (on the left hand) and four 'ones' fingers (on the right hand).

Our children have had fun making up signals for hundreds and thousands. We teach forehead taps to represent 'hundreds'; 3 taps would represent 300. 'Thousands' are represented by taps on the nose. The children find this quite amusing and enjoy representing three and four digit numbers in this way.

2. Money

Counting money is typically

y difficult for our students because they have to count by 5's, 10's, and 25's. Using Chisanbop, students can 'hold' the value of the previous coins and then add additional coin values by counting up one by one, or by fast pressing 5's and 10's. (Fast pressing is a quick method of adding values larger than one.) Children who have never been able to count collections of coins can suddenly determine amounts of money. At higher levels, Chisanbop can be used to demonstrate making change or to solve problems with money.

3. Advanced Computation

Pupils can also do multi-digit calculations with Chisanbop, often eliminating difficulties with regrouping. For example, in the following problem, many of our students would typically carry the three instead of the one when adding six and seven.

$$\begin{array}{r} 26 \\ +17 \\ \hline \end{array}$$

With Chisanbop, after adding six and seven, students see and feel one 'ten' on the left hand, and three 'ones' on the right hand. By matching tens and ones columns, students will carry the correct numeral.

4. Other Applications

We have also found Chisanbop to be useful when teaching:

- a) estimation,

- b) rounding,
- c) time problems and
- d) oral problem solving.

Once a teacher becomes acquainted with the Chisanbop program, numerous applications are possible, depending upon the level and need of the students. As well, once the students have learned the Chisanbop system, they very often begin to make their own application to other areas of mathematics.

Time Commitment

To be most effective, Chisanbop needs to be taught on a daily basis for approximately 15 minutes. Students can begin to apply adding and subtracting skills immediately, although it takes approximately one-and-a-half to two years for students to learn the entire Chisanbop program (including multiplication and division). This extended time frame is necessary because students must learn by touch, and it takes many hours of practice before the patterns necessary for multiplication and division become automatic. We have found, however, that this time period may be reduced slightly with more proficient or older students.

The extended time period may seem a short-coming of the program, however, the end results speak for themselves. That is, within two years, students who have been unsuccessful learning place value and computational skills (even with hours of drill and manipulatives), suddenly become masterful and are free to proceed onto advanced mathematical concepts.

Program Strengths

The strength of this method for the learning disabled is the use of several learning modalities. Chisanbop capitalizes on the use of tactile stimulation, chanting, and patterning, all of which are beneficial to many LD students.

Although we see Chisanbop as a necessary tool for many students within the learning disabled population, we have also had good success with students in the regular stream. For many schools, Chisanbop has proven to be less taxing in terms of teacher time and resources, than traditional methods.

"Ryan has recently completed the Chisanbop program. The other day he worked on a series of computational questions. He sped through the list so quickly and accurately, that I had to ask him how he managed to complete his work so rapidly.

"Well," he replied, "I don't always use Chisanbop now. Sometimes, I just dream it in my head."

Kim Calder, Teacher,
Foothills Academy

Foothills Academy teaches Chisanbop to all elementary and junior high students. For further information, please contact: Susan Nordean, Community Services, Foothills Academy Society, 745 - 37 Street NW, Calgary, Alberta, T2N 4T1. (403) 270-9400. FAX: (403) 270-9438.

Kim Calder and Patrice Burchby are teachers at
Foothills Academy in Calgary, Alberta.

LE FRANÇAIS

LANGUE SECONDE

PAR OBJECTIFS



Anne-Marie Connoily

These workbooks may be adapted to elementary, secondary and post-secondary levels, and may also be used in adult education classes.

The package for each level consists of the following:

- 6 workbooks
- 6 cassettes (60 min. running time each)
- slides (216)
- teaching transparencies (64)
- filmstrips (12)

This collection of six workbooks is designed to meet the needs of the beginner who wants to complement his or her studies of spoken French with exercises in writing. The approach is centered on language, communication and the analysis and writing of newspaper articles; the study of literary French is not a priority. Rather, the student is given a very general objective: to learn how to write what he is capable of saying.



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Article #1

ED188906 - An Annotated Bibliography of the Chisanbop Method Finger Calculation.

ERIC #: ED188906

Title: An Annotated Bibliography of the Chisanbop Method of Finger Calculation.

Authors: Dougherty, Mary K.

Descriptors: Addition; Algorithms; Annotated Bibliographies; Division; Elementary Education; Elementary School Mathematics; Mathematics Curriculum; Mathematics Instruction; Mathematics Materials; Multiplication; Research; Subtraction; Teaching Methods

Source: N/A

Peer-Reviewed: N/A

Publisher: N/A

Publication Date: 1980-06-20

Pages: 16

Pub Types: Reference Materials - Bibliographies

Abstract: The term Chisanbop is the trademark for the finger calculation method originally developed by a Korean, Sung Jin Pal. It was refined and simplified by his son, Hang Young Pai, who introduced the technique to the United States in 1976. This annotated bibliography has been organized in five categories. Readings in the first category, Historical Background of Finger Counting Systems, give information about the way past civilizations used fingers to meet mathematical needs. The second, Instructional Materials, provides a list of materials which are presently being used in schools and homes to instruct beginners in finger calculation. The articles annotated in Informational Articles have appeared in journals to give the public a "bird's eye view" of this unconventional teaching method. Reactions has been chosen as a follow-up to the first three categories. The selections in this section include articles written by experts, in the field of mathematics or other educational areas, who have evaluated the Chisanbop program. After becoming aware of the Chisanbop method through the categories mentioned, it is hoped that from the data collected in the final category, Research Findings, some generalizations about its effectiveness can be made.
(Author/MK)



SECTION 10: RELAXATION TECHNIQUES

"Relaxation is not just 'not doing anything.' It's a state of bodily relict, of reduced tension, of calmness ...the first steps you should take are to eat right and exercise more- The more you do things that actively release stress and tension, the less you will feel a need to 'veg out' ...5schedule some time in to relax. Give it a priority on your list of things to do...It's recharging your batteries!"

(www.livingwell.ca/english/print_friendly.asp?iarid=450)

RELAXATION TECHNIQUES

Learning can be difficult enough for some, even before a learning disability is factored into the mix. The added pressure of test-taking and school/work expectations can be anything but relaxing. Because persons with LD may experience a cycle of academic failure and lowered self-esteem, the potential for heightened stress levels is high for them.

Stress and anxiety are part of daily life for many, including those with LD, in today's busy, fast-paced society. While the acceptance of any disability is a significant first step, it's often the use of coping strategies or intervention methods that helps one to deal successfully with the accompanying changes, difficulties, frustration, stress, and anxiety.

There are a number of informal stress-solving strategies that can be tried, from a simple *'counting to ten'* option that allows time to refocus, to other choices like changing tasks and lifestyle choices, developing enjoyable hobbies, helping others, taking time to 'smell the roses', closing one's eyes, prayer, meditation, or listening to music.

Relaxation techniques are intervention choices for a number of physical and mental conditions. They can be an effective option for teachers working with adult learners with learning disabilities or for the students themselves, provided that they are followed correctly. A continued use of relaxation strategies has been known to alleviate test anxiety, increase cognitive thinking and calmness, decrease fear and the physical symptoms of stress, while helping many to overcome obstacles and traumas associated with having a learning disability. Strategies can include muscle relaxation, guided imagery, or deep breathing exercises. The goal is to find the most positive, healthy way of dealing with the pressures of life that surround the adult with learning disabilities.

WEB RESOURCES:

www.livingwell.ca Living Well (MediResource Inc.)

www.nifl.com National Institute for Literacy.

Section X Reading- Relaxation Techniques

[Progressive Muscle Relaxation: Highly Effective but Often Neglected –Greg Harris](#)



RELAXATION TECHNIQUES

Dr. Greg Harris

Progressive muscle relaxation (PMR) is an effective treatment for numerous psychological and physical conditions when used in a thorough and systematic manner. However, it is often overlooked by helping professionals as a viable treatment option. This article reviews research on the treatment efficacy of PMR and describes how to effectively use it with clients. It is hoped that helping professionals will come to understand the proper uses and potential benefits of PMR

INTRODUCTION

Stress and anxiety have been a part of everyday life for most people, through past generations to the present. Many interventions have been designed to reduce this problem. Progressive muscle relaxation (PMR), the focus of this article, is one such intervention. Although PMR is a well-known intervention within the professional helping community, it is often overlooked as a treatment option. Research has found PMR to be effective in reducing stress and anxiety. It has been found to effectively treat various physical and psychological complaints. But to be effective, practitioners must follow its tenets systematically to achieve the results reported in the literature.

TREATMENT EFFICACY TREATING PHYSICAL CONDITIONS WITH PMR

Irritable bowel syndrome (IBS) is a lower gastrointestinal disorder with symptoms such as abdominal pain and constipation or diarrhea. It is diagnosed when no other known physical causes for the symptoms can be identified (Blanchard et al., 1993). Schwarz et al. (1990) found that PMR, as a part of a multi-component treatment plan (i.e., PMR, thermal biofeedback, cognitive therapy and IBS education), reduces symptoms of IBS, with 84% of the sample reporting improvements. Blanchard et al. also found significant improvement using only PMR

PMR has also relieved headaches (Blanchard et al., 1990, 1991). Blanchard et al. (1990) showed PMR to be more effective than two placebo conditions. Furthermore, some measures showed PMR alone to be as effective as PMR and stress-coping strategies (cognitive component) combined. Carlson and Hoyle (1993) found a significant decrease in symptoms associated with tension headaches among participants using PMR compared with a control group.

PMR has been associated with significant improvement in pulmonary function in asthma clients (Lehrer, Sargunraj, & Hochron, 1992). However, Lehrer, Sargunraj, and Hochron reported that the magnitude of the changes generally fall short of the standard criteria for medication (i.e., 15% increase in air flow). But findings suggest that PMR would be a useful adjunct to medical interventions for treating asthma.

Urinary incontinence occurs when timing and coordination of the contraction and relaxation of the pelvic muscles are abnormal (Groot, 1998). Philips, Fenster, and

Samsom (1992) reported that PMR and biofeedback were each very successful in treating this condition. Clients' self-reports, as well as urologists' ratings, confirmed equal success for PMR and biofeedback, which were both superior to a waiting-list control group. Haaga et al. (1994) also found that PMR reduced systolic and diastolic blood pressure in adult males with borderline hypertension.

Insomnia and other sleep disturbances have been alleviated with PMR (Greeff & Conradie, 1998; Means et al., 2000). Greeff and Conradie found an improvement in sleeping patterns, as well as an increase in quality of sleep, for alcoholics with insomnia. Means et al. found that students with insomnia who were treated with PMR reported that they spent less time awake during the night and slept better than those who did not use PMR. However, the success of PMR in this application is limited. Insomnia also involves poor daytime functioning, but Means et al. reported that even after PMR and reported increases in sleep, the subjective daytime functioning of participants did not improve. PMR treatment may need to include a component to improve subjective experiences of daytime functioning.

Using sleep medication (hypnotics) may result in reduced sleep efficiency, impaired daytime functioning and chemical dependency (Lichstein et al., 1999). Lichstein et al. reported that when insomniacs who used hypnotics participated in a gradual drug withdrawal program, they stopped medication consumption by 80%. Participants who also received PMR obtained additional benefits of sleep efficiency, rated quality of sleep and improved overall sleep by post-treatment and follow-up. Lichstein et al. also found that individuals taking medication to improve their sleep tend to sleep the same or better if they stop taking the medication and use a psychological intervention, for example, PMR.

Herpes simplex virus 2 (HSV) is an incurable sexually transmitted disease. HSV remains dormant and periodically reoccurs, showing symptoms of pain, itching, vaginal or urethral discharge, muscle aches, fever, swollen lymph glands, and headaches (Burnette et al., 1991). Marks and Patrick (1983) found that psychosocial stress is linked to recurrences of HSV. Burnette et al. found that participants who used PMR had fewer outbreaks of HSV.

People living with HIV/AIDS have also experienced positive effects from PMR (Cormier & Nurius, 2003). Cruess et al. (2000) noted decreases in self-reported stress levels and changes in anxiety and distress associated with relaxation home practice for gay men living with HIV.

Cancer patients usually go through intense chemotherapy as part of treatment. Burish et al. (1988) reported that chemotherapy can be a very distressing experience for patients. Patients have reported that PMR helped to lower their distress. In fact, 65% of Burish et al.'s participants continued to use PMR for a variety of stress-related problems, even after chemotherapy was over.

TREATING PSYCHOLOGICAL AND MENTAL CONDITIONS WITH PMR

Mild depression, or thoughts and feelings of sadness, hopelessness, and loneliness, have also been treated effectively with PMR. Broto and Dhir (1990) found that individuals with mild depression reported more positive results from PMR than those not receiving treatment.

Alzheimer's clients experience a lot of anxiety, irritability and agitation. Suhr, Anderson, and Tranel (1999) found that clients with Alzheimer's who learned PMR showed significant decreases in psychotic and behavioural disturbances that are common to the disease. Some of the clients also showed improvements in memory and verbal fluency. However, Suhr, Anderson, and Tranel note that the Alzheimer's clients in this study had mild to moderate dementia; clients with more severe dementia would likely have difficulty with PMR.

Agoraphobia is a fear of being in a place or a situation where escape might be difficult or embarrassing, or where help may not be available in the event of a panic attack. A panic attack is mainly defined as a discrete period of intense fear or discomfort. Marks and Lader (1973) reported that people living with agoraphobia show significantly higher levels of sympathetic nervous system arousal than people without the phobia. Michelson et al. (1990) reported that restoring agoraphobics' excessive physiological reactivity to normative levels may be important in treating this condition. They found that PMR has beneficial effects on the heart and ameliorates excessive physiological arousal for clients suffering from agoraphobia and panic attacks.

Specific phobia (formally simple phobia) is a fear of clearly discernible circumscribed objects or situations. McGlynn et al. (1995) found that when participants with a fear of snakes received PMR, they showed lower heart rates from baseline during exposure trials (real caged snakes), lower skin-conductance from baseline during exposure trials, and lower self-reports of fear after the exposure trials. McGlynn et al. (1999) replicated some of the effects of PMR on arousal and fear during in vivo exposure to participants with a snake phobia. PMR lowered participants' arousal and fear throughout the course of exposure, as measured by heart rate, skin-conductance level, and self-reported fear frequency.

Rasid and Parish (1998) reported that PMR lowered state but not overall trait anxiety among high school students. Similarly, Scogin et al. (1992) found PMR to reduce state anxiety, but not trait anxiety, among people over age 60. It is possible that more relaxation training sessions over a longer period of time may be required to produce significant positive change in the more stable and enduring trait anxiety construct. It should be noted that Scogin et al. also found that imagined muscle relaxation was as effective in reducing anxiety in the elderly as PMR.

Schloss et al. (1989) reported a case study in which a man diagnosed with mild mental retardation reduced his anger responses using PMR and desensitization over a period of time. The client was able to relax more and was able to use social skills instead of the usual anger responses. PMR and desensitization have been found to be effective in the laboratory setting as well as in other natural settings (e.g., clients' homes).

Mullins and Christian (2001) reported a case study in which a 12-year-old boy with autism successfully learned PMR. The boy displayed increased relaxed behaviours and spent less time engaged in disruptive behaviours.

Hiebert (2002) reported the effectiveness of relaxation techniques in the classroom for the benefit of both students and teachers. Teachers who used a pre-manufactured relaxation program in their classrooms reported improved rapport between students, fewer disruptive behaviours, and increased attentiveness and self-confidence among students. Students were also positive toward the relaxation exercises. Older students reported benefits in the school environment (e.g., less anxiety around math examinations) and at home (e.g., fewer parent-student "hassles").

GENERAL ASSESSMENT

Bernstein and Borkovec (1973) reported three general areas that counsellors should explore before using PMR: medical clearance, identifying the cause of the tension, and finding an appropriate treatment. These three areas provide the general information that would indicate the appropriateness of using this strategy as opposed to another strategy (e.g., pharmaceuticals, systematic desensitization)

The first general area involves medical clearance. In cases where PMR is being considered for use in eliminating a physical complaint (e.g., headache), the counselor should rule out the existence of a strictly organic basis for the problem because such problems require another treatment approach. The counsellor should also ensure there are no other indications that PMR would be inappropriate. For example, Cormier and Cormier (1998) reported that some clients with certain muscle or connective tissue damage might have trouble tensing and relaxing certain muscle groups. Also, it should be clear to the counsellor that learning to relax certain muscles is what the client needs. For example, instead of learning how to relax specific muscles, certain clients may have to strengthen these muscles (e.g., lower back). Finally, clients taking drugs (e.g., tranquillizers) should discontinue use because mastering PMR is much easier and more beneficial in the absence of drugs (Bernstein & Borkovec, 1973). Rice (1998) reported that taking medication makes it difficult to recognize real signals of bodily tension as opposed to "noise" generated by the drug. In assessing medical issues, the counselor should consult with the client's physician.

The second general area of information gathering involves discovering the cause of the reported tension. This involves exploring questions such as, "Does the client feel overly tense in situations where tension of disruptive intensity is inappropriate, or is the discomfort a rational response to realistic circumstances?" (Bernstein & Borkovec, 1973, p 12) For example, if a client is tense and is having trouble focusing on a reading task because of the state he or she is in, PMR may be appropriate. However, if the client is having trouble focusing on the reading task because he or she is in a noisy environment or has poor reading abilities, then it is unlikely that PMR will be effective. The counselor must first decide whether using PMR will alleviate a client's problem. It may be necessary to either help the client solve the external cause of the symptoms first (Cormier & Cormier, 1998) or combine PMR with another technique (e.g., systematic desensitization) (Bernstein & Borkovec).

The third general area of information gathering is finding appropriate stimuli for the tension response. The counsellor has to be aware of any specific environmental stimuli that may be triggering conditioned anxiety (Bernstein & Borkovec, 1973). This information can be sought out during a clinical interview. For example, the counselor could ask the client when the tension occurs and then look for similarities (i.e., conditioned anxiety to certain environmental factors) in the elicited tension. In a case involving conditioned anxiety or tension, PMR would likely be included as an adjunct to another technique, such as systematic desensitization (Bernstein & Borkovec).

REQUIRED CLIENT SKILLS, KNOWLEDGE, AND ATTITUDES

For PMR to succeed, the client needs to be able to closely attend to his or her muscles and to the therapist's voice (Bernstein & Borkovec, 1973). The client must also be able to systematically tense and release specified muscle groups. In Jacobson's (1987) PMR study, individuals who could not control muscular relaxation had to be omitted from the study. Clients must also be able to regularly practice the skills learned in the training sessions (Bernstein & Borkovec). Carlson and Hoyle (1993) reported that, overall, practicing PMR is strongly related to outcome effectiveness in alleviating various complaints, for example, tension headaches.

The client needs to understand how PMR works. During the first session, the counselor provides a rationale for PMR, explaining the procedure, what the client can expect, and the expected goals (Bernstein & Borkovec, 1973). The therapist instils in the client a sense of enthusiasm and confidence in the counsellor's skill and the technique. This confidence and understanding motivates the client to partake in the training sessions and do homework (Bernstein & Borkovec, 1973). Research (e.g., Jacobson, 1987) suggests that clients who are not motivated do not benefit from PMR.

The client must also adopt a responsible attitude. While the counsellor introduces the technique of PMR, it is up to the client to practise and internalize the procedure (Bernstein & Borkovec, 1973)

REQUIRED COUNSELLOR SKILLS, KNOWLEDGE, AND ATTITUDES

For PMR to work, the counsellor must come to sessions with the appropriate knowledge and attitude. If the counsellor is unable to successfully engage the client, treatment will likely fail

The counsellor must demonstrate various qualities to help the client. For example, the counsellor's voice quality is very important (Bernstein & Borkovec, 1973). The counsellor should begin the first relaxation session in a conversational tone and then soften his or her tone in keeping with the client's progressive relaxation (Bernstein & Borkovec). The counsellor should also moderate his or her voice during different aspects of therapy, for example, when instructing clients to either tense or relax muscle groups.

The counsellor must also be able to establish a rapport with the client (Bernstein & Borkovec, 1973). PMR is not a mechanical procedure, but one that should be delivered in a safe, warm environment.

The counsellor obviously needs to know how to administer PMR. Various resources describe the procedure (e.g., Bernstein & Borkovec, 1973; Cormier & Cormier, 1998). However, helping professionals should learn the basic procedure (e.g., which muscles to tense/relax, how often to tense/relax, and how much time to hold/relax) and then make any necessary modifications they feel will increase the client's comfort level, and thus increase overall effectiveness. The counsellor may also need to adapt instructions to client variations in understanding and sophistication (Bernstein & Borkovec).

The basic procedure consists of the following muscle groups being sequentially tensed and then relaxed: dominant hand and forearm; dominant biceps; non-dominant hand and forearm; non-dominant biceps; forehead, upper cheeks, and nose; lower cheeks and jaws; neck and throat; chest, shoulders, and upper back; abdominal or stomach region; dominant thigh; dominant calf; dominant foot; non-dominant thigh; non-dominant calf; and non-dominant foot (for further discussion on the process of PMR, see Bernstein & Borkovec, 1973). Following the initial session with the counsellor, the client is instructed to practise these steps twice daily, for periods of about 15-20 minutes each time.

The counsellor must also know what physical setting will be most conducive to clients' relaxation. Bernstein and Borkovec (1973) reported that the room must be quiet, attractive, and dimly lit. They also reported that the client's chair must be fully supporting and should be padded.

The counsellor must know how to deal with problems that arise during treatment. Outlined here are some potential problems, solutions, and alternatives to PMR that Bernstein and Borkovec (1973) highlight.

Clients will sometimes laugh during the beginning of PMR procedures. The counselor should determine whether he or she is inadvertently causing the client to laugh. If not, the counsellor should ignore the laughter and wait for it to pass. Another problem that can occur is muscle cramping, which disrupts relaxation. One way to reduce muscle cramps is to ask the client to generate less tension for shorter periods of time (i.e., no longer than five seconds, depending on which muscle group is cramped) in the problem areas. Another problem that may arise is clients not being able to tense or relax specific muscle groups. In this case, the counsellor should implement a variation of PMR. Variations could include relaxing fewer muscle groups (i.e., instead of 16 muscle groups, the client may only work with seven muscle groups).

Even if the client is very effective at using PMR, the counsellor must still know how to implement variations of PMR. This is mainly because clients who master PMR using the initial 6 muscle groups obtain a new goal; that is, to lower the amount of time and work associated with PMR, while still maintaining, and perhaps even increasing, the actual experience of relaxation. Thus, clients may move to seven muscle groups and then four muscle groups, and then move to relaxation by a cue response. Cue relaxation is based on the assumption that the repeated

connection between a cue (e.g., word) and the response (i.e., relaxation) makes it possible for the cue to actually produce the response (i.e., through classical conditioning) (Rice, 1998) This means that clients can use a word during their regular practice of PMR, and eventually this word can produce the same results as the actual PMR procedure.

The counsellor must be confident, enthusiastic, and realistic While the counsellor must convey the belief that PMR may be effective, he or she must also be realistic about the client's chances of success.

EVIDENCE TO SUGGEST USING PMR

Various initial client responses may suggest that PMR is the best approach to reach the client's goal. Clients who are responding very positively to the idea of PMR. are good candidates. Motivation and a desire to partake in PMR. may indicate that the client will want to practice the procedure and thus learn how to go into deep relaxation. Also, clients who report tension as a result of concrete, changeable factors, for example, a perception that "daily living is just becoming too much," or "I will never fall asleep because there are too many insignificant thoughts running through my head," will likely benefit from PMR. Such examples are in contrast to a client who feels tension because he or she is unemployed, homeless, or living in poverty. Individuals with such problems would likely not benefit from PMR without first dealing with their immediate situation (Cormier & Cormier, 1998).

As clients delve deeper into treatment, other signs may indicate that PMR is working. As the client goes through more sessions and completes his or her home practice, the counsellor may notice that the client is completely relaxed before he or she has been instructed to relax these muscle groups. With practice, PMR should gradually become easier and take less time (Bernstein & Borkovec, 1973) Furthermore, if the client says that he or she feels more relaxed even without using PMR, this indicates that the technique is working. Another sign of success is when clients do not require the second home practice session. This may mean that the client has become so effective in using PMR. that the second home practice session seems like a waste of time. However, clients should be assessed to ensure that this does not simply mean they are unmotivated to continue using PMR (Bernstein and Borkovec).

Several client responses during actual sessions may also indicate success. As mentioned earlier, the client should be reaching deep relaxation faster, as more sessions and home practices are completed. Second, as clients develop more skill at deep relaxation, they should move less during the session. The client should resemble a peacefully sleeping person, without actually being asleep. Third, the client should show characteristics such as a slack jaw, with the face being very relaxed and lips apart. The position of the client's feet can also show how well PMR is working. Initially, the feet may be parallel, but as deep relaxation occurs, they may turn away from each other at about a 45-degree angle (Bernstein & Borkovec, 1973).

WHEN NOT TO USE PMR

For some clients, PMR can be ineffective and even counterproductive. For example, Cormier and Cormier (1998) noted that clients with certain muscle or connective tissue damage, or those who are chronically weak, may have difficulty tensing and relaxing certain muscle groups. Clients with neuromuscular disability may be incapable of exercising control over all of their muscles (Cormier & Cormier, 1998). Bernstein and Carlson (1993) reported that clients with generalized anxiety disorder, panic disorder, or hypertension may experience adverse side effects. However, as was discussed earlier, state anxiety (Rasid & Parish, 1998; Scogin et al., 1992) and hypertension (Haaga et al., 1994) have been lowered using PMR in certain cases. Herman (1994, cited in Cormier and Cormier, 1998) noted that clients with histories of severe trauma will not likely be helped by PMR due to their need to maintain a level of vigilance to feel safe. As mentioned earlier, Bernstein and Borkovec (1973) reported that an organic complaint would be treated more effectively with pharmaceuticals. Furthermore, a client who is using drugs (e.g., tranquilizers) will likely not benefit from PMR (Bernstein & Borkovec).

CONCLUSION

PMR can be effective for clients with varying characteristics and symptoms, and can be implemented quite easily by counsellors, psychologists, guidance counsellors, teachers, and nurses. Furthermore, clients can learn to self-administer the technique, so they can manage tension and stress in different environments and under different circumstances on their own. When clients find themselves in new circumstances that cause tension, they are well equipped to deal with the situation themselves. PMR has withstood the test of empirical research, practical application, and, most of all, time (Jacobson, 1934).

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By *Gregory E. Harris*, University of Calgary, Division of Applied Psychology

Indirect Induction

As you are sitting in your chair you may start to feel comfortable, maybe even feeling a bit relaxed. You don't need to be too relaxed, maybe just relaxed enough to feel comfortable. You may notice as I talk your eyelids are beginning to feel heavy; you may even want to close them ... You don't need to concentrate on my voice, or on relaxing, as this will just likely happen in time ... You may notice some sounds in the room start to slowly drift away ... Sometimes you can feel sensations in your hands and figures, or possibly in your feet and toes ... It's possible you may hear your inner voice chattering away. Sooner or later, everyone begins to let go and feel deeply relaxed ... Maybe you are reminded of a pleasant sound ... A smell. ... Or a place that helps you to feel relaxed ... Most people have a pleasant memory that helps them feel relaxed ... It is a very common experience for people to find a pleasant place to relax ... Or a pleasant smell to remember. ... Or a pleasant sound to hear. ... As you are relaxing you may notice this pleasant feeling becoming even more strong ... Just take a moment to let yourself wonder about this pleasant feeling ... Does it make a noise? Does it have a taste? Does it have a smell? Does it paint a picture? Your journey can take you wherever you would like to go ... Let yourself float away into that special relaxation place ... Look around and notice what you are ... This is your time to feel what you want to ... As you drift away, notice all of the pleasantness in just relaxing ... Taking a break can feel so nice and peaceful ... Letting go can feel so good ... Sometimes without even knowing it you can find yourself there ... Don't be concerned if you find yourself drifting into places and feelings that seem to go by fast, or slow, just notice them for a while ... Notice the way they make you feel. ... It gives everyone a sense of pleasure to just take some time to feel and notice ... It's almost like going on a trip or a vacation To that special place, feeling, or sound You can take the time to notice what you like To stop here, or there, or keep going Everyone experiences it at some time or another, just slowing down and listening for something ... Sometimes we forget as time goes on, but often we remember it sometime ... Just take a moment to remember what it is you would like to remember. ... Whatever it is, you can remember by just taking a moment to pause ... Maybe to relax. Maybe to smile. Take some time now to reflect on the trip you have taken today, to that special spot in the deep realm of your mind ... This is a safe place, a relaxation place, that you can return to if you want to relax and slow down ... Take a moment, to allow yourself to slowly start to come back into the room ... Take as much time as you need to start to hear the sounds in the room ... The sound of my voice ... Maybe you are starting to become more aware of a sensation in your hand or your leg ... Take time to start to become more and more aware of your conscious thoughts and feelings ... When you are ready, try allowing your eyelids to begin to open ... Whatever feels comfortable ... Allow yourself to come back into the room ...

Direct Induction

Take a moment to prepare yourself for a deep relaxation experience Find a comfortable spot in your chair Take a deep breath so you feel it in your belly, in your diaphragm, and then let it out. ... Take a few more deep breaths and let the relaxation feeling start to take over your body ... As you start to feel more and more relaxed, let your eyes start to close, taking another deep breath, feel your eyes closing more and more ... Picture yourself lying on a long sandy beach ... Feeling the warm sunbeams ll over your body ... The ocean waves are gently rolling up onto the sand ... You can hear them splashing onto the sand and you can see them rolling back into the big blue ocean ... There is even some cool refreshing spray that you can feel on your face ... This feels nice and moist and it cools you down from the warm beams of sun ... It is a beautiful summer day. There is the slightest breeze, just enough to help you take some deep breaths while you enjoy the warm sun ... The sand is warm, and the ocean water is cool and refreshing ... As you lie on your soft cotton beach blanket, and feel the warm sun on your face, arms, and legs, you feel a deep sense of relaxation coming over you ... The heat on your face, your arms, and your Jegs is nice and relaxing ... As you lay on the beach, you can smell the ocean; the salt air makes you feel relaxed and at peace ... It reminds you of how nice it is to be on vacation, how you can just focus on relaxing and taking

care of your self... As you lie on your blanket and feel the fluffy pillow under your head, you feel more and more relaxed ... You can hear a seagull off in the distance. Then you can see the seagull gliding and floating up in the big blue sky ... The sky is clear; there are no clouds, only blue sky and a warm SW1
Take some time to just lie on your blanket Feel the warm sun ... And feel the deep relaxation ... As you're relaxing on your blanket take a moment to feel the sand ... Feel it with your fingers and your hands ... It's warm on your hands, and it feels so nice to let it run between your fingers ... The sand running through your fingers seems to make you feel more and more relaxed; with each little piece of sand you can feel yourself becoming deeply relaxed ... It almost puts you into a trance, watching the sand slide through your hands and drift back onto the beach, time seems to stand still.. You can also feel the warm brown sand on your feet, as they hang just enough off of your blanket to feel comfortable ... The sand squishes between your toes as your feet become buried in the warm never-ending sand ... As you are lying on your blanket, take a moment to roll onto your stomach and feel the warm rays of sun on your shoulders and your back ... Feel the sensation of warmth soaking into your shoulders ... Penetrating your back. Feel the deep relaxation ... As you lie on your blanket you can hear the ocean waves breaking softly onto the sand ... The clear blue water sounds inviting as it rolls down the sand. Its salt smell makes you feel relaxed and comfortable ... As you feel warmer and warmer from the rays of sun and the hot sand you feel relaxed ... Slowly, and comfortably, you stroll toward the ocean, noticing how clear and blue the water looks ... The sand is warm as you glide toward the cool water ... The refreshing ocean water rolls up the sand to meet you as you get closer and closer. It feels nice and refreshing ... As you wade in the blue clear water you feel more and more relaxed, refreshed. You notice the water over your feet, you see the wet sand covering your toes ... It feels nice to cool off your feet from the hot sandy beach ... The sunbeams are shining on you, keeping you nice and warm while you enjoy the cool clean water on your feet... It's the perfect combination of a warm sunny day and a nice cool stroll along the ocean's beach. Take a moment to just feel how relaxing it is to stroll along the beach ... Notice the waves gently brushing up against your feet... Feel the wet sand on the bottom of your toes ... Feel the sun shining on your hair, shoulders, and back... Smell the clean salt air all around you ... It feels very relaxing very refreshing ... As you begin to slowly walk beyond the ocean's stream of water you again feel the warm sand on your toes. You notice the sand sticks to your feet, and with more and more sand sticking to your feet, you feel more and more relaxed ... The sand is soothing; it's like a relaxation blanket has covered your feet and it is making your feet drift into deep relaxation ... They feel tingly, soft, and warm. Take a moment to just enjoy this warm feeling ... To enjoy the long sandy beach ... To gaze upon the big blue ocean ... Now it's time to slowly start to pack up your belongings, and prepare to come back ... I am going to count backwards from five ... With each number you hear I would like you to collect your belongings, and start to come back to the room ... Five ... You're starting to dust the sand off your feet, and put on your sandals ... Four. .. You're folding up your blanket. .. *Three* ... Starting to come back to the room, hearing the sound of my voice more clearly ... Two ... Hearing the sounds in the room and starting to become more conscious ... One ... Slowly starting to open your eyes and coming back to the room ... Feeling very relaxed and refreshed from your trip to the beach ...

RELAXATION LOG SHEET Name _____

Indicator	Date / Time		
	Start	Finish	Difference
Pulse (beats per minute)			
Breathing rate (beats per minute)			
Finger temperature (degrees)			
<u>Feelings, body, sensations, etc</u>			
<u>Thoughts, perceptions, imagery, etc</u>			

Indicator	Date / Time		
	Start	Finish	Difference
Pulse (beats per minute)			
Breathing rate (beats per minute)			
Finger temperature (degrees)			
<u>Feelings, body, sensations, etc</u>			
<u>Thoughts, perceptions, imagery, etc</u>			

Figure 2. Relaxation Home Practice Log Sheet.

PR ESS CHART

It is important to monitor the intensity of your headaches for at least two reasons:

1. Research has shown that this will help to reduce the psychological side effects that often accompany a headache.
2. It is useful in helping to determine the effects of your treatment program.

The following five point scale is useful in helping people monitor the severity of their headache.

- 0- No tension
- 1- Low level, only enters awareness when you think about it
- 2- Aware of tension most of the time, but it can be ignored at times
- 3- A lot of tension, but can continue job
- 4- Severe tension, at times painful to move muscles freely
- 5- Very intense tension levels

To monitor your headache level, mark the appropriate number on the graph at each hour and join the points together.

List at the right of the graph any medication you take, and the time it was taken.

Placing a coloured dot on your watch will help you remember to do this.

Name: _____

Intensity	5	4	3	2	1	0
a.m.						
8						
9						
10						
11						
12						
noon						
1						
2						
3						
4						
5						
p.m.						
6						
7						
8						
9						
10						
11						
12						
midnight						
1						
2						
3						
4						
5						
a.m.						
6						
7						
8						
9						
10						
11						
12						
midnight						
1						
2						
3						
4						
5						
a.m.						
6						
7						
8						
9						
10						
11						
12						
midnight						
1						
2						
3						
4						
5						

Time

Medication

Time

Medication

Time

Medication

PRC ESS CHART

It is important to monitor the intensity of your headaches for at least two reasons:

1. Research has shown that this will help to reduce the psychological side effects that often accompany a headache.
2. It is useful in helping to determine the effects of your treatment program.

The following five point scale is useful in helping people monitor the severity of their headache.

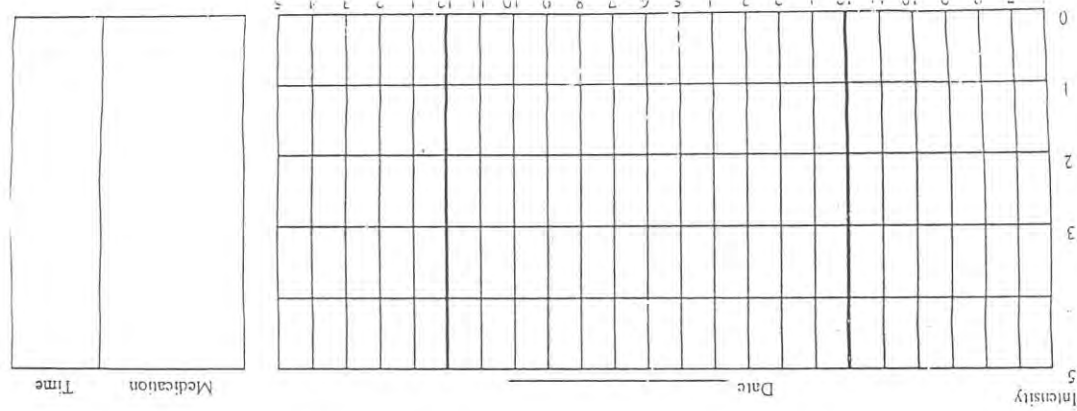
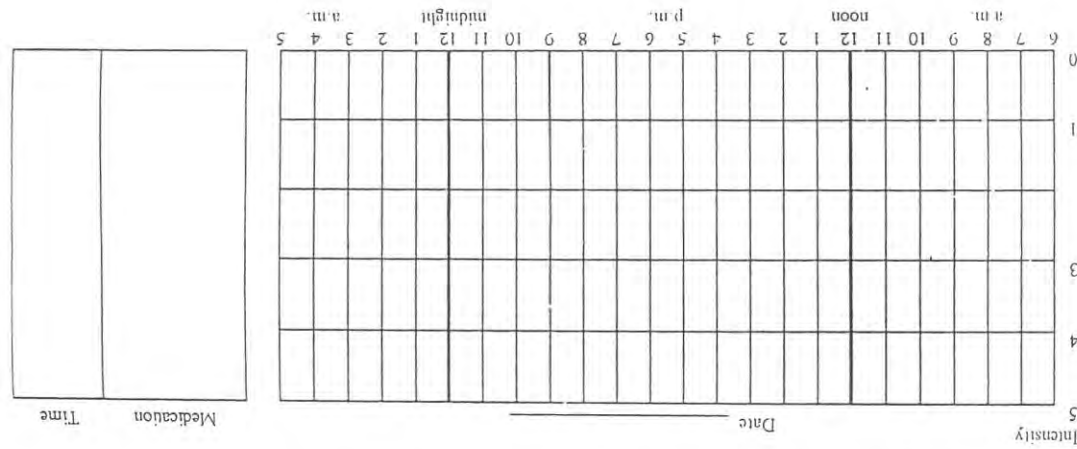
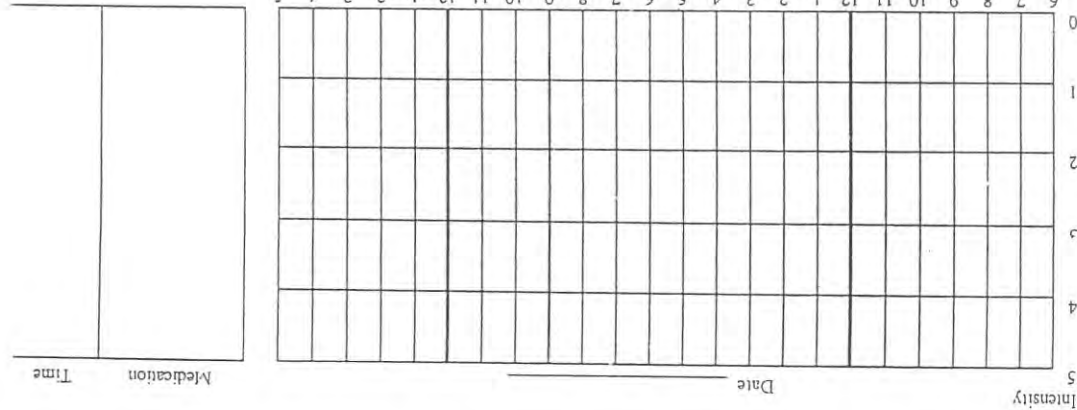
- 0 - No headache
- 1 - Low level, only enters awareness when you think about it
- 2 - Aware of headache most of the time, but it can be ignored at times
- 3 - Painful headache, but still able to continue job
- 4 - Severe headache, difficult to concentrate with demanding tasks
- 5 - Intense incapacitating headache

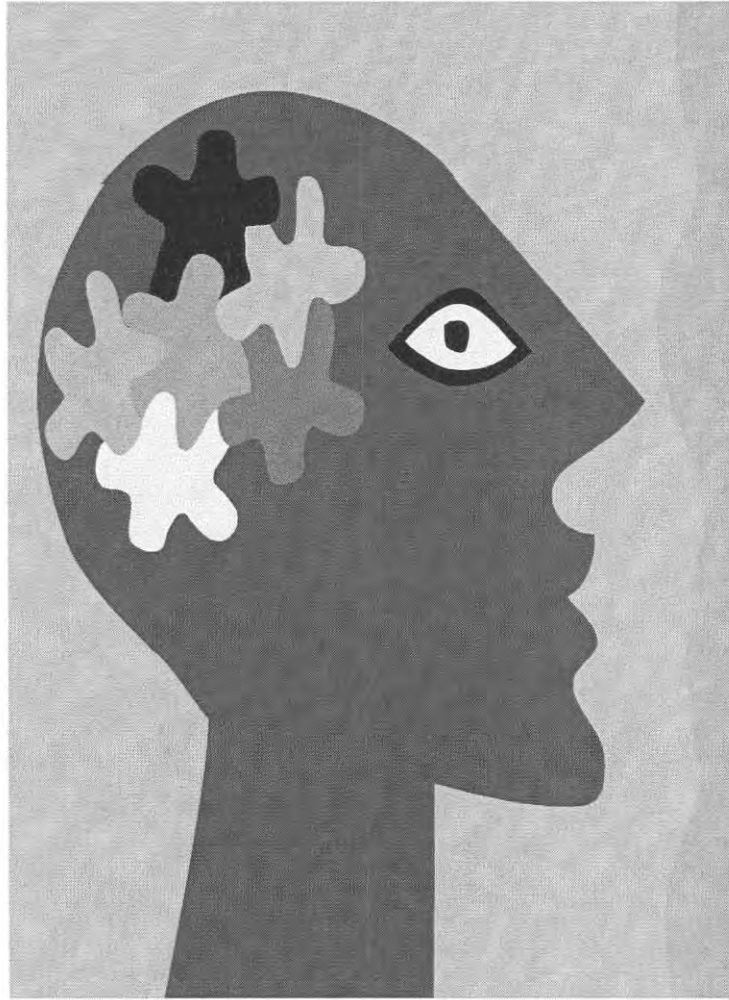
To monitor your headache level, mark the appropriate number on the graph at each hour and join the points together.

List at the right of the graph any medication you take, and the time it was taken.

Placing a coloured dot on your watch will help you remember to do this.

Name: _____





SECTION 11:
ADHD: ATTENTION DEFICIT
HYPERACTIVITY DISORDER



ATTENTION DEFICIT HYPERACTIVITY DISORDER

Introduction

Although individuals with ADHD can be very successful in life, without identification and proper treatment, ADHD may have serious consequences, including school failure, depression, problems with relationships, substance abuse, and job failure. Early identification and treatment are extremely important.

Diagnosis

While there are no biological, physiological, or genetic markers or independently valid tests that can reliably identify the disorder, the scientific consensus is that the diagnosis of ADHD can be made reliably, using well-tested diagnostic interview methods.

Because everyone shows signs of these behaviors at one time or another, the guidelines for determining whether a person has ADHD are very specific. In children and teenagers, the symptoms must be more frequent or severe than in other children the same age. In adults, the symptoms must affect the ability to function in daily life and persist from childhood. In addition, the behaviors must create significant difficulty in at least two areas of life, such as home, social settings, school, or work. Symptoms must be present for at least six months. Determining if a child has ADHD is a multifaceted process. Many biological and psychological problems can contribute to symptoms similar to those exhibited by children with ADHD. For example, anxiety, depression and certain types of learning disabilities may cause similar symptoms.

There is no single test to diagnose ADHD. Consequently, a comprehensive evaluation is necessary to establish a diagnosis, rule out other causes, and determine the presence or absence of co-existing conditions. Such an evaluation should include a clinical assessment of the individual's academic, social, and emotional functioning and developmental level. A careful history should be taken from the parents, teachers and when appropriate, the child.

Checklists for rating ADHD symptoms and ruling out other disabilities are often used by clinicians. Regardless of who does the evaluation, the use of the Diagnostic and Statistical Manual IV criteria is necessary. A medical exam by a physician is important and should include a thorough physical examination, including hearing and vision tests, to rule out other medical problems that may be causing symptoms similar to ADHD. Only medical doctors can prescribe medication if it is needed. Diagnosing ADHD in an adult requires an examination of childhood academic and behavioral history as well as reviewing current symptoms (<http://www.help4adhd.org/en/treatment>)

Symptoms of ADHD

The year 2000 Diagnostic & Statistical Manual for Mental Disorders (DSM- IV- TR) provides criteria for diagnosing ADHD. The criteria are presented here, in modified form, in order to make them more accessible to the general public. They are listed here for information purposes and should be used only by trained health care providers to diagnose or treat ADHD.

DSM-IV Criteria for ADHD

I. Either A or B:

A. Six or more of the following symptoms of inattention have been present for at least 6 months to a point that is disruptive and inappropriate for developmental level:

Inattention

1. Often does not give close attention to details or makes careless mistakes in schoolwork, work, or other activities.
2. Often has trouble keeping attention on tasks or play activities.
3. Often does not seem to listen when spoken to directly.
4. Often does not follow instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions).
5. Often has trouble organizing activities.
6. Often avoids, dislikes, or doesn't want to do things that take a lot of mental effort for a long period of time (such as schoolwork or homework).
7. Often loses things needed for tasks and activities (e.g. toys, school assignments, pencils, books, or tools).
8. Often easily distracted.
9. Often forgetful in daily activities.

B. Six or more of the following symptoms of hyperactivity-impulsivity have been present for at least 6 months to an extent that is disruptive and inappropriate for developmental level:

Hyperactivity

1. Often fidgets with hands or feet or squirms in seat.
2. Often gets up from seat when remaining in seat is expected.
3. Often runs about or climbs when and where it is not appropriate (adolescents or adults may feel very restless).
4. Often has trouble playing or enjoying leisure activities quietly.
5. Often "on the go" or often acts as if "driven by a motor".
6. Often talks excessively.

Impulsivity

1. Often blurts out answers before questions have been finished.
2. Often has trouble waiting one's turn.
3. Often interrupts or intrudes on others (e.g., butts into conversations or games).
4. Some symptoms that cause impairment were present before age 7 years.
5. Some impairment from the symptoms is present in two or more settings (e.g. at school/work and at home).
6. There must be clear evidence of significant impairment in social, school, or work functioning.
7. The symptoms do not happen only during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder. The symptoms are not better accounted for by another mental disorder (e.g. Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).

Based on these criteria, three types of ADHD are identified:

1. ADHD, Combined Type: if both criteria 1A and 1B are met for the past 6 months
2. ADHD, Predominantly Inattentive Type: if criterion 1A is met but criterion 1B is not met for the past six months
3. ADHD, Predominantly Hyperactive-Impulsive Type: if Criterion 1B is met but Criterion 1A is not met for the past six months.

SOURCES:

American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision. Washington, DC, American Psychiatric Association, 2000. www.cdc.gov/ncbddd/adhd/symptom.htm

STRATEGIES FOR STUDENTS WITH AD/HD

Developed by: Dr.E. Hallowell; Dr. C. Jones; Foothills Academy in Calgary, AB; and Landmark East in Woltville, NS

- **Praise-** Approve, encourage whenever possible.
- **Look for sparkling moments.** Be positive. AD/HD individuals are generous in spirit and glad to help. They are often gifted and very creative.
- **Listen to them with your heart and eyes.** Stop everything and engage.
- **Ask permission to help.** Don't assume they want it.
- **Post victories.** Allow students to monitor their own progress. AD/HD individuals need immediate reinforcement.
- **Create a victory board.** Success needs to be validated.
- **Ask the student what will help them to keep them on task.**
They are intuitive.
- **Students with AD/HD need a structured environment,** a predictable schedule. They need to be warned ... no surprise, if there is going to be a transition into another activity, or if an activity has been changed.
- **Post rules.** Let students design their own rules and consequences. Have students write a contract and post rules in full view. Use picture and word cues. Use colour to emphasize key words.
- **Specify consequences in advance.**
- **Allow for 'an escape valve'.** Allow the students to go for a walk rather than lose it. 'The internal spark'.
- **Give them a second chance.** They deserve a break, give them some slack. Pick your battles.
- **Be flexible.** *Rigid things break in the wind.*

- **Don't personalize their behaviour.** The behaviour is not the student.
- **Teach social skills.** Social coaching. AD/HD students are poor self-observers. They need to learn how to interact. Acknowledge good behaviour. Give a reprimand immediately but pick your battles.
- **Ask:** - "Do you know what you did?" and "What would you do differently?"
- **Repeat, repeat and rephrase,** simplify instructions. Ask students to repeat back. Remind, correct, reflect.
- **Set limits and boundaries.** Take charge, be consistent, predictable.
- **They are younger** by 1/3 of their chronological age. Emotionally young. Driving is an issue!
- **Reward and incentive system.** Many thrive on rewards (entrepreneurs). What do you want them to do rather than what you don't want them to do. Be brief and unemotional if you have to reprimand.
- **Make expectations explicit.** Give clear and simply-constructed instructions.
- **Break tasks down into small tasks.** AD/HD students become overwhelmed and will avoid the task. Chunk information.
- **Encourage questions.** No question is stupid. Award 'best 'question of the day.
- **Talk slower.**
- **Use body language.** Thumbs up, smiles, nods, and eye contact convey meaning. Students pay more attention to what you do than what you say.
- **Use a calm voice.**
- **Wait patiently for student to reply.** They are trying to 'process.' They become frustrated and tire easily.
- **Encourage active participation.**
- **Take lots of breaks.**
- **Make frequent eye contact.** Bring them back on task, retrieve them from a daydream. Use visual cues.

- **Seat the student across from you (eye contact). U-shaped arrangement for desks.** Student will stay on task better if they sit directly in front of teacher.
- **Help them to organize themselves.** A designated place for everything. *Sharper Image: Now you can find it! Wireless electronic locator.*
 - Tag Alert www.remoteplay.com
- **Narrow down their choices.** Not open-ended...
- **Help them sleep.** Shut down TV and Gameboy early, slow down, white noise in their bedroom. Time to wind down.
- **Have a sense of humour.** AD/HD students love play. Be playful, be unconventional, and be flamboyant. It helps them to stay focused. Learning should not be boring.
- **Bring their talents to class.** Music, art, photography etc.
- **Play calming music** when working on tasks or transition times. Not rock and roll. Earphones are good thing for AD/HD folks as they reduce external noise. Allow them to work where they perform best.
- **Encourage physical exercise.** They need to work off excess energy as it helps them to stay focused. Example: small trampoline.
- **Solo sports are best.** Difficulty playing with more than one person at a time. Team sports have too many directions. (Note: An excellent activity for an AD/HD child is martial arts.)
- **CAUTION:** Too much exercise can also be stimulating. Watch for overstimulation. Redirect physical energy as they tend to be risk-takers and accident-prone.
- **Music-.some** individuals with AD/HD can't recall notes when playing piano, but can play by ear. Good at drums or instruments, where they can see the keys like a clarinet but not the flute.
- **Avoid lectures.** Give global directions, use visual gestures, strong facial expression, and move around.
- To comprehend, students need '**association**' as it links learning. They need mental pictures, linguistic information, physical sensation (smell, etc.) and some form of emotion to recall. When teaching, set the vision, then give the details.
- **Use pictures** instead of words.

- **Assignments** should be written down and heard.
- **Key lock for locker**, as can't recall combination #'s.
- **Second set of books** for home.
- **Use digital recorders.**
- **Monitor their progress.** Helps them to keep track.
- **Fewer assignments.** Quality over quantity.
- Teach **memory skills.** Tricks, flashcards, cues, codes, rap, rhymes.
- **Use numbers** not bullets in outlines.
- When **making lists**, chunk lists, cross off each item.
- **See it, say it, and hear it.**
- **Use outlines.** Teach outlines. Use **INSPIRATION** software.
- Introduce **typing.**
- **Colored Cards.** To reduce interruptions:
 - *GREEN, I'm working.*
 - *BLUE, I'm finished.*
 - *RED, I need help.*
- **Memory color cues.** Red (easiest), green, blue,
 - Yellow (hardest to recall), pink (sense of peace).
- Use colored pens, binders, folders, boxes, photocopies for each subject.
- **Highlighters.** Do not use yellow; this color doesn't 'stick' in their memory.
- **Highlighting tape.** Colour what student doesn't know, not what he does know.
- **Board work-** Use visual cues and designs, Boxes around key words, use an overhead, colored overheads, pointers, arrows and markers, cover non-essential material, number items ...don't use bullets.
- **Overheads** rather than blackboard. Use color, look straight at students not the board .

- **Use timers** as reminders to stay on task. Good for self-monitoring .
- **Wrist alarms, buzzers** (good for transition between tasks)
 - WatchMinde2; programmed messages, alarms/alert modes.
- Allow student to use **a laptop**. Know when to quit trying to teach and give student assistive technology.
- **Typing**. Encourage students to type .
- **Eliminate timed tests**. No educational value
- **Change** classroom activities often. Chunk.
- Let student be the **leader or teacher**.
- **Partner reading**. Older student is best.
- Encourage them to **read aloud** whenever possible. Encourage story-telling.
- Allow student to wear **headphones** to eliminate noise.
- **Use manipulative**.
- **Timelines**, calendars, agendas.
- **Books on tape**.
- **Soft, thick gripper** for pencil and pens.
- Tape **schedules** on their desk(s).
- **NCR carbon paper** for scribe.
- **Raised lined paper**.
- Put **drills** to music.
- To help student **stay on task**, let student sit on a balance ball or stick chairs, play with squeeze balls, twist pipe cleaners, sponge to tap on, sand paper, carrels, allow them to chew gum during a test. *Let everyone in the class try this.*
- **Oral tests**.
- **Scribe**, spell check.

- Keep **supplies** visible, on-hand.
- **Clipboards** keep papers organized.

SOURCES:

Bender, W. (2004). Learning Disabilities: Characteristics, Identification (and Teaching Strategies. 5th Edition. Pearson Education. Boston, MA.

Hallowell, Edward., Ratey, J. (1995). Driven to Distraction. Simon & Shuster.

Jones, Clare. (2003). Practical Suggestions for AD/HD. LinguiSystems. Moline, IL.

Osman, B. (1997). Learning Disabilities and AD/HD: A Family Guide to Living and Learning Together. Wiley & Sons. New York, NY.

Rapoport, J. (1999). Treatment of AD/HD. New England urnal of Medicine, 340/10, pgs. 780-88.

Seidman, L. (2006) Neuropsychological Functioning in People With AD/HD Across the Lifespan. CPR, 26(4): 466-485.

WEB RESOURCES:

www.addsupport.org	Canadian AD/HD Support Site
www.addvance.com	Resource for Women with AD/HD
www.adhdnetwork.org	Canadian AD/HD Support Site
www.addcoach4u.com	Information for Adults with AD/HD
www.chaddcanada.org	Attention Deficit Disorder
www.additudemag.com	Magazine for People with AD/HD

Section XI Readings- Attention Deficit Hyperactivity Disorder (ADHD)

ADHD and ADD organizations and support group website references

Variety of Charts and Graphs related to ADHD

Fact Sheet #1: An Overview of ADHD (LDAC/ LDANS)

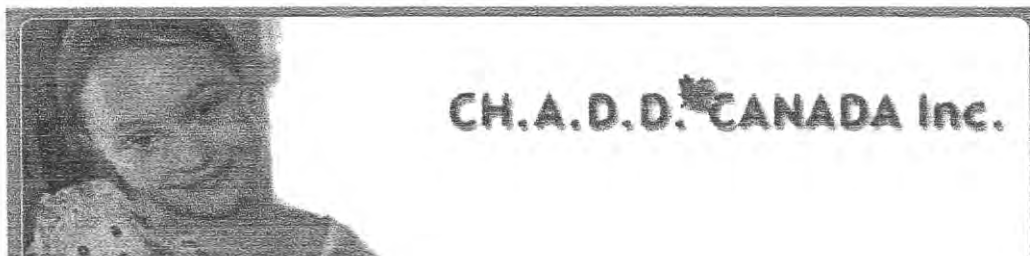
Fact Sheet #2: Symptoms of ADHD (LDAC/ LDANS)

Fact Sheet #3: Diagnosis and Treatment of ADHD (LDAC/ LOANS)

Fact Sheet #4: Co-Existing Conditions of ADHD (LDAC/ LDANS)

Fact Sheet #6: ADHD and Teenagers (LDAC/ LDANS)

Fact Sheet #7: ADHD and the Adult (LDAC/ LDANS)



This organization helps support, educate, and improve the lives of individuals with AD/HD. CH.A.D.D has chapters across Canada and holds support meeting regularly. Many of its chapters hold workshops, presentations, conferences for individuals with AD/HD and those who work with them.

Website: <http://www.chaddcanada.org>

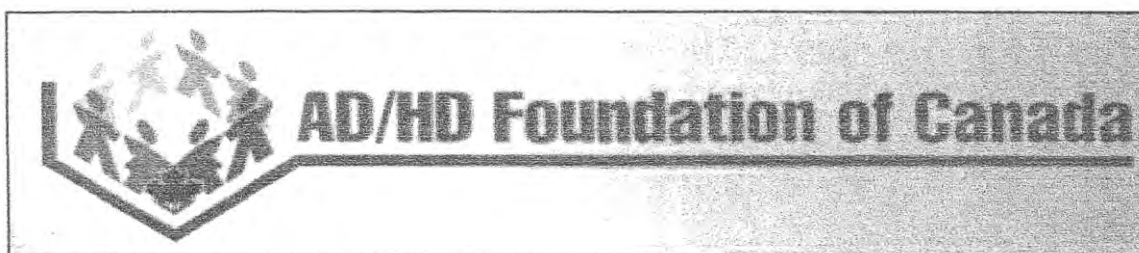
Email: chaddcalgary@yahoo.com (If you are not from Calgary then they will direct your email to a chapter near you)



This sight is based out of Toronto and is used to help individuals and those who are touched by them find information and resources on AD/HD. This support group feels that information is the power behind success and it is their objective to bring as much of it to parents, teachers and professionals.

Website: <http://www.addsupport.org>

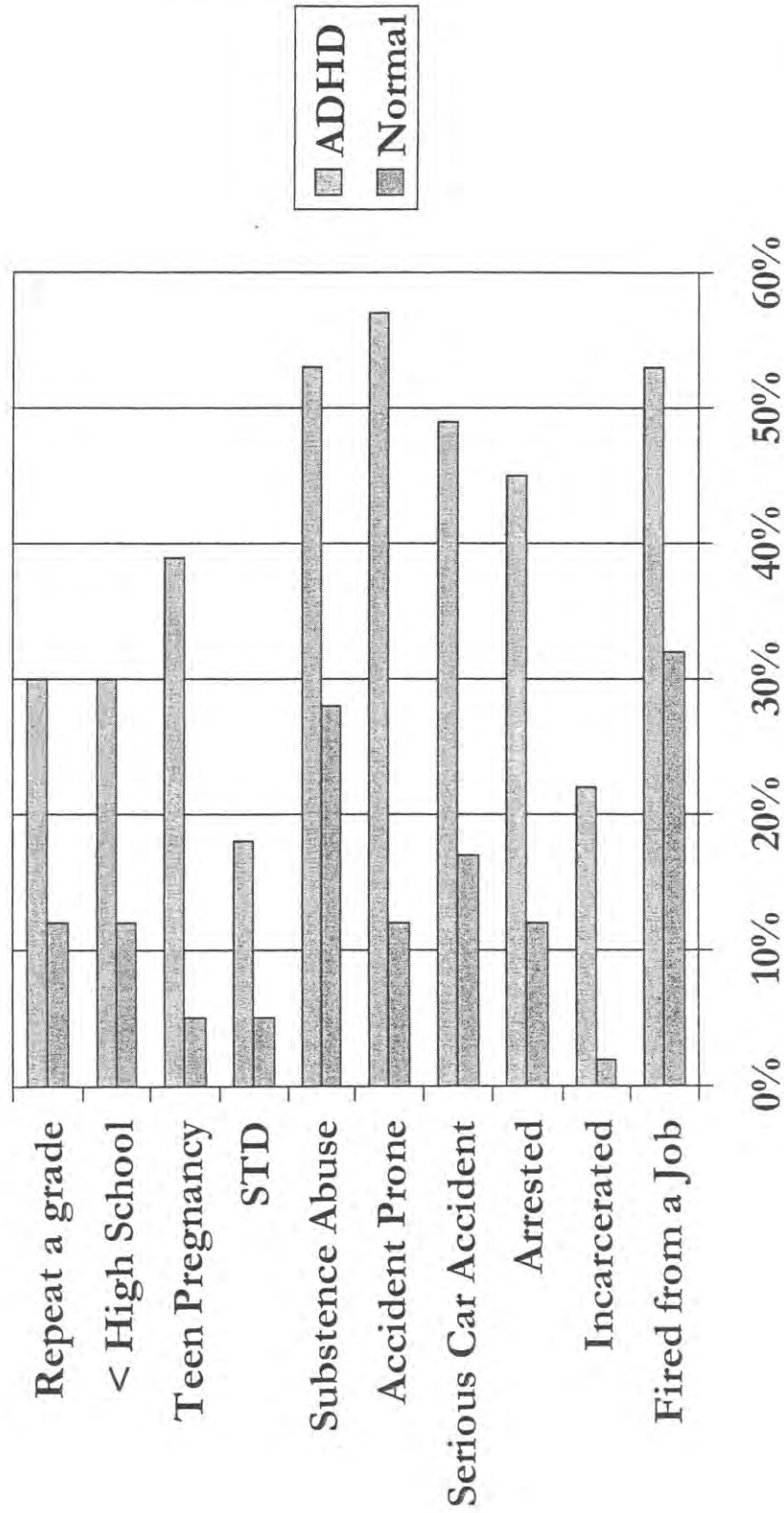
Email: norm@addsupport.org



This is an online support group for individuals with AD/HD or those who are touched by them. On this sight people are able to write in and give tips, suggestions, or stories about their experiences with AD/I-ID.

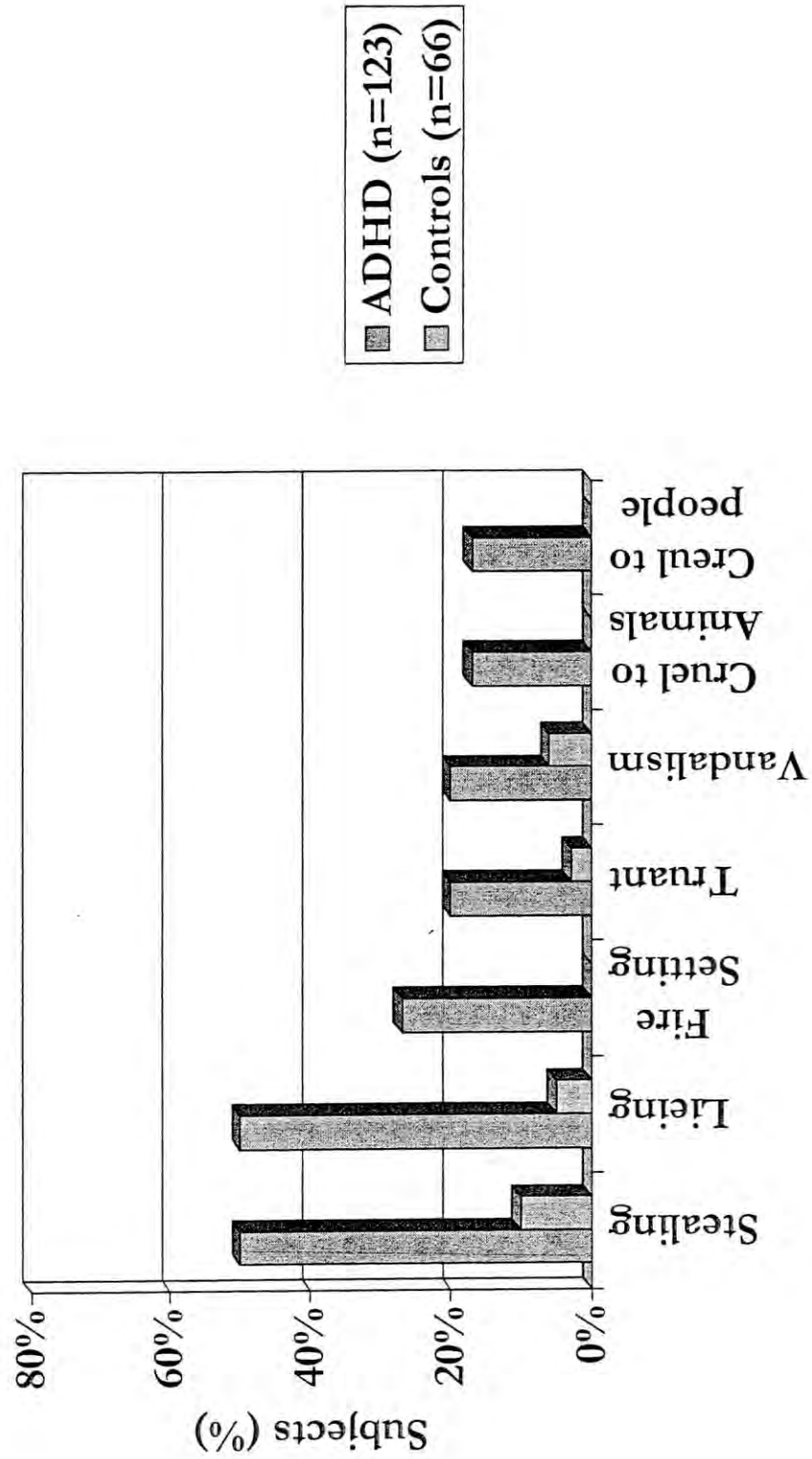
Website: <http://www.adhdfoundation.ca/>

Functional Impairment in Patients with ADHD compared to Those Without



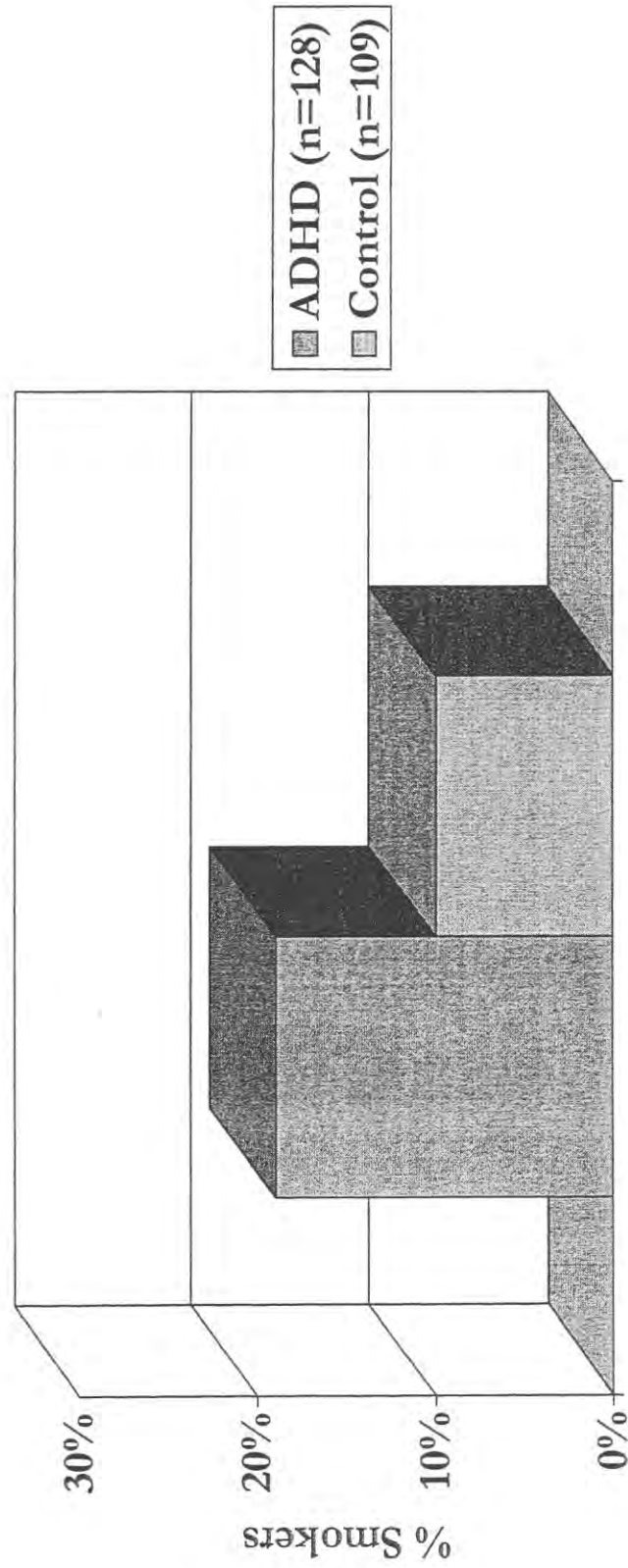
1. Barkley. Attention-deficit hyperactivity disorder. A handbook for diagnosis and treatment, 1998; 2. Barkley et al. JAACAP 1990; 3. Biederman et al. Arch Gen Psych 1996; 4. Weiss et al. JAACAP 1985; 5. Satterfield, Schell. JAACAP 1997; 6. Biederman et al. Am J Psych 1995.

Increased Anti-Social Behavior

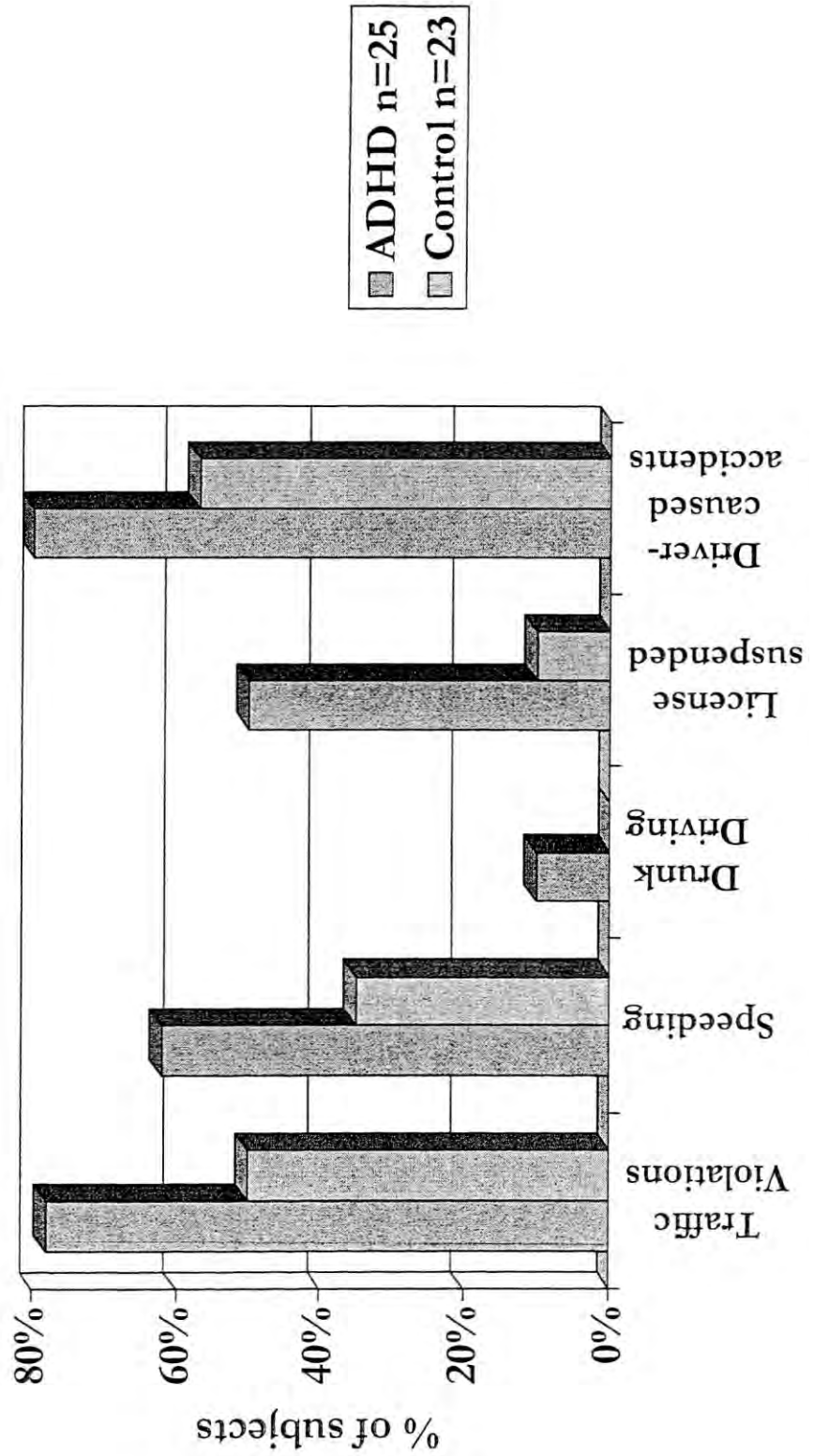


Higher Rates of Smoking

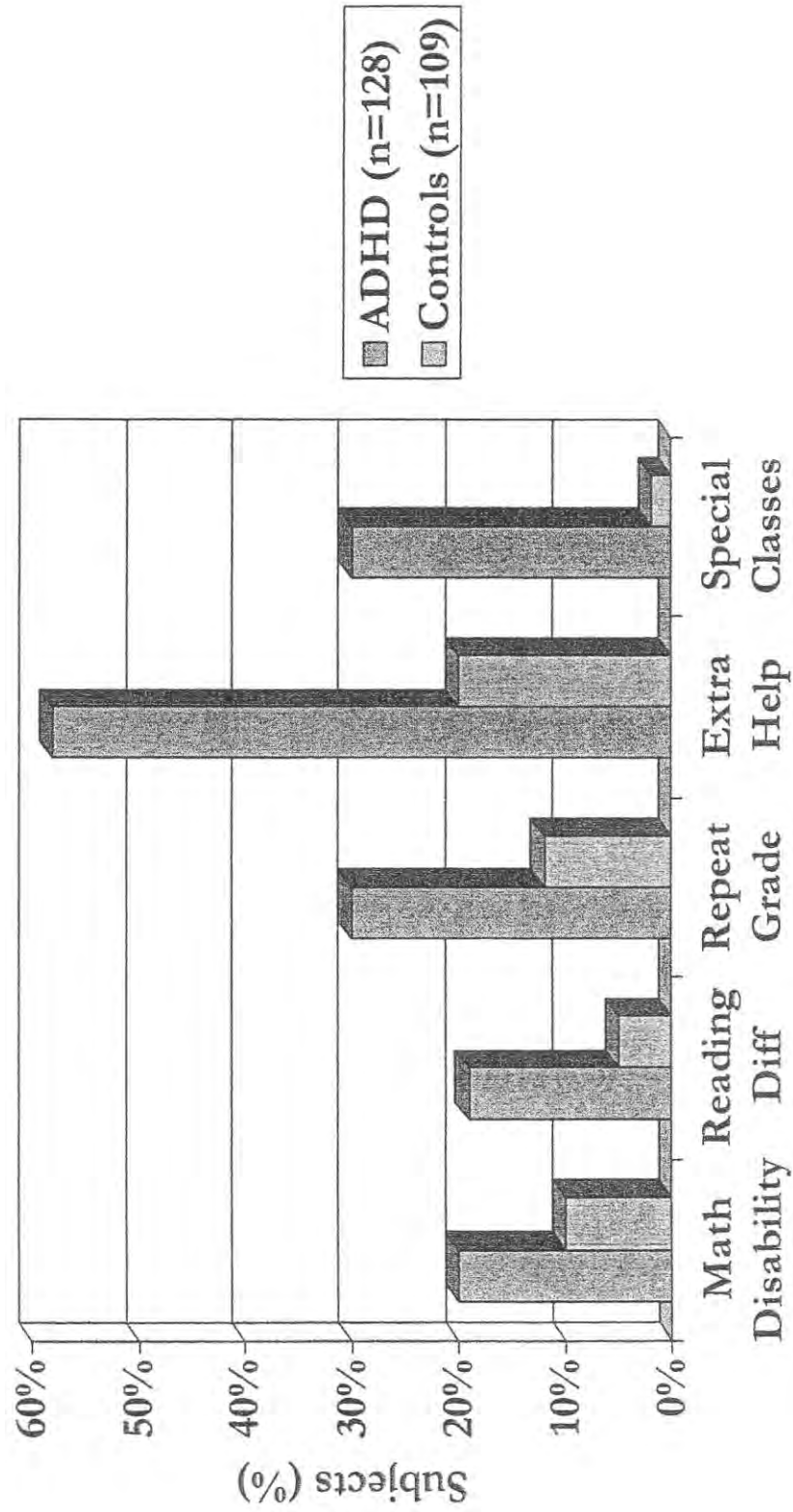
Boys 6-17 years followed for 4 years



Increased Traffic Violations and Motor Vehicle Accidents



Poorer Academic Performance



FACT SHEET # 1

AN OVERVIEW OF AD/HD

AD/HD stands for Attention Deficit Hyperactivity Disorder. It is considered to be a neurobiological disability that interferes with a person's ability to sustain attention or focus on a task and to control impulsive behaviour. We may all have difficulty sitting still, paying attention or controlling impulses, but for some people the problem is so chronic and persistent that it gets in the way of daily life-at home, at school, at work and in social settings.

Current research has shown that AD/HD is caused by a deficiency of specific neurotransmitters in a specific set of brain circuits. Depending on which areas of these circuits are involved, the person may be distractible, impulsive or hyperactive.

We also know that genetics may play a part. AD/HD is likely to run in families and seems to be passed down through generations.¹ According to one twin study, if one twin had AD/HD, the other identical twin had a 75% to 91% chance of also having AD/HD²

AD/HD is not a learning disability (LD). Each is a distinctive neurologically based disorder. Each is recognized and diagnosed differently. And each is treated in a different way. The treatment for AD/HD will not correct LD. The treatment for LD will not help AD/HD. About 30% to 40% of people with LD will also have AD/HD, so if one disorder is found it is important to look for the other.

Do Many Kids Have AD/HD?

Yes AD/HD affects about 3% to 5% of the children in Canada, with boys being affected about two to four times more than girls.^{3,4} We also know that girls are often older than boys when they are diagnosed and that they are less likely to be referred for treatment. This may be because the behaviour of girls with AD/HD is not usually as disruptive or aggressive, and they are often less trouble to their parents and teachers." AD/HD can carry on into adulthood. Up to 67% of people who had AD/HD as a child may continue to have symptoms of AD/HD as an adult.'

How Might a Child with AD/HD Behave?

Three behaviours are used to confirm a diagnosis of AD/HD-distractibility, impulsivity and high energy/activity (hyperactivity). It is important to note, though, that just as everyone has different fingerprints, everyone with AD/HD has a unique set of symptoms that occur more often and in different settings all the time. (Fact Sheet # 2)

Distractibility/Inattention is supersensitivity and limited ability to tune out both internal stimuli (e.g. thoughts, pain, hunger) and environmental stimuli (e.g. noise, movement) ¹

Children who are distracted often have poor short-term memory and may easily forget instructions, have trouble keeping track of belongings, and organizing or concentrating on one task or finishing a task.

Children who are *inattentive* may also be underactive (known as hypoactive). Hypoactivity is insufficient motor activity. They react and work slowly and seem to be unemotional, so that they appear "lazy" and "spacy" or daydreamers.

Impulsivity is a lack of restraint. Impulsive people may react immediately, without thinking ahead, so they tend to make judgment errors. They want to satisfy their needs immediately, often interrupting others and blurting out whatever is on their mind, which they may regret later. They may know the rules but can't pause long enough to think before they act, and so they don't learn from their experience. Children who are impulsive get into trouble at school, with friends and at home. They have difficulty working and playing in groups and rush through tasks, making careless mistakes. They exhibit aggressive behaviour as a reaction to stress.

Hyperactivity is persistent, heightened and sustained activity. Hyperactive children are constantly restless-tapping fingers or feet, swinging legs or squirming in the chair. They may be up and down from their desk during class activities or doing several things at once. They may start projects but are unable to complete them because of too much energy and boredom as they constantly need stimuli. Their motivation appears to be fading.

When AD/HD is left unidentified or untreated, a person is at great risk for impaired learning ability, decreased self-esteem, social problems, family difficulties and potential long-term effects.

Evaluation, Diagnosis and Treatment

There is no one test to diagnose AD/HD. A comprehensive evaluation is needed to rule out other causes and to diagnose the presence of other co-occurring conditions. Treatment plans should be tailored to meet the specific needs of each person. Treating AD/HD requires medical, educational, behavioural and psychological interventions (Fact Sheet #3).

Co-existing Conditions

AD/HD often co-occurs with other conditions, such as depression, anxiety or LD. When co-existing conditions are present, academic and behavioural problems may be more complex (Fact Sheet #4).

The Upside

With identification and treatment, children and adults with AD/HD can be successful. Many professionals who work with children and adults have reported many positive features of AD/HD when it is managed appropriately.

People with AD/HD are often highly creative, and can show strong leadership skills. They are compassionate and/or empathetic with others-good at relating to younger children, elderly people and marginalized groups. At times, they may be able to hyper-focus and show great "stick-to-it-ness." They are intuitive/perceptive and have a powerful drive to move ahead"

*** . ADIHD is not a learning disability. Each is a distinctive neurologically based disorder. Each is recognized and diagnosed differently. And each is treated in a different way. The treatment for ADIHD will not correct LD. The treatment for LD will not help ADIHD. About 30% to 40% of people with LD will also have ADIHD, so if one disorder is found it is important to look for the other.*

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FACT SHEET # 2

SYMPTOMS OF AD/HD

AD/HD is considered to be a neurobiological disability that interferes with a person's ability to sustain attention or focus on a task and to delay impulsive behaviour.

AD/HD usually shows up in early childhood, unless associated with some type of brain injury later in life. Formal diagnosis of AD/HD is based on the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) from the American Psychiatric Association. Although the official diagnostic criteria state that the onset of symptoms must occur before the age of 7, leading researchers in the field of AD/HD argue that this criterion should be broadened to include onset anytime during childhood?

AD/HD in Children

AD/HD comes in many shapes and sizes," but most children with AD/HD have a hard time paying attention, keeping 'at it' and finishing tasks.

The diagnosis of AD/HD is not based only on the presence of the following symptoms. It is also based on their severity and duration, and the extent to which they interfere with everyday life.

The symptom-related criteria for the three following primary subtypes are adapted from DSM-IV and summarized as follows:

(1) Six (or more) of the following symptoms of inattention have persisted for at least 6 months to a degree that is chronic and inconsistent with development level:

Predominantly Inattentive Type

- often fails to pay close attention to details or makes careless mistakes in schoolwork, work or other activities
- often has difficulty keeping attention on tasks or play activities
- often does not seem to listen when spoken to
- struggles to follow through on instructions
- has difficulty organizing tasks and activities
- avoids or dislikes doing tasks that require sustained mental effort, like schoolwork or homework
- often loses things needed for tasks or activities, such as school assignments, pencils, books or tools
- is easily distracted
- often forgetful in daily activities

(2) Six or more of the following symptoms of hyperactivity-impulsivity have lasted for at least 6 months to a degree that is chronic and inconsistent with development level:

Predominantly Hyperactive-Impulsive Type

- fidgets with hands or feet or squirms in seat
- leaves seat in class or other places where staying seated is expected
- runs about or climbs excessively when it is inappropriate (in teenagers or adults, may show up as restlessness)
- has difficulty engaging in quiet activities
- is often "on the go" or acts as if "driven by a motor"
- talks excessively
- blurts out answers before questions have been completed
- has difficulty awaiting turn
- interrupts or intrudes on others, such as butting into conversations or games

AD/HD Combined Type

- Individual meets both sets of inattentive and hyperactive/impulsive criteria.

AD/HD in Adults

Greater public awareness has led to more adults seeking evaluation and treatment for AD/HD and its associated symptoms. The current diagnostic criteria for AD/HD (reworded slightly to be more appropriate for adults) according to the most recent DSM-IV are:

- fails to pay close attention to details or make careless mistakes at work
- fidgets with hands or feet or squirms in seat
- has difficulty sustaining attention in tasks or fun activities
- leaves seat in situations where seating is expected
- doesn't listen when spoken to directly
- feels restless
- doesn't follow through on instructions and fails to finish work
- has difficulty engaging in leisure activities quietly
- has difficulty organizing tasks and activities
- feels "on the go" or "driven by a motor"
- avoids, dislikes, or is reluctant to engage in work that requires sustained mental effort
- talks excessively
- loses things necessary for tasks and activities
- blurts out answers before questions have been completed
- is easily distracted
- has difficulty awaiting turn (impatient)
- is forgetful in daily duties
- interrupts or intrudes on others

Although other rating skills and checklists are sometimes used in assessing adults for AD/HD, the above DSM-IV criteria are currently considered the most empirically valid. These core symptoms of AD/HD often lead to associated problems and consequences that often co-exist with adult AD/HD. These may include:

- problems with regulating behaviour
- poor working memory
- poor persistence of *efforts* toward tasks
- difficulties with regulation of emotions, motivation and arousal
- greater than normal variability in task or work performance
- chronic lateness and poor time management
- easily bored
- low self-esteem
- anxiety
- depression
- mood swings
- employment difficulties
- relationship problems
- substance abuse
- risk-taking behaviours⁶

The impairment from both the core symptoms and associated features of AD/HD can range from mild to severe in their impact on academic, social and vocational settings, and in daily functioning. Since the symptoms of AD/HD are common to many other psychiatric and medical conditions and some situational/ environmental stressors, adults should never self-diagnose and should seek a comprehensive evaluation from a qualified professional.

Once a diagnosis is made, however, most people with AD/HD and their family and friends feel considerable relief-"at last there's a name for it!" 5 The uncertainty over what was "wrong" is replaced with information and hope for the future

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FACT SHEET # 3

DIAGNOSIS AND TREATMENT OF AD/HD

Diagnosing AD/HD

Everyone shows signs of distractibility, impulsivity and hyperactivity at one time or another. Because of this, guidelines for determining whether a person has AD/HD are very specific

There is no single test for AD/HD. Determining if a person has AD/HD is a multifaceted approach and involves a comprehensive evaluation for three reasons: to establish an accurate diagnosis; to evaluate for the presence of other coexisting medical conditions; and to rule out alternative explanations for behaviours and/or relationship, occupational or academic difficulties.

A physical examination, including hearing and vision tests, is usually the first step because it helps rule out any medical conditions that could cause AD/HD-type behaviour.' Some medical conditions, such as hypothyroidism, can cause symptoms similar to AD/HDs. A medical examination can also diagnose some of the conditions that may co-exist with AD/HD (Fact Sheet # 4)

As part of the evaluation, a clinical assessment of the individual's academic, social and emotional functioning and developmental level is done. This requires a clinical interview for a comprehensive history, observations, and information gathered from parents, teachers and partners. Diagnosing AD/HD in an adult requires an examination of childhood academic and behavioural history, as well as career difficulties.

Measures of attention span and impulsivity will be used, in addition to parent and teacher behavioural rating scales and checklists. The actual criteria for diagnosing AD/HD are set out by the American Psychiatric Association in the *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition." To be diagnosed with AD/HD, a person must exhibit several of the listed characteristics. Some of them are

Severity - The symptoms must be more frequent or severe than in other children the same age.

Early onset - Some of the symptoms must have been present before age 7

Duration - The symptoms must have been present for at least 6 months.

Impact - The symptoms must have a negative impact on the individual's academic, employment or social life.

Settings - The symptoms must be present in multiple settings, such as home, social settings, school or work.

To be diagnosed with AD/HD, individuals must exhibit six of the nine characteristics in either or both DSM-IV categories listed in Fact Sheet #2.

Treatment of AD/HD

A combination of education, behavioural, psychosocial and medication treatments is thought to be the most effective approach. This comprehensive approach to treatment is called "multimodal" and often includes

- parent training in behaviour management
- behavioural intervention strategies
- an appropriate educational plan
- education regarding AD/HD
- individual and family counselling
- strategies for daily living
- medication, when and if required
- vocational counselling
- lifestyle changes
- appropriate academic and workplace accommodations
- coaching, support groups

Behavioural interventions

Behavioural interventions try to change the physical and social environment to modify the behaviour of the person with AD/HD. This type of treatment requires the efforts of parents, teachers and other professionals. Some elements of this treatment include

- behavioural training for parents and teachers
- clinical behaviour therapy (problem solving, social skills)
- cognitive behavioural therapy (self-monitoring, verbal self-instruction, development of problem solving, self-reinforcement)

Some practical examples of behavioural interventions are being consistent and using positive reinforcement. Behaviour skill building, such as list making, day planners, filing systems and other routines, is also encouraged.

Pharmacological treatment

The most common medications are psychostimulants that help in the production of neurotransmitters. A non-stimulant treatment for AD/HD has now been approved by Health Canada. Properly prescribed and taken according to instructions, medication can improve many of the symptoms of AD/HD, including inattention, distractibility and hyperactivity. Although medications do not cure AD/HD, while they are being taken they seem to correct for the lack of a certain chemical or neurotransmitter in the brain.

It is important to discuss with your doctor how the medication works and what its possible side effects are. Some possible side effects to these medications include insomnia, nervousness, headaches and weight loss. A comprehensive team approach with doctors, teachers and parents is required to monitor the medication and ensure that the correct dosage is being administered. Researchers have found that lower medication doses can be effective when a multi modal approach is used for treatment.⁸

Prognosis

A multimodal treatment plan combining education, behavioural, psychosocial and medication is often used to treat AD/HD. Whatever approach is chosen, it needs to be recognized that the process must be maintained over a long period of time, and may need to be changed as the person develops. Constant monitoring and evaluation are required. Everyone must be included in this monitoring process, including the child with AD/HD if he or she has the capacity to understand. Armed with an understanding of the disability and its implications, and with appropriate treatment, strategies and support, individuals with AD/HD can succeed.,

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FACT SHEET # 4

CO-EXISTING CONDITIONS OF AD/HD

People with AD/HD sometimes have other conditions at the same time. These are referred to as *coexisting*, *co-occurring* or *co-morbid* conditions. A staggering statistic from the United States suggests that nearly 70% of people with AD/HD have at least one additional or co-occurring major disorder.⁹

Diagnostic precision is essential for any person suspected of having AD/HD. Identifying these co-existing conditions becomes critical, as the presence of another condition may require different approaches or medications. Just as untreated AD/HD can leave lasting scars, so can other untreated disorders cause unnecessary suffering in AD/HD individuals and their families.

When co-existing conditions are present, they can vary widely depending on the person's age and gender. In children, learning and language disorders and oppositional defiant disorder are the most common, followed by conduct disorder, depression, anxiety and tic disorders.

In teens and adults, substance abuse and depressive disorders become more prominent. Often overlooked are the differences in the ways that men and women manifest mental disorders. Women and girls are less likely to have "acting-out" problems, such as oppositional defiant or conduct disorders, and more likely to have more internalized conditions such as depressive or anxiety disorders.

To successfully treat co-existing conditions, clinicians and patients need to recognize the symptoms and understand the benefits and risks of treatment for multiple conditions.

Learning disabilities (LD) are a distinct disorder from AD/HD and affect as many as 25% of children with AD/HD.⁴ Many adults also have both LD and AD/HD. Since each disorder interacts with the other, the behavioural symptoms can be difficult to handle. LDs affect the acquisition, retention, understanding, organization or use of verbal and/or non verbal information. They interfere with a person's ability to either interpret what is seen or heard, and to link information from different parts of the brain, which can result in auditory and visual perception problems; academic problems; motor, temporal, organizational and memory problems; and social skills problems.

Depression

AD/HD frequently co-exists with depression (about 10% to 30% of children with AD/HD and more than 45% of adults with AD/HD)⁹ Symptoms can include lack of concentration, hopelessness, helplessness, suicidal tendencies, excessive sleep, crying episodes and pervasive sadness, among others. All too often their symptoms are mistaken for anger, shyness, lack of direction, perceived laziness, obstinacy or chronic

underachievement. The mood problem in AD/HD may be subtle-it may not always be severe enough to be diagnosed as depression, but it is more severe than the ordinary dips in mood of everyday life.⁵ Treating only the depression or just the AD/HD is insufficient. Many patients require specific medications for each condition.¹⁰

Anxiety

Many people with AD/HD experience chronic anxiety (about 30% of children and 25% to 40% of adults with AD/HD).⁴ They worry excessively about things (school, work, friends) and from chronically forgetting obligations, daydreaming, speaking or acting impulsively, or being late.⁵ They may feel stressed out or tired, tense and have trouble getting restful sleep. Some may experience severe panic attacks. Again, specific medications may be needed for each condition.

Substance Abuse

Recent studies suggest that youth with AD/HD are at increased risk for very early cigarette use, followed by alcohol and then drug abuse. Cigarette smoking rates are almost double in adolescents with AD/HD.⁵ Many people who have undiagnosed AD/HD feel bad, and do not know why. To escape their emotional or physical pain, to fit in, to relax, they sometimes turn to using substances. But when the "use becomes abuse," it can become an illness itself. So, during the evaluation, it is important to explore the possible underlying causes for the substance abuse, such as AD/HD.⁵

Treating AD/HD as early as possible can reduce the risk of cigarette smoking and substance abuse. Clinical studies indicate that the use of stimulant medication also reduces the risk to start smoking cigarettes. Several international studies have found that stimulant pharmacotherapy did not increase the risk for later substance abuse.⁵

People with AD/HD and current substance abuse require comprehensive multimodal intervention incorporating parallel addiction and mental health treatment."

High-Risk Behaviours

Searching for highly stimulating situations is often a central part of AD/HD. If a person is hyperactive, he or she usually seeks action (but not the dreamy, hypoactive people). The hyperactive child or teen with AD/HD seeks novelty and needs excitement. If there is "nothing to spice up the scene," the person might create one, like creating a disturbance at school or car racing. Adults, too, may seek high stimulation, such as exercising heavily or creating tight deadlines to work under, or they may take up riskier activities like bungee jumping, and in some severe cases excessive gambling or sexual practices."

Aggressive and Defiant Behaviour

can also occur along with AD/HD. In children, this is called oppositional-defiant disorder (ODD) (about 40% of those with AD/HD) or conduct disorder (CD) (about 25% of those with AD/HD).⁴ ODD involves a pattern of arguing with multiple adults, losing one's temper, refusing to follow rules, blaming others, deliberately annoying others and being angry, resentful, spiteful and vindictive. In the child with AD/HD only, you do not see the premeditation you see in ODD or CD⁵

CD is associated with efforts to break rules without getting caught, aggressiveness toward animals, destruction of property, lying or stealing things from others, running away, skipping school or breaking curfews. It is often described as delinquency. and children who have both AD/HD and CD may have lives that are more difficult than those with AD/HD only.

In adults, such symptoms may be called "antisocial personality." Some of those who are diagnosed as antisocial personalities may also have AD/HD. They test the limits, may break the law, or lie or cheat. These individuals can respond favourably to treatments for both coexisting conditions.⁵

Emotional Problems

After years of struggling and failing to perform in school, at home and in the community, feelings of inadequacy and low self-esteem often arise. Being labelled "lazy" or "stupid" time after time, some people with AD/HD may act out these feelings, become aggressive, get into fights or impulsively strike out. Others may internalize their feelings, becoming depressed, withdrawn or show a poor self-image. Still others may channel their feelings into their bodies, developing headaches or other physical symptoms. Some believe that they are less worthy, and come to expect failure.'

The good news is that with proper diagnosis, most of the co-existing conditions can usually be treated by a combination of counselling, coping strategies, medication, family support, education and/or accommodations in school, home or work settings.

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FACT SHEET # 6

AD/HD and Teenagers

Having a teen with AD/HD means your house has a different atmosphere than other homes. There is a constant feeling of tension, as if arguments and emotional outbursts could occur at any time. The behaviour of a child with AD/HD is often a cause for division among family members, pitting mom against dad, child against parent, and sibling against sibling.

AD/HD problems tend to be magnified during the teenage years. Teens with AD/HD also face the usual adolescent challenges such as gaining independence from parents, peer pressure, exposure to drugs, sexuality issues and driving.¹⁴

AD/HD behaviour in teens means constant aggravations, such as bombing into rooms, incessant demands, perpetual sibling rivalry, incredible disorganization, lack of follow-through, selfishness, and for those with hyperactivity, non-stop noise. Since a teen with AD/HD has few friends, s/he may be home a lot, making these burdens more constant

An accurate diagnosis is the essential first step in dealing with AD/HD in teens. As noted in Fact Sheet #4, AD/HD is often found with other conditions. An up-to-date assessment can sort out other coexisting conditions a teen may be experiencing. A teen with AD/HD should take part in decisions affecting the treatment plan, which may include education regarding AD/HD, academic tutoring, individual or family counselling, parent training in behavioural interventions, lifestyle changes, medication, strategies for daily living, coaching, appropriate academic accommodations, and/or social skills programs.

Here are a few suggestions to help parents avoid unnecessary conflicts with the AD/HD teenager in the home.¹⁵

Rule # 1 - Unless you are going to say something to your teen who has AD/HD that is very positive ("Good job on the lawn"), think before you speak. Kids with AD/HD are irritating much of the time and you're often tempted to correct them and to try to shape their behaviour in more positive directions. If you must say something corrective, make it short and sweet ("Your music is too loud").

Rule #2 - Many things that teens do or don't do fall into the minor but aggravating category-like today's clothing and jewellery fashions, long and apparently stupid conversations on the phone, and exceptionally messy rooms. It's better to say "What an interesting outfit" than "You're not going out looking like that are you?" Remember, during phone calls kids are making contact with each other and learning how to handle relations, which is good for self-esteem. For room-cleaning jobs, contract with your teen that once a month, you and s/he will tackle the job without bickering. Provide a garbage

bag and ask your teen to fill it with all the trash, then move on to picking up dirty dishes and laundry, CDs and books while you rearrange the bookshelves-all without lecturing.

Some other minor aggravations to stay away from include musical preferences, grammar, not going on family outings, negative attitude, eating habits, use of allowance, using your things and forgetting chores. Remember, the first rule is "Never open your mouth unless you have a very good reason."

What are not minor but aggravating problems? Anxiety disorders, depression, conduct disorder, medication non-compliance, alcohol and drug abuse, sexual acting out, rotten grades, school attendance and no friends. Compare these items to the previous list and you will have a better perspective.

Rule # 3 - When necessary, state the rule, stick to your guns, and brace yourself for testing.

Rule # 4 - Have fun with your AD/HD teenager on a regular basis! The most important things that keep two people getting along and caring about each other is shared fun.

Rule # 5 - Don't argue with teens about taking medication. Simply take them to the doctor or the person you're working with and have that person review the medication situation with the teen. Arguing at home will only make the problem worse.

Some simple strategies for parents:

- Become a strong advocate for your teen. Make sure that those who teach your teens are aware of the problem, understand the challenges and know appropriate teaching strategies.
- Maintain ongoing communication with people who play important roles in your teen's life, such as teachers, school counsellors, after-school activity leaders and health care providers. Keep updated on your teen's social development in community and school settings.
- Encourage, and model, a healthy lifestyle. Make sure your teen gets exercise, eats healthy meals and gets enough sleep.
- Create an organized household environment. AD/HD teens need to have a routine.

Teenagers and Driving¹⁶

Driving is a big event in a teenager's life, but it can also create worries and concerns for parents. These concerns are magnified when the teen has AD/HD. Teens with AD/HD may demonstrate good knowledge of driving rules, but applying these rules is a different matter. Rather than rule-of-the-road knowledge, it is poor driving performance that distinguishes individuals with AD/HD from their peers.

Research has shown that teens with AD/HD are at much higher risk for

vehicle accidents and driving infractions. These include deficiencies in attention, impulsivity, risk-taking and thrill-seeking tendencies, and immature judgment. The presence of co-existing disorders (60% to 70% of youths with AD/HD), variations in medication effectiveness throughout the day, and issues with alcohol and substance use/abuse should all be considered when granting driving privileges. Risks increase when a teen driver and peers drive together without adults present.

Teen driving privileges should be discussed within the context of the overall AD/HD treatment plan. It is the parent's responsibility to establish rules and expectations for safe driving behaviours. Some practical tips for dealing with a teen with AD/HD who wants to drive are:

- Don't allow your teen to drive if you feel unsafe as a passenger.
- Provide driving lessons before and after your teen obtains a licence.
- Create consequences for poor driving performance and require payment of any added costs resulting from bad performance.
- Observe your child's driving skills at different times of the day, when drug therapy varies in effectiveness.
- Driving privileges can also be used as a reward for completing home and household chores.

Teens must understand that learning to drive is a privilege that must be earned-it is not a right.

Anger Outbursts

Many teens with AD/HD are irritable and short tempered. This behavior can have serious negative effects on family life as parents and siblings become targets. As parents, know what triggers some of these outbursts. For example, many teens who have AD/HD are not morning people. A pleasant "good morning" from a parent can be greeted with irritation, grumbling and sometimes even swearing. The best morning strategy is to leave the teen alone.

Parents need to educate themselves on behaviour management techniques. For example, teens should never get what they want by screaming or threatening. Parents may also want to institute a system of behaviour contracting where the teen and parents each put together a wish list. If the teen meets one of the parent's wishes, he or she can be rewarded by having one of their own wishes fulfilled.¹⁷

If the outbursts become out of control, professional help is highly recommended.

*** AD/HD is not a learning disability. Each is a distinctive neurologically based disorder. Each is recognized and diagnosed differently. And each is treated in a different way. The treatment for AD/HD will not correct LD. The treatment for LD will not help AD/HD. About 30% to 40% of people with LD will also have AD/HD, so if one disorder is found it is important to look for the other.

This project has been funded with an unrestricted educational grant from Eli Lilly Canada Inc. LOAC is solely responsible for the content.

FACT SHEET <i>An Overview of AD/HD</i> Learning Disabilities Association of Canada 323 Chapel Street, Suite 200 Ottawa, Ontario, Canada (613) 238-5721 (613) 235-5391 email: information@ldac-taac.ca website: www.ldac-taac.ca	DISTRIBUTED By: Learning Disabilities Association of Nova Scotia 1800 Argyle Street, Suite 705 Halifax, NS B3J 3N8 902.423.2850 email: sclarke.ldans@ns.sympatico.ca website: http://ldans.nsnet.org
March 2005	

FACT SHEET # 7

AD/HD and the Adult

For many years, professionals believed that children would outgrow AD/HD through puberty and adulthood. It is now recognized that AD/HD can carry on into adulthood as many as 30% to 70% of children with AD/HD may continue to experience symptoms of AD/HD as an adult⁴⁹

It can be difficult to spot AD/HD in adults because the symptoms are often mistaken for other things, like a stressful lifestyle, substance abuse or psychological problems. AD/HD is not often recognized in adults until they seek help with one of these conditions.

AD/HD in adulthood occurs as a continuation of childhood *AD/HD*. The person would have had the condition when younger, although it may not have been recognized at the time. Many adults realize they have AD/HD only when their own children or another family member are diagnosed with the condition.⁹

Adults with AD/HD may experience problems in their relationships, work and education, but never really understand why. They may overreact to minor frustrations and find it difficult to organize things. Sometimes, they may have been treated for learning disabilities or depression. Others may have experimented with drugs, sex or gambling more than their peers.

Predominantly inattentive AD/HD is more common in women. It is associated with a higher incidence of learning disabilities, anxieties and sadness, and is often undiagnosed. Hyperactivity is more common in males and is sometimes associated with social rejection as a child.

Diagnosis of AD/HD in Adults

As for children, the criteria for diagnosis of AD/HD in adults were developed by the American Psychiatric Association" (Fact Sheet #2). A detailed diagnosis procedure is needed to:

- establish an accurate diagnosis and treatment plan
- check for co-existing medical or educationally disabling conditions
- rule out an alternative explanation for the person's behaviour and difficulty

There is no single diagnostic test for AD/HD. Scales and checklists help clinicians obtain information from partners, family members, teachers and others about symptoms and functioning in various settings. This is necessary for an appropriate assessment for AD/HD and treatment monitoring. Symptoms must be present in more than one setting (for example, both at home and at work) to meet DSM-IV criteria for the condition. Such instruments are only one component of a comprehensive evaluation, which may include a medical examination, interviews and possible psychological assessment.⁹

Treatment of AD/HD in Adults

In many cases, the diagnosis itself can be a major benefit for adults with AD/HD. Knowing that they have a medically recognized condition, and that they are not "lazy" or "stupid," can be a big first step in dealing with their AD/HD. They may also feel saddened or angry that it was not recognized and treated sooner.

There is no cure for AD/HD. But being involved in the management and effective treatment strategies of your AD/HD will help you deal with the condition, along with support from doctors, family, friends, your local LOA chapter and employers. Treatment will normally involve several components, including:

- education to help you and those close to you understand and manage your AD/HD
- lifestyles changes, such as cutting back or giving up drugs, alcohol, taking up regular exercise, stress management and improved diet
- developing strategies for dealing with behaviours that limit success
- counselling to deal with self-esteem issues or co-existing conditions
- marriage counselling to support your partner in understanding AD/HD
- vocational counselling and workplace accommodations to help you achieve success at work
- joining a support group or obtaining a coach
- medication prescribed and taken appropriately to improve AD/HD symptoms and co-existing conditions

AD/HD and Relationships

AD/HD in adults can significantly affect their relationships with others, particularly a partner, family, friends and work colleagues. They may see the adult with AD/HD as unreliable, or become frustrated trying to understand or help. Research has found that the most common behaviours that have a negative impact on relations are:

- doesn't remember being told things
- saying things without thinking
- "zoning out" in conversations
- problems dealing with frustration
- trouble getting started on a task
- underestimating time needed to complete a task
- leaving a mess and being disorganized
- forgetting special dates, meetings or always being late
- not finishing a project.¹⁸

For both members of a relationship, it is important to recognize these behaviours. That's why any education about AD/HD needs to include the family and friends. Several interventions or strategies are available to deal with these difficulties. For example, if saying something without thinking is a problem, the adult with AD/HD should try to be aware of how his or her verbal impulsivity can make other people feel uncomfortable. People with AD/HD often enjoy vigorous conversation as a source of stimulation. But

they should understand that others may not share this enjoyment and know how to tone down the argument and move onto another topic.¹⁹

Similar strategies are available for the other problems. Working with a counsellor or using self-help techniques can help adults with AD/HD improve their relationships.

AD/HD with Work or Studies

If you have AD/HD but didn't know it for a long time, you may have been misunderstood at work, at university or college. Your behaviour-whether you are restless, impulsive, disorganized or easily distracted can be seen as being purposefully disruptive and unreliable. People with AD/HD may be seen to be unmotivated, lazy, self-centred or even slow learners. AD/HD may lead to a lifetime of underachievement, falling short of goals at work and complicating relationships with coworkers. Since AD/HD symptoms are usually not visible, co-workers may also have difficulty understanding and accepting the limitations they create.

A poor person-job match may also exist. Sometimes, a person needs to choose a place of employment or type of work that makes the best use of particular strong points and minimizes weaknesses. At times, success may be achieved with the help of the employer by disclosing your AD/HD in order to receive job accommodations. These must be tailored to meet the person's specific needs. Some examples of accommodations in the workplace include extra clerical support, access to audio and video equipment, job restructuring, reassignment to a different position that better matches strengths, modified work schedules, computer with reader and voice-activated software, and filing systems that meet your needs. With the proper diagnosis and treatment, knowledge about how AD/HD affects you, a willingness to make changes, and the support and encouragement of family members, friends, your local LOA chapter and employers, you can learn to work around your difficulties, increase productivity and enjoy a more rewarding life.

**** AOIHO is not a learning disability. Each is a distinctive neurologically based disorder. Each is recognized and diagnosed differently. And each is treated in a different way. The treatment for AO/HO will not correct LO. The treatment for LO will not help ADIHD. About 30% to 40% of people with LD will also have AD/HO, so if one disorder is found it is important to look for the other.*

This project has been funded with an unrestricted educational grant from Eli Lilly Canada Inc. LDAC is solely responsible for the content.

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SECTION 12: STATISTICS

STATISTICS

In March 2007, the Learning Disabilities Association of Canada released a groundbreaking 3-year review on the impact of learning disabilities, based on a study called PACFOLD, *Putting a Canadian Face on Learning Disabilities*, conducted on a group between the ages of 5 to 44. Its references and methodology can be found at: www.pacfold.ca The findings paint a devastating picture of living with an LD and must serve to inform advocacy efforts.

Highlights of the PACFOLD Recommendations:

- Invest in research-based, mandated, early screening and intervention model for children.
- Identify and assist children at-risk for school failure from ages of 4-8.
- Implement national incentives for people with LD to access affordable assistive technology and increase the list of adaptive technology that is eligible under the *Medical Expense Tax Credit* of the Income Tax Act.
- Increase funding for programs that support improving literacy skills and enhancing paid on-the-job learning opportunities.
- Build awareness and training among the medical, mental health and educational professionals of the co-existence of mental health disorders and LD in both children and adults.
- Include compulsory courses in teacher training programs on students with LD at both the elementary and secondary school levels.

For other Canadian literacy statistics, visit the Learning Disabilities Association of Saskatchewan website at: www.ldas.org/statistics.htm

Section XII Readings- Statistics

[Power Point slides from LDANB and LDAC](#)

[PACFOLD 2007 Report \(LDAC\)](#)

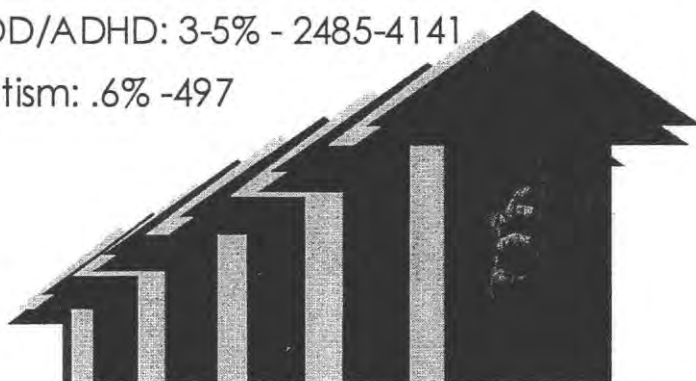
Prevalence Statistics

Learning Disabilities: 10% - 8282

Behavioral Disorders: 10% - 8282

ADD/ADHD: 3-5% - 2485-4141

Autism: .6% -497



Learning Disabilities Association of New Brunswick

Under-Recognition of Children with Learning Disabilities

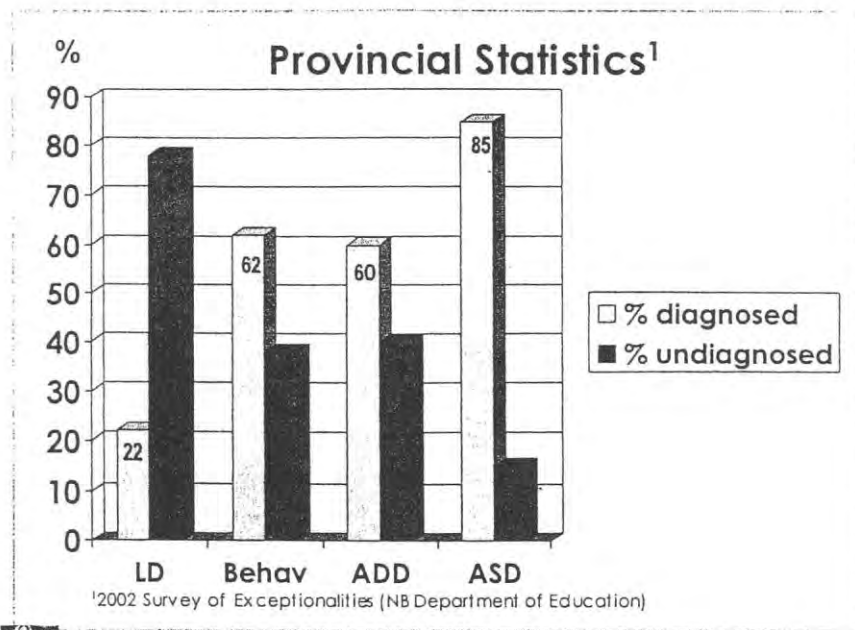
Anglophone schools: 82,819 students

Expected number with a learning disability: 8282

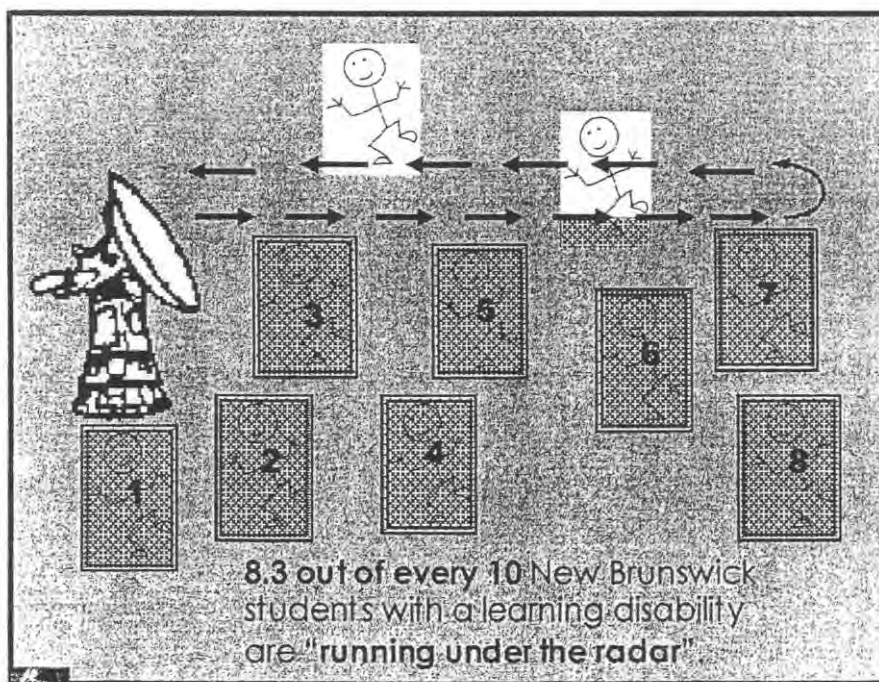
Comparison to 2002: 22% diagnosed



Learning Disabilities Association of New Brunswick



Learning Disabilities Association of New Brunswick

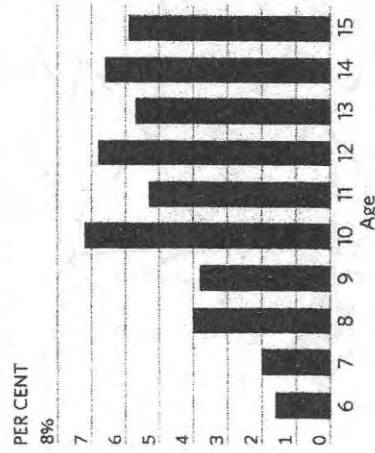


Learning Disabilities Association of New Brunswick

Snapshot of learning disabilities

Why early detection matters

The incidence of learning disabilities is highest among 10-year-olds (7.2 per cent), meaning their problems aren't detected and treated until they are already in Grade 5.

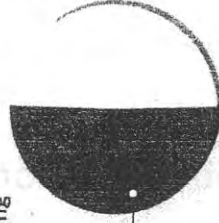


SOURCE: Learning Disabilities Association of Canada

Less chance of working

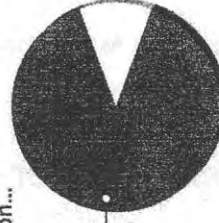
Of people with learning disabilities aged 30 to 44 ...

Reported being employed*: **51%**



Of the total population...

Reported being employed*: **89.1%**



* During the week prior to the 2001 census

More health problems

Of people with learning disabilities aged 22 to 29 ...

Reported fair to poor mental health: **27.8%**



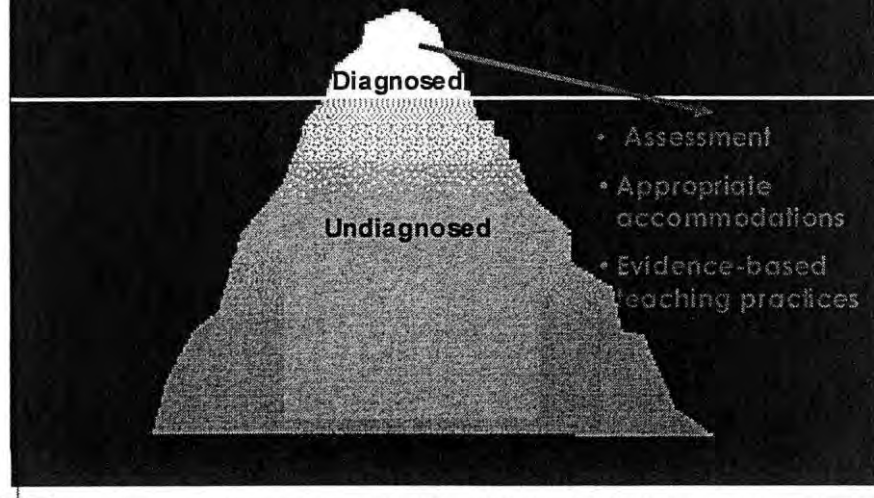
Of the total population...

Reported fair to poor mental health: **8%**



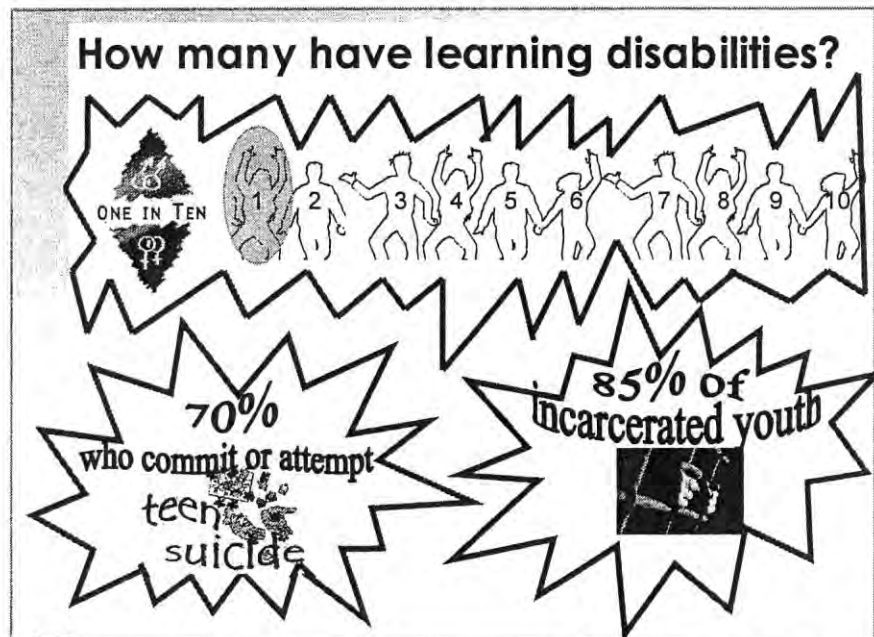
TORONTO STAR GRAPHIC

The Tip of the Iceberg in the Treatment for Learning Disabilities



Learning Disabilities Association of New Brunswick

What is the cost of under - identification?



Learning Disabilities Association of New Brunswick

Highlights of Putting a Canadian Face on Learning Disabilities (PACFOLD)

Putting a Canadian Face on Learning Disabilities (PACFOLD) is a groundbreaking research study spearheaded by the Learning Disabilities Association of Canada (LDAC), with funding from the Social Development Partnership Program – Disability Component.

The study was completed by a team of top Canadian researchers, headed by co-principal investigators, Dr. Alexander M. Wilson, Director of the Meighen Centre at Mount Allison University in New Brunswick, and Adele Furrie, an Ottawa-based expert in disability statistics. They were joined by researchers, Dr. Elizabeth Walcot-Gayda, Postdoctoral Fellow at the University of Sherbrooke in Quebec, Dr. Catherine Deri Armstrong, Department of Economics of the University of Ottawa, and Andrew Archer, an information data retrieval expert. The goal of the research study was to find out what it means to be a child, youth or adult with learning disabilities in Canada.

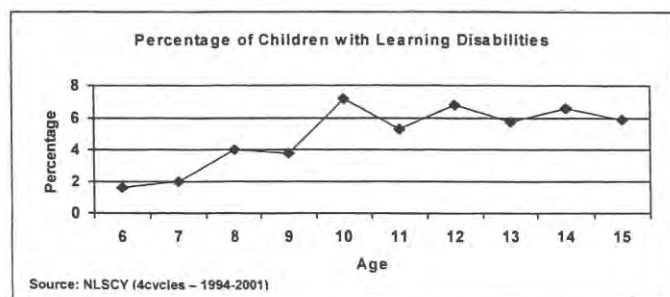
The PACFOLD study is unique, because it represents the first time any disability organization in Canada has requested access to Statistics Canada data surveys. Ten different data sets were examined, making it the most comprehensive look ever at the impact of living with a learning disability (LD) in Canada. The PACFOLD study found that Canadian governments can do more to enable people with learning disabilities. People with LD are often prevented from realizing success at school, at work, and in everyday activities. Achievements are often accomplished through factors outside government support, such as:

- Finding a teacher who is trained to work with a student with LD.
- Having family support that includes financial resources.
- Finding an employer that understands learning disabilities, and provides the necessary accommodations.

These findings clearly indicate that there are huge societal costs if learning disabilities are not addressed.

How many children in Canada have learning disabilities?

Of those children aged 6 to 15, slightly less than 5 in 100 (4.9%) have a learning disability according to the National Longitudinal Survey of Children and Youth (NLSCY). However, this figure varies when one looks at each age separately, from a low of 1.6% for children aged 6, to a high of 7.2% for 10-year-olds. This peak confirms the findings in the initial examination of existing literature in the field of LD conducted by the research team as well as the anecdotal comments from the focus groups.



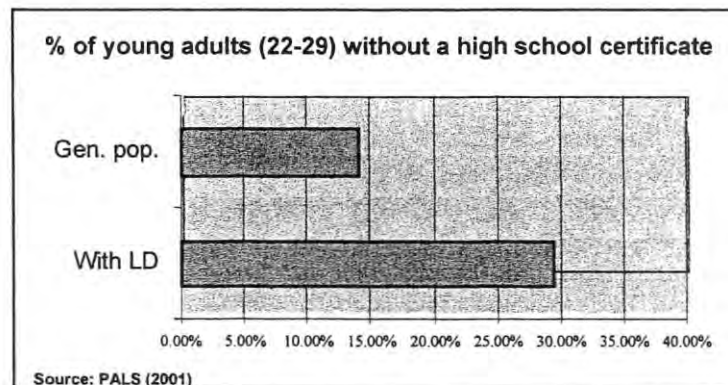
I was diagnosed when I was really young. I was ready to quit school when I was in grade three, then I got into a school for children with learning disabilities. That's what turned things around for me. That school helped give me the skills I need to manage things better, and to deal with the challenges I have. - Winnipeg focus group participant

I started to get concerned when my child was in grade 1. He was finally diagnosed in grade 3.
- Saskatoon focus group participant

Canadians with learning disabilities are less likely to succeed in school.

A significant number of youth and adults with learning disabilities drop out of the education system altogether, with over one-quarter of Canadians with LD aged 22 to 29 (28.3%) reporting less than a high school certificate as their highest academic achievement, compared to 14.9% with the general population.

I quit school in grade 7. I went back, but it was hard. I quit again in grade 10. I returned to school through the Bridges to Success Program at the Learning Disabilities Association of Saskatchewan. I just recently got my GED(General Education Development, a grade 12 equivalency). I'm 24 years old. – Saskatoon focus group participant



Children with LD in Canada need aids, but cannot afford them.

In the 2001 Participation and Activities Limitations Survey (PALS), parents and guardians of children aged 6 to 14 with learning disabilities were asked about their child's use of aids, specialized equipment or services to help with their learning disability. Just over half (50.3%) of these children used these types of aids, equipment or services. However, almost 3 out of 10 (29.3%) parents said that their children needed these types of aids, equipment or services, but did not have them.

I paid a tutor to do extra work with my daughter, but I had to stop because I couldn't afford it. If you don't have the financial resources, your child has to do without.

- Winnipeg focus group participant

Among those children aged 6 to 14 with learning disabilities **who use aids**, specialized equipment or services to help with their learning disability, 59.5% used a computer as a learning aid, 52.6% used a tutor, 13.3% used recording equipment, 11.2% used talking books, and 6.6% used voice activated or voice synthesis computer software.

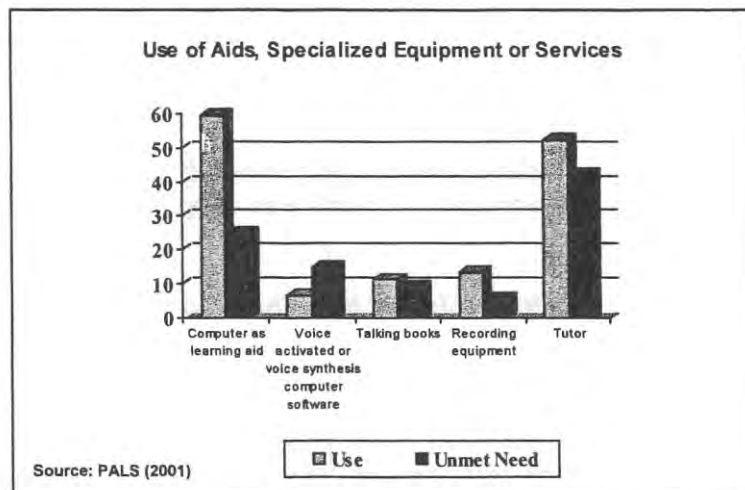
I'm \$45,000 in debt, because I've had to pay for additional services for 10 years. We have to pay the equivalent of a year of university education each year our children are in school. -

Halifax focus group participant

It costs \$500 per month for tutors for my two boys. Without tutoring, they would be struggling in school, so I work two jobs to make it happen.

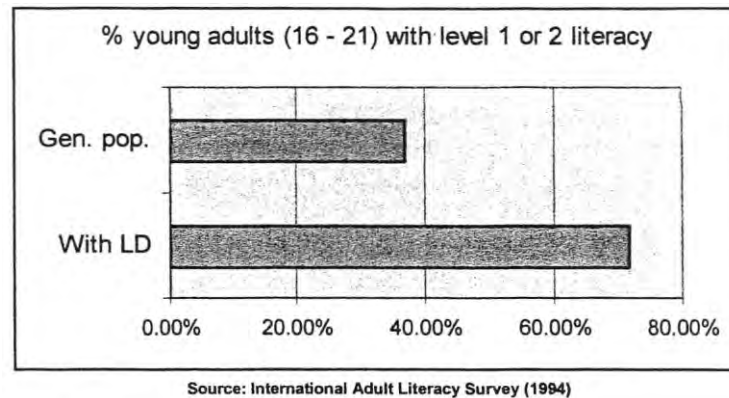
- Saskatoon focus group participant

Among those children aged 6 to 14 with learning disabilities who needed aids, equipment or services that they **did not have**, 42.3% needed a tutor, 24.7% needed a computer as a learning aid, 14.6% needed voice activated or voice synthesis computer software, 8.9% needed talking books, and 5.5% needed recording equipment.



Canadians with LD are less likely to achieve high levels of literacy.

Canadians with learning disabilities overwhelmingly achieve lower levels (Level 1 to 2)¹ of prose, document and quantitative literacy, and are far less likely to test at higher levels. 71.6% of young adults with LD aged 16 to 21 tested at Level 1 to 2 for prose literacy compared to 36.9% of the general population.



I couldn't believe they let me graduate from high school, because I didn't know how to read or spell. I was only able to learn later when I was taught one-an-one.

- Saskatoon focus group participant

I have four children. I didn't use to be able to help them with their homework. Now, through the Bridges to Success Program at the Learning Disabilities Association of Saskatchewan, I can. My children understand that mommy has learning disabilities.

- Saskatoon focus group participant

In the North, there is always work you can get. You don't have to fill out an application form like you do in the city. I drove a semi. I had trouble filling out the paperwork that I had to do, so I got other people to do it for me.

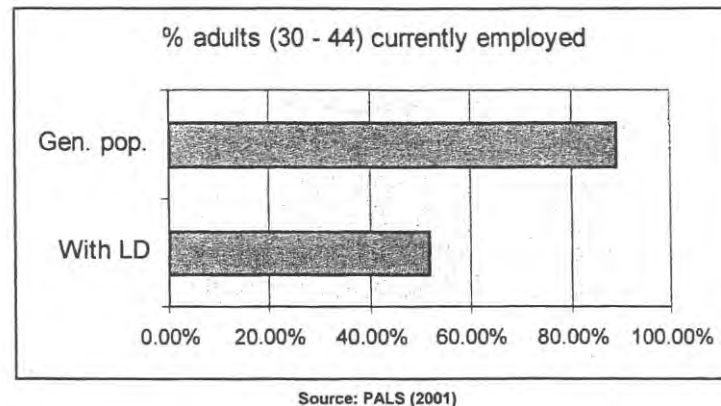
- Saskatoon focus group participant

¹ The 1994 International Adult Literacy Survey (IALS) measures proficiency at five different levels: 1 being the lowest and 5 being the highest in each of three literacy types: prose, document, and quantitative literacy.

Level 1 - Difficulty reading and have few basic skills or strategies for decoding and working with text.

Level 2 - Have limited reading skills, but do not read well. Can deal with material that is simple and clearly laid out.

Canadians with learning disabilities are less likely to succeed at work. Learning disabilities also have an impact on employment opportunities. In a pattern that remains constant throughout their lifetimes, just over half of adults with LD aged 30 to 44 (51%) reported being employed the week prior to the 2001 census, compared to 89.1 % of the total population in the same age group.



I quit school and worked as a waitress, but the cook couldn't read my orders, so they let me go. I had to find a job that didn't require reading. I worked as a banquet server. I tried to take a course to become a bricklayer, but there was too much math involved. Through the Bridges to Success Program at the Learning Disabilities Association of Saskatchewan, I took basic upgrading and improved my literacy skills. Now, I'm working as a cook at a very nice bistro.

- Saskatoon focus group participant

I can never move up the ladder at work. I have trouble expressing myself verbally.

- Saskatoon focus group participant

It was devastating for me to have to walk away from my dream job, because of my learning disability. Everything that I did well wasn't recognized, while the things I had difficulty with were always being emphasized. It's so important that employers be educated about learning disabilities.

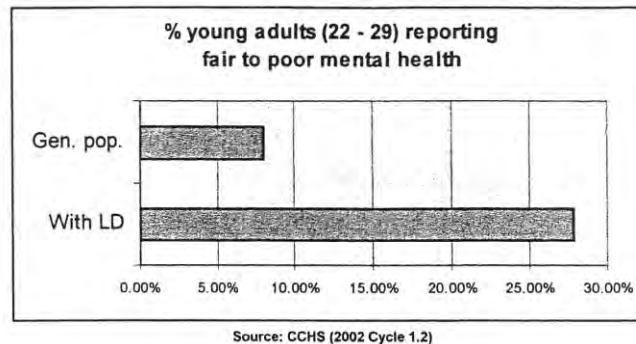
- Winnipeg focus group participant

Through my assessment, I have learned what my strengths are, so I know what careers are definitely not for me. I'm not setting myself up for failure again.

- Winnipeg focus group participant

Canadians with LD are more likely to report lower overall mental health.

Canadians with learning disabilities were found to be 2 to 3 times more likely to report fair to poor physical, general, and mental health than the total population. In mental health alone, more than 3 times the number (27.8%) of adults with learning disabilities aged 22 to 29 years, said their mental health was fair to poor compared to only 8% of the total population.



Persons with Learning Disabilities were more than twice as likely to report high levels of distress, depression, anxiety disorders, suicidal thoughts, and visits to a mental health professional and poorer overall mental health compared to persons without disabilities.

Differences found in the adolescent group (ages 15 - 21) were even larger than in the older adults (ages 30-44) for suicidal thoughts, depression and distress.

Males with LD were more likely to report depressive episodes, anxiety disorders, consultations with a health professional and poor general mental health.

Females with LD were more likely to report high distress and suicidal thoughts relative to person without disabilities.

On balance, LD was not found to be more detrimental to mental health for one sex or the other.

When my son got overwhelmed at school, we would have a family mental health day. I'd buy him some Lego, so he could focus on something he was good at.

- Winnipeg focus group participant

Not having an early diagnosis meant that I needed to have a plan A, Band C at all times. Thereis a tremendous amount of effort needed to stay on track, and energy needed to organize myself, let alone a family or a home. This caused me many anxieties.

- Toronto focus group participant

Public school was very difficult for me. I had to repeat grade 3 twice. If you're the dumb kid in the classroom, then you're the dumb kid on the playground. Your sett-esteem is low, you have no friends, you're lonely. You get depressed. You go through life thinking that it's all your fault and that you're no good.

- Ottawa focus group participant

My child wrote her first suicide note in grade 4. She was self-mutilating at 13. She was never invited to go anywhere. The phone never rang for her. She was very lonely.

- Saskatchewan focus group participant

I have tried to change my internal dialogue from 'should' to 'could.' I have forced myself to use the strategy of not making a decision right away. This has helped a great deal. Negative self-talk is a huge problem for LD individuals, because we already doubt our skills, and many of us think of ourselves as failures. - Toronto focus group participant I think my success is due to perseverance, support from friends and family, and knowing what works for me.

- Toronto focus group participant

My learning disability was devastating to every intimate relationship I had, because I didn't know about it. I became the black sheep of the family. I got involved with alcohol and drugs, and hit rock bottom. It was only when I was finally diagnosed at the age of 39, and began to understand my strengths, learned strategies and coping skills, that my life turned around.

- Toronto focus group participant

Summary

This study has uncovered compelling evidence of what our national network has witnessed anecdotally for decades-left undiagnosed, untreated and/or not accommodated, Canadians with LD are unable to reach their potential, resulting in high costs to the Canadian economy.²

Putting a Canadian Face on Learning Disabilities demonstrates how the issues Canadians with LD face are both linear and cyclical. They are linear, in that there is a direct correlation between the problems not identified in school, and/or not accommodated in school, with the end result of low literacy levels. This, in turn, impacts the employment opportunities and the financial situations of people with learning disabilities. The issues are cyclical, because these challenges feed into one another. Low literacy levels, higher rates of unemployment, lack of independence, and lower incomes contribute to higher rates of poor to fair mental and physical health, and impact the relationships of people with LD.

The solution does not rest solely with the education system. While recognizing that educational institutions have been the place where many Canadians with LD discover their disability and hope to find appropriate interventions and accommodations, it is necessary to look at other public policy areas for remedies to the lifelong challenges people with learning disabilities face. The solutions should be systemic, and involve publicly funded programs, such as social services, health, employment, literacy programs, federal income tax programs, and other areas.

Canadian governments, education and labour sectors can do more to enable people with learning disabilities to realize success at school, at work and in everyday activities. Affordable and available solutions can be put in place immediately to help break the cycle of failure, and provide opportunities for success.

² Learning Disabilities in Canada: Economic Costs to Individuals, Families and Society, Learning Disabilities Association of Canada, January 2001

Public Policy Recommendations:

- Invest in a universal research-based, mandated early screening and intervention model for children 4 to 8 years of age that is designed to identify and assist children at risk for school failure. This would increase Canadian literacy rates, reduce health care costs, increase employment and income potential, and improve family life among Canadians with learning disabilities.
- Negotiate with the federal Council of Ministers of Health on the costs of the primary diagnosis of learning disabilities for Canadians with LD of all ages (children, youth, and adults), and to have support for people with LD publicly funded through provincial and territorial health insurance plans or some other public funding mechanism, as is the case for other disabilities.
- Implement national incentives for people with learning disabilities to access affordable assistive technology and increase the list of adaptive technology eligible under the Medical Expense Tax Credit of the Income Tax Act to include: computers, voice activated software, scanners and readers.
- Build awareness and training among medical, mental health and educational professionals of the coexistence of mental health disorders and learning disabilities in both children and adults. This would facilitate quicker identification and diagnosis of LD, and provide families with early support, understanding and resources to reduce the likelihood of developing more serious mental health disorders.
- Increase funding for programs that support improving literacy skills, and enhancing paid on-the-job learning opportunities.
- Endorse a consistent definition and a comprehensive diagnostic assessment protocol for learning disabilities to be used in all publicly funded programs such as education, social service, health and other service areas.
- Build awareness and provide training among health practitioners of the coexistence of conditions with learning disabilities like low-birth weights, ear infections, allergies, asthma, depression, etc. This would facilitate quicker identification and diagnosis of LD, and provide families with early support, understanding and resources.
- Advocate for further statistical data research with a consistent definition of "disability," and specifically, "learning disability," coordinated across all future Statistics Canada surveys, with the most appropriate ways of wording screening questions to ensure that respondents with LD are neither screened out, nor so ill-defined that clear data cannot be garnered.
- Increase the sample size on future Statistics Canada surveys, in order to further understand the barriers and impact that living with learning disabilities has on various aspects of an individual's life.

For Educational Institutions:

- Include **compulsory** courses in teacher training programs on students with special needs at both the elementary and secondary school levels.
 - A portion of the compulsory course content on students with special needs should be devoted to the education of students with learning disabilities at the elementary and secondary levels in the areas of: characteristics, diagnosis, impact, and implementation of appropriate research-based reading programs, strategies, interventions and accommodations.
- Enhance professional development for teachers on learning disabilities in all provincial and territorial school districts/boards to ensure fewer students fall through the cracks in Canadian classrooms. All teachers must know:
 - What the 'signs' are of a student at risk
 - The needs and entitlements of students with learning disabilities.
 - How students with LD learn.
 - How to adapt and differentiate their teaching methods.
 - How to utilize the principles of Universal Instructional Design.
 - How to implement appropriate accommodations to meet the needs of students with learning disabilities.

For Labour:

- Increase staff and human resource personnel's knowledge of learning disabilities, and implementing appropriate accommodations for individuals with LD.

Overall, these recommendations will provide equitable access for all Canadians to affordable, appropriate services early enough to make a difference in their lifelong outcomes, and will reduce the short- and long-term economic costs of failure (special education, unemployment, health, welfare, and corrections).

The Learning Disabilities Association of Canada

Since 1963, the Learning Disabilities Association of Canada (LDAC) has provided support to people with learning disabilities, their families, teachers and other professionals who help them. LDAC is a volunteer-led association representing a network of 10 provincial and two territorial Learning Disabilities Associations. From these extends a network of chapters in some 55 communities across the country with more than 7,000 members across Canada. Our role is to help provide a level playing field of opportunities and services for children, youth and adults with LD. At the national, provincial/territorial and local levels, Learning Disabilities Associations provide cutting-edge information on LD, practical solutions, and a comprehensive network of programs and resources. These services make LDAC the Canadian leader in the area of learning disabilities.

For further information, please visit www.pacfold.ca

SECTION 13:
COMMUNITY SUPPORT

and

REFERRAL INFORMATION

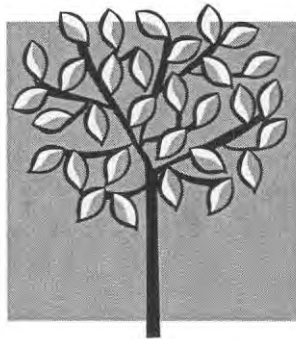


COMMUNITY SUPPORT and REFERRAL INFORMATION

If LDs are identified, the persons having them are entitled by law to certain accommodations in school, university, and in the workplace. There are times in everyone's lives when we need to reach out to others---sometimes it's just a matter of knowing how to contact the right agency, service, or person. There are a number of community directories and referral charts available provincially that can start the flow of contacts and referrals. In this manual, we have included *The Helping Tree*, a list of NB Department of Family and Community Service offices offering community-based services for children with special needs, as well as guidelines for *FCS –Screening Needs Assessment Case Management*.

THE HELPING TREE

The Helping Tree is designed to inform New Brunswickers of the many helping resources available in their region, and is revised annually by Suicide Prevention Committees and/or the Canadian Mental Health Association.



If one of your students is experiencing a problem in any of the areas listed, follow the arrows on the flow chart to find the resources that may help.

(Note: Samples of *The Helping Tree* included in this section are from the Fredericton & surrounding areas, the Albert-Westmorland region, and the Restigouche areas of NB. Check to see if one is designed for your area.)

Section 13 Readings-COMMUNITY SUPPORT & REFERRAL INFO.

[The Helping TREE charts \(Community Suicide Prevention Committee, CHIMO and CMHA\)](#)

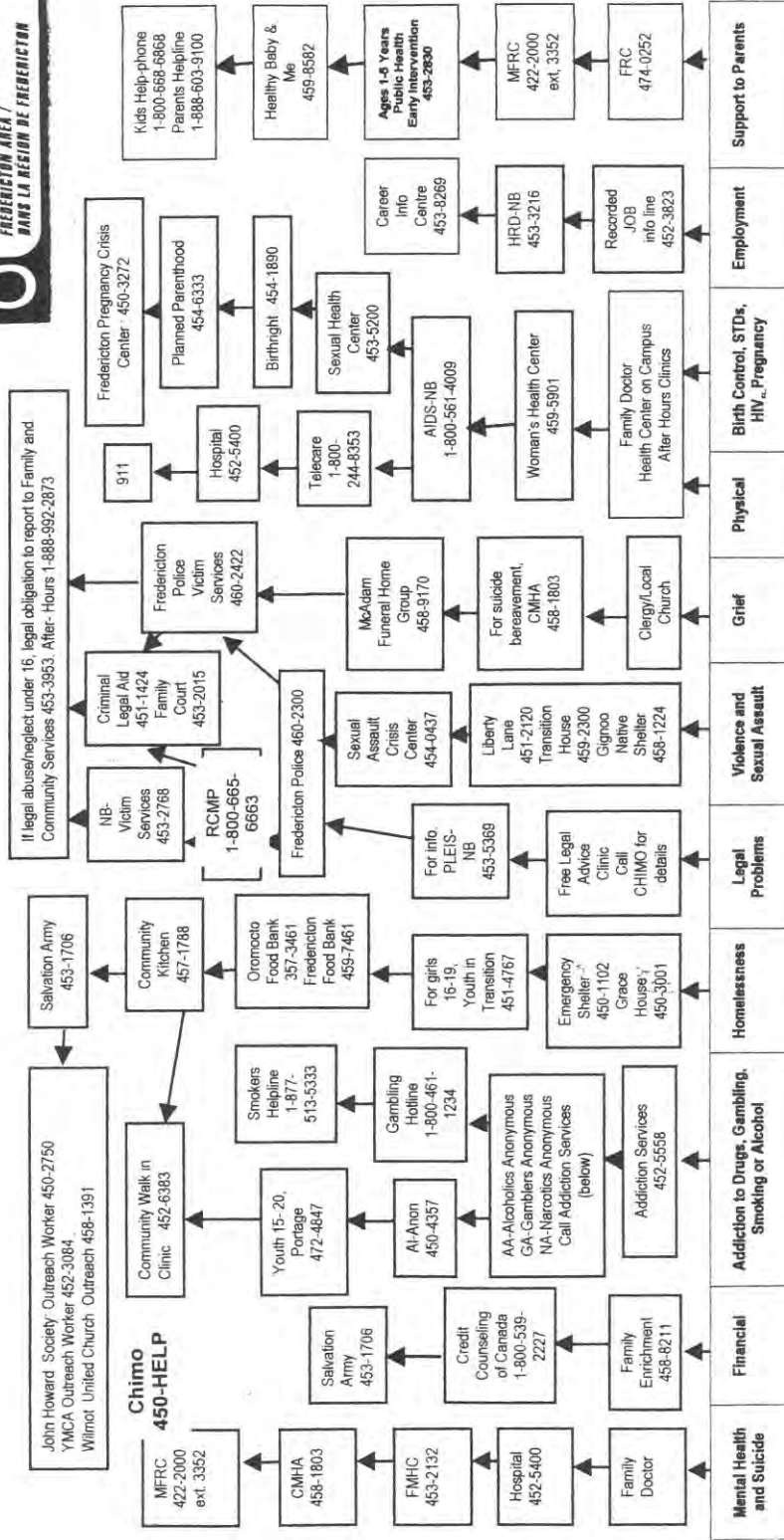
[NB Department of Family and Community Services \(FCS\)---Community Based Services for Children with Special Needs](#)

Help is just a phone call away
de l'aide sup. est à la portée de la main

1-800-667-5005
TOLL-FREE, PROVINCE-WIDE /
SANS FRAIS, DANS TOUTE LA PROVINCE

450-HELP (4357)
FREDERICTON AREA /
DANS LA RÉGION DE FREDERICTON

This Helping Tree is designed to inform the public of resources within Fredericton and surrounding areas. If you or someone you know is having a problem in any of the areas listed, follow the flow chart to find out which resources can be of help. There are many resources in the area, and you may not know how to contact them. This Tree lists numbers you can call. If you are uncertain where to turn, or would like more information, call the CHIMO Helpline at 450-4357 or 1-800-667-5005, 24 hrs/day.



Agency Names

CHIMO: 24 hour provincial helpline
CMHA: Canadian Mental Health Association
FMHC: Fredericton Mental Health Clinic
PLEIS-NB: Public Legal Education and Information Service, NB
F&CS: Family and Community Social Services
HRDC: Human Resources Development, Canada
HRD-NB: Human Resources Development-NB
MERC: Family Resource Centre
FRC: Family Resource Centre

YOU START HERE



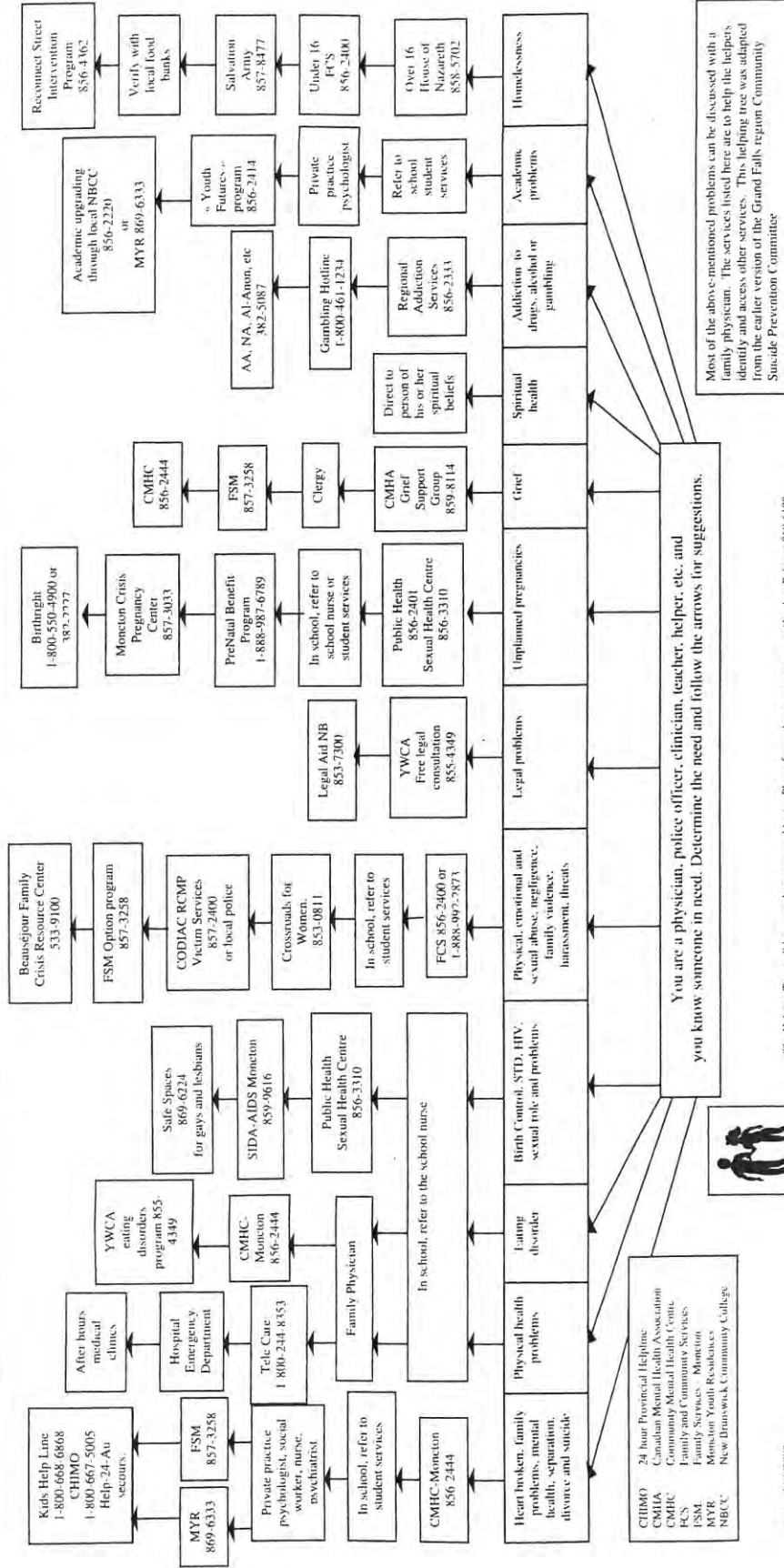
This Helping Tree was designed by the Grand Falls Suicide Prevention Committee. The Fredericton Suicide Prevention Committee operates under the auspice of the Mental Health Centre. We are one of thirteen such committees around the province dedicated to providing education and intervention in the area of suicide.

Reaching out for help is a critical step in suicide prevention.

LCNIB - Adult Literacy & Learning Disabilities Institute:
Best Practices for Success
August 2007

THE HELPING TREE

This helping tree was developed by the Albert - Westmorland region Community Suicide Prevention Committee. It provides a list and phone numbers of some services available in the Albert - Westmorland area. Some of the numbers are provided to make the task easier. Some numbers are not provided since they change from one community to another.



The Helping Tree will be revised on an annual basis. Please forward your suggestions to Caroline Babin at 869-6198.

Revised 10/2003

10



HACHEY IMPRESSION 3830

NB

DEPARTMENT OF FAMILY AND COMMUNITY SERVICES

www.gnb.ca/fcs-sfc

• COMMUNITY BASED SERVICES FOR CHILDREN WITH SPECIAL NEEDS

CBSCSN is designed to assist children with special needs (0-19 years of age) and their families to function as independently as possible within their community. Services are focused on children with severe physical, mental, intellectual or emotional/behavior disabilities, which significantly interfere with the normal development process of the child. For more information contact the Family and Community Services Regional Office in your area.

Campbellton

157 Water Street
Campbellton, NB E3N 3H5 Tel: (506) 789-2422

Caraquet

295 blvd St-Pierre O.
Caraquet, NB E 1W 1B 7 Tel: (506) 726-2040

Edmundston

P.O. Box 5001
121, rue Church
Edmundston, NB E3V 3L3 Tel: (506) 735-2010

Fredericton

P.O. Box 5001
300 St. Mary's Street
Fredericton, NB E3B 504 Tel: (506) 453-3953

Miramichi

360 Pleasant Street
Miramichi, NB E1V 3N3 Tel: (506) 627-4044

Moncton

P.O. Box 5001
77 Vaughan Harvey Blvd.
Moncton, NB E1C 8R1 Tel: (506) 856-2400

Saint John

55 Union Street
Mercantile Centre
Saint John, NB E2L 5B7 Tel: (506) 658-2734

SECTION 14: TRAINING AND EMPLOYMENT SUPPORT SERVICES



Section XIV Readings-Training & Employment Support Services

NB Department of Training and Employment-Regional contacts (DPET)

EEO/Equal Employment Opportunity Program- Official Languages & Workplace Equity Branch, Office of Human Resources, Province of NB

Awards, Bursaries and Scholarships –Canada/NB Student Loans Program, Canada Study Grants, and TESS.

(DPET)Gizèle McCarthy's Power Point Presentation on TESS Program

NB DEPARTMENT OF TRAINING AND EMPLOYMENT

www.gnb.ca/ted-fde

• STUDENT SERVICES BRANCH

548 York Street

P.O. Box 6000

Fredericton, NB E3B 5H1

Tel: (506) 453-2577

Toll Free: 1-800-667-5626

Fax: (506) 444-4333

• TRAINING AND EMPLOYMENT SUPPORT SERVICES (TESS)

<http://www.gnb.ca/0311/Q04e.htm>

Support services to help persons with disabilities go back to school or get a job are available through the TESS program. The following is a list of TESS contact persons by region:

Caraquet (Acadien Peninsula) Region

Place Bellevue

20 E boul. St. Pierre ouest

CP. 5644

Caraquet, NB E 1W 1B7

Tel: (506) 726-2711

Fax: (506) 726-5207

Contact: Roger T. Lanteigne

Bathurst/Campbellton Region

157 Water Street

Main Floor, Suite 100

Campbellton, NB E3N 3L4

Tel: (506) 789-2955

Fax: (506) 759-6696

Contact: Gisele Roy or Caroline Rouleau

Edmundston Region

121 rue de l'Eglise

Carrefour Assomption

Local 408 PO Box 5001

Edmundston, NB E3V 3L3

Tel: (506) 735-2677

Fax: (506) 735-2527

Contact: Pauline St-Onge

Fredericton Region

633 Queen Street

P.O. Box 6000

Fredericton, NB E3B 5H1

Tel: (506) 453-8269

Fax: (506) 444-5189

Contact: Judith Morrison

Email: judith.morrison@g:nb.ca

Miramichi Region

150 Pleasant Street

PO Box 1030

Miramichi, NB E IV 3V5

Tel: (506) 627-4000

Fax: (506) 624-5482

Contact: Gerry Cormier

Moncton Region

Assumption Building, 4th Floor
770 Main Street
P.O. Box 5001
Moncton, NB E 1C 8R3

Tel: (506) 869-6944
Fax: (506) 869-6608
Contact: Denise Bourgeois-Gallant
Abby Bourque-Coyle

Saint John Region

1 Agar Place
P.O. Box 5001
Saint John, NB E2L 4Y9

Tel: (506) 643-7258
Fax: (506) 643-7443
Contact: Phyllis Beatteau



Equal Employment Opportunity Program

For Aboriginals, persons with disabilities and members of a visible minority group

"Sometimes equality means treating people the same, despite their differences, and sometimes it means treating them as equals by accommodating their differences, "

(Judge Rosalie Silberman Abella, Equality in Employment 1985)

What is the Equal Employment Opportunity (EEO) Program?

The Equal Employment Opportunity (EEO) program was established In 1984 and has provided Aboriginals. Persons with disabilities and members of a visible minority group with equal access to employment, training and advancement opportunities in the New Brunswick Public Service,

The EEO program is administered by the Official Languages and Workplace Equity Branch of the Office of Human Resources in partnership with government Departments, It is delivered through a Program Manager and staff in coordination with Departmental EEO coordinators, agencies and special interest groups, This includes the maintenance of an inventory of designated group job seekers and the administration of a special hiring fund

Once registered with the EEO program, candidates are eligible to apply for Open and In-Service (closed) competitions or temporary employment that could lead to appointment to government positions,

Program Objective

The objective of the Equal Employment Opportunity (EEO) program IS to help create a more balanced workforce that reflects the diversity of our province,

The components of the EEO program are:

- Registered EEO candidates can have their e-resume included in the corporate EEO database. The corporate EEO Database is used by authorized Human Resource Personnel in government departments to search for EEO candidates e-resumes when attempting to fill temporary, short term or regular positions in their respective departments
- Registered EEO candidates are eligible to apply for Open and In-Service (closed) competition
- Term Placement (up to a maximum of two years)
Subsidized funding is allocated to provincial government departments, to hire persons who are considered eligible under the EEO program, with the understanding that participating departments make every effort to place successful participants in regular positions upon completion of the term placement
- Through a partnership with the Department of Post-Secondary Education and Training, EEO candidates can also participate in the Work Ability & SEED Summer Employment Placements program:
 - **Work Ability**
This employment initiative provides participants with approximately 12 weeks of work experience and further consideration towards an EEO funded term position.
 - **Student Summer Employment (SEED)**
The Equal Employment Opportunity Program is actively involved in the selection and job placement of grade 12 and post-secondary students. The objective of the summer employment program is to provide designated group students with career-related work experience. This initiative trains and prepares students for potential Public Service employment at the end of their school days.

Registration and Inventory

To register with the program, candidates must be a resident of New Brunswick. Candidates can register online or complete an EEO program application form and provide a resume indicating education, work experience and the type of work desired. Once their application has been reviewed and approved, candidate's information will be maintained in the EEO database for a period of two years

Once candidates are registered with the program, they then receive.

- A letter confirming their registration to the program.
- A candidate responsibilities checklist.
- A list of Departmental EEO Coordinators.

Candidate Responsibilities

- Complete an EEO program application form and submit it for registration.
- Ensure resumes are up to date.
- Search for employment opportunities within the New Brunswick Civil Service:
www.gnb.ca/0163/employ-e.asp.
- Research Departments and target their job search to those Departments whose jobs match their skills.
- Communicate with appropriate Departmental EEO Coordinators to market themselves.
- Seek assistance from employment counselors when necessary.

For additional information, please contact:

Equal Employment Opportunity Program
Official Languages and Workplace Equity Branch
Office of Human Resources
P.O. Box 6000
Fredericton, NB, E3B 5H1

(506) 453-2264

OTHER PROGRAMS

CANADA / NEW BRUNSWICK STUDENT LOANS PROGRAM

PERMANENT DISABILITY PROVISIONS

To qualify for permanent disability assistance, you must:

- Have a functional limitation caused by a physical or mental impairment that restricts the ability of a person to perform the daily activities necessary to participate in studies at a post-secondary level or in the labour force; and
- Be able to provide proof of the disability, describing its type and substantiating that it is expected to remain with the person for the person's expected natural life. Proof could be in the form of:
 - a document showing that you are receiving federal and/or provincial disability assistance;
 - a medical certificate; or learning disability assessment.

The Canada Student Loans Program provides for the availability of relaxed eligibility criteria and grant assistance for persons who demonstrate that they have a permanent disability that restricts their ability to participate in post-secondary studies. A person with Permanent disability status is eligible for:

1. Reduced Course Loads
2. Longer Period of Studies
3. Permanent Disability Benefit
4. Canada Study Grants

1. REDUCED COURSE LOADS

If you are a full-time student with a permanent disability, you may be eligible for a Canada or New Brunswick student loan if your course load represents at least 40% of a full time course load; and you successfully completed 40% of a full-time course load in the previous year.

If you are a part-time student with a permanent disability, you may be eligible for a part-time loan if your course load represents at least 20% (but less than 40%) of a full time course load.

2. *LONGER PERIOD OF STUDIES*

A lifetime maximum of 520 weeks of Canada student loan assistance under the permanent disability provisions. This is to allow for the possible longer period of time it may take for a student to complete a program of studies at a reduced course load.

3. *PERMANENT DISABILITY BENEFIT*

If you are unable to repay your Canada student loan because of your permanent disability, you may qualify for the Permanent Disability Benefit.

To be eligible, you must:

- Have been permanently disabled at the time you received your first loan advance as a full-time or part-time student; or
- Have become permanently disabled before the first day of the seventh month following completion of full-time studies.
- Demonstrate to the satisfaction of the Canada Student Loans Program, an inability to repay the student loan without exceptional hardship.
- Applications may be made when a student has completed studies and is required by the lender to make payments on his/her Canada student loan.

4. *CANADA STUDY GRANTS (CSG)*

(A) Students with Disabilities

Students with disabilities may be eligible for up to \$ 8000 a year from the federal government to cover exceptional education-related costs associated with certain permanent disabilities.

To apply for such a grant, you must first apply to your provincial or territorial authority for a full-time or part-time Canada student loan in order to establish need. You must submit a separate application form for the Canada Study Grant to the same authority.

Since funding is limited, all applicants may not receive a grant, although attempts will be made to assist as many students as possible. Applicants are therefore encouraged to apply at the earliest opportunity.

Types of disabilities that are eligible include:

- Deafness
- Hardness of hearing
- Blindness
- Visual Impairment
- Physical disability
- Learning disability
- Other (e.g., head injury, mental illness, etc.)

Exceptional education-related costs include:

Services

- Note taker
- Tutor
- Reader
- Interpreter (oral, sign)
- Attendant care for studies
- Specialized transportation (to/from institution only)

Equipment

- Technical aids (e.g., computer, braille)
- Alternate formats (e.g., large or braille printer)

(B) High-need Students with Permanent Disabilities

Students with disabilities may be eligible for up to \$ 2000 per loan year to assist in covering the costs of accommodations, tuition, books and other education-related expenses.

To apply for such a grant, you must first apply to your provincial or territorial authority for a full-time or part-time Canada student loan in order to establish need.

To be eligible, all students must have a permanent disability, not be restricted from further Canada Student Loans, maintain a satisfactory scholastic standard, and have an assessed need greater than the maximum amounts available from student loans and if applicable, CSG for Students with Dependents.

If you are a **full-time student**, once your application is processed your Notice of Assessment will identify an estimated amount for the CSG. **If you are a part-time student**, once your participation is processed you will receive a letter detailing eligibility for funding under this program.

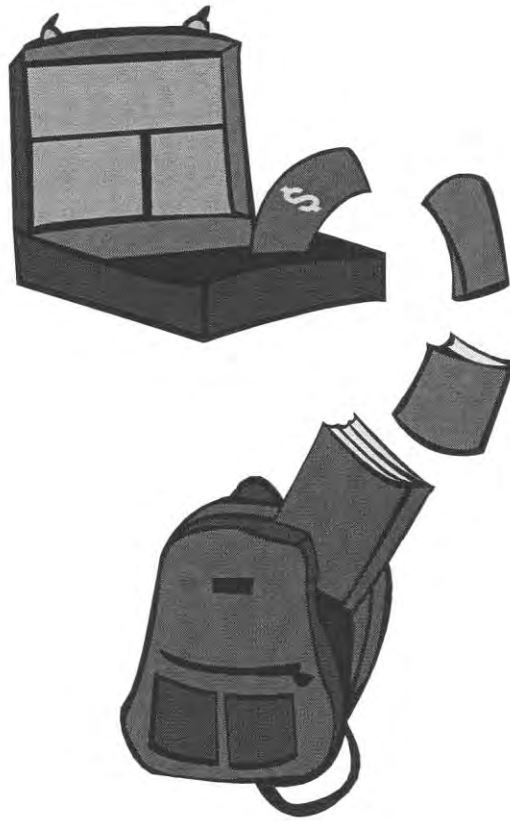
TRAINING AND EMPLOYMENT SUPPORT SERVICES (TESS) FOR PERSONS WITH DISABILITIES

TESS provides funding for support services to persons with disabilities to help decrease barriers they face in achieving their occupational goal, obtaining employment or resuming employment when it has been interrupted.

Some of the services available through TESS include counselling to help decide on a suitable career plan, purchase of adaptive equipment required to pursue a career and assistance with special educational or training costs.

To find out how this program might help you, contact the Department of Training and Employment Development in your area.

TRAINING AND EMPLOYMENT SUPPORT SERVICES



**TESS Presentation
Gizèle McCarthy
(DPET)**

EMPLOYMENT SERVICES PROGRAM

Training & Employment
Support Services
(TESS)

PURPOSE

- To offer training and employment support options to persons with permanent or long term Disabilities
- To help the identified client develop marketable skills in order to assist him/her to enter the labour force
- To lessen the barriers a person with disabilities faces so that he/she may be as competitive as the non-disabled person

OBJECTIVE

- To assist individuals with permanent or long term disabilities to gain access to training and employment opportunities

ELIGIBILITY CRITERIA

- Resident of New Brunswick or a First Nation Community in New Bnmswick
- 18 years of age (based on Education Act). A high school graduate who is 17 years of age would be eligible
- Have a permanent or long-term physical, intellectual, psychiatric or cognitive disability

TESS SUPPORT SERVICES

- Training Benefits
- Employment Benefits
- Adaptive and Assistive Benefits and Other Benefits
- Job Crisis Benefits
- TESS Project

1- Training Benefits

- Books, Supplies, Tuition Fees
- Living Expenses
- Note Taker / Scribe, Reader
- Tutor
- Academic Upgrading
- Extended Training Period

2 - Employment Benefits

- Employment or Self-Employment (first 12 weeks)
 - Employment Assessment / Counselling
 - Job Search, Job Coach
 - Worksite Modifications
 - Assistive Technology
 - Assistance with business planning
 - Home & Vehicle Modifications

3 - Adaptive & Assistive Benefits and Other Benefits

- Assistive Technology, Tools & Equipment
- Upgrade of Assistive Technology (employed or self-Employed longer than 12 weeks/ 50%)
- Assistive Technology for Progressive Disability (employed or self-employed longer than 12 weeks, 50%)
- Specialized Transportation
- Medical/Professional/Vocational Assessment
- Attendant Services, Interpreter Services
- Diagnostic Assessment

4 - Job Crisis Benefits

- When a sudden change occurs in the course of employment due to a disability, potentially causing loss or reduced capacity of employment.
- Employed or self-employed for longer than 12 weeks.
- All current benefits can be considered. Benefit period is short-term, i.e. period needed to resolve the crisis or maximum of 12 weeks, whichever comes first.

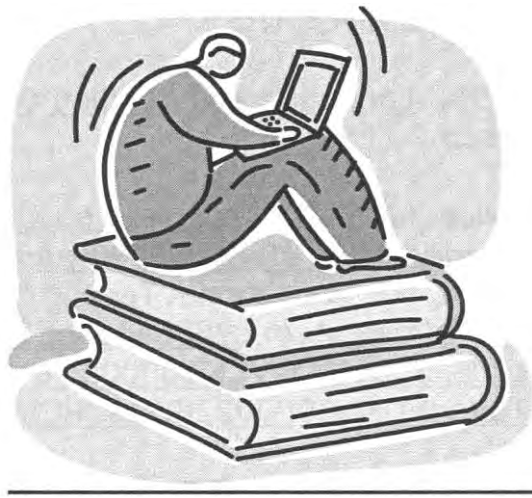
5 - TESS Project

- Established with organizations to undertake projects beneficial to disabled clients. Such projects must assist individuals in accessing training and/or employment opportunities allowing them to integrate or re-integrate the labour market.

SECTION 15: BIBLIOGRAPHY



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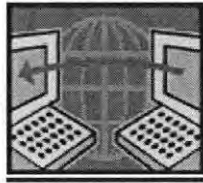
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Professional Associations & Organizations

www.idanatl.org	LD Association of America
www.idac-taac.ca	Learning Disabilities Assoc. of Canada (LDAC)
www.nald.ca/ldanb.htm	Learning Disabilities Assoc. of NB (LDANB)
www.ncld.org	National Centre for Learning Disabilities
www.nifl.gov	National Institute for Literacy

LD and Support

www.alphaplus.ca	Resources for Adult Literacy Programs
www.ccrw.org/enliancana.htm	Accommodations in the Workplace (CA)
www.edyslexia.com	The Human Side of Dyslexia (US)
www.ericec.org	Clearinghouse on Disabilities
www.integra.ca	Mental Health & High School (CMHA).
www.ldonline.org	LD Resources
www.nald.ca	National Adult Literacy Database (NALD)
www.nimh.nih.gov/	National Institute of Mental Health
www.nldline.com	Nonverbal LD
www.remediationplus.com	Multi-Sensory Program by Jo-Anne Gross
www.schwablearning.org	Schwab Foundation

Attention Deficit Disorder

www.additudemag.com	Magazine for People with ADHD
www.addsupport.org	Canadian ADHD Support Site
www.addvance.com	Resource for Women with ADHD
www.adhdnetwork.org	Canadian ADHD Support Site
www.chaddcanada.org	Attention Deficit Disorder