

Learning Disabilities: A Trainer Guide

Tell me and I will forget
Show me and I may remember
Involve me and I will understand

- Ancient Chinese Proverb

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INTRODUCTION

All students have strengths and weaknesses. In some cases, the combination or nature of the strengths and weaknesses require extra attention outside regular classroom learning. Whether for intellectual, emotional, physical, social, or any combination of these reasons, the student needs something extra to help them achieve their potential. In identifying exceptionalities, there are six categories¹:

1. **Intellectual** differences: those who are intellectually gifted or mentally handicapped
2. **Sensory** handicaps: students with auditory and visual problems
3. **Communication** disorders: students with speech and language problems
4. **Physical** handicaps: birth defects, orthopaedic conditions, disease related conditions, neurological difficulties
5. **Behaviour** disorders: students with psychoses, socially maladjusted, emotional disturbed
6. **Developmental** disabilities: autism and multiple handicaps

A learning disability is a communication disorder and the focus of this paper. The information contained here will facilitate a “Learning Disabilities” discussion in your training program. Also included are some overheads that may be used in your presentation.

WHAT IS A LEARNING DISABILITY?

Each year new information is discovered about learning disabilities to help educators identify and develop methods to work with and overcome the disorder. It is an ongoing learning process, not only for those with the disability, but for those who work with learning disabled people.

However, there are some points on which everyone agrees and holds to be true:

- ◆ Discrepancies exist between a person’s potential for learning and what is actually learned
- ◆ There is an uneven pattern of development (language, physical, and academic)
- ◆ The person has difficulties processing information in the central nervous system
- ◆ It is invisible
- ◆ It is a lifelong condition

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Likewise, there are many things a learning disability is not:

- ◆ It is not low intelligence or a mental handicap
- ◆ It is not mental illness or emotional disturbance
- ◆ It is not due to environmental disadvantages
- ◆ It is not autism
- ◆ It is not Attention-Deficit/Hyperactivity Disorder (ADHD or ADD)

A learning disability is an invisible, permanent, lifelong condition, where a person of average or above average intelligence has trouble processing information in the central nervous system. It affects the collection, storage, understanding, organization, and use of information. A learning disability is not low intelligence, mental illness, autism, or the result of a poor academic background.

- Mr. Mike Walker, Nipissing University

Learning disabilities often co-exist with other conditions, including attentional, behavioural and emotional disorders, sensory impairments or other medical conditions.

MYTH VERSUS REALITY²

| Myth | Reality |
|---|--|
| Learning disabled people have lower intelligence, are dumb, or retarded | Learning disabled people have average to above-average intelligence. There is a significant difference between their capacity and functioning. The following well-known people are/were learning disabled: Thomas Edison, Albert Einstein, Hans Christian Anderson, Nelson Rockefeller, General George Patton, and Whoopi Goldberg. |
| They are slow learners | Although they usually have difficulty learning by conventional methods, special techniques or a different approach may be all they need. |
| Learning disabled people have a sensory impairment | Most have adequate sensory acuity. The problem occurs in perceiving and processing the information. In some case, LD students may also have a vision or hearing problem. |

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|--|--|
| They are not university-bound and should be directed to a vocation | Many LD students attend higher education with or without special assistance. |
| They are brain damaged | There is no correlation between brain injury and learning disabilities. |
| Learning disabilities are caused by social situations or a breakdown of the family | Although family and societal problems do not cause learning disabilities, they can exacerbate the problem. |
| A learning disability can be outgrown | A learning disability is a life-long disorder. Students may learn to compensate for a specific difficulty but will deal with it their entire life. |

INFORMATION PROCESSING

In order to learn, retain, and use information about the world around us, we must process it. The central nervous system allows us to do this. It is an intricate network of sensors which, when processed properly, allow us to utilize a motor response. Taste, touch, sight, sound, and smell are our sensors. Everything the central nervous system knows comes from these five functions. A simple model of learning and information processing is:

1. Attention
2. Sensory input
3. Decoding
4. Processing
5. Encoding
6. Physical output

An example:

1. You wake up in the morning and open your eyes
2. Your eyes take in the room around you
3. You decode the shapes and sounds into objects you know: a fan, the alarm clock, the sheets around you, a window

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4. You process the information by realizing it is morning, your alarm clock is buzzing, and that means you have to get up
5. You send a message to your arm letting it know it has to respond
6. Your arm reaches over, turns off the alarm and pushes you upright in bed

Step 4 is a very large and essential step. It can include storage and retrieval issues. When you went to bed the night before you determined you needed to get up the following day. That information was put in storage: "I need to get up when it is morning". To help you do this you set your alarm: "I need to get up when my alarm goes off" which is also put in storage. In the morning, you hear the alarm. Your memory searches for references to alarm clocks. You remember "I need to get up when my alarm goes off". You then connect the two and proceed to get up.

When one or more of these steps fails to act properly, difficulties develop.

WHERE CAN INFORMATION PROCESSING BREAK DOWN?³

1. Frontal lobe functioning deficits
 - abstract and conceptual thinking, ie. making choices, planning
2. Memory impairment
 - short term memory
 - working memory, ie. mental blackboard, the memory you use to store information you are currently using. For example, $2+4=6$: the working memory remembers "2" and "+" as it reads "4".
 - long term memory
 - storage vs. retrieval issues; material is not "filed" properly in memory just like a file cabinet; if something is in the wrong folder, you won't be able to find it
3. Sequencing deficits (visual or auditory)
 - order of events, some steps may be skipped, or switched
4. Speed of information processing
5. Attention
 - selective (cannot choose/focus), such as someone talking and a fan whirring; may end up focusing on fan and not person
 - sustained (cannot maintain)
 - divided (cannot shift/hyperfocus), such as a person talking and using an overhead; cannot move focus from person to overhead therefore losing that aspect of the presentation

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6. Narrow processing style
 - can't simultaneously attend to and process multiple aspects of a stimulus field; must deal with one thing at a time. For example a person might notice a chair. It is blue. It is big. There is something in the chair. It is a cat. It is my cat.
7. Poor scanning resolution
 - misses relevant data
8. Right hemisphere dysfunction
 - good at details, but not global picture
 - gets lost in details and easily overloaded
 - can't make sense of holistically presented information; needs the information broken down into small pieces
 - poor ability to interpret visual cues
9. Faulty output mechanism
 - interferes with demonstration of adequate information processing; proper processing but inability to express the outcome. For example a person knows the sentence they wish to write, but is unable to write it legibly.

TYPES OF LEARNING DISABILITIES⁴

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

- ◆ oral language (e.g. listening, speaking, understanding)
- ◆ reading (e.g. decoding, comprehension)
- ◆ written language (e.g. spelling, written expression)
- ◆ mathematics (e.g. computation, problem solving)

- LDA Definition of Learning Disabilities, www.ldao.on.ca

1. Developmental Speech and Language Disorders

Speech and language problems are often the earliest indicators of a learning disability. People with developmental speech and language disorders have difficulty producing speech sounds, using spoken language to communicate, or understanding what other people say.

2. Academic Skills Disorders

Students with academic skills disorders are often years behind their classmates in developing reading, writing, or arithmetic skills:

- **Developmental reading disorder (dyslexia)**

Reading disabilities affect up to 8 percent of elementary school children. To read, you must simultaneously: focus attention on the printed marks and control eye movements across the page, recognize the sounds associated with letters, understand words and grammar, build ideas and images, compare new ideas to what you already know, and store ideas in memory.

A person can have problems in any of the tasks involved in reading. Many people with dyslexia share an inability to distinguish or separate the sounds in spoken words. Some children have problems sounding out words, while others have trouble with rhyming games, such as rhyming "cat" with "bat."

However, there is more to reading than recognizing words. If the brain is unable to form images or relate new ideas to those stored in memory, the reader can't understand or remember the new concepts. So other types of reading disabilities can appear in the upper grades when the focus of reading shifts from word identification to comprehension.

- **Developmental writing disorder**

Writing too, involves several brain areas and functions. The brain networks for vocabulary, grammar, hand movement, and memory must all be in good working order.

- **Developmental arithmetic disorder (dyscalculia)**

Arithmetic involves recognizing numbers and symbols, memorizing facts, aligning numbers, and understanding abstract concepts like place value and fractions.

3. Other Learning Differences

These diagnoses include delays in acquiring language, academic, and motor skills (including disorders that can lead to poor penmanship) that can affect the ability to learn, but do not meet the criteria for a specific learning disability.

Many aspects of speaking, listening, reading, writing, and arithmetic overlap and build on the same brain capabilities. People can be diagnosed as having more than one learning disability. For example, the ability to understand language is essential in learning to speak. Therefore, any disorder that hinders the ability to understand language will also interfere with the development of speech, which in turn hinders learning to read and write. A single gap in the brain's operation can disrupt many types of activity.

A NOTE ON ATTENTION-DEFICIT/HYPERACTIVITY DISORDER

Attention-Deficit/Hyperactivity Disorder (ADHD) is not a learning disability. ADHD is a diagnoses applied to children and adults who consistently display certain characteristic behaviours over a period of time. The most common behaviours fall into three categories⁵:

1. inattention: have a hard time keeping their mind on any one thing and may get bored with a task after only a few minutes
2. hyperactivity: always seem to be in motion; they can't sit still and may feel constantly restless
3. impulsivity: seem unable to curb their immediate reactions or think before they act

One thing to remember about students with ADHD is although it seems they are not paying attention, the opposite is true. ADHD people pay attention to everything around them and are unable to appropriately determine which items require their immediate attention and which can be ignored. For instance, if a child with ADHD is asked to find his sister in a playground, you may find that child a few moments later staring all around him carefully studying an anthill without regard for his sister. He might have started out by looking for his sister, but instantly, the colours, sounds, movements, people and things removed his attention from the task at hand.

The best way to teach a child who has ADHD is to remove all distractions from the work area. Using a cubicle in a corner, facing the child away from windows and other people, placing only needed material on the desk (one pencil, one piece of paper, one book), and keeping the noise and interruptions to a minimum will help both the student and the tutor work successfully through the lesson.

QUICK FACTS

- ◆ Learning disabilities are formally identified by psychologists
- ◆ 10% of the population is affected by learning disabilities
- ◆ 4% of Ontario's school-aged population is formally identified

- ◆ 80% of students with LDs have trouble reading
- ◆ 90% will read normally if they receive help by Grade 1
- ◆ 75% who receive help after age 9 will have life-long difficulties

- ◆ 25% of people with LD also have ADHD
- ◆ 75% of people with ADHD also have LDs

WHAT IS A LEARNING DISABILITY LIKE?

Read the following piece aloud. Read at a normal pace and be prepared to answer comprehension questions when you are done:

Myle arn in gdisa bi LI tyma kesit dif Ficu
 Itform eto re Adi tslo wsm edo wnwh eniha
 veto re AdmYte xtbo Ok sbu twhe nius Eboo
 kso Nta peo rco mpu Teri zedsc ree nrea Din
 gsof twa Reto lis tent Om yte xtbo ok sith elp
 sal Ot.

- Mr. Mike Walker, Nipissing University

The text reads: My learning disability makes it difficult for me to read. It slows me down when I have to read my textbooks but when I use books on tape or computerized screen reading software to listen to me textbooks it helps a lot.

This is just one example based on reading, word recognition, and comprehension. Another learning disability might affect visual perception so when looking at a

photograph, you are unable to tell foreground from background. This is similar to 3-D pictures, or “Magic Eye” artwork where in order to see the picture you have to shift your viewing focus.

Now, imagine you are in a classroom and the teacher has asked you to read aloud. You see the text in the box above and slowly try to read it. Children are snickering and the teacher is getting impatient. And after all that, you are expected to answer questions about what you just read.

Or, perhaps you have to describe a photograph of a busy market place to the class. You can see the colours, but are not able to make out any shapes or forms right away. In a minute or two you will have refocused on the image (like in the 3-D pictures) and be able to describe it, but you don’t have a minute or two. Again, children are snickering and the teacher is impatient.

Living with a learning disability can impact many areas of a person’s life. There are obvious academic problems like difficulty with reading, writing, spelling, and comprehension. Often children with learning disabilities re-do school work at home and spend greater amounts of time on homework. There is also the risk of dropping out.

Learning disabilities can also have a negative impact on social and emotional aspects. Feelings that no one understands and of always needing help can lead to embarrassment, anxiety, frustration, and isolation. With this comes the fear of rejection and failure and the need to hide the disability so as not to be put down or looked upon as lazy or dumb.

Later in life, learning disabilities can affect a person’s career by a lack of basic skills, a feeling of inadequacy, and knowing the problem will never go away. Often they have low expectations of themselves and move from job to job still trying to hide their disability.

Some of the day-to-day problems faced by people with learning disabilities include⁶:

- ◆ difficulty with alphabet and penmanship (confuses, reverses, and mixes upper and lower case letters, awkward writing style)
- ◆ problems in personal organization (forgetful, needs constant reminding)
- ◆ difficulty in copying and note taking (very slow, inaccurate, loses place often, lack of sub-headings or other organization)

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- ◆ problems in arithmetic (reverses numbers, omits steps, careless placement of numbers in columns)
- ◆ slow work speed
- ◆ problems with time and sequence (has trouble with chronological order, following set of instructions, starting a piece of work)
- ◆ confusion in spelling (does not retain basic words, continues to use phonetic spelling)

And ...

PROBLEMS IN READING⁷

- ◆ loses place regularly
- ◆ makes many guesses
- ◆ does not try new or strange words, rather gazes at the teacher or uses avoidance techniques
- ◆ ignores punctuation and other cues
- ◆ makes up words
- ◆ loses meaning of a sentence from beginning to end
- ◆ gets events out of sequence
- ◆ infers content that is not there
- ◆ forgets details

TUTORING STRATEGIES

Some of the most useful tutoring strategies for people with learning disabilities come from Frontier College's Student Centred Individualized Learning (SCIL) method, specifically the following points:

- ◆ Learning is based on the needs of the learner, defined by the learner.
- ◆ Every person can learn no matter what the education system has labelled him or her and no matter what his or her particular circumstances are.
- ◆ Learning begins with attention to the learner's strengths and successes rather than deficiencies and failures.

By keeping these three things in mind, working with someone who has a learning disability will be much easier. Encouragement and understanding is key. Even small

successes can make a difference to a child who frequently deals with failure and frustration. By pointing out the student's strengths and not dwelling on their weaknesses, a sense of trust and a positive atmosphere emerge where the student can feel more at ease.

A learning disabled student will also need help in other areas. Structure and sequence is very important. Try to use a constant, systematic approach and have material prepared ahead of time so you are organized and ready to help. Avoid jumping from one topic to another as this can cause confusion and frustration. As well, help the student with organizing their own notes and planning for deadlines.

Other useful strategies include⁸:

- ◆ choose materials which are clearly printed, avoid streaky photocopies, or pages with lots of unnecessary extras (pictures that do not relate to the text, fancy fonts, etc)
- ◆ use visual aids, although in some case this may be distracting
- ◆ try not to talk and write at the same time; write it down and then explain
- ◆ speak slowly and give one instruction at a time (for example: instead of saying "Let's work on pages 8-10 in the reader and then we'll do these colouring pages" say "Let's turn to page 8 in the reader")
- ◆ ensure the student fully understands any instructions or sequences; break it down into mini-steps if necessary and present them one at a time
- ◆ provide lots of repetition and review
- ◆ repeat or re-phrase material if not understood
- ◆ have the student repeat or re-phrase the lesson or instruction
- ◆ ensure the student is attentive before giving instructions or help
- ◆ summarize key points and have the student copy or write them down
- ◆ allow time for the student to think about what is being learned
- ◆ give lots of feedback

One resource that may provide a lot of help with students who have learning disabilities (or any student struggling in school) is *Learning Disabilities Intervention Manual*, by Stephen B. McCarney and Angela Marie Bauer. In this book, headings are given followed by an extensive list of various teaching strategies. For instance, problem 36 on page 104: "Fails to correctly answer comprehension questions from reading activities". McCarney and Bauer give 52 strategies to deal with this problem. Some of the suggestions include:

- ◆ reduce distracting stimuli in order to increase the student's ability to concentrate
- ◆ pre-record the reading material so the student can read along
- ◆ have the student take notes while reading in order to increase comprehension

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- ◆ highlight important points before the student reads the material silently
- ◆ introduce new words and their meanings to the student before reading new material
- ◆ stop the student at various points and check for comprehension
- ◆ make it pleasant and positive for the student to ask questions about things not understood

This book may be available at the university library or special needs office. Ordering information is listed under “Resources” on the next page.

We learn:

- ◆ 10% of what we read
- ◆ 20% of what we hear
- ◆ 30% of what we see
- ◆ 50% of what we both see and hear
- ◆ 70% of what is discussed with others
- ◆ 80% of what we experience personally
- ◆ 95% of what we teach someone else

- William Glasser

LEARNING ENVIRONMENT

Even if the work area is pre-determined, there are some things that can help the learning disabled student better focus⁹:

- ◆ reduce distractions – face away from the main part of the room
- ◆ keep work area clear – have only the materials needed
- ◆ find a quiet area
- ◆ build in success each visit
- ◆ spend time organizing notebooks
- ◆ ensure the student knows what to do
- ◆ allow the student to pre-read a passage before practising orally
- ◆ help the student set up and use an agenda
- ◆ provide immediate feedback on academic and social skills

RESOURCES

For more information on learning disabilities and some tools available to make learning easier:

- ◆ www.ldonline.org: Learning Disabilities On-line
- ◆ www.ldao.on.ca: Learning Disabilities Association of Ontario
- ◆ www.ldrc.ca: Learning Disability Resource Centre
- ◆ McCarney, Stephen B. and Angela Marie Bauer. *Learning Disabilities Intervention Manual*, Revised Edition. Columbia, MO: Hawthorne Educational Services, 1995. This can be ordered in Canada from Exceptional Resources in Toronto (416) 665-8982.

SUMMARY

Learning disabilities can severely impact a student's school career, but given the right material, a little individualized help, and a bit more time, any learning disabled student can succeed. Empathy and understanding is very important when helping these special students. Remember they **can** learn, just differently, and they need your help to do it.

ENDNOTES

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² Ms. Lois Jones, W.C. Eaket Secondary School, Blind River, Ontario

³ Dr. Allyson G. Harrison, Queen's University

⁴ www.ldonline.com

⁵ National Institutes of Health, 1993

⁶ Weber, Ken and Sheila Bennett. *Special Education in Ontario Schools*. Thornhill: Highland Press, 1999.

⁷ Weber, Ken and Sheila Bennett. *Special Education in Ontario Schools*. Thornhill: Highland Press, 1999.

⁸ Ms. Ruth MacDonald, Elliot Lake Secondary School, Elliot Lake, Ontario

⁹ Ms. Ruth MacDonald, Elliot Lake Secondary School, Elliot Lake, Ontario