Learning Disabilities Training:
A New Approach

Literacy Link South Central
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Project background:

In the years that Literacy Link South Central has been in the business of coordinating regional training, learning disabilities is a topic that has been addressed a number of times. Usually, the only training available is a one-day, surface exploration of the topic that allows those who attend to understand that learning disabilities exist, that they affect many of our adult learners and that they do so in various ways. Recently, the Learning Disabilities Association of Ontario (LDAO) coordinated a project that allowed approximately 25 individuals within Ontario to receive more intensive exposure to information on learning disabilities. To date, this information has not percolated down to all front line practitioners for many valid reasons, such as lack of time and resources. The LBS field in Ontario has an information need that has not yet been completely filled.

This project proposes to take advantage of recent developments in online training (specifically the Centra system) to research and deliver advanced training modules in learning disabilities. Various efforts have been made to increase the field's awareness of the impact of learning disabilities on literacy learners and to share strategies with practitioners to assist learners with literacy acquisition. This project, coupled with MTCU's foresight to provide programs with access to quality computer hardware and software, will enable practitioners in Ontario (from all sectors) to access training to fill in gaps in knowledge. It will also allow them to access training at times that are more convenient to them.

This project proposes to research the topic of learning disabilities in a way that complements the Literacy and Basic Skills (LBS) program and provides practitioners and administrators with advance level information on learning disabilities. The Centra system for online training is a potential solution to barriers that many experience when trying to access training.

Project objectives:

- To conduct high quality, advanced research on learning disabilities as they relate to LBS learners.

- To develop five modules of training on learning disabilities.

- To produce five online training sessions for adult literacy practitioners, using Centra.

- To make information on learning disabilities accessible to a wide variety of individuals and organizations.

- To explore sharing information and training modules from this project with adult education course deliverers.

Module development:

Content:

The organization of information and content for delivery was developed from:

- Findings from the "LBS Practitioner Learning Disability Training Needs Survey" (over 100 surveys received representing all three sectors).

- The five LBS service delivery functions.

- An extensive Internet search including relevant adult education databases.

- A comprehensive review of materials obtained from AlphaPlus, OISE and the Texas Center for Adult Literacy and Learning.

- A review of existing training modules/manuals:
    - Bridges to Practice: National Adult Literacy and Learning Disabilities Center, United States
    - Screening for Success: Learning Disabilities Association of Canada
    - Literacy and the LD Adult written by Janet Johnston
    - The Suzy Harris Upgrading Workshop Manual, Laubach Literacy Ontario
    - Asking the Right Questions: The Learning Centre Calgary
    - Exploring all Options: Australia Learning Disabilities

Assumptions upon which modules are based…

Each type of learning disability should not be treated in isolation by dedicating a module for each one.

- …"more recently there have been attempts to specify types of learning disabilities in order to establish various subtypes. While this initiative has been helpful, particularly with respect to providing subject selection guidelines for research purposes, it has not managed to overcome the difficulties associated with the individualistic nature of learning disabilities. In other words, many learning disabled individuals do not fit neatly into particular subtypes, but may span aspects of one and aspects of another depending on their specific learning profile of strengths and weaknesses." (Johnston, Janet. *Literacy and the LD Adults: Workshop.* Learning Potentials.1994)

- "There is such a large amount of individual variation among different learning disabled adults that it is difficult to come to any consensus in terms of characteristics." (Johnston, Janet. *Literacy and the LD Adults: Workshop*. Learning Potentials. 1994)

- "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." (*Screening for Success*. Learning Disabilities Association of Canada. 2001.Section II)

Practitioners should not be trained to conduct formal learning disability assessments but instead, should be trained to identify the specific strengths and challenges of each adult learner.

- If a practitioner thinks a learner may have a learning disability, then further assessment may help to understand the characteristics of the learner's potential learning disability. Teaching and learning strategies, accommodations and the use of assistive technology can be incorporated based on assessment results.

- If the assessment has not helped the practitioner to: identify the specific nature of the learning disability; identify appropriate teaching strategies; or if the learner continues to experience difficulty, then it is recommended that a specialist in learning disabilities be consulted. (*Screening for Success*. Learning Disabilities Association of Canada.2001)

Utilize and incorporate materials from existing training modules/manuals where appropriate.

- Existing manuals/modules have been well researched.

- It is more efficient to focus energy on identified areas of need that have not yet been addressed in existing training manuals.

- Let's not duplicate efforts and "reinvent the wheel!"

It is not our role to dictate nor reinforce one particular screening and/or assessment tool. We should provide criteria and pre-existing evaluative information on the various screening tools and informal assessments that are presently available.

- Agencies may already have learning disability screening and/or assessment tools that they use. It may be more beneficial to the programs to give them evaluative criteria to rate their existing practices and a list of possible tools to access.

- This approach follows the Ministry's "Common Assessment" directive. The tool is not common, but the features are.

- This approach respects the different program and learner needs that exist among the sectors (community-based, school board and college).

Outline of training modules

Throughout the modules a case study format was used to help link theory to the application. There are three case studies that attempt to capture the realities of the LBS programs in all three sectors. These case studies were developed to help practitioners understand how learning disabilities can impact adult learners.

Module 1

Characteristics of Adults with Learning Disabilities and Understanding the Initial Screening Process

- Introduction to learning disabilities
  - Latest definition
  - Example of how learning disabilities can impact the information processing cycle
  - How can a person with learning disabilities experience success?

- Signs and characteristics of potential learning disabilities
  - Where does dyslexia fit in?
  - Where does ADD fit in?
  - Specific skill characteristics of adults with learning disabilities

- Understanding the effects of learning disabilities on adults

- The screening process:
  - When should screening tools be used?
  - Gathering information about the learner
  - Effectively involving the adult in the screening process
  - What to consider when looking at the screening tool results

- Introduction to learning styles
  - What is a learning style?
  - How do learning styles relate to learning disabilities?

Module 2

Assessing Individual Strengths and Struggles: The Foundation for an Effective Training Plan

- The assessment process

- Understanding diagnostic assessments

- Understanding the impact of processing breakdown
    - Visual processing difficulties
    - Auditory processing difficulties
    - Organizational processing difficulties

- Informal assessment methods
    - Four elements of informal assessment

- In-depth look at observation and task analysis

- Self-assessment and learner involvement

- Impact of learning disabilities on literacy skills
    - Assessing oral communication
    - Assessing expressive writing
    - Assessing reading
    - Assessing math
    - Helpful tips when assessing literacy skills
    - Recognizing memory challenges
    - Recognizing visual-spatial challenges

- Informal assessment models
    - Holistic Education Literacy Process (HELP) model
    - Destination Literacy: information assessment model

- Criteria to consider when selecting assessment tools

Module 3

Building an Effective Training Plan: Incorporating Learner-Centred Strategies

- Principles of an effective training plan

- Types of strategies and related functions

- Factors that can impact the effectiveness of learning strategies

- Features of effective learning strategies

- How to teach learning strategies
    - Steps to successful acquisition of a strategy

- Learn various skill building strategies for:
    - Reading
    - Writing
    - Math
    - Listening and speaking
    - Memory

- Strategies to deal with behavioral challenges

Module 4

Accommodations, Self-Management and Transition Planning: Keys for success

- Psychosocial strategies
    - Social skills
    - Practitioner tips for helping learners to improve their social skills
    - Studying and organizational skills
    - Examples of organizational and studying strategies
    - How to deal with behavior challenges in the classroom

- Self-determination a key part of the transition process

- Understanding motivation strategies

- Identifying accommodations
    - Process to select accommodations
    - Criteria to rate accommodations

- Learning disability characteristics, related strategies and potential accommodations

- Assistive technology
    - Why use assistive technology?
    - A holistic approach to using assistive technology
    - The SETT model
    - Examples of assistive technology

- Developing fair demonstrations using accommodations

Module 5

Effective Instructional Methods

- Characteristics of effective approaches to instruction
    - Practitioner efficacy

- Practitioner based strategies: Content enhancement routines

- Instructional models
    - Strategic Instructional Model (SIM)
    - Direct instruction

- Reading, writing and math instructional approaches

- Collaborative approach to learning

- Standards for selecting instructional materials

- Learn to apply learning styles/multiple intelligences to training
    - Incorporating theory into instruction
    - Incorporating theory into reflection

- Ongoing assessment
    - Ongoing assessment of learning strategies
    - Ongoing assessment of accommodations

Learning Disabilities Training:
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Characteristics of Adults With Learning Disabilities and Understanding the Initial Screening Process

Learning objectives:

- Define learning disabilities
- Describe the types of learning disabilities and related characteristics
- Understand the signs of learning disabilities for specific skill areas
- Understand how learning disabilities impact adults' lives
- Carry out an effective learner-centred screening process
- Understand learning styles, their limitations, and how they relate to persons with learning disabilities

Chapter outline

- Introduction to learning disabilities
  - Latest definition
  - Learning Disabilities Association of Ontario's working description of learning disabilities
  - How learning disabilities can impact the information processing cycle
  - Cautions to be exercised by learners and practitioners
  - How can adults with learning disabilities experience success?

- Signs and characteristics of potential learning disabilities
    - Points to consider when looking at the characteristics
    - General signs of learning disabilities
    - Specific characteristics
    - The three most common learning disabilities
    - Where does dyslexia fit in?
    - Where does Attention Deficit Disorder (ADD) fit in?
    - Specific skill characteristics of adults with learning disabilities

- Understanding the effects of learning disabilities on adults
    - Possible impacts
    - Potential positive outcomes
    - Potential negative outcomes

- The screening process
    - What is screening?
    - When should screening tools be used?
    - Gather information about the learner
    - Screening tools can serve many purposes
    - Effectively involving adults in the screening process
    - What to consider when looking at the results of the screening tool

- Introduction to learning styles
    - What is a learning style?
    - How does this relate to learning disabilities?
    - Something to think about when using learning style models
    - Multiple Intelligences (MI)
    - The eight intelligences

- Summary of key points
- Appendix A: Website resources related to learning disabilities
- Appendix B: Words/definitions commonly associated with learning disabilities
- Appendix C: Screening tool samples and references
- Appendix D: Three case studies

Introduction to learning disabilities

"I understand my weaknesses and can easily describe them, because I dealt with them for 21 years. Growing up, I knew who I was as a student with weaknesses; I just didn't know who I was as a student with strengths."[1]

Although this quote is a personal insight, Literacy and Basic Skills (LBS) practitioners often speak of learners expressing similar experiences and feelings. Many adults may not realize they have a learning disability but feel they are somehow "different" from others. Research shows that the impact of this unknown "difference" can be negative when adults have few emotional and financial supports. Most adults with a learning disability have average, if not above average, intelligence. It is ironic and unfortunate that when asked to describe their abilities, adults with learning disabilities often view themselves as dumb or stupid.

Several studies have examined the impact of learning disabilities on the individual and society in general. Here are a few highlights:

- The 1970 Commission on Emotional Learning Disorders in Children stated that 1 in 10 Canadians have learning disabilities or 3 million Canadians.[2]
- 35% of students identified with learning disabilities drop out of high school. This does not include students who are not identified and drop out.[3]
- Adults with learning disabilities, who have not received appropriate education and/or training, typically hold a job for only three months.[4]
- 30% of adults with severe literacy problems were found to have undetected or untreated learning disabilities.[5]

It is suspected that a large majority of adult learners who participate in LBS programs have some form of learning disability, although no study has officially confirmed this. Practitioners frequently observe adult learners displaying characteristics indicative of learning disabilities. Often adults report negative experiences in previous schooling and feelings of inadequacy about their academic skills. Few adults enter LBS programs with official

documents stating a learning disability. Those who suspect they have learning disabilities rarely pursue formal assessments from a licensed psychologist because of costs and the lack of accessibility. In addition, it can be difficult to find psychologists with experience testing adults and the test results may not be relevant to adult learning needs.

Practitioners frequently find that learners really only want to understand why they are having difficulties learning and do not want to have an official diagnosis. The goal, often shared by both adult learners and practitioners, is to understand learners' strengths and weaknesses and to develop learning strategies to help learners succeed.

"I believe one key idea is to find one's own definition of the dual identity within oneself as a learner and as a student. The learner is the one who makes an effort to be curious, involved and motivated. The student is the one who determines how you cope in school. Not all knowledge is taught in school. It is the student identity which gets labeled as disabled. The "learning disability" should not be allowed to overwhelm one's desire to attain knowledge. The learner in you must prevent it."[6]

Latest definition

Through research review and consultation with a broad range of academics and professionals in the field, The Learning Disabilities Association of Ontario has arrived at a definition of learning disabilities. "Learning Disabilities" refers to a variety of disorders that affect the acquisition, retention, understanding, organization or use of verbal and/or non-verbal information. This definition is supported by a background document entitled *Operationalizing the New Definition of Learning Disabilities for Utilization within Ontario's Educational System,* LDAO, 2001, available on the LDAO website: www.ldao.on.ca.

These disorders result from impairments in one or more psychological processes related to learning, in combination with otherwise average abilities essential for thinking and reasoning. Learning disabilities are specific, not global impairments, and are distinct from intellectual disabilities.

Learning disabilities range in severity and invariably interfere with the acquisition and use of one or more of the following important 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)

Learning disabilities may also cause difficulties with organizational skills, social perception, and social interaction.

The impairments are generally life-long. However, their effects may be expressed differently over time, depending on the match between the demands of the environment and the individual's characteristics. Some impairments may be noted during the pre-school years, while others may not become evident until much later. During the school years, learning disabilities are suggested by unexpectedly low academic achievement or achievement that is sustainable only through extremely high levels of effort and support.

Learning disabilities are a result of genetic, congenital and/or acquired neuro-biological factors. They are not caused by cultural or language differences, inadequate or inappropriate instruction, socio-economic status, or lack of motivation, although any one of these and other factors may compound the impact of learning disabilities. Frequently learning disabilities co-exist with other conditions including: attentional, behavioural, and emotional disorders; sensory impairments; and other medical conditions.

Learning Disabilities Association of Ontario (LDAO) working description of learning disabilities:

- Learning disabilities can affect the way in which a person takes in, remembers, understands, and expresses information
- People with learning disabilities are intelligent and have abilities to learn despite difficulties in processing information

- Living with a learning disability can have an ongoing impact on friendships, school, work, self-esteem, and daily life
- People with learning disabilities can succeed when solid coping skills and strategies are developed[7]

How learning disabilities can impact the information processing cycle

There are three stages to learning:
1. Inputting information
2. Processing information
3. Outputting information

There is a breakdown at one or all three of the stages for adults with learning disabilities.

Signs at the input stage:
- Limited amount of information taken in at once
- Distraction or short attention span which can result in a loss of all or some of the information
- One or more of the five senses of learning hinder the ability to take in information

Signs at the processing stage:
- Difficulty organizing and putting information in order
- Difficulty integrating new information with old information
- Limited short or long-term memory, resulting in information being forgotten or lost
- Difficulty transferring information learned visually with information learned auditorily or visa versa
- Difficulty encoding and decoding information

Signs at the output stage:
- Difficulty writing information even though it is understood or can be expressed verbally
- Difficulty completing tasks even though the knowledge is present
- Difficulty expressing verbal knowledge[8]

Cautions to be exercised by learners and practitioners

"It was hard not knowing what I could do, not knowing what I was good at. I was never let in to any of the discussion about anything that was going on with me. In school, I always heard "She has problems with this, she can't do this, she doesn't know how to do that." I never, ever heard anything good about me. The only thing I heard was that I was a very quiet and polite young lady. I never heard, "She's a good student, she does well in that. These are her strengths." At home, it was "You don't want to do anything. I don't know what's wrong with you."[9]

Practitioners and learners should note the following cautions:

- Don't define adults by their difficulties
- Learning problems experienced by adults should not become the characteristics that overpower other more positive features of their identities
- It is far more important to emphasize people's strengths during the learning process than their weaknesses
- Learning disabilities should not be used as an excuse for lack of success[10]

How can adults with learning disabilities experience success?

People with learning disabilities need individualized accommodations and strategies in their home, school, community and workplace settings, which are suitable to their strengths and needs, including:

- Specific skill instruction
- The development of compensatory strategies
- The development of self-advocacy skills
- Appropriate accommodations[11]

Researchers in California conducted a longitudinal study that followed former students with learning disabilities to identify reasons that led to success. The results showed that decision-making, empowerment, perseverance, goal-setting, effective support, and emotional stability were more accurate predictors of success than background variables such as IQ and academic achievement. Although not every successful student showed all of the variables, this research illustrates that when working with adults with learning disabilities, literacy skills alone cannot be the sole focus.[12]

This study, among others, highlights that a holistic approach when working with all adult learners is key, regardless of disabilities. Over the past few years the LBS agencies have moved towards flexible programs by adopting a learner-centred approach and developing individualized training plans. Given this movement, agencies are in a good position to practice a holistic approach to learning with learners.

A literature review on low literacy and reading disabilities found that both fields highlighted the need to provide strategies to help build the skill shortfalls, regardless of whether or not adults have disabilities. The literature review found:

"If a person is a poor reader in adulthood, then it matters little whether the reading problem stemmed initially from a localized intrinsic limit, a general learning problem, or inadequate educational opportunity. They recommend not distinguishing people from other poor readers unless it will (a) aid psychological well-being (b) result in a call for different instruction, or (c) gain access to special privileges or considerations that would be denied. They feel the most effective approach to working with adults' reading instruction is one that is tailored to the learners' current skill levels."[13]

Everyone has strengths and weaknesses and preferred ways of learning. Janet Johnston states that people who do not have learning disabilities experience small differences between their strengths and weaknesses. Usually several skills are needed to complete a task. When there are large differences in one's strengths and weaknesses related to the skills required, it could be difficult to perform the task. Some parts of the task may be easy and others difficult. Often these weaknesses are what get in the way of completing the task. Too

often, peoples' strengths can become masked by their weaknesses, resulting in increased frustration.

Janet Johnston states that a learning disability increases or lessens depending on the context or specific task demands. This has significant implications for career planning for adults. It highlights how important it is for adults to look at their strengths when pursuing employment.[14]

"I could always only talk about my weaknesses, never about my strengths, because I never knew I had any. If someone asked me about my strengths, I wouldn't know. Growing up, I thought there must have been something wrong that I did. I was too lazy or stupid. It was me."[15]

Signs and characteristics of potential learning disabilities

Points to consider when looking at the characteristics

- There are great diversities within the learning disability population because learning disabilities can affect each individual differently.
- Learning disabilities can vary from mild to severe. They can show in many different ways.
- Characteristics that people experience may be more predominant for some than for others.
- The experience or impact of learning disabilities can vary from person to person as they progress through developmental stages.
- Social, emotional, and economical variables can impact how people deal with their learning disabilities.[16]

General signs of learning disabilities

Learners may have trouble with:

- Remembering newly learned information because of either visual or auditory problems.
- Staying organized (thinking in a logical and orderly manner).
- Understanding what they read.
- Getting along with peers or co-workers (usually stems from a lack of skill to interpret non-verbal cues such as body language, personal space, taking turns in the conversation or an inability to recognize implicit messages in "tone of voice").
- Finding or keeping a job.
- Understanding jokes that are subtle or sarcastic.
- Making fitting remarks.
- Expressing thoughts orally or in writing.
- Learning basic skills (such as reading, writing, spelling and mathematics.) Skills are below expectations in some areas but not in others, e.g. poor writing skills but excellent comprehensive skills.
- Exhibiting strong self-esteem resulting from poor sense of self from years of failure in academic, social and employment situations - they may give up easily and put themselves down.
- Using proper grammar in spoken or written communication.
- Remembering and sticking to deadlines. They may have difficulty with awareness of time because they don't have an internal sense of time and can't predict how long a task may take, or because they have difficulty telling time.[17]
- Following directions, creating mental images, dealing with size, physical, geographic features and dimensions of space.[18]
- Generalizing skills from one situation to another.
- Changing their approach to a task even when the initial approach has proven unsuccessful.[19]

Keep in mind that even when individuals show several characteristics, this does not infer that their potential disability is severe. Likewise, if individuals only show a few of the characteristics, it is unwise to assume that their potential disabilities are mild.[20]

Specific characteristics

Regardless of the disability being explored, the characteristics can be categorized as **critical or secondary**.

Critical characteristics are conditions that cause problems for adults in their daily living. They have an impact on employment opportunities, family, and social relationships. Academic skills remain difficult and impact reading, writing, math, and/or spelling. Difficulties result because "psychological processes bear on the areas of challenge. These include awareness, perception, language, attention, motoric abilities and social skills."[21] For example, adults' attention is challenged when they have difficulty understanding what is heard due to the surrounding noise in a classroom. Similarly, their auditory processing is challenged when their writing is plagued with spelling errors.

Secondary characteristics are viewed as the "next layer". Secondary features refer to the emotional coping of adults with learning disabilities. It is difficult to say with certainty that learning disabilities have a direct impact on the secondary characteristics, since adults' life experiences and different upbringings can also impact this area. The emotional coping characteristics are displayed either in positive or negative ways. "Examples of negative reactions are low self-esteem, shortfalls in social skills and/or demoralization. On the flip side, the frequent challenges people face can cause them to be resilient. Each hurdle they overcome builds their determination. Often adults have developed strong coping skills to accommodate their learning disabilities."[22]

Adults with learning disabilities can be successful when their disabilities are recognized and understood. When agencies understand the characteristics of learning disabilities, they can use this as an opportunity to change opinions and actions to contribute to learners' successes.[23] Although practitioners cannot claim their learners have learning disabilities, they can help explain why learners are having challenges. Practitioners need to work together with learners to develop strategies to address weaknesses and highlight strengths.

"With hindsight, I know all my pain could have been prevented. To know the cause of my problem would have enabled me to cope with it. It was the not knowing that left me in the dark. I am not sure when I discovered I had a learning disability. I think I always knew, but could not put a label to it. One day I found myself at a learning disability association. Here I read some of the literature on the topic and here I found a revelation. As I filled out a learning disabilities checklist, I was amazed to find how much of the list applied to me. I was also amazed to learn that many of the symptoms had to do with social skills."[24]

The three most common learning disabilities

Visual processing disability

It hinders learners' abilities to make sense of information taken in through their eyes. It can affect their reading, mathematics and writing. People with this disability usually present with difficulty:

- Recognizing or remembering visual information such as words, letters, or numbers.
- Reading since the words sometimes jump around on the page.
- Tracking information and following text. They may reverse letters in writing.[25]
- Seeing symbols (letters and numbers) both as separate units and in relationship to others.
- Recognizing an object when the entire object is not visible.
- Integrating the relationship between the sum and the parts of an object. Some learners may only see pieces while others may only see the whole (can see the letters but not the word that it makes or visa versa).[26]

Auditory processing disability

Auditory processing disabilities do not affect what is heard, but how it is interpreted or processed by the brain. This can interfere with speech and language acquisition and can affect all areas of learning, especially reading and spelling.[27] People with this disability usually present with difficulty:

- Remembering and making sense of auditory information such as words, letters, and sounds.
- Understanding nuances of speech.
- Recognizing differences in tone of speech.
- Processing a series of oral instructions.[28]
- Putting sounds together to form words.[29]

Organizational and information storage and retrieval disability

Individuals have difficulty managing time and space and ordering their day-to-day activities. They also show difficulties with receiving, integrating, remembering and expressing information.[30] People with this disability usually present with difficulty:

- Processing information quickly.
- Putting meaning to what is heard by linking it with known information that is similar.
- Retrieving or finding previously stored information.
- Making sense of a new task or skill.
- Performing under stress.
- Organizing.
- Making sense of time. They may be early or late and often can't meet a deadline.[31]

Memorization problems are also prevalent in learners, regardless of the types of learning disabilities. They can show up in various ways. For example, the inability to:

- Memorize the alphabet
- Learn numbers by heart
- Recognize sight words
- Remember the names of people they meet or to recall common facts from conversation[32]

"Memory is affected in many ways. This includes immediate memory, long-term memory, recall of rote arbitrary material as opposed to meaningful material, memory for facts, the ability to revisualize words, as well as the capacity for new learning."[33]

Where does dyslexia fit in?

"Dyslexia is a disability involving different forms of language. It includes difficulties with reading, writing and speaking. Many people with learning disabilities have some degree of dyslexia. However, most have additional disabilities as well, such as challenges estimating time, organizing their belongings and coordinating their muscles."[34]

Dyslexia is a common form of learning disability and a commonly misunderstood term. Dyslexia usually does not involve seeing or reading words backwards. Rather, it refers to problems in learning to read, write, and spell.[35] People with dyslexia may have spelling difficulties only and their reading comprehension is not affected by the disability. However in most cases where dyslexia affects reading comprehension, spelling is also affected.[36]

Children who are diagnosed with dyslexia exhibit phonetical problems. "They have difficulty with the ability to notice, think about, and manipulate the individual sounds in a word."[37] Without a phonetic base, reading and spelling can continue to be a challenge into adulthood.

It is important to remember that many individuals with dyslexia can learn to read and write, given suitable supports. Individuals with dyslexia are not alike; each individual may have different strengths, weaknesses and instructional needs.[38]

Where does Attention Deficit Disorder (ADD) fit in?

Adults with learning disabilities often have problems concentrating on a task. It is important to note that **ADD is not a learning disability** but an "an associated disorder that can interfere with the individual's availability for learning." The percentage of persons who have a learning disability and ADD is unclear due to inconsistent study methodolgies.[39]

"ADD and learning disabilities are two discrete disorders with distinct symptom clusters. However, some symptoms may be common to both disorders, including: disorganization, weak executive functioning, and inefficient use of strategies. Without careful assessment, distinguishing between ADHD and learning disabilities can be difficult because of overlapping symptoms and because some behaviours that may result from learning disabilities can look like ADHD symptoms. For example, individuals with central auditory processing deficits can appear inattentive, and students who have become discouraged due to learning problems may not stay on task or may appear distractible."[40]

There are three types of attention deficits:

- The inability to block out distractions (white noise or background noise such as street traffic and/or visual distractions such as patterned wallpaper)
- The inability to see or hear instructions or interjections because learners completely block external stimuli
- The inability to sustain attention – learners may become bored or tired easily[41]

Overall, persons with ADD may:
- Fail to pay close attention
- Make careless mistakes
- Not listen when spoken to
- Lose or forget things
- Have difficulty following instructions
- Talk excessively
- Have difficulty taking turns[42]

The core symptoms of ADD change, as a person grows older. Research suggests that hyperactivity declines with age; attention problems remain constant; and organizational management problems increase in adulthood. Poor time-management, chronic lateness, and difficulties completing paperwork and meeting deadlines are common work-related problems of adults with ADD.[43]

Specific skill characteristics of adults with learning disabilities

Aspects of speaking, listening, reading, writing and mathematics overlap and build on the same brain capabilities. Therefore, it is understandable that an individual can have more than one disability. One gap in processing can affect many types of activities. (Information contained in the following charts.)[44]

READING CHARACTERISTICS	WHAT THEY LOOK LIKE IN AN ADULT
Does not read for pleasure.	Engages in leisure activities other than reading; prefers more active pursuits. Doesn't read stories to his/her children.
Does not use reading to gather information.	Cannot easily use materials like newspapers and classified ads to obtain information.
Has problems identifying individual sounds in spoken words.	Does not attempt to sound out words in reading or does so incorrectly. May read words with syllables backwards (*was* for *saw*; *net* for *ten*)
Often needs many repetitions to learn to recognize a new or unused word.	May encounter a newly learned word in a text and not recognize it when it appears later in that text.
Oral reading contains many errors, repetitions and pauses.	Reads slowly and labouriously, if at all. Words may be skipped, endings can be left off and there are frequent repetitions. May refuse to read orally.
Efforts in reading are so focused on word recognition that it detracts from reading comprehension.	Loses the meaning of text, but understands the same material when it is read aloud.
Has problem with comprehension that goes beyond word recognition. May have limited language skills that affect comprehension.	Does not understand the text when it is read to him/her.
Has limited use of reading strategies. Is an inactive reader; not previewing text, monitoring comprehension, or summarizing what is read.	When prompted to do so, does not describe strategies used to assist with decoding and comprehension of text.
Rarely practices reading, which may compound reading problems. Lacks complex word knowledge.	Recognizes and uses fewer words, expressions, and sentence structures than peers.

WRITING CHARACTERISTICS	WHAT THEY LOOK LIKE IN AN ADULT
Has difficulty communicating through writing.	Rarely writes letters or notes. Needs help completing forms such as job applications.
Written output is severely limited.	Struggles to produce a written product. Produces short sentences and text with limited vocabulary. Spelling errors may consist of confusing letter order; missing middle syllables; spelling exclusively by sound; and/or some words may be completely unrecognizable.
Writing is disorganized.	Omits critical parts or puts information in the wrong place. Writing lacks transition words.
Lacks a clear purpose for writing.	Does not communicate a clear message. Expresses thoughts that don't contribute to the main idea.
Does not use the appropriate text structures.	Uses sentences that contain errors in syntax or word choice. Fails to clearly indicate the referent of a pronoun. Unable to determine which noun they are referring to, i.e. She glanced at him while looking through the window.
Shows persistent problems in spelling.	Spells only phonetically. Leaves out letters. Writes numbers or letters backwards or upside down. Refrains from writing words that are difficult to spell.
Has difficulty with mechanics of written expression.	Omits or misuses sentence markers such as capitals and end punctuation, making it difficult for the reader to understand the text.
Handwriting is sloppy and difficult to read.	Has awkward writing grip or position. Letters, words, and lines are misaligned or not spaced appropriately. Makes frequent punctuation errors and mixes capital and lower-case letters inappropriately.
Demonstrates difficulties in revising.	Is reluctant to proofread or does not catch errors. May spell the same word differently in the same writing sample. Focuses primarily on the mechanics of writing, not on style and content.

LISTENING CHARACTERISTICS	WHAT THEY LOOK LIKE IN AN ADULT
Has problems perceiving slight distinctions in words.	Misunderstands a message with a word mistaken for a similar word. Might say, "Pick up the grass," instead of, "Pick up the glass."
Has a limited vocabulary.	Recognizes and uses fewer words than peers when engaged in conversation or when gathering information by listening.
Finds abstract words or concepts difficult to understand.	Requests repetitions or more concrete explanations of ideas. Frequently asks for examples.
Has difficulty with non-literal or figurative language such as metaphors, idioms, and sarcasm.	Does not understand jokes or comic strips.
Confuses the message in complex sentences.	Will eat lunch first if given the direction, "Eat lunch after you take this to the mail room."
Has difficulty with verbal memory.	Doesn't remember directions, phone numbers, jokes, stories, etc.
Has difficulty processing large amounts of spoken language.	Gets lost listening in classroom or to large group presentations, complaining that people talk too fast. Becomes inattentive during the presentation.

SPEAKING CHARACTERISTICS	WHAT THEY LOOK LIKE IN AN ADULT
Mispronounces words and sounds.	Adds, substitutes, or rearranges sounds in words, as in *phemomenon* for *phenomenon* or *Pacific* for *specific*.
Uses wrong word, usually with similar sounds.	Uses a similar-sounding word, like *generic* instead of *genetic*.
Confuses the morphology (structure) of words.	Uses the wrong form of a word, such as calling the *Declaration of Independence* the *Declaring of Independence*.
Has a limited vocabulary.	Uses the same words over and over in giving information and explaining ideas. Has difficulty in conveying ideas.
Makes grammatical errors.	Omits or uses grammatical markers incorrectly, such as tense, number, possession, and negation.
Speaks with a limited repertoire of phrase and sentence structure.	Uses mostly simple sentence construction. Overuses *and* to connect thoughts and make statements.
Has difficulty organizing what to say.	Has problems giving directions or explaining a recipe; talks around the topic, but doesn't get to the point.
Has trouble maintaining a topic.	Interjects irrelevant information into a story. Starts out discussing one thing and then goes off in another direction without making the connection.
Has difficulty with word retrieval.	Can't call forth a known word when it is needed and may use fillers, such as *"ummm,"* and *"You know."* May substitute a word related in meaning or sound, as in *boat* for *submarine* or *selfish* for *bashful*.
Has trouble with the pragmatic or social use of language.	Does not follow rules of conversation like taking turns. Does not switch styles of speaking when addressing different people.

MATHEMATICS CHARACTERISTICS	WHAT THEY LOOK LIKE IN AN ADULT
Doesn't remember and/or retrieve math facts.	Uses a calculator or counts on fingers for answers to simple problems; e.g. 2 x 5.
Doesn't use visual imagery effectively.	Can't do math in his/her head and writes down even simple problems. Has difficulty making change.
Has a visual spatial deficit.	Confuses math symbols. Misreads numbers. Doesn't interpret graphs or tables accurately. May make careless mistakes in written work. Has trouble maintaining a chequebook.
Becomes confused with math operations, especially multi-step processes.	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.
Has difficulty in language processing that affects the ability to do math problem-solving.	Doesn't translate real-life problems into the appropriate mathematical processes. Avoids employment situations that involve this set of skills.

THINKING CHARACTERISTICS	WHAT THEY LOOK LIKE IN AN ADULT
Problems with abstract reasoning.	Asks to see ideas on paper. Prefers hands-on ways of learning new ideas.
Shows marked rigidity in thinking.	Resists new ideas or ways of doing things and may have difficulty adjusting to changes on the job.
Displays random, rather than orderly thoughts, in logical or chronological thinking.	May have good ideas that seem disjointed, unrelated, or out of sequence.
Has difficulty synthesizing ideas.	Pays too much attention to detail and misses the big picture or idea when encountering specific situations at home or at work.
Makes impulsive decisions and judgments.	"Shoots from the hip" when arriving at decisions. Doesn't use a structured approach to weigh options.
Has difficulty generating strategies to use information and solve problems.	Approaches situations without a game plan, acting without a guiding set of principles.

CHARACTERISTICS OF "OTHER DIFFICULTIES"	WHAT THEY LOOK LIKE IN AN ADULT
Has problems with attention, which may be accompanied by hyperactivity, distractibility, or passivity.	Doesn't focus on a task for an appropriate length of time. Can't seem to get things done. Does better with short tasks.
Displays poor organization skills.	Doesn't know where to begin tasks or how to proceed. Doesn't work within time limits, failing to meet deadlines. Has difficulty prioritizing tasks. Workspace and personal space are messy.
Has a problem with eye-hand coordination.	Omits or substitutes elements when copying information from one place to another, as in invoices or schedules. Often confuses left from right and up from down.
Demonstrates poor fine motor control, usually accompanied by poor handwriting.	Avoids jobs requiring manipulation of small items. Becomes frustrated when putting together toys for children.
Lacks social perception.	Stands too close to people when conversing. Doesn't perceive situations accurately. May laugh when something serious is happening or slap an unreceptive boss on the back in an attempt to be friendly.
Has problems establishing social relationships. Problems may be related to spoken language disorders.	Does not seem to know how to act and what to say to people in specific social situations and may withdraw from socializing.
Lacks "executive functions" including self-motivation, self-reliance, self-advocacy, and goal setting.	Demonstrates over reliance on others for assistance or fails to ask for help when appropriate. Blames external factors on lack of success. Doesn't set personal goals and deliberately doesn't work to achieve them. Expresses helplessness.

Not all learners show all of these characteristics. In addition, just because they display some of the characteristics does not mean they have a learning disability. Any of these characteristics should be observed over time and under various circumstances.

"In adulthood, the effects of learning disabilities can affect a wide array of areas associated with learning and adaptive behaviour. No longer can the focus of learning disabilities exclusively be on the basic remedial skills because there are many challenges associated with all the tasks and activities of adult life and adult responsibilities."[45]

At best, basic skills upgrading must share equal focus with other important areas of functioning such as employment, family relations, emotional issues, community, and personal adjustment.

Understanding the effects of learning disabilities on adults

"My disability is not a tool, nor a badge of honour. It gives me a perspective on life, a sense of reality, a way of understanding. I see the world through a different lens. I accept my disability, not as a crutch but as a token of reality. I continue to try harder. Not because some teacher thinks that I need to, nor because some supervisor says I haven't tried. It is because trying is all I can control."[46]

Possible impacts

Literature on learning disabilities often highlights the social skill inadequacies that adults face. However practitioners need to be cautious of generalizations. Adults with learning disabilities are diverse. Practitioners should view each individual as unique. The impacts of learning disabilities will be both positive and negative. Consequently, it is difficult to predict how individual adult learners will experience the impact of their learning disabilities. Adults' life

experiences, resources, supports, and personality traits will affect whether the impacts are positive or negative.

Often adults have only heard about their so-called inadequacies and thus have difficulty recognizing that they even have strengths. For adults with learning disabilities, the effects, whether they are positive or negative, often compound with age. The challenges may either overshadow their intellectual abilities or may help them develop other skill areas and accommodations to help compensate for their weak areas. However, too many adults grow up misunderstanding their problems, thus failing to get the help and support they need.[47]

Potential positive outcomes

Problem-solving skills

Adults with learning disabilities often seek creative solutions that are "outside the box" and they can come up with imaginative answers to difficult problems.[48] Some adults have developed various coping mechanisms to help overcome or adjust to (or compensate for) their challenges. They may build support systems that assist them with their weaknesses and/or access tools to help manage these areas.

Outgoing personality

"Because of their histories of failure, many adults with learning disabilities can develop gregarious personalities to help hide their learning problems."[49] This is especially true for people with visual processing challenges. They are able to express themselves clearly but have difficulty with written expression. Adults who have good social and emotional support networks can tend to the development of outgoing personalities. Many adults not only have adequate social skills: a good many consider their social skills to be a significant compensation and a key to success.[50]

Strong compensatory skills

"Individuals with learning disabilities often compensate for literacy shortfalls by developing strong skills in other areas. These skills may include proficiency in the use of computers or other focused abilities in limited areas."[51]   Often compensatory skills are not taught; adults have had to learn through trial and error. This creative learning is an individualized way to accomplish tasks and compensate for weaknesses. For example, a person with an auditory processing disability may find recording information from a phone call to be quite challenging. Instead of having to continually ask the caller to repeat information, the person may find saying "I know this message is important, so I want to make sure I get the information correct" will result in the caller being patient when repeating the information.

Empathy

Although adults' experiences with learning disabilities are unique, many can share a common feeling of frustration and sense of failure at one time or another. As a result, they can relate to other adults' difficulties and are able to offer support.[52]

Persistence

Self-determination is often cited as the key to success for persons with learning disabilities. By understanding and accepting their disabilities, they can make a conscious decision to take charge of their lives and make individualized adaptations to succeed. "Persistence is a hallmark of many adults with learning disabilities, who have refused to give up despite their difficulties and frustrations. If channeled appropriately, this experience can contribute to an active sense of dedication and purpose."[53] Often this persistence is preserved through a good support network. Unfortunately many adults that take part in LBS programs have not developed or had access to a good support network and thus their lack of persistence is often the first difficulty to interfere with their learning.

Potential negative outcomes

Self-esteem

Negative experiences with school, social, and employment settings can lead to low self-esteem. As a result, individuals are not willing to take risks, strive to reach their potential or speak for themselves. When adults don't understand their disabilities, they may experience low self-esteem and be less willing to advocate for themselves.

Employment

Limited organizational skills, lack of attention, spelling and reading difficulties, and poor comprehension are some of the challenges that may prevent adults from keeping steady employment. An employer's limited understanding of learning disabilities could compound these challenges. Employers sometimes believe myths that accommodations for persons with learning disabilities are extremely expensive and that adults with learning disabilities can't learn.

Social interactions

Relationships with family members, spouses, peers and colleagues are affected by the challenges that learning disabilities present. Adults with learning disabilities may display poor judgment of others' moods and attitudes and be less sensitive to others' thoughts and feelings. They may say inappropriate things and have problems understanding humour. Most want acceptance but often are so eager that they try too hard, causing them to act inappropriately. These challenges often lead to limited peer support, isolation, marriage difficulties and weak relationships with children.[54]

Daily living

Daily routines that people without learning disabilities take for granted such as writing a cheque, filling out applications, and taking phone messages can be challenging for adults with learning disabilities. The stress and fear of ridicule can lead to avoidance of these basic tasks. A stressful situation compounded with negative experiences can interfere with the ability to

complete a task that is usually accomplished independently. People with learning disabilities may have difficulty doing banking at an ATM when there is a large lineup and an impatient person standing directly behind.

Ineffective learning strategies

Opportunities for learning occur in many environments such as school, the workplace, and with peers. It is common when faced with problems and learning challenges to develop strategies for attacking problems and tasks. However, without the suitable skills and supports for attacking problems, ineffective and inefficient strategies may develop.[55]

Many adults with learning disabilities don't know how to approach tasks. They may develop strategies that are only partially successful or are not effective for every situation. Because the strategies have become habits and have led to some success, adults with learning disabilities may be reluctant to change or abandon their strategies. Their fear of failure may make them reluctant to take risks or try new strategies that may help them be more successful.[56] It is critical to take time to help individuals understand their strengths and weaknesses. With this understanding, learners can develop individualized strategies to meet their unique package of strengths and weaknesses.

"When a person is identified with a learning disability, they should understand their strengths and weaknesses. Discovering yourself as an individual with learning disabilities has certain benefits. Understanding and accepting yourself allows you a voice and sets an example for others around you. Every person is different but once you understand how you learn best and what you do well, you can capitalize on this knowledge and use it to your advantage. The strengths of a person with Learning Disabilities are areas in which one can see wonderful success."[57]

The screening process

What is screening?

There are many different terms to describe screening instruments such as
inventories, checklists, measures, and assessments. Regardless of the term,
they all aim to achieve the same objective: to identify whether or not an **adult
displays indicators of learning disabilities.**[58]

Screening is the starting point of the assessment process. It helps to determine
the need for further assessment, either formally or informally. It does not
identify or label people with disabilities, but provides a general indication of
their **potential** learning disabilities. The screening tool identifies areas that
need further exploration. When adult learners and practitioners explore these
areas together, they can identify effective strategies and accommodations that
best meet learners' needs.

Overall, the tools look at areas that adults may experience difficulty with
and/or what they are good at. Areas that are covered include reading,
writing, speaking, and daily life skills. In addition, general interests such as
music, sports, computers, and hobbies should be identified to gain a full
understanding of adults' strengths. Each tool should have guidelines for
interpreting the results.

To gain better insight into potential learning disabilities, practitioners could
consider asking specific questions, observing learners, listening for self-
identification, discussing previous school experiences, reviewing medical
records, and discussing employment history.

Remember, the screening will only give an indication of possible learning
disabilities. Conduct additional assessments to gain specific insight into
adults' strengths and challenges. Depending on the results of the screening
and the needs of adult learners, it may be necessary to consider professional
evaluation. Adults need to weigh the value of getting a formal assessment
completed against the cost and effort required.

When should screening tools be used?

The answer to this question is not really clear. The following variables impact affect when or if a screening process should take place:

- **Available resources**: i.e. number of staff and experience of staff, access to professional diagnostic assessments and agency finances

- **Intake process**: i.e. formal or informal, whether or not screening can be integrated, whether or not screening is a common process for all adults entering the program

- **Learning environment**: i.e. learners' goals (GED preparation, employment, college/apprenticeship or independence), the impact of an official diagnosis

- **Learners themselves**: i.e. levels of self-esteem, motivation and their individual needs

Individual LBS agencies have their own unique makeup and need to examine the fore mentioned variables to determine how the screening process best services learner and program needs. One of the most valuable sources for information about learners' potential learning disabilities is the practitioner's direct observation of learners during instruction. Using screening tools in combination with practitioners' observations is very effective. However, some agencies may prefer to do a learning disability screening test during their intake process for every adult who enters the program. One advantage of this is that practitioners don't need to get permission from the learners since everyone will be going through the screening. In addition, if the practitioner suspects a disability, immediate focus can begin before there is a risk of the learner dropping out of the program. Obviously one distinct disadvantage is that practitioners don't have any observations of adult learning to help interpret the screening results. Regardless of what process a program follows, set policies and procedures should be developed to ensure fair and equitable practice with the learners.[59]

Gather information about the learner

If it is suspected that a learner has a learning disability, as much information as possible should be gathered. Try to build specific questions into an informal conversation. Any screening tools used must be suitable for adults. Agencies should be honest with learners and talk about the impact of the potential disabilities and the commitment needed by both the adult learners and the agencies in order to achieve progress. Overall, this process should be positive for the adults.[60]

Do not rush the time spent collecting information. The more information that is gathered, the better the chances are of determining the possibility of learning disabilities. As the information is collected and examined, practitioners should give themselves and the learners the benefit of the doubt. Look for disabilities, but be sensitive to information that would lead to a different conclusion such as:

- Vision or hearing problems
- A general lack of educational instruction in certain areas such as grammar, spelling rules, and/or reading
- Health problems (diabetes, medication issues, fatigue)
- Physical or emotional issues (finances, accommodations, personal issues, stress, mental health status)[61]

Integrating the screening process into the intake procedure is ideal. However for learners who are already participating in the program, practitioners should look for characteristics of potential learning disabilities and integrate the screening tool into the ongoing evaluation process.

Indicators of learning disabilities may appear when observing:

- Learners' work habits
- Learners' work samples
- Informal conversations with learners
- Learners' and parents' educational experiences[62]

Incorporate specific questions designed to elicit information concerning
adults' learning histories during intake interviews.

Some of the more pertinent questions to ask include:

- Did you ever repeat any grades in school?
- Why did you leave school (if appropriate)?
- Were you ever given any special education assistance in the past? If
  so, what kind?
- How would you describe your reading abilities?
    - Are you able to sound out words that you don't know?
    - If you can read the words, are you able to understand and
      remember what you read?
    - Are you a fast reader?
- Can you usually understand verbal directions, or what other people
  say?
    - Are you able to explain yourself when speaking so that other
      people understand you?
- How would you describe your writing abilities?
    - Can you organize your ideas to write?
    - Do you usually put periods and commas, etc. in the right
      place?
    - How would you describe your spelling?
- How would you describe your ability to do math or science?
- How would you describe your social skills? Do you have difficulty
  making and/or keeping friends?
- Have you ever been formally assessed (one-on-one) before for any
  learning difficulties?
- What do you feel gives you the most difficulty when doing school or
  work tasks?
    - What do you find easiest to do?

This information will help determine where adults' learning strengths and weaknesses might lie. Their responses are the foundation on which strategies can be built.[63]

Most adult learners in a literacy program will have at least one of these characteristics. Therefore, practitioners should not suspect the presence of learning disabilities if adults display only one or two of these characteristics. Instead, practitioners need to seek information in several different ways: consulting with other staff, observing characteristics under a number of circumstances and assessing further their learners' skill areas, not only to confirm their suspicions, but to help in planning the next steps.

Screening tools can serve many purposes

- The informal nature of the information gathering process in screening enables practitioners to include learners in determining suitable instruction
- Informal screening opens the doors for discussion between practitioners and learners regarding which strategies and/or interventions, if any, have been tried in the past
- Screening can help establish the foundation for discussions between practitioners and learners to develop short-term objectives and long-range goals[64]

Effectively involving adults in the screening process

The first step in effectively involving adults in the screening process is to gain adult learners' confidence and make sure they realize that the screening process is a team process. Learners should understand that practitioners don't know everything about how they (learners) learn and the more information learners can share, the more likely it is that practitioners can improve the opportunities for learning. If learners are continuously showing several of the characteristics of learning disabilities, it is advisable for practitioners to use a screening tool or checklist to reinforce their observations. This helps both

practitioners and learners to gain more insight into possible challenge areas and recognize potential learning disabilities.

When learners' challenges consistently follow learning disability patterns, one of the first steps for practitioners is to meet with the learners to discuss practitioner observations. Literacy practitioners are not qualified to provide formal diagnoses, but can point out that they have observed people with learning disabilities exhibit similar characteristics.[65] Practitioners need to explain they are not experts in learning disabilities, but that they want everyone to be successful.[66]

This meeting should encourage open dialogue with learners and should try to elicit responses to the practitioner's observations. Learners should feel comfortable sharing any frustrations they are experiencing with the learning process. Practitioners could ask one or all of the following questions to help encourage responses from learners:

- Do you think this information is accurate?
- What do you think this information means?
- Why do you think (e.g. spelling) is difficult for you?[67]

 "The goal of the discussion is not to label the adult but to focus on habits and practices of the learners and to work on techniques to deal with those difficulties."[68]

Actively involving learners as equals helps them to take ownership of the issue and to begin to understand their strengths and weaknesses. It is critical for practitioners to emphasize to learners that having potential learning disabilities does not mean that the learners are not intelligent or that they cannot learn.[69] Practitioners who have taken this approach have found that learners often express relief as they gain a better understanding of their learning challenges.[70]

Self-assessments

The use of self-reported inventories or questionnaires is very effective. Practitioners need to examine adults' processing styles and learning characteristics as well as their specific strengths and weaknesses. Self-

assessments help gather information about learners' families, educational experiences, work and medical histories, study habits, literacy skills and value orientations. This is the first step towards actively involving learners and helps them build their capacity to take ownership for their learning. In addition, the process allows practitioners to develop comfortable relationships with the learners.

Practitioners need to reinforce that learners can:

- Learn
- Be successful
- Work with their instructors/tutors to develop the best strategies and programs that will work for them
- Continue to learn after they leave their program[71]

The screening tool helps to identify if learners' challenges are related to potential learning disabilities. If referrals are warranted, then practitioners can help learners with this process. Referrals could involve accessing hearing tests, visions tests, counseling and/or formal diagnostic testing. If no referrals are needed, then further assessments should be conducted. Based on the assessment results, it is possible that changes to learners' goals, curriculum and learning environments may be required.

Practitioners need to help adult learners recognize the full extent of their suspected learning disabilities and how they impact on social and academic functioning. When working with learners, practitioners need to help them to accept the full range of strengths and challenges associated with their learning disabilities. Together, practitioners and learners need to develop plans consistent with learners' strengths and challenges to help them reach their goals.[72]

 "Literacy programs should be designed with a positive view toward the success of adults with learning disabilities. To do this, program leaders must ensure that disabilities and their impact are widely recognized and positively accepted by practitioners and clients. They also should strive to create a program that forges a partnership with adults with learning disabilities to promote their success."[73]

What to consider when looking at the results of the screening tool

- Keep in mind that several of the characteristics can be true for all of us at some time or another. Thus the characteristics need to seen over time.

- When working with adults at the basic level, it is difficult to decide when the observation of some of these behaviours represents a normal stage of learning a new skill and when it suggests the presence of a learning disability.

- To help distinguish between the two, look at both patterns of errors and gather as much information about adults' earlier educational experiences as possible.

- In addition, "if learners appear intellectually capable in other respects, but show little progress in one particular area that seems out of place with what you might expect, practitioners' suspicions of learning disabilities are most likely accurate."[74]

Screening only identifies the possibility of a learning disability. It does not offer a diagnosis nor does it provide a comprehensive picture of learners' academic, cognitive and life-management strengths and weaknesses. It is only the foundation or the beginning of the assessment process. This is a process of growing dialogue and discovery involving **both** the practitioner and learner.

Introduction to learning styles

What is a learning style?

It is a set of strategies that adults prefer to use when participating in learning. The strategies relate to:

- Cognitive styles - how one organizes, stores and retrieves information that is learned
- Affective styles - how one deals with feelings associated with the learning
- Interpersonal styles - how one interacts and deals with others involved in the learning
- Physiological styles - how one deals with the physical surroundings in the learning environment[75]

To access information on models that fit each of the above above styles, go to: http://web.indstate.edu/ctl/styles/model.html

Several learning style models have been developed. Instead of providing a description of each one, Curry (1987) developed a framework to understand each of the models and what areas they impact. This framework is referred as the "onion model". It consists of four layers:

The first layer refers to personality dimensions and includes models that attempt to measure the influence of one's personality on the approaches to integrating information.

- Witkins (1954)
- Myers-Briggs Type Indicator (1978)

The second layer refers to information processing and includes models related to a person's preferred intellectual approach to assimilating information.

- Schmeck (1983)
- Kolb (1984)

The third layer refers to social interaction dimensions and includes models that look at how a person interacts in the learning environment.

- Reichmann's and Grasha (1974)

The fourth layer refers to instructional preference and includes models that look at a person's preferred learning environment.

- Keefe (1998)
- Dunn and Dunn (1978)

This list of learning styles is by no means inclusive of all the learning models, but it is a good framework to understand the different dimensions of learning. The key difference in all the models is that some advocate the need to accommodate a person's learning style versus stressing a flexible and adaptive learning environment that exposes learners to all styles of learning.[76]

To access a summary of the history of the theories go to:
http://jwilson.coe.uga.edu/EMT705/EMT705.Hood.html

How do learning styles relate to learning disabilities?

Learning disabilities and learning styles share common beliefs:

- Learners are unique and have different ways of learning

- For learners to experience success, they must be aware of their strengths and weakness and be active members in the learning process

- A learning environment should offer a variety of strategies and instruction methods, with learners being active in the planning, participating and evaluating process

"The backbone of learning styles theories is the idea that no one style is better than another."[77] There are many different learning theories, yet there is no universal test or evaluation system for learning styles.

Three common goals seemed to be shared by all learning style models:

1. To promote learners' skills and intelligences that are not recognized through traditional test scores.
2. To increase practitoners' knowledge of the various learning opportunites.
3. To encourage practitioners to be creative and use a variety of teaching venues.

The following strategies incorporate the ideas behind learning styles:

- Build on strengths rather than repeating weaknesses
- Teach new concepts by relating them to practical applications
- Be creative and try to vary teaching styles
- Use multisensory strategies to present material - many learners must see, say, hear, and touch before they can develop full mental images that stick and make sense
- Vary lessons - reteach and review in a variety of ways
- Change an activity when it's not working
- Encourage the use of learning aids and tools (for example, calculators, highlighter pens, extra worksheets, computerized learning programs, tape recorders, film, demonstrations, maps, charts, rulers)
- Talk with learners about their learning process and ask them what does and does not work for them[78]

Something to think about when using learning style models

Most practitioners are aware of the various learning style indicators and probably have used them with their students. A common belief held by many practitioners is that everyone has a preferred way of learning (auditory, visual or kinesthetic).

Although there are questions about the reliability and validity of learning styles theory and inventories, it has been positive for both practitioners and

learners to be open to the various ways that learning is accomplished. The key is not to stick to one type of learning but to offer various preferences to help increase memory retention and enjoyment of learning.[79]

Practitioners need to recognize that everyone learns differently. Therefore, they need to practice offering various strategies for learning to students. As learners try out different strategies, they will find what works best for them.

 "To assume that one must teach to a particular learning style misses the fact that a given student may be best taught by one method early in learning and by another after the student has gained some competence."[80]

The practitioner's role is to educate learners on the choices and to continually discuss how strategies are working. This will help adults with their future learning as they will be able to determine when they are being taught material in a way that may not meet their learning preferences.

"Good teaching involves more than communicating the content of one's discipline; a good teacher also needs both to motivate students to continue learning and to teach them the skills and strategies needed for continued learning."[81]

Multiple Intelligences

Multiple Intelligences (MI) is a theory that addresses what the brain does with information. It builds on the practice of looking at students' strengths and weaknesses in learning.

Dr. Howard Gardner, the founder of the theory, proposes that there are at least eight intelligences. Each person's intelligences work in several combinations that are unique for each individual. That is, we all have eight types of intelligence, but generally one or more of these intelligences tend to predominate and this creates a particular style of learning for each individual. There is no specific application method or instructional approach. The application of MI is becoming widely practiced both in the K-12 schools and more recently in adult literacy and ESL programs.[82]

"Gardner's theory of MI offers a more holistic accounting of individual potential and talents."[83]

MI theory allows educators, family members and society to see adult learners for the intelligences (cognitive strengths) they have, instead of focusing on what they can't do well. Increasing learners' understanding of their unique makeup will help them to manage their own learning and to value their individual strengths.[84]

The eight intelligences

Linguistic intelligence
Is the ability to use language to communicate and understand other people (hearing, speaking, reading, and writing languages).

Logical-mathematical intelligence
Is the ability to think logically, utilize deductive reasoning, recognize abstract patterns, and work with numbers. People who demonstrate this MI are usually curious about the world around them. They ask many questions and like to do experiments.

Musical intelligence
Is the ability to think in music, to be able to hear patterns, recognize them, remember them, and perhaps manipulate them.

Spatial intelligence
Is the ability to see, imagine and create mental images and pictures. These learners think in pictures and need to create vivid mental images to retain information. They enjoy looking at maps, charts, pictures, and videos.

Bodily-kinesthetic intelligence
Is the ability to use your body or parts to solve a problem. Individuals with this ability have a good sense of balance and eye-hand co-ordination (for example, playing ball or using a balance beam). Through interacting with the space around them, they are able to remember and process information.

Interpersonal intelligence
Is the ability to communicate effectively with others through one-to-one relationships.

Intrapersonal intelligence
Is the ability to understand yourself, clearly understanding and accepting your strengths and weaknesses.

Naturalist intelligence
Is the ability to understand and express an interest in living things and other features of the natural world. Historically, this was a strong feature for hunters and farmers.[85]

Learners feel more confident with their ability to learn and are motivated to engage in the learning process when they:

- Understand the different ways of learning and their unique combination of MI
- Are taught new subjects through various activities and projects
- Are able to show what they know through information gained through assessments

It is important that practitioners understand learners' particular learning preferences and/or MI, but not label them with it. Through this understanding, practitioners can provide opportunities for learners that foster their learning and strengthen their intelligences.[86]

Summary of key points

- Learning disabilities are a breakdown in adults' auditory, visual and/or organizational processing

- Learning disabilities can range from mild to severe

- Individual life experiences and emotional and economic supports can influence the impact of a learning disability

- Adults with learning disabilities can experience success when they understand their disabilities and when they are active partners in the goal setting and learning process

- Diagnosing adults with learning disabilities is not the role of practitioners, but helping learners to understand their strengths and weaknesses is appropriate

- Focus equally on learners' academic, self-management, and emotional needs

- Practitioners need to understand that everyone learns differently and various strategies will work for some and not for others

Appendix A

Websites related to learning disabilities

Adults with Learning Disabilities (updated April 2000). The ERIC
Clearinghouse on Disabilities and Gifted Education (ERIC EC)
Go to: http://ericec.org/faq/ld-adult.html

Overview
This site provides a good summary of available information on learning
disabilities. The following can be accessed:

- ERIC mini-bibliographies
- ERIC digests
- Frequently asked questions (FAQ)
- Internet resources
- Internet discussion groups

The Learning Disabilities Resource Centre
Go to: http://www.ldrc.ca/

Overview
The Learning Disabilities Resource Community (LDRC) has been
developed to provide information, resources, and tools for individuals and
groups working with persons with learning disabilities and to support
research and development in associated fields.

Partners include:

- The Learning Disabilities Association of Canada (LDAC)
- The Learning Disabilities Association of Ontario (LDAO)
- The Ontario Institute for Studies in Education (OISE)

- The Hospital for Sick Children's Learning Disabilities Research Program (LDRP)
- The Office of Learning Technology - Community Learning Networks Initiative (OLT ⁄ HRDC)
- The University of Toronto's Adaptive Technology Resource Centre (ATRC)

National resources for adults with learning disabilities
Go to: http://novel.nifl.gov/nifl/ld/archive/resource.htm

Overview
A list of contacts is provided for:

- National Resource Centers
- General education
- Learning disability organizations
- ADD organizations
- Employment
- Technology
- Life management
- Publications
- Toll free numbers

LD Online
Go to: http://ldonline.org/sitemap.html

Overview
This site is U.S. based and provides both general and comprehensive information on learning disabilities. Articles, resources, bulletin boards, and expert advice can be accessed. It is geared for teachers, individuals, and parents. A listing of Canadian resources and organizations is available at http://www.ldonline.org/finding_help/canada.html

Guidelines for documentation of a learning disability in adolescents and adults
Go to:
http://www.ldonline.org/ld_indepth/postsecondary/ahead_guidelines.html

Overview
Find recommendations for consumers and lists of tests for adults.

VARK Questionnaire (visual, aural, read/write & kinesthetic)
Go to:
http://www.hcc.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/vark.htm

Overview
The questionnaire aims to find out something about the preferences or the way learners like to work with information. An online and printable version of the questionnaire along with instructions on how to use the questionnaire with learners and steps to administering the test is available.

"What are my Learning Strengths?" – An MI Inventory
Go to: http://snow.utoronto.ca/courses/mitest.html

Overview
This activity helps learners find out about their strengths by using the 8 MI. By gaining an understanding, learners can work on strengthening the other intelligences that they don't use as often.

Literacy Works: "What is MI?"
Go to: http://literacyworks.org/mi/home.html

Overview
The site is divided into four main sections:

- **Introduction** - Multiple Intelligence (MI) theory and how it can be applied to adult literacy and education.
- **Assessment** - How to identify learners' preferred intelligences and take inventory of learners' skills. The assessment activities are designed to help practitioners tailor their teaching methods to their learners' strengths.
- **Practice** - This section contains dozens of suggestions for approaching subjects in different ways to take advantage of different intelligences. To make the most out of this section, it is helpful to have the free Macromedia Flash player installed on the computer, although any of the activities can be viewed, even if the Flash player is not installed.
- **Resources** - Explore links to other adult literacy and education sites.

Tapping into Multiple Intelligences workshops
Go to:
http://www.thirteen.org/edonline/concept2class/month1/index.html

Overview
It is suggested that practitioners start with the Explanation section, which is about the concept of MI. Move from the concept of MI to classroom applications by going to the Demonstrations section.

Topics include:
- What is the theory of multiple intelligences (MI)?
- How does this theory differ from the traditional definition of intelligence?
- What does MI have to do with my classroom?
- How has MI developed since it was introduced in 1983?
- Who are the critics of this theory and what do they say?
- What are some benefits of using MI approach?
- How can I find out more about MI theory?

Appendix B

Words/definitions commonly associated with learning disabilities

Dyslexia, perhaps the most commonly known word, is primarily used to describe difficulty with language processing and its impact on reading, writing, and spelling – "is the most common of the LD and the one that causes most difficulties." [88]

The following definitions have been taken from the National Center for Learning Disabilities.
http://www.ld.org/info/index.cfm#Common%20LD%20words

Dysgraphia involves difficulty with writing. Problems might be seen in the actual motor patterns used in writing. Also characteristic are difficulties with spelling and the formulation of written composition.

Dyscalculia involves difficulty with mathematical skills and impacts math computation. Memory of mathematical facts, concepts of time, money, and musical concepts can also be impacted.

Dyspraxia (Apraxia) is difficulty with motor planning and impacts upon a person's ability to coordinate appropriate body movements.

Auditory discrimination is a key component of efficient language use and is necessary to "break the code" for reading. It involves being able to perceive the differences between speech sounds and to sequence these sounds into meaningful words.

Visual perception is critical to reading and writing processes as it addresses the ability to notice important details and assign meaning to what is seen.

Attention Deficit Disorder (ADD/AHDD) may co-occur with learning disabilities (incidence estimates vary). Features can include marked over-activity (physical restlessness), distractibility (poor attention to tasks), and/or impulsivity (impaired impulse control) which in turn can interfere with an individual's job, family and social life. [89]

Learning strategy approaches are instructional approaches that focus on efficient ways to learn, rather than on curriculum. Includes specific techniques for organizing, actively interacting with material, memorizing, and monitoring any content or subject.

Multi-sensory learning is an instructional approach that combines auditory, visual, and tactile elements into a learning task. Tracing sandpaper numbers while saying a number fact aloud would be a multi-sensory learning activity.

Transition is commonly used to refer to the change from secondary school to post-secondary programs, work, and independent living typical of young adults. It is also used to describe other periods of major change such as from early childhood to school or from more specialized to mainstreamed settings. [90]

Above terms taken from: Lokerson, Jean. LD: Glossary of Some Important Terms. *ERIC Digest 517*. Reston. V.A.: ERIC Clearinghouse on Handicapped and Gifted Children. 1992.
< http://www.ed.gov/databases/ERIC_Digests/ed352780.html>.

Full glossary of learning disabilities terms

Over 100 learning disability related terms and definitions:
http://www.ldonline.org/ld_indepth/glossaries/ld_glossary.html

Appendix C

Screening tool samples and references

Overview:

A checklist is a guide. It is a list of characteristics. If the adult states, "that's me" for most of the items, and the difficulties they experience appear to cause problems in employment, education, and/or daily living, it might be useful to explore further through a more thorough assessment process.

A learning disability checklist

Go to:
http://novel.nifl.gov/nifl/ld/archive/resource.htm#checklist

The following checklist was adapted from lists of learning disability characteristics developed by the following organizations: Learning Disabilities Association of America, For Employers... A Look at Learning Disabilities, 1990; ERIC Clearinghouse on Disabilities and Gifted Education, Examples of Learning Disability Characteristics, 1991; The Orton Dyslexia Society's Annals of Dyslexia, Volume XLIII, 1993; and the Council for Learning Disabilities, Infosheet, October 1993.
While individuals with learning disabilities have average or above average intelligence, they do not excel in employment, education, and/or life situations at the same level as their peers. Identified characteristics are as follows:

- May perform similar tasks differently from day to day
- May read well but not write well, or write well but not read well
- May be able to learn information presented in one way, but not in another

- May have a short attention span, be impulsive, and/or be easily distracted
- May have difficulty telling or understanding jokes
- May misinterpret language and have poor comprehension of what is said
- May have difficulty with social skills, may misinterpret social cues
- May find it difficult to memorize information
- May have difficulty following a schedule, being on time, or meeting deadlines
- May get lost easily, either driving or when in large buildings
- May have trouble reading maps
- May often misread or miscopy
- May confuse similar letters or numbers, reverse them, or confuse their order
- May have difficulty reading the newspaper, following small print, and/or following columns
- May be able to explain things orally, but not in writing
- May have difficulty writing ideas on paper
- May reverse or omit letters, words, or phrases when writing
- May have difficulty completing job applications correctly
- May have persistent problems with sentence structure, writing mechanics, and organizing written work
- May experience continuous problems with spelling the same word differently in one document
- May have trouble dialing phone numbers and reading addresses
- May have difficulty with mathematics, mathematical language, and mathematical concepts
- May reverse numbers in chequebooks and have difficulty balancing a chequebook
- May confuse right and left, up and down
- May have difficulty following directions, especially multiple directions
- May be poorly coordinated
- May be unable to tell you what has just been said
- May hear sounds, words, or sentences imperfectly or incorrectly

Checklists and learner self-assessment tools

The following resources can be accessed:
- The National Center for Learning Disabilities' checklist of common warning signs of learning disabilities from childhood through to adulthood
- The American Council on Education and the National Adult Literacy and Learning Disabilities Center's sample checklist
- Adult Literacy and Learning Disabilities – "Analyzing my Strengths and Struggles" self-assessment tools

Go to: http://ldlink.coe.utk.edu/screening.htm

Select the Screening Process and scroll down to find the resources listed under Observation Checklists and Information Checklists for teachers and learners.

Learning disabilities screening tool evaluation

Go to: **Bridges to Practice, Guidebook #2 at**
http://www.nifl.gov/nifl/ld/bridges/materials/bridges_docs.html
Appendix B, page. 171
The following are a few tools selected from the Bridges to Practice report card process. Access an evaluative report card on the screening tools listed below.

Bringing Literacy Within Reach: Identifying and Teaching Adults with LD
Cost: $25.00
Learning Disabilities Association of Canada, 323 Chapel Street, Suite 200
Ottawa, ON, Canada, K1N7Z2, Phone: (613) 238-5721, Fax: (613) 235-6391

Diagnostic Assessment of Reading with Trial Teaching Strategies (DARTTS)
Cost: $190.50, Riverside Publishing Co., 425 Spring Lake Drive, Itasca, IL 60143, Phone: (800) 323-9540, Fax: (630) 467-7192

Phoenix Specific LD Quick Screen for Adults, Cost: $3.00
William Butler, P. O. Box 32611, Phoenix, AZ 85064-2611

Adult Learning Disability Screening (ALDS)

More than eighty screening instruments reviewed by the National Adult Literacy and Learning Disabilities Center were deemed inappropriate and/or unreliable. Citing this lack of a valid reliable screening instrument, researchers at the University of Kansas (in collaboration with practitioners from a variety of agencies) developed an instrument that is" 89% accurate and takes less than 12 minutes for most participants."
http://www.swadulted.com/workshops/ld/intro-ld.html

ALDS is an entirely empirical instrument with respectable reliability and validity. Development of the ALDS started in 1996 and was completed recently. It is very affordable and easy to administer. No training is needed and the instrument takes about 15 to 20 minutes to administer. The ALDS consists of three parts: Self-Rating Scale, Inventory, and a brief Interview. All three taken together have been shown to be a very effective tool in finding indications of LD. The ALDS items are organized into five major sections.

(1) Demographic information
- Has 15 questions
- Elicits descriptive information about client's age, gender, racial and ethnic membership

(2) Rating scales
- Is a standardized, criterion-referenced measure
- Has 25 questions
- Clients rate the degree to which the statements accurately describe them or the frequency with which they complete activities
- A score is calculated to determine if a referral for further testing should be considered
- Item content covers self-attributions, spelling, reading, organization, and social skills, one's work efficiency, and sense of direction

(3) Inventory

- Includes 19 questions
- Answered with a "yes" or "no"
- A score is calculated to determine if a referral for further testing should be considered
- Covers learning influences and problems, arithmetic skills, educational history, and mental health issues
- Can be completed independently, in a group, or can be read to the person

(4) Interview

- Is individually administered
- The interviewer selects questions based on the responses to the Inventory
- Each person might be asked different Interview questions
- Eight possible questions are in the Interview
- No score is calculated from the Interview responses; the information aids interpretation of other battery questions

(5) Validity check

- Examiner completes eleven questions
- Questions are answered after the testing is completed but before the Rating Scales and Inventory are scored
- Questions focus on one critical decision by the examiner: Does the examiner have any reason to believe that the scores from the battery should be interpreted any differently for this person than for any other person? If the answer is "yes," then the scores are suspect and possibly invalid.

Costs:

- ALDS Directions for Administrative Scoring and Interpretation = $5.00
- Individual ALDS Record Booklet = $3.00 each
- Available through Kaw Valley Resources, 785-331-3659, email KVRInc@yahoo.com

Other sources for screening tools (questionnaires and observation checklists)

The following resources are available for loan at AlphaPlus, 1-800-788-1120, info@alphaplus.ca

Literacy Upgrading for Adults with Learning Disabilities. Yukon Literacy Council. 1993. Call number: 371.0475E22

- Interview format and questionnaire exploring reading, mathematics, writing/spelling, memory, learning styles, compensatory strategies and visual-spatial skills
- Learning Disability Screening Checklist that covers: language, literacy, memory/organization and social skills

Learning Together: A Handbook for Teaching Adults with Learning Disabilities. British Columbia, Ministry of Advanced Education, Training and Technology. 1990. Call number: 371.90715L24

- Learning Disability Identification Guide that covers: visual perception functioning, auditory perceptual functioning, memory challenges, and attention level.

Literacy and the L.D. Adult: Participants Manual. Janet Johnston.1994. Call number: 371.92675J57.

- Checklist of Learning Disabled Student Characteristics that covers: performance inconsistency, concentration problems, communication, perceptual motor abilities, difficulty with time and space, academics, social skills and self-esteem.

Teaching Adults with Learning Disabilities. The University State of New York.1990. Call number: 371.90475H58.

- LD Characteristics Checklist that covers: ADD disorder, reasoning, processing, memory, communication, interpersonal skills/emotional maturity, coordination/motor functions, reading, writing/spelling and math/calculations.

Bringing Literacy within Reach. Learning Disability Association of Canada.1991.Call number: 371.9263B67.

- Screening questionnaire, screening interview, summary checklist and guidelines for interpreting the screening questionnaire. Areas that are covered in the tools are: employment, education, language, and health.

Appendix D

Three case studies

The following three case studies are fictional but have been developed from an extensive review of learning disabilities research and collections of case studies gathered from Canadian, American, and international sources.

Case Study A – Tom

Information gathered during initial meeting

- Male, age 29, resides on his own.
- Divorced 4 four years ago and has one son, age 8, with whom he spends every third weekend.
- Attended high school until he was 16 but left due to poor attendance, lack of interest and failing grades.
- Worked in a beer manufacturing plant for 13 years and recently lost his job due to plant closure – he was making good money and is bitter about the plant closure.
- Over the past 6 six months he has tried to get a "good paying job" at the local factories but they won't look at him since he doesn't have his Grade 12 diploma.
- Tom often mentioned that it was is the "company's" fault that he is in this situation.

Tom came to the learning centre to get his high school upgrading. After three months he was close to dropping out because he was continually failing his written assignments. However, Tom's English teacher convinced him to give it another chance and referred him to the "literacy program" in the learning centre.

Observations: (from initial 10-minute introductions when English teacher brought Tom over to the program)

- Appears very confident as an individual but frustrated with his current situation.
- Had no difficulty expressing himself and was quite clear that he wanted to get his Grade 12 diploma ASAP!
- Tom often mentioned that it was the "company's" fault that he is in this situation.

The program set up an initial intake appointment with Tom to meet for 1.5 hours. This would allow the practitioners to learn more about his situation and to give him a brief orientation to the program. He was eager to get the "show on the road."

Questions for practitioners to consider:

What types of information and/or questions would you plan to gather from Tom? What types of screening tools would you plan to use with Tom and why?

Suggested focus areas and tools to access

Goal: To understand why Tom is having difficulty with his written assignments.

- Gain information about his academic history, employment background, and family history through an informal interview discussion. He appears to be quite confident in vocalizing his thoughts.
  - Academic history: Did he repeat grades, have special assistance, do any type of assessments, excel in any areas or struggle with any areas?
  - Health: Are there any visual or auditory problems? Did he have any trauma to his head? Is any medication that he may be taking interfering with his learning?
  - Employment background: Was it sporadic prior to his work at the beer company? What types of jobs did he do at the company? What areas did he like or dislike?

- Use a self-assessment tool to understand Tom's take on his strengths and weaknesses. Does he recognize his strengths and weaknesses and has he ever been given the opportunity for self-reflection?
    - What areas does he see weaknesses in, if any?
    - What are his strengths?
- Discuss level of commitment and what is involved – Tom may want a quick fix and needs to understand his full situation.
- Use an informal screening tool to help assess your observations and results of Tom's self-assessment (e.g. Destination Literacy, ALDS).

Information gathered through intake process

Interview
- Academic history:
    - Tom moved twice during elementary school.
    - He remembers not doing well in spelling tests when he wasn't given the opportunity to study the words.
    - Tom doesn't recall any special testing, but he remembers a Grade 4 or 5 teacher telling him that he performed at a Grade 2 level in a spelling test – the results were just brushed off.
    - His teachers always said he kept messy notes and he was often told that he was rated lower on tests due to his spelling and writing, even though he knew the facts.
    - Tom became frustrated as he moved into higher grades because he knew the facts for the tests – "why did it matter if his spelling and writing wasn't perfect, especially if it wasn't an English class?"
    - Tom hated doing written reports and essays – often he would just copy material from a book.
    - He preferred to do multiple-choice tests or oral reports.
    - Tom didn't miss any grades during elementary school, but he found Grade 9 really hard – he thought the teachers were too picky and he couldn't keep up with his written assignments. Tom also said there was a lot of reading and it was hard to remember all of the information.

- Tom left school once he was 16 year of age, with 7 credits, (2 Math, 1 Art, 2 Physical education, 1 History and 2 Technology) of which he indicated he got a low 70 average. He reported that he liked the math class, but didn't like the word problems.

- **Health:**
  - Tom reported no medical problems.
  - Tom wasn't taking any medication.
  - Tom has been wearing glasses since age 14 and gets regular checkups.

- **Family background**:
  - Tom indicated no major issues.
  - Tom is the only child. His father worked at the same beer company, which is how he got the job.
  - Tom stated his father didn't get his Grade 12 diploma, but that never affected his ability to get a job.
  - His father took an early retirement package with the beer company when it closed.
  - His mother stayed at home, but she got her Grade 12 diploma and worked as a secretary prior to having him.

- **Employment history:**
  - Tom worked at the beer company during the summer prior to landing the job full-time.
  - He held various service jobs such as fast food worker and gas attendant, prior to his full-time job at the factory.
  - Tom was on the line in different areas and was also in loading and shipping, while he worked at the beer factory.
  - He tried a telemarketing job because they said he could make good bucks while he was unemployed – he wasn't afraid of talking on the phone, but he didn't stay because they said he made too many mistakes recording the information from the potential buyer.

- **General observations during the interview**:
    - Tom would often go into great detail when answering the questions and sometimes forget the question that was asked.
    - He was not shy when talking - in fact he would sometimes begin to answer a question before the practitioner had time to complete it.
    - Tom would sometimes draw a blank on a word he was wanting to use and say "you know, um" and would attempt to describe the word he was trying to get at.
    - Tom liked to control the conversation and would respond quickly without gathering his thoughts.
    - Tom was easily distracted by people coming into the agency, even though the door was closed to the office – he would watch people go by and not hear what was being said to him.

Results of self-assessment:

- Tom found he got bored of reading information or books that had too much detail and technical "mumbo jumbo". He didn't dislike to read, but said it wasn't of great interest to him - he would read the newspaper and scan the headlines and brief articles.
- Tom rated his spelling and handwriting as poor.
- Tom admitted that his actual writing wasn't great but he was able to get by. He said he sometimes found it difficult to put his thoughts on paper.
- Tom often lost track of things at home, although he never really thought much about it because he had never done any type of self-reflection.
- Tom preferred to read printed directions especially if they were detailed, rather than hearing them orally and he said he finds it difficult to concentrate if there is too much information given to him.
- He had no problem with handling money, shopping, telling time, and overall basic life management.
- Tom indicated an interest in using the computer and enjoys sports.
- He stated his goal was to get his Grade 12 so that he could get another factory job.

Questions for practitioners to consider:

Based on the information presented, what are your impressions for potential learning disabilities? Do you need to gather more information before you can make the decision? What is your rationale for your observations?

Interpretation of the information gathered through the screening process

Regardless of the screening tool used, the following three key questions should be answered to gain insight to learners' situations:

- Why do they not achieve as expected? Do they lack intellectual ability?
- Have they been taught the basic skills necessary for progress?
- Are there affective or motivational issues that are hindering the learning?

The following was noted, using guidelines to interpret observations and gathered information:

- Tom does not appear to have an intellectual inability. He is able to express himself; he has been able to maintain employment; and he was able to obtain some high school credits with average marks. He has most likely been taught basic skills through his elementary school experience.
- An auditory processing disability and short-term memory problem may be present based on some of Tom's characteristics such as:
    - Tendency to interrupt without realizing it
    - Difficulty verbalizing some words
    - Forgetting initial question when he provides detailed explanation
    - Poor spelling
    - Doesn't like to read material that contains a lot of information
    - Possible difficulty hearing and recording information based on his experiences with the telemarketing job.

- Tom appears motivated but wants a quick fix. He doesn't seem to understand why he has problems with his spelling and writing and really doesn't see it as a big deal. This may be a bit of avoidance on his part. Tom does have fairly strong verbal skills and he has used this skill to get around his weaknesses, although unconsciously. He can be easily distracted and has difficulty staying focused. He appears to be quite upfront with what he wants.

General conclusions:

Further informal assessment would be needed to determine the possibility of an auditory learning disability and the level of spelling and writing challenges. If Tom wants to obtain his Grade 12 diploma, both reading and math skills should be assessed. It is recommended that this assessment be done with Tom before entering into any discussion about potential learning disabilities.

Case Study B – Samantha

Observations and information gained from the general intake

- A 24- year old female who just enrolled in the LBS program at a local college to work towards her ECE certification.
- She left school at 16 due to pregnancy – her son is now 7 seven and attending first grade.
- Samantha is highly motivated and is ready to make this step, although she is nervous since her previous school experience was not positive.
- She has a good support system – her grandmother provides daycare when needed.
- Samantha indicates she struggled throughout elementary and high school with her reading skills and often disrupted the class during quiet time when they were required to read.

- She took basic courses during her short time at high school and remembers being sent to a small group for extra help in reading during elementary school.
- Her rebellious behaviour began to interfere with her academics in grade 7. Samantha's parents went through a difficult divorce at that time and limited attention was focused on her.
- She reports no medical history that would interfere with her learning and has had her eyes checked in the past eight months.
- During her upbringing, Samantha recalls her mother always reinforced the need for her to do well in school and get a college degree, so that Samantha would not wind up like her mother.
- Samantha's mother has always worked as a cashier in a grocery store and most recently is working at a major department store. Although her mother has average reading abilities, Samantha knows that her mother avoids reading when possible.
- Samantha hasn't seen her father since her parents' divorce and believes he did get his Grade 12 diploma. He was a mechanic.

Initial test results: (CAAT – Canadian Adult Achievement Test and Math Skills Inventory)

- Vocabulary 10.3, reading comprehension 6.5 and spelling 7.7.
- Math results indicate that she can add, subtract and multiply single-digit numbers but had has difficulty with double-digits and division. As a result, she struggled with her percentages and fractions. Although her adding and subtracting were strong, when they were put into a word problem format she was unable to solve them.

Questions for practitioners to consider:

Samantha has entered your college program and you have the above information. What initial observations can you make from the information? Do you need to ask additional questions or gather further information before you have her begin her program? Explain your approach, including any tools you may use.

Initial interpretation and further inquiry

Based on the information gleaned from the intake interview and the CATT results, it appears that Samantha has difficulty with reading comprehension and spelling, which may indicate some type of visual processing disability. Her vocabulary and verbal skills are excellent which rules out any intellectual ability and her medical history reveals no interfering factors to impact her learning. Her key strength is her determination and realistic understanding of herself. She has a good support system and is clear on her goal.

- Utilize a self-assessment tool, but provide oral direction if she is having difficulty reading it. This will help to gain insight into Samantha's understanding of her strengths and weaknesses and may also give insight into her oral comprehension versus her reading comprehension.
- Discuss how Samantha has dealt with her reading challenges (i.e. when dealing with her son and taking care of his needs) – she may identify strategies that she has used without realizing they are strategies.
- Ask Samantha how she felt about the CAAT and the math inventory skills tests: what areas did she struggle with and what areas did she find okay?
- Share with Samantha her role in the whole learning process and the importance for both Samantha and the practitioner to be open to ensure the best learning opportunity for her.
- Further assessment is required to understand Samantha's strengths and weaknesses. It will be important to point out her strengths given her past educational experiences and frustrations with her reading abilities. Build on any existing strategies if they have been identified.

Case Study C – Frank

General Description:

- Frank is 52 years old and has been unemployed for the past 2 years, since his company shut down.
- He is currently receiving Ontario Works benefits.
- He has learned about the "new way "to search for a job, but recognizes that he needs to upgrade his skills.
- He is quite handy, has done renovation projects and is interested in starting his own business.
- He was referred to the community-based literacy program from the school board credit program because he was having difficulty in the classroom environment and with submitting assignments on time.

Information gathered from initial intake

Interview:
- **Academic background** -
    - Frank obtained his Grade 9 credits, but left to seek work.
    - Frank found it hard to pay attention in school and often got into trouble.
    - He did enjoy math and spelling, but disliked English and History.
    - Frank remembers always handing his assignments in late or avoiding them completely by skipping school, as he got older.
    - Frank struggled in the adult learning program – he found it difficult to complete his writing and reading homework and assignments – he also indicated that he found it hard to sit in the classroom for a long period of time.
    - His initial CAAT tests revealed that Frank had Grade 8 to 9 level functioning in all areas, yet he still struggled in the adult upgrading program.

- While Frank was at the learning centre he was enrolled in a Mathematics, History, and English program.
- Frank was referred to the community-based program to access one-to-one tutoring or a small group program, as a result of his difficulties in the credit program.

- **Medical history:**
    - Frank is not on any medication that would interfere with his learning.
    - Frank does wear glasses and shows no indication of a hearing problem.

- **Family situation:**
    - Frank is married with two sons who are adults and living independently.
    - His wife is a school secretary and is the "organizer", as he states it.
    - Frank states that his wife deals with most of the daily planning and household organizing.
    - Frank's role is to keep the house in good repair.

- **Self assessment:**
    - Frank indicated that he has difficulty sometimes with his reading and writing.
    - Frank stated that he often has difficulty organizing and planning things. He often loses his tools when doing his renovation projects and gets bogged down when he has more than one project on the go.
    - Frank finds it difficult to pay attention and concentrate when there are other distractions around.
    - Frank can't sit still for long and indicated that he doesn't enjoy doing tasks that require a lot of attention, such as paying the bills and banking.
    - Frank is good at building and repairing things when he works at one thing at a time.

General observations from the interview:

- Frank has a good vocabulary and appears to understand what is spoken to him.
- Frank did seem a bit disorganized at the beginning of the interview – he had to look through his wallet several times before he could find the report the school had sent with him.
- Frank was quite fidgety and he was given 4 breaks during the 1.5 hour interview.
- Frank did not have any problem reading the self-assessment tool and he completed it independently.
- Frank's writing was sloppy when he added information on the self-assessment form but his sentences, although brief, were coherent.

Questions for practitioners to consider:

What areas does Frank appear to be having difficulty with and what type of learning disability, if any, may be impacting his learning?

Overall conclusions

- Although an informal assessment has not been completed, the CAAT results indicate that Frank is not struggling with his basic communication and math skills. However, based on the report from the credit program he struggled with completing his homework and assignments.
- Based on Frank's description of his academic background, his self-assessment and his most recent upgrading experiences, it appears that he may have some type of organizing or cognitive processing breakdown and may have attention problems that interfere with his learning.
- Any informal assessment should focus on the process and not just the product. Get input from Frank on how he attempts to do his writing and reading tasks. Further observations are needed to understand how his short attention span and limited organizational skills may be impacting his ability to learn.

End Notes

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Learning Disabilities Training:
A New Approach

Assessing Individual Strengths and Struggles: The Foundation for an Effective Training Plan

Learning objectives

- Understand the assessment process
- Explain the difference between formal and informal assessments
- Understand when a diagnostic formal assessment is appropriate and understand the process
- Assess for the impacts of auditory, visual and/or organizational learning disabilities
- Use various informal assessment techniques (i.e. observation, work samples, dynamic assessment)
- Effectively involve learners in the assessment process
- Assess adults' learning disability strengths and struggles in the areas of reading, writing, spelling, speaking, listening and mathematics
- Understand individuals' memory, visual-spatial and attention strengths and struggles
- Increase knowledge of two informal assessment models for learning disabilities
- Use effective assessment practices
- Utilize evaluation criteria when selecting assessment tools

Chapter outline

- The assessment process
    - Definition
    - The process
    - Primary purposes of the assessment process
    - Assessment covers three broad areas
    - Types of assessment tools

- Understanding diagnostic assessments
    - To test or not to test: that is the question

- Understanding the impact of processing breakdown
    - Visual processing difficulties
    - Auditory processing difficulties
    - Organizational processing difficulties

- Informal assessment methods
    - Four elements of informal assessment

- An in-depth look at observation and task analysis
    - Observations
    - Different ways to observe
    - Observing learners' strengths and struggles
    - Analysis of demonstrations and tasks

- Self-assessment and learner involvement
    - Helpful strategies when sharing information with learners

- Primary factors to consider when assessing for learning disabilities
    - How to distinguish between literacy challenges and potential learning disabilities
    - Product and process

- Impact of learning disabilities on literacy skills
  - Assessing oral communication
  - Assessing expressive writing
  - Assessing reading
  - Assessing mathematics
  - Helpful tips to use when assessing literacy skills
  - Recognizing memory challenges
  - Recognizing visual-spatial challenges

- Case studies to illustrate assessment application

- Informal assessment models
  - Holistic Education Literacy Process (HELP) model
  - Destination Literacy: Informal assessment model

- Effective assessment practices

- Criteria to consider when selecting assessment tools

- Summary of key points

- Appendices:
  - Websites that support information in Module 2
  - Self-assessment tools and resources
  - Sources for additional assessment tools

The assessment process

Definition

In Module 1, signs and characteristics that adults may exhibit or discuss that can indicate a potential learning disability were identified. How the various processing breakdowns in auditory, visual and/or organizational functions can impact on adults' literacy skills was also discussed. The use of screening tools was described in the first module and how the tools can identify potential learning disabilities that may be impacting adults' abilities to learn. This module will address the screening tool findings and how to understand the impact the potential learning disabilities may have on adults' literacy skills.

The term assessment will refer to a process, not a specific type and/or method. It is a process to determine individual strengths and struggles to help practitioners to develop teaching strategies and accommodations and help learners to understand what is required to reach their goals. The process is constant and flowing and may include a mix of formal and informal assessment techniques. It may involve a number of persons and/or tools. For example, practitioners who are specialized in learning disabilities may be asked to help with the process and/or referrals to psychologists may be made for diagnostic assessments. The assessment tools involved throughout the process may include checklists, work samples (informal assessments) and/or standardized tests (formal assessment).

Difference between the screening and the assessment process:

"Screening tests do not provide a prescription of how to intervene for a problem but may yield details about areas such as reading, writing, attention, social or math skills which warrant a closer look."[1]

The screening process is an indicator that a potential learning disability is evident – the assessment looks at the person's strengths and struggles in more depth, in order to develop a plan of action. Strengths can be reinforced and

used to overcome weaknesses. Questionnaires, rating scales and interviews are examples of screening tools. They provide an indication of learners' performance and explain the impact of their personal circumstances and past learning experiences. The results of the screening provide an estimate of learners' performance and/or an indication of challenge areas.

The Process

"Assessment is defined as a problem-solving process in which a problem is identified, information is gathered to better understand the difficulties, intervention strategies are generated and implemented and the effectiveness of the intervention is evaluated."[2]

When a problem has been identified through the screening process, information is needed to better understand the difficulties, strengths and interventions. By gathering more pertinent information, together the practitioner and learner can develop an effective training plan. Assessment does not stop here. As the plan is implemented, ongoing evaluation is needed. Both learners and practitioners need to note progress and struggles and they need to gather more information as needed. This process is ongoing until learners exit programs.

The movement from identification to understanding is important not only for practitioners but also for learners. It is critical that learners be active partners in the process and fully understand the information that is gained. Janet Johnston states that the development of personal control is the key to paving the way to success for learners with learning disabilities. Adults need to reframe or reinterpret their identity in a positive and productive way.

She identifies the following four stages:

1. The need to recognize the disability – at a minimum the learner needs to recognize that they do things differently.
2. A degree of acceptance must be attained – which involves accepting both the negative and positive aspects of the potential disability.

3. A need to understand strengths and weaknesses and build on strengths.

4. Commitment to action; the conscious decision to take some specific action towards goals.[3]

Primary Purposes of the Assessment Process

- To provide an explanation for the difficulties that learners may experience
- To provide information that will help in overcoming, getting around or coping with these difficulties[4]
- To gather information to facilitate decision-making
- To allow learners to demonstrate what they can do[5]
- To change instructional methods, to add and modify strategies and accommodations
- To set the stage for practitioners to help learners with suspected learning disabilities, to understand learners' strengths and weaknesses and the reasons behind their struggles and difficulties
- To help practitioners identify special materials and strategies for setting up individualized learning plans for adults[6]

Assessment covers three broad areas:

Vision/hearing and auditory/visual processing problems

- Rule out any physical cause first. Sometimes medical conditions may manifest themselves as a learning disability. Obtaining a detailed medical history helps to eliminate possible reasons for the challenges such as medication side effects, seizures, strokes, mental health disorders, or compulsive disorders.

Academic performance

- Practitioners need to look for error patterns. The presence of consistent error patterns helps to distinguish between a learner who may just be at a low level of achievement due to a lack of education

exposure or opportunity, versus a learner who has a suspected learning disability. The pattern of errors should be evident under a number of circumstances.

Behaviour/psychological manifestations

- Look for difficulties with attention span, organizational skills, inappropriate social interactions, and variable or unpredictable performance.[7] Practitioners should observe indicators over a period of time and under various circumstances before any conclusions can be made about potential challenges.

Types of assessment tools

The assessment process can involve two types of assessment techniques:

1. **Informal Assessments** - Use flexible tools that provide a wide coverage of learner performance and behaviours. Informal assessments are subjective and must be used with caution.

    - **Observation:** a direct measure of learner behaviour. It helps to determine the present level of the learner's performance.

    - **Informal tests**: a direct measure of learner performance in a specific area. It provides direction for planning and/or modifying instruction. Examples could include: a reading comprehension passage with questions, spelling dictation, word recognition or a quiz on fractions.

    - **Dynamic assessment**: a person is asked to answer questions or solve problems, but instead of the assessment ending once the criterion has been met (i.e. the number of errors) the person is given various types of cues to help improve performance. The types of cues used are recorded. It uses a "test – teach - retest" approach. The way the learner problem

solves and the types of cues used are helpful for planning instruction and strategies that would best meet the learner's needs.

- **Work samples**: an evaluation of learner performance to locate patterns of errors and correct responses. Work samples provide an overall picture of the learner's work. Through the identification of errors, skills that require further instruction are identified.[8] Examples could include: writing samples such as journals, math activity sheets and work-related projects or assignments.

2. **Formal assessments**: have stringent guidelines for administering the test and evaluating the results. They provide information about the skills of the learner as compared to a group of similar learners.

- **Norm referenced tests**: "compares a learner's results against a group of similar learners. It provides direction for further assessment. Often when working with adults, it is difficult to find tests that have been standardized on the adult population."[9] Most norm referenced tests are multiple-choice tests. Some also include open-ended, short-answer questions (i.e. CAAT, "IQ," "cognitive ability," "school readiness," and developmental screening tests).

- **Criterion referenced tests (CRT)**: "the results are measured against a standard set of criteria. It indicates what a learner can or cannot do, and the degree to which a skill or material has been mastered."[10] On a standardized CRT, the passing or cut-off score is usually set by a committee of experts, while in a classroom the instructor may set the passing score (i.e. school programs use this to measure a student's knowledge and skills against the core curriculum criteria). In both cases, deciding the passing score is subjective, not objective. Note that some criterion referenced test may have been normed as well.

Given that most programs are unable to afford formal testing conducted by trained professionals, the information gathered by practitioners is very valuable in understanding learners' strategies, their ways of learning and their strengths and limitations. Regardless of the tools used, the process should be goal-driven. Areas to assess and understand in more depth should be related to an end goal. If a learner's goal is to read to his/her grandchild, there is no need to assess math skills. Or if a learner wants to prepare to enter a cook apprenticeship program, then only the specific skills required for successful entry to the program should be addressed. Assessment results are used to make decisions regarding learners' needs and the development of individualized plans to help meet their goals successfully. Through this process, new information is shared with learners to assist in making meaningful choices to promote opportunities for success.[11] The assessment procedure used should address the presenting problems. It needs to be comprehensive and involve input from a number of sources.

Understanding diagnostic assessments

"To test or not to test - that is the question"

Even if no financial barriers existed in accessing diagnostic assessments for adults, there still would be a great debate as to the merits of formal assessment and whether it is beneficial for adult learners. It is not the practitioners' role to enter the debate, but instead, to recognize the pros and cons of both sides. Practitioners should ensure that learners understand all points of view and the decision to pursue formal testing should be left to the learners. However, there are times when accessing an official diagnosis should be encouraged:

- If learners want to obtain their GED or require an official diagnosis to obtain certain compensations within the workplace
- If a learning disability is suspected and, after an informal assessment is conducted, both the practitioner and the learner have no clear understanding of the learners' challenges
- If learner financial supports may be impacted

When formal diagnoses are pursued, it is important that both learners and practitioners understand what is involved in the process. This knowledge helps to increase the benefits gained from the experience. Learners can prepare questions, and both practitioners and learners will be in better positions to understand the results.

In order to make a learning disability diagnosis the following must be established:

- The learner's learning difficulties significantly interfere with his/her academic and daily living activities that require reading, math and writing skills
- There is a discrepancy between intelligence and academic achievement
- There are no other apparent reasons that could account for the level of learning difficulties the learner is experiencing[12]

A comprehensive assessment by a member of the College of Psychologists is required to diagnose a learning disability. In general the process involves an interview and a series of tests.

Advantages:

- When adults are diagnosed with a learning disability they have access to accommodations within the work, academic and testing environments
- When adults are diagnosed with a learning disability they are protected by human rights legislation from discrimination and from being denied access to accommodations
- The results help adults to understand their strengths and weaknesses and may ease feelings of inadequacy
- It helps adults watch for signs of potential learning disabilities with their children

Disadvantages:

- There are limited government funds available to help cover the costs of the assessment
- There may be limited access to qualified and suitable psychologists in the area
- Not all licensed psychologists have experience with adults and since the results are open to subjective evaluation, how they are interpreted could be detrimental to the adult. [13] Adults who are bombarded with a report that only highlights their weaknesses may be inclined to become overwhelmed or completely give up. In addition, if the report is written in complex language, this could lead to the adult not understanding the report and possibly misinterpreting the information.

The formal assessment should include:

1) An initial interview.

2) Tests of cognitive functioning and information processing including specific measures of:
   - Short and long term memory
   - Receptive and expressive language
   - 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
   - Organizational and planning skills

3) Tests of academic achievement levels (reading, spelling, written expression and mathematics).

4) Social and emotional evaluations (use formal tests to explore anxiety, depression, poor self-esteem and attention deficit disorder).

5) A feedback interview to share results and discuss suggestions for remediation to improve weaknesses or compensatory strategies and accommodations to cope with problem areas. In addition, strengths should be explored and a written report should be provided.[14]

If an adult learner decides to access the formal assessment process, he/she may want to consider asking the following questions:

- Have you tested many adults with learning disabilities?
- How long will the assessment take?
- What will the assessment cover?
- Will there be a written and an oral report of the assessment?
- Will our discussion give me more information regarding why I am having trouble with my job or job training, school, or daily life?
- Will you also give me ideas on how to improve my skills and how to compensate for my disability?
- Will the report make recommendations about where to go for immediate help?
- What is the cost? What does the cost cover?
- What are possibilities and costs for additional consultation?
- Can insurance cover the costs? Are there other funding sources? Can a payment plan be worked out?[15]

Understanding the impact of processing breakdown

When assessing, practitioners need to understand **the impact** of the processing breakdown on learners' academic, social and organizational skills. When a person has a learning disability, there is a breakdown in the processing of the information that is gathered. Visual: does your brain understand what you see? Auditory: does your brain understand what you hear? What is heard or what is seen is not processed properly. This processing

breakdown can also impact how one stores and retrieves the information and/or how one organizes the information taken in.

Controversy still remains over the value of actually assessing perceptual abilities. There has been little evidence to show that training directed to perceptual abilities will improve academic performance and there are concerns with the validity and reliability of the actual tests.[16] To test visual perceptual abilities, an individual may be asked to find a smaller image contained in a larger image. To test for auditory perceptual abilities, an individual could be asked to discriminate changes in volume or to discern between consonant and vowel sounds. If such tests are conducted, it must be recognized that the key is to understand what perceptual inabilities are impacting the adult's learning. The rationale for gathering this information is not to attempt to improve the perceptual weakness, but to develop learning strategies or accommodations that help the adults deal with their perceptual inabilities.

Research has found that evaluating communication issues such as reading and writing, rather than perceptual issues, more often explains deficits.

"Language provides the foundation upon which communication, problem solving, and expanding, integrating, analyzing, and synthesizing knowledge take place. Deficits in language, therefore, can have a profound impact on the ability of an individual to learn and function competently and confidently as he or she interacts in the world."[17]

Unfortunately, many learners within the LBS programs have felt similar impacts as highlighted in the above quote. In most cases, learners have little understanding of why they struggle with their communication skills. Often they blame themselves and feel "dumb". This crystallizes the importance of helping learners discover their strengths and struggles in both the language process and outcome.

It is important to assess adult learners' abilities in each of the language areas in order to identify what they already know, as well as what they need to work on during their training. One emerging theme derived from the adult basic education research suggests that assessing each component of reading in order to develop a picture of learners' reading ability gives practitioners much

more relevant information than any test of a single component can.[18] As a result, practitioners should be encouraged to assess all language areas that impact learners reaching their goals.

Adults with suspected learning disabilities may be unable to demonstrate their knowledge with tests that have heavy text and writing expectations. Any type of assessment tool or model should be flexible enough to allow learners to demonstrate their knowledge and ways of learning.

Visual processing difficulties

This form of learning disability hinders the ability to make sense of information taken in through the eyes due to a breakdown in how the brain interprets what it sees. It can affect spatial relation, which is the position of objects in space and in relation to other objects. This disability interferes with reading and mathematics, which are both symbol-based. Learners may have difficulty perceiving words or numbers as separate units, experience directionality problems, and get confused over similar shapes. Visual processing difficulties can also impact whole and part relationships. Learners may have difficulty perceiving or integrating relationships between the whole and parts of the object. For example, they may have difficulty breaking down a word or seeing parts of words such as endings and prefixes.

Learners may struggle with:

- Recognizing known words
- Reading orally
- Keeping their place on the page (uses finger)
- Spelling from sounds
- Recognizing irregular sounds (*ight, tion*)

Auditory processing difficulties

This type of learning disability affects the ability to make sense of the information taken in by the ears. It affects not what is heard but how the information is processed. Auditory processing disabilities affect phonological awareness, which is the ability to understand that individual sounds are put together to make words. This is fundamental to reading. The difficulties result in the inability to recognize or isolate individual sounds in words, recognize similarities between words, or identify the number of sounds in words, which can all affect reading, writing and language. The disability impacts a learner's auditory memory. He/she may have difficulty storing and recalling information that is heard (i.e. verbal instructions and/or taking phone messages). Learners experiencing the inability to list the order of sounds in a word (auditory sequencing) have challenges with spelling. These challenges also weaken their ability to put sounds together to make words. Learners can also mix up sounds when saying them and substitute letters in words.

Learners may struggle with:
- Long words
- Pronunciation
- Rhyming
- Spelling based on known words
- Speaking

Organizational processing difficulties

This form of learning disability causes learners to struggle with their ability to think logically and organize their thoughts. They have trouble with comprehension-related activities like understanding the meaning of questions. Learners with an organizational disability have trouble constructing answers to questions quickly. When they are given extra time to understand the question and frame an answer, they can succeed.

Learners may struggle with:
- Giving clear, concise answers to simple questions
- Focusing
- Following-through and being on time[19]

The above section on Visual, Auditory and Organizational difficulties was taken from the article "Special Needs Assessment Procedures" found at the learning disabilities page at http://www.torque.net/~bpd/dev/snap/learning.htm. Written by Pat Hatt.

Informal assessment methods

When working with learners who may have learning disabilities, the two major objectives for assessment are:

- To help explain why learners are experiencing difficulties

- To provide information that will help learners to overcome, get around or cope with their challenges

"Providing a process whereby students can become aware of the manifestations of the difficulty and strengths is crucial to accessing future academic adjustments, aids, modifications and interventions in all education, training and employment environments."[20]

Understanding individuals' strengths and weaknesses is central to building training and lesson plans. Assessment begins as adults enter programs (initial), becomes more comprehensive as learners participate in the program services (ongoing) and ends when they leave the programs (exit). When practitioners suspect learners have learning disabilities, there is more reason to emphasize ongoing assessment. Consistent evaluation of adaptations, strategies and learners' motivation is critical in helping learners reach their goals.

"Assessment is something done with the learner, not something done to a learner."[21]

Four elements of informal assessment

Observation

Observing learner characteristics and manifestations in the learning environment can be a valuable resource for practitioners to gain a better understanding of their learners. As practitioners use this technique, it will help them to fine tune the process and recognize learning disability struggles efficiently.

Checklists

The checklist is one of the most frequently used tools in the screening process. The checklist is more of an indication of a potential learning disability; further assessment is required to understand the type and impact of the learning disability. Checklists are easy and quick tools. They provide a number of symptoms or behaviours, which adults with learning disabilities might exhibit. If learners exhibit a number of the characteristics, they may have potential learning disabilities.

Authentic skill or task demonstration and analysis

Practitioners frequently practice this type of informal assessment and are quite comfortable with it. When practitioners assess learner's task demonstrations and work samples, a number of samples should be assessed to find consistent error patterns and variances in performance under different circumstances.

Intensive interview or self-report questionnaire

Learner self-assessments should be used throughout the process. This form of assessment is very valuable during the screening process and helps to set the stage for developing trusting relationships with learners. Learners will begin to view their role as active not passive in the assessment process. Valuable insights can be gained by understanding learners' past experiences and learning histories. If adults experienced similar learning challenges when they were younger as they do now, then their literacy challenges may be a result of a learning disability and not that they simply just need more exposure and practice through literacy instruction.[22]

An in-depth look at observation and task analysis

The Tennessee Literacy Resource Centre with a grant from the US Department of Education reviewed a number of assessment tools. Based on the research they recommended that **informal observations and work samples were two of the best ways to determine individuals' strengths and weaknesses**.

"They found that careful observation was so valuable to the assessment process that it recommended training to sharpen the practitioner's observation skills."[23]

Observations

Effective observation tips:

- Monitor individual patterns, look for recurrent themes and look for where the breakdown occurs within the learning process
- Observe learners' interactions with their work, with other students and with practitioners
- Look at how learners interact with the content and how they handle the tasks (organization, rate, volume, memory)

Understanding learners' strengths and struggles and identifying breakdowns in the learning process come from ongoing observation of:

- Patterns of errors and successes from multiple sources and samples
- How learners perform tasks
- When, and in what context, successes and difficulties occur
- With what consistency the behaviours occur
- The ease, fluency, and capacity in assimilating and expressing new knowledge
- Affective reactions and coping strategies[24]

Things to consider when observing:

- Who or what will be observed
- Where the observation will take place (observing a range of situations where the student operates is recommended)
- When the observation will take place (a number of observations at different times is also important)
- How the observations will be recorded[25]

Different ways to observe

Anecdotal: recording general notes from observations seen throughout the day or over the week. The observations can be noted by one practitioner or by a number of practitioners. They are subjective and recorded any time as seen applicable by practitioners.

Event recording: practitioners look for specific behaviours or skill challenges. These events are recorded as they are observed or over a specified time period (i.e. over two weeks in a classroom environment or over six one-to-one tutoring sessions).

Timed observation: recording an event over a specified time period and noting the frequency. For example, a tutor may note how many times a learner loses focus over a ten minute period while working on an oral reading task. Or an instructor may note how many times a learner gets out of his/her chair over a ½ hour period in a small group environment. This form of observation is generally used when trying to observe behaviours that may be interfering with adults' abilities to learn.

Duration: the length of time or the number of attempts it takes for an adult to complete a task. If a learner is utilizing strategies to work on increasing his/her reading comprehension speed in preparation for the GED, then observations of the number of times the learner needs to reread the passage before he/she is able to answer the questions could prove useful. This observation may be tracked over a period of time to see if the strategies are helping the learner's comprehensive speed.

Checklist: practitioners may use a number of questions or a scale to check off each time a characteristic or behaviour is noted. This observation technique could be used if a learner is pursuing a job as a customer service representative and wants to improve his/her listening by decreasing the amount of times he/she may interrupt a person's conversation. During class discussion the practitioner could record the frequency of interruptions made by the learner to see if he/she is improving over a period of time.

Regardless of the observation technique used, a few cautions should be exercised when making conclusions. First, the observations should be done during a number of circumstances and in different surroundings to ensure a pattern is noted. Second, a practitioner may want to have other practitioners observe at the same time or on their own to confirm observations.

Making a quick assumption about an adult's behaviour could not only prove to be harmful to the learner if the practitioner's assumption is incorrect, but it could also lead to the development of inappropriate learning/teaching strategies. Many of our learners have numerous life circumstances that could interfere with their ability to learn, so by observing any interference in learning over time and by confirming them with the learner you can feel confident that your assumptions are correct.

Questions practitioners may consider asking:

To help understand the impact of the potential learning disability, practitioners can ask the following questions which are designed to seek information about the problem. These questions will help practitioners understand what is keeping the learner from being able to achieve.

- In what physical environment do they learn best?
- What is useful, debilitating, or neutral about the way they approach the task?
- Can the learner hold multiple pieces of information in memory and then act upon them?
- How does increasing or slowing the speed of instruction impact upon the student's accuracy?
- What processing mechanisms are being taxed in any given task (visual, auditory, organizational, memory)?

- How does the learner respond to a certain teaching style?
- With whom has the learner been successful? What about the person seems to have contributed to their success?
- What is encouraging to the learner? What is discouraging?
- How does manipulating the mode of teaching (e.g. visual or auditory presentation) affect a learner's performance?[26]

Observing learners' strengths and struggles

Auditory or receptive abilities (the way students respond to directions)**:**

- Do they interrupt or respond inappropriately?
- Do they continually ask for information to be repeated?
- Can they track and follow the conversation?
- Do they hesitate frequently before responding?

Oral expressive language abilities (the level of expressive language used)**:**

- Watch for the tone, quality and comfort level.
- Observe the level of quality; is it higher or lower than presented by the learners' general academic functioning?

Visual abilities:

- How do learners track print in books, forms and tests?
- Compare their ability to process print versus verbal expression.
- When they read out loud do they skip partial or full lines of print?
- Are they frequently on the wrong number or column?

Memory abilities:

- Can they recall information, either personal or educational and in a logical and clear manner?
- Do they have difficulty remembering the names of their fellow learners, numbers, and/or math equations?

Sequencing abilities:

- Is information presented in a natural and logical order?
- Do they approach directions and instructions in a logical order?
- Can they identify the beginning and end of events?
- Do they wander when expressing themselves?
- Does their written work follow an order?

Organizing abilities (best noted when observing study or work habits)**:**

- Do they have trouble with abstract reasoning?
- Can they prioritize?
- Do they have difficulty organizing material?
- Do they have difficulty with knowing where to start?

Visual-Motor abilities (eye hand coordination)**:**

- Do they show inconsistent writing patterns?
- Do they have difficulty doing math calculations on paper?
- Do they have difficulty copying information to print either from a book or the chalkboard?

Temporal and spatial relations abilities (ability to orient or manage themselves in space and time)**:**

- Do they forget their appointment times?
- Do they have difficulty comprehending length or time or managing their time?
- Do they have difficulty finding places?
- Can they tell time and understand the concept?

Attention abilities:

- Can they sustain their attention throughout an activity?
- Is the span of attention short or irregular?
- Are they distracted by auditory or visual stimuli?
- Are they easily pulled off task?

- Is there a high level of impulsive behaviour demonstrated socially? Verbally?[27]

Use these questions when observing an individual over time and under various circumstances. If the answers indicate that the individual has consistent difficulties in one or more of these areas, then it is likely that he or she has a learning disability related to his or her difficulties.

The above section on observing learner's strengths and struggles was adapted by permission from Payne, N.A. (1998). The rationale, components, and usefulness of informal assessment of adults with learning disabilities. In S.A. Vogel & S. Reder (Eds.), *Learning disabilities, literacy, and adult education* (pp. 107-131). Baltimore: Paul H. Brookes Publishing Co.

Analysis of demonstrations and tasks

There are two types of assessment processes that can be used when reviewing learners' work samples and reading practices. They are "diagnostic–prescriptive teaching" and "dynamic assessment". Although the terms may be unfamiliar to LBS practitioners, most likely practitioners have used both or a combination of these two kinds of approaches.

Diagnostic-prescriptive teaching: refers to the practice of constant evaluation. Practitioners and learners continually participate in observation and evaluation. During this process, the role of the learner is to provide feedback and input on instruction methods and/or learning strategies that may or may not be working. As practitioners continually assess demonstrations or tasks, they look for concrete signs of learning disabilities.

Dynamic Assessment: involves the process of assessing, directing and reassessing. Instead of stopping once the assessment is done, practitioners provide guidance or cues in the areas that the learner is experiencing difficulty. As learners use the guidance, their work is reassessed to see how the additional support impacted on their performance. The interaction between learners and the practitioners could include: modeling the task for the learners; giving learners prompts as they try to solve a problem; and asking what learners are thinking as they work on problems. Practitioners

may want to share experiences with learners which help to give relevancy to the task and provide constant praise, regardless of the task performance.[28]

The interaction in both kinds of assessment helps practitioners draw conclusions about learners' thinking processes (i.e. why they answer a question in a particular way), their response to a learning situation (i.e. whether, with prompting, feedback, or modeling, the learners can produce a correct response), and what specific means of instruction produce and maintain positive change in learners' cognitive functioning.[29]

Practitioners should informally discuss with the learners their attitude towards the particular task (writing, reading, math, organization) they plan to assess. Find out learners' views on the task, how people learn to do the task, what has been most helpful for them in doing the task, what has been least helpful, what they think will help them to improve their skills with the task and what strategies do they use when they run into a difficulty with the task.[30]

Self-assessment and learner involvement

"If a student has an educational need that prompts him to enroll in a class, I'll bet he can explain what that need is. If a student can tell an instructor specifically what part of her life could run a little more smoothly with just a little help, I'll bet that instructor can provide some materials, lessons, and practice to address that need. If a student can recognize a change, then that student will be performing self-assessment."[31]

Involvement of learners helps them understand themselves, reduces frustration, builds self-esteem and facilitates the building of independence and ownership for their ongoing and future learning and coping strategies. Part of the initial self-assessment is to help learners identify how they think, process and store information. The practitioner's role is to provide learners with tools and the forum to help them to identify and express themselves. The focus of the initial discussions with the learner should be spent talking about the learner's potential learning disability and how it may affect his/her learning and everyday activities. This is also the time to build **trust**.

Helpful strategies when sharing information with learners:

- Share results ASAP – ease their fear of the unknown – in fact, involve learners throughout the process.
- Explain that the process is intended to help them build a plan and effective strategies - not to label them.
- Feedback should be handled sensitively and results should be interpreted in relation to an individual's life circumstances.
- Provide objective evidence of their strengths and weaknesses, which can be empowering for most adults.
- Listen to what is important for the learners. What areas of learning do they want to focus on?
- Take away any mystery; this helps learners to become part of the process.
- Keep them informed and involved.
- Encourage learners to identify and respond to their areas of difficulty.
- Be honest.
- Encourage learners to be open about the findings and accept them so that they can use them to benefit themselves in future situations.[32]

Ongoing self-assessment works when learners have been active participants in the goal setting process. To ensure that learners own their goals, they need to feel responsible for their own success. They need to buy into the process. Learners need to understand and accept their strengths and struggles. The practitioner's role is to help facilitate the process by providing learners with guidance to the process not content. Learners need to not only feel but also to see that they are in control of the process.

The information gathered is key to building instructional strategies and techniques. By setting the stage, learners will understand their role in the ongoing assessment process. This helps to build their ownership of the process and responsibility for learning.

Successful adults with learning disabilities stated that the key to their success was self-determination and persistence. The first step towards self-determination is actively involving learners in the assessment process. When

learners understand their strengths and weaknesses, they become more alert to specific situations and tasks that are most difficult and/or frustrating for them. By involving learners in the development of alternative strategies and ongoing evaluation of their effectiveness, they are able to assume a greater sense of control.

Primary factors to consider when assessing for learning disabilities

How to distinguish between literacy challenges and potential learning disabilities

When working with adults at the basic literacy level, it is difficult to decide when the observation of some behaviours represents a normal stage of learning a new skill and when it suggests the presence of a learning disability. Janet Johnston states that people who do not have a learning disability experience small differences between their strengths and weaknesses. Usually several skills are needed to complete a task. When there are large differences in one's strengths and weaknesses related to the skills required, it can be difficult to perform the task. Some parts may be easy and others difficult. Adults who face these difficulties most likely have some form of a learning disability. Often these weaknesses are what get in the way of completing the task. Too often peoples' strengths can become masked by their weakness(es) and increased frustrations are the result.

The impact of adults' learning disabilities may increase or lessen depending on the context or specific task they are required to perform. For example, an adult with visual processing disabilities, who is required to read a passage him/herself, will more likely feel the impact of his/her disability on his/her reading comprehension versus having the opportunity to listen to the reading passage and then respond to comprehension questions. Or an adult who has organizational learning disabilities may be quite capable of writing sentences independently, but when required to do a written report will be unable to proceed and his/her writing skills may decline.

When reviewing the signs to look for in the areas of communication, practitioners may find that a lot of their learners show some of the characteristics and question – "does this mean that every one of my learners has a potential learning disability?" To help distinguish between learners who need to work on their literacy skills because of limited exposure to learning versus learners who struggle with their literacy due to potential learning disabilities, practitioners need to look at:

- Patterns of errors
- Large differences between strengths and weaknesses
- Information about the adults' earlier educational experiences gathered through the screening process

Overall, adults with learning disabilities show little progress in one or more particular areas and that seems out of place given their overall intellectual capability. Practitioners' suspicions of learning disabilities will be confirmed through ongoing assessment with the learners as they both notice consistent patterns of errors and definite strengths and weaknesses in key areas.

Product and process

Assessment, whether it is initial or ongoing, should look at:
- How learners input and output information
- The rate and amount of information they can produce or handle
- How the information they provide is organized and presented

When practitioners gain an understanding of these areas, strategies such as the way to instruct, the time needed for completion of a task and the amount of information learners can handle, can all be adjusted based on the adults' strengths and limitations.[33]

Any form of evaluation and monitoring of progress should examine two key areas:
- **Product** - the knowledge and skills the learner can demonstrate or has gained (i.e. a book report)
- **Process** - how the learners produce the outcome (i.e. the steps they followed to develop the book report)

The following table uses Mickelson's (1987) evaluation model to illustrate what types of assessment tools help to examine the process the learner uses to complete the task and the product that evaluates the end outcome.

Tools to assess the process (steps taken to complete the task)	Tools to assess the product (the final outcome)
Anecdotal comments	Reading logs
Interviews	Writing journals or folders
Conferences	Notebooks
Focused observations	Learner audiotapes
Checklists: skills, strategies, process being used and self-assessment to describe the process they think they use	Learner self-assessment
Informal tests: cloze, predictive tests "how to" tests	Demonstrations
Dynamic assessment (assess, assist and reassess)	Formal assessments such as norm referenced and standardized tests

Source for above chart see endnote[34]

Impact of learning disabilities on literacy skills

Assessing oral communication (speaking and listening)

Auditory and organizational type disabilities are often expressed when assessing an individual's oral communication. Interviewing should help elicit specific problems such as vocabulary and organizational difficulties. Learners may have difficulty discriminating sounds, retrieving information (names), repeating words that have a number of syllables and they may have difficulty with organizing their thoughts and expressing their ideas. Practitioners should ask learners if they recognize these struggles and, if so, if they have any strategies they use when they run into such problems.

Oral communication struggles to assess

Learners may:

- Add, substitute, or rearrange sounds in words, as in *phemomenon* for *phenomenon* or *Pacific* for *specific*
- Have difficulty pronouncing multisyllabic words, such as statistics or anonymity
- Exhibit articulations problems, use a similar-sounding word, like *generic* instead of *genetic*
- Have difficulty speaking in sentences
- Have difficulty conveying ideas and expressing ideas coherently, as if the words needed are on the tip of the tongue but won't come out (i.e. using unspecific vocabulary, such as "thing" or "stuff" to replace words that cannot be remembered)
- Have limited vocabulary - they use the same words over and over in giving information and explaining ideas and use mostly simple sentence construction
- Tend to overuse *and* to connect thoughts
- Have difficulty maintaining a topic and may interject irrelevant information into a story; they may start out discussing one thing and then goes off in another direction without making the connection
- Omit or use grammar incorrectly, such as tense, number, and possession
- Confuse the meaning of words that sound the same
- Have difficulty listening to the information in a room with other activity
- Struggle to remember information that is given – they will ask you to repeat it several times (i.e. telephone number, address, or the spelling of a person's name)
- Confuse a message or instructions in a complex sentence (i.e. Get your credit card after you pump the gas – they may get the card first).[35]

Practitioners need to be alert to these kinds of errors in learners' oral communication because such challenges will be exhibited in written language, particularly spelling.

However, before drawing any conclusions, practitioners need to monitor their observations of the oral communication throughout the assessment process to identify common areas of difficulty and consistent patterns of errors.

Assessing expressive writing

The steps learners go through before they write such as the planning and organizing of ideas should be assessed, along with the actual product. Practitioners should watch for any obstacles that learners may face when trying to get things down on paper: how the learners attempt to spell things they don't know, do they read what they wrote, do they talk about or share their work, what changes or editing do they do? Most adults with learning disabilities are reluctant to proof read. They often do not see the errors and if they do, they don't correct them consistently.

One way to assess the process that learners go through is by using the POWER model– **p**lan, **o**rganize, **w**rite, **e**dit and **r**evise. This involves asking learners questions on how they go through each of the five steps. Learners' self-assessment of writing is helpful because it helps them observe and reflect on their own approach, drawing attention to steps they may have overlooked, and helps them internalize a strategy and mentally rehearse the strategy steps. This process can help learners take ownership of their writing and begin to internalize strategies. (See Appendix B for more details on the POWER model.)

Many adults with learning disabilities that impact their reading also have difficulty with writing, since both areas are language-based (receptive and expressive). Difficulties with writing affect learners' achievements in virtually every content area.

The product can be evaluated on five factors:
- Fluency
- Content
- Conventions (phonetics, spelling, morphology)
- Syntax
- Vocabulary[36]

Definition of Terms
- Phonetics: the ability to understand sounds and blending of sounds
- Morphology: the stringing together of sounds to make meaningful units of language i.e. prefixes, suffixes, word endings that describe numbers (dog versus dogs) and tense
- Syntax: the rules used to form a sentence ranging from simple to complex

Fluency
Can learners read their own writing fluently or do they have trouble due to a number of syntax and morphology errors?

Content (structure, cohesion)
Learners' writings may reveal poor organization and lack a clear purpose for writing. For example, they may not communicate a clear message, they may express thoughts that don't contribute to the main idea and omit critical parts or put information in the wrong place. Overall the writing is disorganized.

Conventions (readability: spelling, punctuation, capitalization, grammar and legible handwriting)
Both visual and auditory disabilities can impact the conventions in learners' expressive writing. Practitioners need to review a number of writing samples to help reveal consistent patterns in convention errors. Quite often learners may struggle with rewriting and editing because they may not see their errors.

Writing sample difficulties:
- Writes letters or numbers backwards or upside down (reverse of *b* and *d, p* for *q, u* for *n, m* for *w*)
- Uses a mix of writing and printing
- Exhibits poor handwriting; letter formation is inconsistent and letters are poorly formed
- Uses incorrect homonyms
- Uses a mix of capital and small letters or omits letters (SunDay, MoNey)
- Uses a fair amount of cross outs and write overs to correct errors
- Punctuation errors are common[37]

Spelling errors can be classified into two general categories:

- **Phonetic or auditory errors**
  - Omission of letters or syllables
  - Substitution of letters that sound alike (b and p)
  - Improper sequencing of letters within a word (fram for farm)
  - Fusing of words (toget)[38]

- **Visual errors**
  - Substitution of letters that look alike (b for d)
  - Strange spelling of common sight words (nite for night)
  - Letter sequence is phonetically correct but graphically wrong (kitchn for kitchen)[39]

Practitioners will want to determine if errors result from the omission of a letter or syllable, an insertion of a letter or syllable, or a phonetic substitution.[40]

Spelling struggles
- Spells words differently in the same document
- Demonstrates a weak visual memory for spelling
- Spells phonetically only and cannot remember spelling patterns, e.g. Munday, Toosday, Winsday, Thirsday
- Reverses letters in spelling, e.g. Friday becomes Firday, girl becomes gril
- Exhibits errors that vary from not even resembling the sounds of the words to smaller errors in everyday words
- Omits endings
- Uses logical phonetics to spell words – i.e. meat but spells met
- Adds parts to words, sounds are missing and/or scrambled

From a written sample, practitioners can ask learners to read the written work to observe the following:
- Do they read the passage exactly as written?
- Do they correct their spelling errors?
- Do they pronounce words the way they have spelled them?

- Are the errors at the beginning, middle or end of the words?
- Do they omit, add or substitute words or letters when reading their own writing?

Observing how they read their own work helps to analyze the spelling errors. Make note of the words that are misspelled. Have the learner make a list of the misspelled words and together look at the challenges.

Syntax:
This refers to the rules used to form sentences (complexity of the sentence and variation from subject, verb and subject, verb, object to more complex). Syntax alone may result in a sentence being grammatically correct but not having meaning. For example: I saw the car flying over the factory. The relationship between form (syntax) and content (semantics) is important because both word order and meaning are essential to effective communication.

Difficulties forming sentences:
- Inconsistent memory for sentence mechanics
- Problems understanding and using grammar in sentences
- Difficulty with sentence structure (e.g. incomplete sentences, run-ons, poor use of grammar, and missing inflectional endings such as "ed")

Adults with learning disabilities often experience difficulties despite adequate conversational abilities. Several researchers (Johnson, 1987, 1993, and Gregg, 1992) found that difficulties in syntax, such as subject/verb agreement, active/passive voice, and embedded clauses were responsible for adults' expressive writing struggles.[41]

Vocabulary:
Learners may have strong verbal vocabularies, but limited writing due to poor spelling; or if they have visual perceptual disability their vocabulary may be limited in all forms of language. Learners, who have difficulties with part-whole relationships may not see the parts of the word or may confuse synonyms. They may produce short sentences and text with limited vocabulary. Both the range (use of a variety of words that mean the same thing or similar meaning) and level (concrete versus abstract) of vocabulary should be explored.

Vocabulary struggles to assess for:

- Difficulty with spatial words (*beneath, next to, left/right*)
- Difficulty with relational words, such as prepositions (*with, except*)
- Improper use of conjunctions (*since, if, but, or, because, although*)
- Difficulty with interrogative pronouns (*who, what, where, when, why*)
- Inability to solve verbal problems such as analogies
- Limited understanding of synonyms, antonyms, and function words[42]

Assessing reading

Practitioners need to understand if a visual or auditory learning disability is interfering with adults' learning. Practitioners should look at learners' abilities to decode or recognize words (i.e. letter/sound omissions, insertions, substitutions, reversals) and comprehension (i.e. recalling or discerning basic facts, main ideas, sequences, or themes). Through the assessment, practitioners need to determine how learners comprehend and recognize words both by sight and by hearing. When learners read, the types of cueing system they use should be observed, i.e. anticipate the next word, semantic (understand the meaning), and decode words.[43] Often adults with learning disabilities struggle with the process of reading, and minimal attempts if any are made to use any type of cueing system. Often they may focus more on attempting to read each word and lose the meaning of the sentence and complete passage. Before any attempts are made to begin developing different reading strategies, first discuss with the learner their understanding of the reading process.

For beginner readers, practitioners should assess phonological awareness, letter identification, listening comprehension and accuracy of decoding single words. Practitioners may want to look at the more advanced readers' speed and fluency of reading, and their use of comprehension strategies.[44] Overall practitioners need to look at learners' reading fluency, oral and silent listening and reading comprehension.

Through observation and dialogue with learners, practitioners need to determine whether learners can comprehend better when they read or listen to a passage. In addition, an attempt should be made through observation and discussion to gain an understanding of whether learners use any form of comprehension strategies. Practitioners could ask learners about their use of strategies during reading (i.e. when comprehension fails, do they make use of strategies such as rereading?).

When assessing learners' comprehension (oral, silent or listening), look for their ability to:

- Understand the main idea
- Make inferences and build on prior knowledge
- Recall or find factual information
- Organize events in sequential order

Reading struggles to assess:

- Mispronouncing, repeating, skipping, substituting and transposing the letters in words
- Unable to associate sounds with letters (consonant, vowel and vowel with "r" combinations)
- Unable to sound out words in units – endings or beginnings, plurals, silent letter rules, words with several syllables, nonsense words
- Cannot hear the sounds in the words and the number of syllables
- Difficulty with reading common words including function words: a, in, the, is
- Unable to recognize a word from a list of similar words both by visual and by auditory means
- Difficulty understanding what is read to them independent from their reading skills[45]

Fluency:
Examine the accuracy and rate of reading, the time it takes learners to read the text out loud (the number of minutes divided by the number of words read correctly will give the percentage of words read correctly). The major elements in fluent reading are accuracy, effective decoding and reading text with rhythm and appropriate expression.

Fluency struggles to assess:
- Appearing to re-read or reading very slowly, when reading silently - this can be attributed to poor visual processing
- Reads with an overdependence on guessing and, as such, comprehension is compromised, evidenced in errors in answering questions related to the text
- Reading style is halting and jerky
- Continuously whispers to self while writing[46]

Assessing mathematics

Math learning disabilities formally know as Dyscalculia often do not occur in isolation. Adults may also experience difficulties with language processing problems, visual spatial confusion, and memory and sequence difficulties. Learning disabilities affect math in two general areas: calculation and problem-solving. These two areas affect learners' abilities to handle daily math functions such as counting money to make change, writing numbers on cheques, reading information from a chart or graph and problem-solving (i.e. determining how much paint to buy to cover a wall). Adults with learning disabilities most often show extremes in math. They may understand some areas but really struggle with others even after a review is given.

When assessing math skills, practitioners should move from the familiar (day-to-day transactions) to the more complex (use of math functions + -, x, etc.). Start with tasks that use mental calculation and move to tasks that may require figuring out with a pencil and paper (but always make the paper and pencil available). Observe when learners move from mental calculations to paper and note the organization of the calculations on the paper. Practitioners should observe the process and any consistency of errors.

Next, move from single-digit calculations to double-digits and then to double-digit calculations where carrying is involved. Practitioners should examine the level and type of errors made by the learners and note when the math performance breaks down. Once the above analysis has been completed, move on to more complex calculations, such as percentages, decimals and fractions.[47]

A one-to-one interview is the best format for noting details. Practitioners should focus both on the process and the product. How does the adult attempt the math and what are the results? Are there consistent errors in certain areas of their math? Working as a team, practitioners and learners should look at what works and what doesn't.

An open dialogue with learners will help them to understand how they derived the answer and what areas they struggle with. Reword math problems orally to see if learners can answer them. Have learners complete a math problem and ask them to explain the steps they took. When looking at the process, practitioners need to determine if learners use strategies or rely on memory – do they finger count? Also look at learners' abilities to solve equations and their reasoning skills (how they access the answers).

Reading difficulties may occur due to problems with visual perception. Learners may have difficulty seeing the numbers and operations as distinct units. Therefore they may be unable to recognize numbers, words, or pictures and differentiate objects such as variables on a graph. Learners may also have difficulties perceiving or integrating relationships between the whole and parts of the object.[48]

Math struggles to assess:
- Recognition and identification of numbers, and mathematical signs as expressed in words: (read aloud 10, 25, + = etc)
- Understanding of math vocabulary (i.e. for the sign +: can they supply at least, 'add', 'more' and 'plus')
- Understanding of the rules and procedures to solve a problem
- Comprehension of word problems and ability to do the mathematical calculations if taken out of the word problem format
- Memory for rules and procedures (multiplication tables, and order for procedure)
- Written and oral output of answers
- Calculation speed - no improvement shown even after review and practice
- Inconsistent mastery of mathematical skills (addition/subtraction, multiplication/division) due to problems with long-term memory

- Careless mistakes in written work, such as: reversal of numbers; mixing up lines of the work or copying information incorrectly; confusing similar numbers or transposing numbers e.g., 18 for 81, 21 for 12, even when the concept is understood
- Trouble following sequential procedures and directions with multiple steps
- Recall from memory is slow or not available. Learners may count on their fingers or they may have difficulty recalling multiplication table facts, other than 2x, 5x, and 10x. If they are asked to answer 7x2 they may start at 2x2 and count up to 7x2
- Difficulty counting backwards and counting from a different starting point: i.e. counting backwards from 30 by 2 or 3's, or what number is 5 places from 18, or finding it difficult to count by 10's starting at 14
- Difficulty understanding place value, especially when there is 0 in the number, i.e. 20,040. As well, they may take longer understanding the patterns of multiplying by 10, 100, 1000, etc.
- Difficulty copying numbers and working with numbers in columns – they may show a preference for doing several small sums rather than adding up the whole column – they may lose track of the addition and keep re-starting
- Trouble with left, right orientation – they will continually mix them up without realizing it or say go left when they mean go right[49]

Helpful tips to use when assessing literacy skills

- Practitioners should give several spelling dictations to find consistency of patterns to the errors. They need to determine if the errors are a result of processing problems or a lack of knowledge of spelling rules.[50]
- Practitioners may want to use: 1) informal auditory discrimination tests to determine if learners hear likenesses and differences in sounds; or 2) visual discrimination tests to determine if learners see likenesses and differences in symbols, words and letters.
- Practitioners can provide a list of synonyms or selected words to help assess learners' vocabularies. Word comprehension and usage

are difficult for adults with learning disabilities. Learners'
vocabularies may be limited because they have not read widely.[51]

- Practitioners should compare learners' reading comprehension by
giving them opportunities to read orally, silently and to listen to a
reading passage. If differences occur between their levels of reading
comprehension, then most likely a learning disability is present.

Recognizing memory challenges

All information first enters the brain through at least one of our senses, and
then goes on to the cognitive processing areas for understanding and storage.
This is where the processing breakdown can affect memory. Most memory
disabilities affect short-term memory only; learners with these disabilities may
need more repetitions than usual to retain information. Assessment of
memory should be done over a period of time and under different
circumstances, in order to understand the learners' difficulties.

Memory struggles to assess:

- Poor recall of information on comprehension questions
- Difficulty recalling what is read even when they reading is fluent
- Difficulty following multiple directions
- Difficulty remembering what is heard
- Difficulty remembering sequences in a task
- Knowing words one day but not the next
- Difficulty recalling events or retrieving words
- Poor recall of visual patterns
- Difficulty memorizing information, (i.e. phone numbers, days of the
week, or months of the year)[52]

Recognizing visual-spatial challenges

This form of learning disability is often referred to as a non-verbal disability.
Spatial and coordination problems make printing and writing, learning math,
telling time, reading and and keeping one's place on the page difficult. More

complex verbal language is based on nonverbal processes - logical ordering and sequencing (both skills necessary for writing essays.) This can cause problems in subject areas other than math. For example, learners often experience difficulties with their sense of time, arranging written material on a page, making change, and sewing and typing, all of which demand good spatial awareness.[53]

Challenges to watch for:

- Difficulty focusing on a page
- Skipping lines when reading
- Using finger to follow along when reading
- Difficulty telling time and/or a lack of sense of time (knowing how long it will take to complete a task or arrive at a destination)
- Holding material close
- Poor letter formation, letter spacing and word spacing problems with sense of direction, estimation of size, shape, and distance
- Problems reading facial expressions, gestures, social cues, and tones of voice, which can lead to difficulties with social interactions[54]

Case Studies to illustrate assessment application

The following three case studies are fictional, but have been developed from an extensive review of learning disabilities research and collections of case studies gathered from Canadian, American and international sources.

Case study A – Tom

Information gathered during initial meeting

- Male, age 29, resides on his own.
- Divorced 4 years ago and has one son age 8 with whom he spends every third weekend.
- Attended high school until he was 16 but left due to poor attendance, lack of interest and failing grades.
- Worked in a beer manufacturing plant for 13 years and recently lost his job due to plant closure – he was making good money and is bitter about the plant closure.
- Over the past 6 months he has tried to get a "good paying job" at the local factories but they won't look at him since he doesn't have his Grade 12 diploma
- Tom often mentioned that it is the "company's" fault that he is in this situation.

Tom came to the learning centre to get high school upgrading. After 3 months he was close to dropping out because he was continually failing his written assignments. However, Tom's English teacher convinced him to give it another chance and referred him to the "literacy program" in the learning centre.

Information gathered through intake process

Academic:

- Tom moved twice during elementary school.
- He remembers not doing well in spelling tests when he wasn't given the opportunity to study the words.
- Tom doesn't recall any special testing, but he remembers a Grade 4 or 5 teacher telling him that he performed at a Grade 2 level in a spelling test – the results were just brushed off.
- Tom's teachers always said he kept messy notes and he often was told that he was rated lower on tests due to his spelling and writing, even though he knew the facts.

- Tom became frustrated as he moved into higher grades because he knew the facts for the tests – "why did it matter if his spelling and writing wasn't perfect especially if it wasn't an English class."
- He hated doing written reports and essays and often would just copy material from a book.
- Tom preferred to do multiple choice tests or oral reports.
- Tom didn't miss any grades during elementary school, but he found Grade 9 really difficult – he thought the teachers were too picky and he couldn't keep up with his written assignments. Tom also said there was a lot of reading and it was hard to remember all the information.
- Tom left school once he was 16 years of age, with 7 credits (2 Mathematics, 1 Art, 2 Physical Education, 1 History and 2 Technology) in which he indicated he received a low 70 average. He reported that he liked the math class but didn't like the word problems.

Health:
Tom reported no medical problems and isn't taking any medication. He has been wearing glasses since age 14 and gets regular checkups.

Family background:
Tom is an only child and his father worked at the same beer company, which is how he got the job. Tom stated his father didn't get his Grade 12 diploma, but that never affected his ability to get a job. His father took an early retirement package with the beer company when it closed. His mother stayed at home. Tom knows she got her Grade 12 diploma and worked as a secretary prior to having him.

Work history:
Tom worked at the beer company during the summer, prior to landing the job full time. He held various service jobs such as fast food worker and gas attendant, prior to his full time job at the factory. While Tom worked at the beer factory, he was on the line in different areas including shipping. While he was unemployed, Tom tried a telemarketing job because said he was told he could make good bucks. Tom wasn't afraid of talking on the phone, but he didn't stay because his employers said that he made too many mistakes recording the information from the potential buyer.

General observations during the interview:

- Tom would often go into great detail when answering the questions and sometimes forgot the question that he was asked.
- Tom was not shy while talking - in fact he would sometimes begin to answer a question before the practitioner had time to complete it.
- Tom would sometimes draw a blank on a word he was wanting to use and say "you know, um" and would attempt to describe the word he was trying to get at.
- Tom liked to control the conversation and would respond quickly without gathering his thoughts.
- Tom was easily distracted by people who came into the agency, even though the door to the office was closed – he would watch people go by and not hear what was being said to him.

Results of self-assessment:

- Tom found he got bored reading information or books that had too much detail and technical "mumbo jumbo". He didn't dislike to read, but said it wasn't of great interest to him - Tom would read the newspaper and would scan the headlines and brief articles.
- Tom rated his spelling and hand writing as poor.
- Tom admitted that his actual witting wasn't great but felt he was able to get by. He said he sometimes found it difficult to put his thoughts on paper.
- Tom often lost track of things at home although he never really thought much about it, because he had never done any type of self-reflection.
- Tom prefers to read printed directions, especially if they are detailed rather than hearing them orally and finds it difficult to concentrate if there is too much information given to him.
- Tom had no problem with handling money, shopping, telling time and overall basic life management.
- Tom indicated an interest in using the computer, and enjoyed sports.
- He stated his goal was to get his Grade 12 diploma so that he could get another factory job.

General conclusions based on information gathered during the screening process:

- Tom does not appear to have an intellectual inability. He is able to express himself. He has been able to maintain employment and obtained some high school credits with average marks. Tom most likely has been taught basic skills through his elementary school experience.

- An auditory processing disability and short term memory problems may be present based on the following:
    - His tendency to interrupt without realizing
    - His difficulty verbalizing some words
    - He forgets the initial question when he provides a detailed explanation
    - He reports poor spelling
    - He doesn't like to read material that contains a lot of information
    - His possible difficulty hearing and recording information, based on his experiences with the telemarketing job

- Tom appears motivated but wants a quick fix. He doesn't seem to understand why he has problems with his spelling and writing and really doesn't see it as a big deal. This may be a bit of avoidance on his part. Tom does have fairly strong verbal skills and he has used them to get around his weaknesses, although unconsciously. He can be easily distracted and has difficulty staying focused. Tom appears to be quite upfront about what he wants.

Further informal assessment would be needed to understand the potential of an auditory learning disability and the level of spelling and writing challenges. If Tom wants to obtain his Grade 12 diploma, both reading and math skills should be assessed. It is recommended that this assessment be done with Tom before entering into any discussion about potential learning disabilities.

Questions for practitioners to consider:

What areas would you assess with Tom? What kinds of assessment tools would you access and why?

Assessment Tools Used:

- Writing sample: Tom was asked to write about his work experience in the beer factory.
- Reading comprehension: Tom read passages orally and silently, and listened to passages. He was asked comprehension questions after each passage.
- Auditory and visual processing abilities were tested by having Tom point out the word that was said from a group of words that sounded and looked very similar (i.e. big, bed, bin). Tom did this while hearing the word with and without seeing the list of words.
- Math skills were tested as Tom was offered a number of problems to solve independently. He was asked to verbalize how he worked out the problem. Tom did some simulation money exchange problems and he read numbers.

Assessment results

Expressive writing:

- Tom had frequent and inconsistent spelling errors.
- He tended to add or miss parts of multi-syllabic words.
- Tom had spelling problems with suffixes and prefixes.
- Tom used poor grammar, such as mixed verbal tenses and used fragmented and run on sentences.
- He used limited vocabulary when writing, most likely due to poor spelling because his verbal vocabulary is strong.
- He had difficulty organizing his thoughts in writing. He just put down the thoughts as they occurred.
- Tom's handwriting was poor – his letters were hard to distinguish.
- Tom was unable to see most of the errors in his writing – but could spot a few spelling errors when he really struggled with the words.
- He had difficulty hearing the letters when he asked for the correct spelling of a word - the letters had to be stated very slowly in order for him to write the word.

Reading and comprehension:

- Tom struggled with oral reading when confronted with new words or multi-syllabic words. He had poor word attack problem skills (could not sound out words and missed parts of words).
- While reading orally, he was faced with a number of words he was unable to pronounce and his comprehension declined, as compared to when he was able to read silently.
- Tom's comprehension was much stronger when he was given time to silently read the passage versus when he heard the passage orally.
- He was able to find factual answers, predict and discuss inferences from the passage and he enjoyed making conclusions and judgments.
- His verbal expression of his understanding of the passage was stronger than his written expression.
- Tom was able to follow multi-step instructions when he read them, versus when he heard them orally.

Oral communication:

- Tom often interrupted before the speaker was able to finish his/her comments.
- He often picked up on one point and seemed anxious to express himself by blurting out his response, even though it wasn't the key point in the discussion.
- He often asked the practitioner to repeat what they said.
- His verbal vocabulary appeared stronger than his written vocabulary, however when he was asked to read some of his words that were misspelled, he did not notice that he mispronounced them as well (i.e. valentime, libary).

Auditory versus visual:

- Tom's score was much higher when he was asked to circle the word that was different versus having to hear the different word.

Math skills:

- Overall, Tom's math skills appeared to be fairly strong.
- He tended to rush through and made careless mistakes.
- He did not see his mistakes and often it was a result of recording the numbers incorrectly (i.e. 256 he would write 265).
- His poor writing also created errors since he was unable to read his work and had difficulty keeping the column of numbers straight – this was problematic when he had to do 3 digit calculations (+, -).
- When making change he found it difficult, without the use of scrap paper, to figure out the answer.
- Although he did struggle with fractions, once he was reminded of the rules he improved.
- Tom appeared to understand calculations but once they were combined in a word problem, he could not figure out what calculation to use and which one to do first.
- Tom had difficulty verbalizing large numbers (i.e. 156,342 – he got his thousands and hundreds mixed up).

Overall attitude and motivation:

Tom tends to minimize the importance of spelling and writing, given that he really hasn't had to use it a lot in his job. His verbal skills have compensated for these areas. He feels that teachers are picky and don't know what you really need to survive. He is motivated to get his Grade 12 diploma but tends to want immediate action. He appears to know when he has a problem but hasn't ever thought of why and how he can fix it.

Questions for practitioners to consider:

Based on the initial findings, what areas would you focus on more in-depth, to gain a better understanding of Tom's struggles and why? What struggle areas do you think are impacted by his potential processing challenges and what areas are just results of a lack of exposure to skills? How would you approach Tom about the potential auditory and possible organizational learning disabilities?

Case Study B – Samantha

Observations and information gained from general intake

- A 24-year old female who just enrolled in the LBS program at a local college to work towards her ECE certification.
- She left school at 16 due to pregnancy – her son is now 7 and attending Grade 1.
- Samantha is highly motivated and is ready to make this step, although she is nervous since her previous school experience was not positive.
- She has a good support system – her grandmother provides daycare when needed.
- Samantha indicates she struggled throughout elementary and high school with her reading skills and often disrupted the class during quiet time when they were required to read.
- She took basic courses during her short time at high school and remembers being sent to a small group for extra help in reading during elementary school.
- Her rebellious behaviour began to interfere with her academics in Grade 7. Samantha's parents went through a difficult divorce at that time and limited attention was focused on her.
- She reports no medical history that would interfere with her learning and has had her eyes checked in the past 8 months.
- During her upbringing, Samantha recalls her mother always reinforced the need for her to do well in school and get a college degree, so that Samantha would not wind up like her mother.
- Samantha's mother had worked as a cashier in a grocery store and currently is working at a major department store. Although her mother has average reading abilities, Samantha knows that her mother avoids reading when possible.
- Samantha has not seen her father since her parents' divorce and believes he had his Grade 12 diploma. He was a mechanic.

Initial test results: (CAAT – Canadian Adult Achievement Test and Math Skills Inventory)

- Vocabulary 10.3, reading comprehension 6.5 and spelling 7.7.
- Math results indicate that she can add, subtract and multiply single-digit numbers but has difficulty with double-digits and division. As a result, she struggled with her percentages and fractions. Although her adding and subtracting were strong, when they were put into a word problem format she was unable to solve them.

Initial interpretation and additional information to ask

- Based on the information gleaned from the intake interview and the CATT results, it appears that Samantha has difficulty with reading comprehension and spelling which may indicate some type of visual processing disability. Her vocabulary and verbal skills are excellent, ruling out any intellectual inability and her medical history reveals no interfering factors to her learning. Samantha's key strength is her determination and realistic understanding of herself. She has a good support system and is clear about her goal.
- Samantha and the practitioner went through a self-assessment tool orally to gain insight into Samantha's understanding of her strengths and weaknesses. Samantha indicated that her difficulties were related to her reading. This interfered with her understanding of bills and any forms or government documents she has to deal with. She prefers to be given oral directions. Samantha felt she was fairly organized and had a pretty good attention span. She would like to read more, especially since her son is focusing on this in school. Samantha stated that she is starting to find some of his homework hard to understand. She enjoys being with people, although she prefers to be with children. She finds them less intimidating.
- After some discussion, Samantha shared how she has dealt with her reading challenges. The practitioner had her think about how she compensated for them while raising her son. Samantha said that when she reads to her son she usually will read the story first to herself and practice or she will buy books that she is familiar with from her childhood. Now that her son can read, Samantha pretends

that it is his homework to look up the unknown word in his picture dictionary, instead of admitting that she can't read it. Overall, Samantha relies heavily on her verbal skills and her ability to remember things. When Samantha or her son require medical attention, she has the nurse or pharmacist explain the medicine or any procedure, instead of personally having to read the brochure or prescription information.

- When Samantha was asked how she felt about the CAAT and the math inventory skills tests, what areas she struggled with and what areas she found okay, she indicated that she wasn't surprised about the results. Samantha found the reading passages very difficult and ran out of time to complete the reading section. She has always found math to be difficult, especially word problems. Samantha was always able to rely on her memory to do multiplication, adding and subtracting. She was pleasantly surprised about her vocabulary. Samantha admitted that when she sees a word in isolation, instead of seeing it combined in a sentence, she is able to read it better.

Questions for practitioners to consider:

What areas require further assessment and what tools would you use? At this point, do you see any potential learning disabilities? If yes, provide a rationale.

Further assessment

Need to assess her reading further to understand her difficulties
- Her reading was slow and she struggled with decoding the words, which interfered with her comprehension.
- She often missed words and left off endings.
- Samantha often lost her place when reading the passage.
- She would read some of the syllables backwards (*saw* for *was*).
- Her comprehension was excellent when the passage was read to her orally along with the questions, as compared to her oral and silent reading of the passage.
- When given sight words she was able to read them, but when nonsense words were mixed in she struggled with breaking the

units down in the word to sound it out. She most likely scored higher on her vocabulary due to her good memory skills and ongoing exposure to reading materials.

- Samantha struggled with cloze paragraphs.

Expressive writing and spelling

- Samantha was asked to write why she was interested in getting her ECE certification. She did take time to think about what she wanted to say.
- Although her grammar and spelling were weak, there were some signs of process (she used an opening and concluding sentence).
- Some common errors found in the written passage were:
  - Samantha omitted letters and words and sometimes substituted vowels and consonants.
  - She would leave out silent letters (i.e. instead of "ous" endings, she would write "us").
  - If she wasn't able to recall a word from her memory she relied only on her phonetics for spelling (wrote payn for pain and laf for laugh).
  - She left out punctuation and often didn't capitalize her sentences.
  - Her writing included a number of run on sentences.
  - She left little space between her words.
  - There were letter reversals and she only caught them when she read over her work, not when she looked over her work (she said this weakness has been drilled into her head so she is very aware of it).

Math skills:

- Samantha had difficulty with multi-step calculations.
- She found it very difficult to find information on a graph or a chart.
- She struggled with operations when they involved more than 2 digits that required columns (long division and multiplication).
- Samantha was able to make change and deal with simple math involving single digits.
- She was able to recite her multiplication tables based on her strong memory skills.

Overall conclusions:

Samantha appears to have some visual learning disabilities that affect her reading, writing, spelling and math. Her strong verbal skills and good memory have helped her cope with her weaknesses and have allowed her to develop good comprehension skills when information is given to her orally.

Case study C – Frank

Information gathered during initial meeting:
- Frank is 52 years old and has been unemployed for the past 2 years, since his company shut down.
- He is currently receiving Ontario Works benefits.
- He has learned about the "new way "to search for a job, but recognizes that he needs to upgrade his skills.
- He is quite handy, has done renovation projects and is interested in starting his own business.
- He was referred to the community-based literacy program from the school board credit program because he was having difficulty in the classroom environment and with submitting assignments on time.

Information gathered from initial intake

Academic background:
- Frank obtained his Grade 9 credits, but left school to seek work.
- Frank found it difficult to pay attention in school and often got into trouble.
- Frank did enjoy math and spelling, but disliked English, and History.
- He remembers always handing in his assignments late or avoiding them completely by skipping school, as he got older.
- Frank struggled in the adult learning program – he found it hard to complete his writing and reading homework and assignments. Frank also indicated that he found it difficult to sit in the classroom for a long period of time.

- His initial CAAT tests revealed that Frank had Grade 8 to 9 level functioning in all areas, yet he still struggled in the adult upgrading program.
- While he was at the learning centre he was enrolled in a Mathematics, History and English program.
- Frank was referred to the community-based program to access one-to-one tutoring or small group programming, as a result of his difficulties in the credit program.

Medical history:
Frank is not on any medication that would interfere with his learning. Frank does wear glasses and shows no indication of a hearing problem.

Family situation:
Frank is married with 2 adult sons who are living independently. His wife is a school secretary and is the "organizer", as he states it. Frank says that his wife deals with most of the daily planning and household organizing - his role is to keep the house in good repair.

Self-assessment:
Frank indicated that he has difficulty sometimes with his reading and writing. He stated that he often has difficulty organizing and planning things. He often loses his tools when doing his renovation projects and gets bogged down when he has more than one project on the go. Frank finds it difficult to pay attention and concentrate when other distractions are around. He can't sit still for long and indicated that he doesn't enjoy doing tasks that require a lot of attention to detail, such as paying the bills and banking. Frank says he is good at building and repairing things when he works on one thing at a time.

General observations from the interview:
- Frank has a good vocabulary and appears to understand what is spoken to him.
- He did seem a bit disorganized at the beginning of the interview – he had to look through his wallet several times before he could find the report the school had sent with him.
- He was quite fidgety and he was given 4 breaks during the 1.5 hour interview.

- He had no problem reading the self-assessment tool and completed it independently.
- His writing was sloppy when he added information on the self-assessment form and his sentences, although brief, were coherent.

Overall conclusions
- Although no informal assessment has been completed, the CAAT results indicate that Frank is not struggling with his basic communication and math skills. However, he is struggling with completing his homework and assignments based on the report from the credit program.
- Based on Frank's description of his academic background, his self-assessment and his most recent upgrading experiences, it appears that he may have some type of organizing or cognitive processing breakdown and may have attention problems that interfere with his learning.

Questions for practitioners to consider:

What areas would you assess with Frank? What kinds of assessment tools would you access and why?

Assessment Areas
Frank needs to focus on the process and not just the product. How does he go about completing a task?

Writing Sample:
Frank was asked to prepare 3 to 4 paragraphs on why he wants to start his own business and what skills he has to offer. The topic was written on the top of the paper that was given to him. After minutes he had nothing completed and was quite frustrated. He had no idea where to begin. As a result, dynamic assessment technique was used. Frank was given the steps for composing a small report, one step at a time. He was able to complete the task only when each step was given to him. Most of the errors found in his writing were minor and any spelling errors were a result of a lack of understanding of basic spelling rules.

During this process it was observed that Frank was easily distracted and needed several breaks before he could move onto the next step.

Reading:
- Overall Frank's decoding and comprehension was good with short passages.
- As the length of the passage was increased, his attention span, decoding skills and comprehension deteriorated even though the reading level was the same as the short passages.

Questions for practitioners to consider:

Based on the assessment results, what conclusions can you make about Frank's challenge areas?

Overall conclusions:
Frank appears to have organizational learning disabilities and a short attention span. He struggles with how and where to begin with any writing assignments. His short attention span interferes with his reading and ability to comprehend meaning when the text is detailed. Further observation of Frank's attention span would be valuable to develop appropriate strategies. Some suggested ways to assess this area further are by self- monitoring, self-assessment, practitioner observations, and learner participation. All of these approaches emphasize the importance of the learner/practitioner relationship.

Informal assessment models

Deciding what assessment tools and techniques to use is impacted by a number of factors: practitioners' knowledge and experience with learning disabilities; existing assessment tools utilized; program resources - both financial and human; and last but not least, the needs of the learners. In recognition and support of the "common assessment" strategy, the goal of this module is not to promote one method or assessment tool, but to provide practitioners with a solid understanding of the assessment process and how to assess learners' strengths and struggles related to their suspected learning disability. The following informal assessment models are included, not to endorse them but to inform practitioners of various options that are available. The following models were developed for literacy practitioners and promote a learner-centred approach. (For more information on other types of formal and informal assessment tools, go to Appendix C.)

Holistic Education Literacy Process (HELP) model

A whole language approach is used to get a complete picture of the skills and processes that adults use. It takes a multidimensional approach by using speaking, listening, reading and writing tasks. The model involves learners' input. This model was developed by Sandra Crux to meet the needs of literacy programs where formal assessment is not feasible or practical.

Each of the steps in HELP model include:

- A description of the assessment process
- The purpose for each step in the model – which explains why this area is being assessed
- A list of potential assessment results that could indicate learning disability problems
- Examples of possible formal tests that could be used in conjunction with the assessment process

The learner completes the following 8 steps in the HELP assessment process:

Step 1: Ask the learner to read a passage aloud into a tape recorder (learner selects a passage of interest that he/she has not seen before).

Step 2: Have the learner listen to his/her oral reading passage with earphones (so he/she doesn't feel imitated if he/she is uncomfortable with his/her oral reading).

Step 3: Ask the learner to listen again, but this time to take notes about the passage.

Step 4: Have the learner highlight the main points from his/her notes.

Step 5: Ask the learner to develop the notes by using an organizing structure (pull together information that belongs under each main point).

Step 6: Ask the learner to write a short summary based on the information he/she has gathered.

Step 7: Have the learner review and revise the short summary.

Step 8: Through an oral discussion with the learner, have him/her reflect on the summary he/she wrote and discuss conclusions.

The skills and strategies needed to do each of the steps are highlighted under the categories of thinking, oral communication, reading and written language. The HELP assessment model cannot formally diagnose a learning disability, but it can help discover areas of difficulty for the learner so that appropriate strategies can be targeted. This model can be simplified to reflect the reading level of the learner.

To access a copy of Compensations for Learning Disabilities by Sandra C. Crux go to http://www.wallbooks.com/source/crux.htm. It can be purchased for $16.95. Orders can be placed by fax or mail.

Destination Literacy – Informal assessment model

The informal assessment is a series of activities that practitioners can use with learners to determine learner strengths and struggles. The results give a better understanding of the learners, help the practitioners to determine the possibility of a learning disability and help to develop an effective program. The assessment will help to indicate strengths/areas of need in learners' processing skills: attention, language/auditory, memory and visual-spatial abilities.

Areas of assessment include: reading, written expression, spelling and mathematics. An attention/self-esteem observation checklist is included to help guide the practitioner's observations while conducting the informal assessment.

At the end of each task section there are two checklists:

- A summary of learner responses that can be used to record answers
- A summary of observations that can be completed after the tasks in each section are finished

The manual also provides comprehensive teaching skill strategies information based on the assessment results. *Destination Literacy: Identifying and Teaching Adults with Learning Disabilities* (1999) is available in French and English and can be purchased for $50 directly by telephoning the Learning Disabilities Association of Canada at : 613-238-5721, **www.ldac-taac.ca** or Grass Roots Press at 1-888-303-3213, **www.literacyservices.com**

Effective assessment practices

The following practices should be used to encourage a learner-centered and self-directed environment. These practices are based on the cognitive learning theory. This learning theory views learning as an active mental process of acquiring, remembering, and using knowledge. Learning is evidenced by a change in knowledge, which makes a change in behaviour possible.

- Encourage divergent thinking and multiple correct responses
- Encourage various ways of self-expression
- Engage learners in problem solving and critical thinking
- Provide choices in tasks
- Provide choices in how to show mastery
- Provide opportunities to reflect, revise, and rethink
- Include concrete experiences
- Engage learners in defining goals
- Provide a range of models for learners
- Provide learners with opportunities for self-evaluation and peer review, with input on criteria
- Provide real world opportunities[55]

Criteria to consider when selecting assessment tools

Use the following criteria when determining what type of assessment tool(s) to select. Many of the tools that practitioners use may not meet all of the criteria, therefore practitioners will need to think about what criteria are most important based on learners' needs, personal assessment skills and the programs' resources.

- Does the assessment tool answer the questions you are asking? For example, if you were asking how does a learner's achievement in

his/her comprehension compare with others of the same age – you would use a norm referenced test. If you want to know what writing errors a learner is struggling with you may choose to use a work sample analysis.

- If you are planning to use a formal assessment tool, you will want check that the norm is appropriate for your learner. If the norm that the results are measured against is related to a group of elementary primary level students and you are working with adults, then you need to assess the impact this would have on the results.

- Is the tool economical in terms of money and/or time? How long will it take practitioners to learn how to use the tool? How much time will it take for learners to complete the assessment? How much time is required to interpret the results?

- The time needed for the learner to engage in the process should be reasonable. If a time is not provided then common sense prevails. Two factors to examine when deciding a suitable length of time are the learners the program serves and the staff availability.

- The assessment material should be consistent with what is currently known about learning disabilities. Theories and definitions of learning disabilities have changed over time, so you need to ensure the basis for the screening tool is reflective of the most recent research. Copyright dates are not the best guide because the tool may have been based on an earlier theory about learning disabilities, but may have been revised every few years.

- Research supports the links between screening procedures and instructional materials. If there are recommendations for learning strategies based on the results of the screening, then you need to feel confident that they reflect the predicted learning disabilities. "The validity information should show the screening test results can accurately predict which intervention, material, or procedure is better. Without that information, treat the recommendations with extreme caution."[56]

Summary of Key Points

- The assessment process, regardless of the tools used, **is not designed to diagnose an adult with learning disabilities but to help them understand the impact that the potential learning disability may have on their learning**. The assessment is a process to determine adult learners' strengths and struggles to help practitioners' to develop teaching strategies and accommodations and help learners to understand what is required to reach their goal.
- Adults with learning disabilities state that the key to their success was their decision to take ownership of their disability and fully understand the impact it had on their learning and day-to-day functions. This highlights the importance of the learner being an active partner in the assessment process. The practitioners' role is to help facilitate the assessment process by providing guidance to the process.
- The assessment process is constant and flowing. Learners and practitioners need to note progress and struggles and gather more information as needed. This helps learners to understand themselves, reduces frustration, builds self-esteem, and facilitates the building of independence and ownership of their ongoing and future learning and coping strategies.
- There should be a focus on understanding the impact of the processing breakdown on academic, social and organizational skills. The processing breakdown can impact how one stores and retrieves information and/or how they organize the information that is taken in.
- Of the four kinds of informal assessment techniques (checklists, self-assessment, task demonstrations and observations), **observations and task demonstrations** were two of the best ways to determine learners' strengths and weaknesses.
- Assessment, whether it is initial or ongoing, should look at both the:
    - **Process** - how learners input and output the information
    - **Product** - how the information provided is organized and presented

Appendix A

Websites that support information in Module 2

Some Thoughts on Learning ABILITIES and **Learning Disabilities: Beginning to Explore the Broader Implications of Learning Disabilities in Adults**

http://novel.nifl.gov/newsletters/nspr96.htm

Overview
You will find the fore mentioned articles in the National Institute for Literacy Newsletter. Just scroll down until you find the article title.

Assessing Learning and Evaluating Progress
The Grade's Not the Thing by Anne M. Bauer

http://www.ldonline.com/ld_indepth/assessment/adolescents_and_inclusion.html

Overview
The chapter explores issues related to assessing learning and evaluating progress in inclusive high schools. Although it is geared to a high school setting, it provides a good overview of authentic ways to evaluate learners' progress. The following are just a few of the topics covered in the chapter:

- Recognize issues of fairness in evaluation
- Describe ways to integrate instruction and assessment
- Identify ways to measure student progress and learning
- Identify accommodations and modifications useful in testing situations

Information-Gathering and Diagnostic-Prescriptive Teaching: The keys to Effective Adult Education. Sturomski & Associates

http://www.ldonline.org/ld_indepth/adult/information_gathering.html

Overview

The author in the article recognizes the limited time practitioners have in a classroom setting and provides an alternative method for assessing. Diagnostic-prescriptive teaching involves: following up with additional questions as instruction proceeds; watching how students attempt to learn new information; observing, scrutinizing, and analyzing student efforts and errors; and modifying instruction to better meet the individual student's needs.

The Uses and Misuses of Processing Tests. Louise Spear-Swerling, Ph.D.

http://www.ldonline.org/ld_indepth/assessment/swerling_assessment.html

Overview

The author discusses the pros and cons to using processing tests. Although it is written about elementary students, it gives a good overview of how cognitive processing tests are used and what they measure. The article includes a chart that highlights measures of important reading-related cognitive processes.

ERIC Clearinghouse for Assessment, Evaluation and Research

http://ericae.net/

Overview

The Clearinghouse provides balanced information concerning educational assessment, evaluation and research methodology. The resources encourage the responsible use of educational data. You can access a full text Internet library on assessment related topics.

Appendix B

Self-assessment tools and resources

Learning Profile and Analyzing my Learning: Strengths and Struggles developed by Janet Johnston.

Overview
This is a tool with 142 individual statements that are associated with a specific learning, training or underlying skill. The individual responds to whether a statement is true or not true for them, based on a 5 point Likert scale. The tool is based on the recognition that most adults know themselves best.

The tool could be used for greater self-recognition and reflection, as a means to validate other assessment results or as a beginning point for the strengths and struggles information gathering process.

To access a copy of the self-assessment tool you can contact Janet Johnston at Learning Potentials (905) 684-4994 and her e-mail is
learningpotentials@on.aibn.com.

The POWER Model (learner self-assessment tool to evaluate the writing process in the areas of **p**lanning, **o**rganizing, **w**riting, **e**diting and **r**eview)

Plan

I chose a good topic	Yes	No	
I read about my topic	Yes	No	
I thought about what the readers will want to know	Yes	No	
I wrote down all of my ideas on a "think sheet"	Yes	No	

Organize			
I put similar ideas together	Yes	No	
I chose the best ideas for my composition	Yes	No	
I numbered my ideas in logical order	Yes	No	
Write			
I wrote down my ideas in sentences	Yes	No	
When I needed help I... ____did the best I could ____looked in a book ____asked my partner ____asked the teacher			
Edit			
I read my first draft to myself	Yes	No	
I marked the parts I like	Yes	No	
I marked the parts I might want to change	Yes	No	
I read my first draft to my partner	Yes	No	
I listened to my partner's suggestions	Yes	No	
Rewrite			
I made changes to my composition	Yes	No	
I edited for correctness	Yes	No	
I wrote the final draft in my best writing	Yes	No	

Available at

http://www.ldonline.org/ld_indepth/writing/isaacson_assessment.html

Analyzing My Learning: Strengths & Struggles at http://ldlink.coe.utk.edu/screening.html (Scroll to information checklists for teachers and learners.)

Overview

This is an 'adapted-for-learner-use' version of the Adult Learning Disability Screening (ALDS) document. Its primary purpose is to build self-understanding and advocacy on the learner's part. There are self-assessment checklists for reading, writing, spelling, mathematics, organization, attention, and general strengths and abilities.

The Cognitive Processing Inventory (CPI) at http://www.ldinfo.com/cpi1.htm#top

Overview

The CPI is a non-biased, standardized behaviour rating scale, which can be completed by parents, teachers and students to evaluate information processing characteristics as part of formal or informal learning style and/or learning disability assessment. The CPI provides scores in the processing areas of:

• Auditory Processing
• Visual Processing
• Sequential/Rational Processing
• Conceptual/Holistic Processing
• Processing Speed
• Attention

CPI for adults to rate themselves (sample only) go to: http://www.ldinfo.com/cpi-aform1.htm#top

Uncovering the mysteries of your learning disability – self-advocacy manual online - Easy to read and clear description of learning disabilities and how they impact on individuals

Practitioners may choose to refer to chapters one through four http://www.ldinfo.com/self_advocacy_manual.htm#top

Appendix C

Sources for additional assessment tools

The British Dyslexia Association Website

http://www.bda-dyslexia.org.uk/main/information/index.asp
and click on Teacher assessment of dyslexia adults.

You can access the following information:
Dyslexia Checklists
Dyslexia Screening
Full Assessments
       Cognitive abilities
       Literacy skills
       Further dyslexia characteristics
       Writing skills
       The effects of the difficulties
       Recommendations

Seeds of Innovation - **If I could only read, write and spell.** Tennessee
Literacy Resource Center.

http://slincs.coe.utk.edu/pdf/Read-Write-Spell.pdf

The first chapter on assessment provides detailed information on specific
tools. The tools are illustrated by actual experiences with students in classes.
The names have been changed but the people are real.

Intelligence tests

Wechsler Adult Intelligence Scale:
 The test provides an overall, composite measure of intelligence, an estimate
 of verbal comprehension and expression, and an estimate of visual-spatial
 reasoning. For ages 16 to 89. More information go to the Psychology
 Corporation at
http://www.tpc-international.com/resources/title.cfm?id=953

Kaufman Adolescent and Adult Intelligence:
Ages 11 to 85. For more information go to the American Guidance Services at
http://www.agsnet.com/index.asp

Woodcock Johnson III Tests for Cognitive Ability: Ages 2 to 90. It provides
information on important cognitive processing abilities, which is important in
the diagnosis of learning disabilities**.** For more information go to Riverside
Publishing Company at
http://www.riverpub.com/products/clinical/wj3/home.html

Other

Wide Range Achievement Test (WRAT 3)
For ages 5 to 75 years. It is a 15-minute numeracy test. There are no word
problems, so reading is not an issue. For more information, go to the Dyslexia
Institute at **www.dyslexia-inst.org.uk** and click on the resource shop.

Woodcock Johnson III Tests of Achievement
For ages 2 to 90. It provides multiple measures of reading, mathematics,
written expression and language. The test takes about one hour to complete.
For more information go to Riverside Publishing Company at
http://www.riverpub.com/products/clinical/wj3/home.html

Cognitive Processing

SCAN – Central Auditory Processing:

It takes approximately 20 minutes to complete. This test can identify a central auditory processing disorder and obtain information about an individual's ability to process auditory stimuli. For more information go to
http://www.med.uc.edu/admin/tartan/scan_a.cfm

Lindamood Auditory Conceptualization Test (LAC)

This test is an individually administered, criterion-referenced assessment that measures the ability to discriminate one speech sound or phoneme from another and segments a spoken word into its constituent phonemic units. It examines phonological awareness. For more information go to
http://www.agsnet.com/group.asp?nGroupInfoID=a11395

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Learning Disabilities Training:
A New Approach

Building an effective training plan: Incorporating learner-centred strategies

Learning objectives

- Define strategy

- Describe different types of strategies and their functions

- Understand good strategy features

- Describe what factors can impact strategy effectiveness

- Understand how to effectively teach strategies to learners

- Describe various intervention strategies:
  - Strategies to teach reading comprehension and written expression
  - Memory strategies
  - Other skill-based strategies (mathematics, spelling, vocabulary and listening)
  - Behavioural strategies

Chapter outline

- Building effective training plans for adults with learning disabilities
    - Principles of an effective training plan

- What is a strategy?
    - Definition
    - Types of strategies and related functions

- Factors that can impact the effectiveness of learning strategies
    - Learner motivation
    - Learning environment

- Features of effective learning strategies

- How to teach learning strategies
    - Steps to the successful acquisition of a strategy
    - Helpful pointers when teaching and working with strategies
    - Characteristics of strategic learners

- Learning strategies
    - What are the most essential strategies to learn?

- Reading
    - Phonetics and word identification
    - Reading fluency and cueing strategies
    - Vocabulary development
    - Reading comprehension
    - Reading strategies

- Expressive writing
    - Support strategies that can be integrated into the writing process
    - Spelling strategies

- Suggestions for adults with visual memory / perception disabilities
- Suggestions for adults with auditory memory/perception disabilities and sample strategies

- Listening strategies

- Math challenges
  - Sample math strategies

- Storing and remembering information
  - Four principles of mnemonics

- Strategies to deal with behavioural challenges:
  - Difficulty remembering
  - Difficulty with initiation
  - Difficulty carrying out a plan of action
  - Attention problems
  - Difficulty with decision-making – poor judgment
  - Impulsivity or lack of inhibition

- Case Studies

- Summary of key points

- Appendix A: Learning disabilities characteristics and related strategies chart

Building training plans for adults with learning disabilities

Principles of an effective training plan

"Each of us is unique. Everyone has something to offer. I can't breathe alone under water. I'm disabled that way. I need accommodations – tank, suit, flippers, etc… I need someone from the ocean to teach me how to swim and dive."[1]

The first step to building an effective training plan is an assessment that focuses on the learner's needs. A good assessment should provide information on the following:

- A rationale for the difficulties the adult experiences and;
- Information on the adult's strengths and struggles.

Providing objective evidence of a learner's strengths and weaknesses is not only empowering for the adult but is essential for planning an effective training plan.

Any support should be carefully planned and relevant to the learner's personal circumstances and individual goals. The learner must not only be active in the planning, they should also be involved in the constant cycle of evaluation and strategy adjustments. One of the most valuable contributions to the plan is what the learner thinks his/her strengths and struggles are and what areas he/she views as needing to learn.

"It appears that the best educational tool for people with disabilities is patience. Self-esteem, building on strengths, advocacy for a student's disability, and increasing the awareness of other staff and students are paramount. These students need to gain respect from others by having knowledge about their rights as a student with a disability.

Often, individuals have struggled their whole life not having been diagnosed with a disability, but knowing that learning was more difficult for them. **Their disability has a psychosocial, a technological, and an educational impact. Any approach that successfully works with these students will address all three of these parameters**.

We need to change the ecology for the learning disabled student by addressing their need for support, acknowledging their experience of helplessness, and providing access to the appropriate assistive technology. We must pull all of these things together to develop the best transition plan possible."[2]

A balanced approach

The Dyslexia Institute states that there are two views about the most appropriate approach to providing support for adults. Some argue that this should be a 'top-down' or 'problem-solving' approach, focusing on the specific difficulties that a person is having in work or in daily life – prioritizing what is causing the greatest problem 'there and then'. Others argue for a 'bottom up' approach through which key skills and strategies are taught that can then be applied in different situations.

The Dyslexia Institute argues that a combination of these approaches is necessary and that what determines the combination mix depends on the learner. The LBS program also reinforces this through the belief in a learner-centred approach. Every adult who enters a LBS program has varying needs, strengths and goals. In order for the training plan to be truly learner-centred, it must meet the individualized needs.

Someone with confidence, who can learn and implement strategies quite easily, would have lessons that are more top-down in nature. Whereas, when dealing with adults who have poor self-esteem, practitioners would first concentrate on the positive and show them that they can learn. Then they would start to tackle the struggles one at a time. Once learners have got past that initial bit, they can start to talk about problems, which need to be addressed.[3]

Regardless of the approach taken, a training plan should be:

- **Individualized** - based on the learner's strengths and struggles.

- **Participatory** - input comes from both the learner and the practitioner.

- **Flexible** - able to adapt to change according to the effectiveness of particular strategies or approaches.

- **Balanced** - covers a number of the learner's strengths and struggles.

- **Continuous** - it is ongoing and is revised and modified as needed.[4]

The following supports should be considered for each area that the learner has identified as a need. These supports are applicable across all areas of need (social, employment preparation and/or educational).

Adjust the Setting/Environment
Alter the environment or provide ways to screen out disrupting environmental stimuli.

Adapt the Task
Find ways to avoid/bypass the problem or devise strategies that the adult can use to lessen the impact of the problem.

Adjust Instruction/Presentation of Information
Alter the way you present information to the adult (in a workplace setting) or adapt your instruction in response to individual needs and strengths (in the classroom).

Make Accommodations in Testing/Performance
Work around specific difficulties to devise a true measure of abilities. Do not allow disabilities to prevent an individual from showing what he/she can do. Allow an adult to respond and demonstrate competence on the job by using his/her strengths and abilities and when possible, bypassing disabilities.[5]

Module 3 and 4 will address learner-focused interventions. Both Modules 3 and 4 will provide content on how to develop interventions that address teaching learners the necessary skills and strategies to enable them to successfully meet their goals. In Module 5 we will address practitioner-focused interventions, which will outline instructional strategies. The interventions will focus on how the information is selected and presented so that it is more understandable and memorable and enhances learner engagement and retention.

What is a Strategy?

Adults with learning disabilities require a number of skills and strategies to help manage their disabilities in education, training and employment situations. Through the initial assessment process, both the practitioner and the learner should have gained a better understanding of the learner's strengths and struggles. Based on this information and an ongoing assessment process, three areas of assistance may be identified in the training plan: "**psychosocial, educational and technological**."[6]

Psychosocial assistance pertains to building self-esteem, motivation and independence. Often adults' self-esteem may be low due to previous negative experiences with school and possible ongoing struggles with employment. Many adults may not understand why they struggle and they accept their difficulties as a lack of "smarts".

Educational assistance refers to helping adults build their skills through the development of strategies, appropriate instruction and/or accommodations.

Technological assistance pertains to the use of technology as an accommodation -a tool for organizing and/or developing skills. Often technology is used to help compensate for specific learning deficits.

This module will deal specifically with educational assistance through the discovery of various skill-based strategies. Module 4 will focus on psychosocial and technical assistance.

Definition

"Strategies are techniques that are used to help: understand and learn new knowledge and/ or skills; integrate this new information with the information we already know; and be able to recall the information/skill later, even in a different situation. When we learn a new skill or gain new information, the strategies include what we think about (cognitive aspect) and what we physically do (the action we take)."[7]

Strategies can be as simple as re-reading something when it doesn't make sense or be more complex like a strategy that requires a number of steps, such as learning the components needed to write an essay.

Types of strategies and related functions

Strategies can be divided into two types:

- **Cognitive** - Help learners process and manipulate information (i.e. filling out a chart, taking notes).

- **Meta-cognitive** - Help learners to plan, monitor and self-evaluate. Learners need to be aware that learning is a process. Examples would include monitoring comprehension, re-reading a passage when something doesn't seem right, or using steps to develop a composition.[8]

Strategies can be categorized by the different functions they serve for the learner.

- **Acquisition and restore strategies**: Used to gain new information or skills, or take advantage of strengths while working on performance skills that are weak and keeping learners from achieving desired outcomes (i.e. a new way to solve a math problem).

- **Storage strategies**: Help learners manipulate or transform information so that it can be effectively placed in memory (i.e. mnemonics).

- **Demonstration strategies**: Help learners recall or demonstrate what they have learned (i.e. reading comprehension strategy such as PASS).[9]

- **Modify/adapt strategies:** Address features of the context and the task so they support the learners' performance. They build on learners' strengths and needs, so that weak areas do not interfere with performance (i.e. use symbols when reading text to indicate areas they know, have questions about or don't understand). These strategies don't fix the problem but reduce its influence on performance.

- **Prevent strategies**: Used to anticipate a problem in the future. Offer a strategy for making the potential situation better (i.e. to help with transition from a one-to-one situation to a small group or classroom).[10]

Factors that can impact the effectiveness of learning strategies

This module was developed based on the need identified by LBS practitioners who frequently asked - **What instructional strategies are effective with adults with learning disabilities?**

It can be a challenge to answer this question. This module will include numerous strategies and identify what strategies may address the various learning disabilities (visual, auditory, organizational). However, given the unique characteristics that each adult brings to literacy programs, finding an easy fix should not be expected. What works for one person may not necessarily work for another. Strategies should be seen as dynamic and ever changing. In addition, for learners with histories of failure, teaching learning

strategies alone may not be enough to encourage them to persist and improve their skills. Adults' previous educational experiences and present emotional states can affect the effectiveness of the strategies and whether learners will even use them.

Learner Motivation

A learner's motivational state can have either a negative or positive impact on his/her willingness to learn. Attribution theory points out that adults who have experienced frequent failure may attribute their failure to bad luck or task difficulty and their success to good luck or ease of task, instead of seeing success and failure as a result of their own effort or ability. Thus adults may be less willing to persist with or even try a new learning strategy if they feel they have no control over the situation. When learners' motivation levels are low, practitioners need to help them understand that the success of the strategy is a result of their effort and not just a case of good luck. As learners continue to experience success, their motivational levels should improve and they will begin to see the relation between their efforts and success.[11]

The St. Thomas University study guide identifies 4 steps to learning which emphasize the impact of an individual's motivational state and previous experiences. The path for most effective learning is through knowing:

- Yourself
- Your capacity to learn
- The process you have successfully used in the past
- Interest in and knowledge of the subject you wish to learn.

Adults need to fully understand their profile of strengths and weaknesses. They should be encouraged to talk about their difficulties and feel free to ask questions. Practitioners need to be open with their learners and emphasize their role as facilitators. Practitioners are encouraged to state any limitations in their knowledge of learning disabilities. This approach creates a more even playing field and helps to develop equal working relationships with learners. Learner independence will be encouraged and fostered by taking this open approach from the beginning

Learning Environment

Numerous studies have found that the most successful individuals understand and use a variety of strategies to assist and monitor their learning and day-to-day functioning. In addition, successful learners can describe the strategies they use and can describe whether or not particular strategies prove useful in particular situations. This requires learners to be aware of how they are learning; to self-evaluate and detect whether particular strategies are working in certain situations; and to modify them accordingly.[12]

The following characteristics should be present in the learning environment to increase the potential for success:

- A positive and supportive climate
- Minimal distractions
- Appropriate levels of structure and feedback
- The independent use of strategies
- A multi-sensory instructional approach.[13]

"At all times, support must be focused on the individual's circumstances and specific goals and tailored to their unique pattern of strengths and weaknesses."[14]

Features of effective learning strategies

Strategies that are both effective and efficient share characteristics found in the following three features:

- **Content features** - The steps in the strategy and what they are designed to facilitate during the learning process.
- **Design features** - How the steps are put together to facilitate learning and future use of the strategy.
- **Usefulness feature** - The potential transferability of the strategy to everyday needs.

Each strategy should provide information on how to use the strategy. This information should include when, how and where to use the strategy. The following table was adapted from Features of Good Learning Strategies written by Edwin S. Ellis and B. Keith Lenz at
 http://www.ldonline.org/ld_indepth/teaching_techniques/ellis_strategyfeatures.html

Features	Characteristics	Examples
Content	Lead to a specific and successful outcome.	"How well is the student performing the second step in the test-taking strategy?" and "Did the strategy help the student pass the test?" The learner can examine the result of his or her effort and begin to evaluate the effectiveness of the strategy.
	Are sequenced in a manner that leads to an efficient approach to the task.	A strategy taught to students must be a collection of "best" ideas organized in the "best" sequence that leads to the "best" mental and physical actions for the task.
	Cue students to use specific cognitive strategies.	Cognitive strategies such as activating background knowledge, generating questions, summarizing, organizing, imaging, and so forth.
	Cue students to use metacognition (learning to learn)	Reflection on and evaluation of the way a task is being approached and accomplished (e.g. self-questioning, goal-setting, checking, reviewing, self-monitoring) should be included in the steps of the strategy when they are important in completing a task.
	Cue the student to take some type of overt action.	
	Can be performed by the student in a limited amount of time.	A strategy must be performed in a relatively short time. Otherwise the self-instruction process involved in performing the strategy will be undermined, rendering the process ineffective.
	Are essential and do not include unnecessary steps or explanations.	

Design	Use a remembering system.	Such as COPS – an acronym used to remember the steps in editing (capitals, overall appearance, punctuation and spelling).
	Use simple and brief wording.	Each step contains only a few action words to facilitate a direct association to the cognitive and physical actions that are necessary to perform the step and that have been presented to the individual already as part of the full explanation of that strategy.
	Begin with "action words"	
	Use seven or fewer steps.	
	Use words that are uncomplicated and familiar to students.	
Usefulness	Address a common but important existing problem that students are encountering in their settings.	Strategies tend to be learned and generalized more quickly than strategies that seem to have less utility from students' perspectives.
	Address demands that are encountered frequently over an extended time.	Strategies that are useful immediately and whose benefits are apparent immediately.
	Can be applied across a variety of settings, situations, and contexts.	The strategy instruction is necessarily intensive and extensive; therefore the relative cost-benefit ratio plays an important role in the effectiveness of strategies.

How to teach learning strategies

“Because adults with learning disabilities often lack a strategic orientation to learning, it is difficult for them to achieve independence without instruction in learning strategies.”[15]

Before learning can be productive and beneficial, learners need to understand why they have experienced difficulties in the past, believe that they can succeed and have a positive approach to making mistakes. Because of the uniqueness of each learner, the time and supports needed to get to this level of self-realization will vary. Practitioners can help learners work towards a more productive learning attitude by providing effective teaching of key skills, being flexible in their approach, providing constant feedback and encouraging independent learning.[16]

A question commonly asked by many practitioners is, “how can we discuss errors with learners without negatively impacting their motivation?” Often learners have only heard about their weaknesses throughout their school experiences. One way to address errors is by using “Directed Discovery Learning.” This method shares the principle that it is more helpful to teach learners to investigate mistakes, rather than to just point them out.

“First, adults need to accept that making mistakes is normal. Then they can learn how analysis of mistakes can help to identify areas that need more attention. This might involve learning strategies to check their work and to correct it themselves. This is a skill that they can take away with them and leads to greater independence and self-confidence. Ideally practitioners should very rarely point out where a person is going wrong but encourage them to find this out for themselves.”[17]

Practitioners need to respect adults’ personal ideas about the way in which they want to be taught and the goals that they expect to achieve. When they are instructing, it is important for practitioners to be flexible and have an understanding of how to adapt to each learner’s particular needs.

The key to success is for practitioners to understand and acknowledge the importance of the actual "teaching process" of the strategy itself. If a strategy is not taught properly, then it is less likely that the learner will see success, repeat the strategy and learn to use it independently.

Strategies need to be chosen and developed for learners based on an assessment of their strengths and weaknesses. Many adults have developed strategies but these strategies may be ineffective. Due to adults' habitual patterns, they often don't want to give these strategies up.

Learners need to identify with and understand why and how the strategy is used before it can be implemented. When learners take ownership of their strategies, it is more likely they will utilize them independently and transfer the strategies appropriately to other situations they may encounter.

Steps to successful acquisition of a strategy

The Strategies Integration Model (SIM) has emerged from the research conducted at the University of Kansas. Based on cognitive behaviour modification, the SIM is one of the field's most comprehensive models for providing strategy instruction. It can be used to teach virtually any strategic intervention to students.

Both learning strategies and teaching strategies can be addressed using the Strategic Instruction Model. The learning strategies for learners will be addressed in modules 3 and 4, and Content Enhancement (teaching strategies) will be addressed in Module 5. The SIM is an integrated approach to address both the challenge of meeting the content demands for learners with diverse needs in a small group or classroom environment, and the performance gap. In this module, the use of the SIM will address how to deal with the performance gap through learning strategies.

The model can be used in a one-to-one situation where practitioners can teach learners the strategies that meet their identified needs. But how do practitioners implement the diverse learning strategies required in a classroom setting? First, they must accept the fact that they can't possibly use

every individual strategy that may have been identified, when teaching a number of learners at once, but they can teach strategies that can be applicable to most learners at any given time. Effective learning strategies are ones that can address a significant learning area and that can be applied in various situations. For example, a reading comprehension strategy such as Paraphrasing strategy – RAP can be applied by all learners regardless of the varied levels of reading skills that may be found in one classroom. This reading strategy encourages learners to read a section of the material, ask questions regarding the main idea and details of the section, and encourages them to paraphrase the information in their own words. This paraphrasing strategy is an effective learning tool for all learners to help improve comprehension.

Once the strategy has been selected the SIM involves 6 main steps:

1) **Pretest learners and encourage them to become interested in learning the strategy.** Practitioners should determine how much the learners might already know about using the strategy and secure learner commitment to learning the strategy from top to bottom. It is important to explain to learners what strategy they are going to learn and how it can help them with whatever skill is being addressed through the strategy.

2) **Describe the strategy.** Give a clear explanation of the strategy, the various steps, as well as some of the benefits of learning the strategy. Identify real assignments or tasks where learners can apply the strategy. Ask learners if they can think of other work where the strategy might be useful.

3) **Model the strategy.** Modeling the strategy for learners is an essential part of strategy instruction. In this stage, practitioners use the strategy to help demonstrate a relevant classroom assignment or authentic task. Practitioners should talk aloud as they work so that learners can observe how a person thinks and what a person does while using the strategy, including: deciding which strategy to use to perform the task at hand; working through the task using that strategy; monitoring performance (i.e. is the strategy being applied correctly and is it helping the learner complete the work well?); revising one's strategic approach; and making positive self-statements.

4) **Practice the strategy.** Provide repeated opportunities to practice the strategy. The more learners and practitioners work together to use the strategy, the more learners will internalize the strategy. Initial practice may be largely practitioner directed, with practitioners continuing to model appropriate ways of thinking about the task at hand and deciding (with increasing student direction) which strategy or action is needed to work through whatever problems arise in completing the task.

5) **Provide feedback.** Providing feedback to learners on their strategy use is a critical part of helping them learn how to use a strategy effectively and how to change what they are doing when a particular approach is not working. Much of the feedback can be offered as learners become involved both in thinking aloud about the task and about strategy use in the modeling and practice steps described above. It is also important to provide opportunities for students to reflect upon their approach to and completion of the task. What aspects of the task did they complete well? What aspects were difficult? Did any problems arise, and what did they do to solve the problems? What might they do differently the next time they have to complete a similar task? It may be valuable to incorporate these questions into a self-evaluation checklist for the learners' reference.

6) **Promote generalization.** It is important for learners to apply the strategy in various situations and to other tasks. This transfer is often not automatic for adults with learning disabilities. Consistent, guided practice at generalizing the use of strategies in various settings and when completing various tasks is therefore vital for adults with learning disabilities. [18] It would be beneficial for practitioners and learners to document the demonstrated success of using the generalizing strategy, so that it is not only learned, but also confirmed at the same time.

The steps outlined in the SIM are not linear. Quite often a practitioner may model the strategy, encourage the learner to practice providing feedback and go back to modeling the strategy again to help the learner utilize the strategy more effectively. In addition, the modeling phase of the SIM can be a process within itself. The transfer from modeling to having the learner practice will most likely be gradual, with the practitioner providing less and less support as the learner practices more with the strategy. The following example highlights the movement within the model.

INSTRUCTION STEPS	EXAMPLE
Discuss	With the learner, discuss the strategy steps, which you have written down and kept visible for reference.
Self-instruct	Have the learner explain in their own words the purpose and how to do the strategy.
Practice	With the learner, simultaneously apply the strategy steps to the materials they are currently using while stating the steps (referring to the visual cues, if necessary).
Provide Feedback	Both the learner and the practitioner provide feedback – what is working, what isn't, can revisions be made, or do we look at a different strategy? (continue the steps if they're working!)
Practice	Encourage the learner to apply the strategy to another problem while stating the steps; watch the learner and provide corrective feedback as needed.
Practice	Ask the learner to apply the strategy to another problem without stating the steps; provide corrective feedback as needed. Make sure the learner has mastered the strategy before moving on.[19]

To help facilitate the generalization of a strategy, practitioners can model and discuss how it can be used in other academic and nonacademic settings. Controlled practice activities enable learners to become proficient strategy users of materials they are comfortable with and capable of performing. Once they are comfortable using the strategy independently, have learners use the strategy with material they want to learn. This practice is often referred to as "Scaffolding." When building a house, workers often use wooden supports and braces to keep the structure in place, until the bricks are placed to keep it in place on its own. The same principles apply when teaching strategies to learners. The practitioners provide the scaffolding and gradually remove it as learners work towards using the strategy independently. The number of practice steps may vary depending on the needs of the learners.

"Scaffolding needs of learners will vary according to the strength of what they already know. What doesn't change is the structure we are working at making strong."[20]

Example of how to build in positive attribution in math using the various steps in SIM

1. Model correct strategy application, stressing the strategy's value to learners.

2. Model positive attribution statements often, as the kind of self-talk that successful math students use (i.e. "This math problem has a lot of steps – I just need to do one at a time and complete as many steps as I can rather than giving up when I run into a road block.")

3. Model positive self-talk when discovering errors in your own work or create intentional errors to discuss (i.e. "I noticed that I reversed my 6 and 9 quite often during this math exercise – I need to make a note to double check this before I complete my math exercise in the future").

4. Allow learners to periodically reflect on class math tasks and reasons for their success or failure through the use of self-reports or journals.

5. Encourage learners to keep personal records of the positive attribution statements they make when working.

6. Encourage learners to set specific goals and use goal statements by doing the following:

   • Keeping a list of individual goals and reading them silently before beginning the day's assignment.
   • Self-checking test-taking goals, such as "Check all basic operations when finished," or "Read the directions twice."

- Using positive attribution statements for test-taking, such as:
    - I have done problems like this before so I can think positively about these.
    - If I use my strategies carefully, I will probably be successful.
    - If this problem feels kind of hard, that means I need to try a little harder; then I'll probably be successful.
    - I'm usually successful when I work carefully and use the learning strategy correctly.
    - If I make a mistake, I can probably find it and correct it.

Helpful pointers when teaching and working with strategies

- **Less is better**
  It is more effective and efficient to choose a few strategies and teach them to mastery rather than trying to implement a wide range of strategies.

- **Instruct explicitly**
  A direct approach to teaching strategies is more effective than a "discovery approach." Examples of direct approaches are providing clear expectations, stating objectives, giving specific instructions and providing numerous examples.

- **Use real life examples**
  Strategies and skills should be taught and practiced in the context of "real life" and relevant situations.

- **Explain what strategy will be learned and why**
  Explain the purpose of the strategy prior to using it with the learner to clarify expectations.

- **Model what is to be learned**
  Provide a clear demonstration of the strategy before practicing it.

- **Use supportive practice**
  Provide a series of prompts and/or questions to help guide the learner through the strategy.

- **Use easy material first**
  This allows the learner to focus on practicing the strategy rather than the skill itself (i.e. using memorization techniques – start with something simple to memorize).

- **Provide lots of opportunity for practice**
  Learners with learning disabilities require plenty of opportunities to practice retaining new skills and/or information.

- **Provide corrective feedback**
  Provide corrective feedback immediately in a straight-forward manner. Learning is enhanced when this approach is taken.

- **Ask frequent questions**
  Maintain communication with learners as they practice the strategy. Ask questions to ensure they are focused on the task and understand the steps in the strategy.[21]

Resource Guide: Strategies for Successful Learning. Email at phdaln@interlog.com ($10.00 for resource and $5.00 for shipping)

The SIMS homepage. Go to:
http://www.ku-crl.org/htmlfiles/sim.html

A summary of strategies and related research. Go to:
http://www.ku-crl.org/archives/2002/0602spot.html

An exercise using a flowchart to help learners gain a complete understanding of a concept. Go to:
http://edservices.aea7.k12.ia.us/framework/strategies/know.pdf

Characteristics of strategic learners

The ultimate goal for both the practitioner and the learner is for the learner to become an independent learner. Strategic adult learners are aware of their strengths and weaknesses and can apply strategies independently to help them reach their goals. The following outcomes can be expected from strategic learners:

- Learners trust their minds
- Learners know there's more than one right way to do things
- They acknowledge their mistakes and try to rectify them
- They evaluate their products and behaviour
- Memories are enhanced
- Learning increases
- Self-esteem increases
- Learners become more responsible
- Work completion and accuracy improve
- They know how to "try"
- On-task time increases; learners are more "engaged"[22]

Learning strategies

Learning strategies are important for the completion of tasks, information storage and expression and demonstration of tasks. They help learners address common challenges, such as:

- What to do when they come to an unknown word (i.e. a decoding strategy for word recognition)

- How to ensure that they understand and remember information as they read (i.e. a strategy for self-directed comprehension questions as they read)

- How to integrate visual and text information (i.e. a strategy for repeatedly viewing a graphic as they read about it).[23]

What are the most essential strategies to learn?

Although adults with learning disabilities will have varied skill-based needs, the following are the common areas of difficulty for adults with learning disabilities. This section will provide some suggestions of skill-based strategies in the following areas.

- **Computation and problem-solving**: Verbalization, visualization, chunking, making associations, using cues.

- **Memory**: Visualization, verbalization, mnemonics, making associations, chunking, and writing. These are usually more effective when used in combinations.

- **Productivity:** Verbalization, self-monitoring, visualization, using cues.

- **Reading accuracy and fluency**: Finger-pointing or tracking, sounding out unknown words, self-questioning for accuracy, chunking, and using contextual clues.

- **Reading comprehension:** Visualization, questioning, rereading, predicting.

- **Writing:** Planning, revising, questioning, using cues, verbalization, visualization, checking and monitoring.[24]

Reading

Phonetics and word identification

"Phonological awareness requires that an individual be able to segment words into syllables or sounds auditorily before letters are even introduced. Many students do not learn to read even when provided written phonics instruction, because they lack the prerequisite understanding of the basic syllable and sound units within spoken language."[25]

For many adults with learning disabilities, struggles with reading can stem from their limited understanding of phonetics. Basic sound-symbol association does not come naturally for many adults with learning disabilities. Research has shown that programs designed to teach sound-symbol correspondences directly, following a systematic sequence from simple to complex and emphasizing multi-sensory instruction help improve adults' abilities to read. This approach encourages practitioners to teach learners that words are made up of blocks of sounds, i.e. "brush" has two units of sounds – bru/sh, instead of "brush" has five letters.[26]

Phonetic Strategies
Keith Stanovitch (1993) outlines several activities that enhance phonemic awareness:

- Phonemic deletion: What word would be left if the /k/ sound were taken away from cat?
- Word-to-word matching: Do pen and pipe begin with the same sound?
- Blending: What word would we have if we put these sounds together: /s/, /a/, /t/?
- Sound isolation: What is the first sound in rose?
- Phoneme segmentation: What sounds do you hear in the word hot?
- Phoneme counting: How many sounds do you hear in the word cake?
- Deleted phoneme: What sound do you hear in meet that is missing in eat?
- Odd word out: What word starts with a different sound: bag, nine, beach, bike?
- Sound-to-word matching: Is there a /k/ in bike?[27]

When assisting with word identification, words should be taken from the content materials that the learner is having difficulty reading. According to the Council of Learning Disabilities, instruction should focus on: sound-symbol correspondence, recognition of phonetically regular consonant-vowel-consonant words and recognition of some sight or high frequency words. The following are some suggested strategies.

Word identification strategy: Adults learn how to break words into parts to facilitate decoding. It is helpful if learners know prefixes and suffixes and have some knowledge of phonics.

Overt word parts strategy: Learners circle word parts at the beginning and end of the word and underline letters representing the vowel sounds in the remaining part of the word. Learners pronounce the parts quickly to say the word.

Making words: Learners use their knowledge of sound, letter correspondences, orthographic patterns, structural analysis, and content-specific vocabulary to form words.[28] Through this process, a number of new concepts will be introduced to learners, such as prefixes and suffixes. To help with the management of the new "language", together practitioners and learners can develop small resource books that list the key concepts and examples. The learners can use their resource books when they come across a term without having to rely on the presence of a practitioner.

- **The Efficacy of Alphabetic Phonics-Based Instruction: Contemporary Orton-Gillingham Approaches to Reading and Spelling** Go to: http://www.neuhaus.org/paper4.htm

Reading fluency and cueing strategies

It is important to help learners become fluent readers so more emphasis can be placed on comprehending the content. Many adults with learning disabilities who struggle with reading often focus so much on understanding a single word that it interferes with their fluency and comprehension of the passage or text.

The Seeds of Innovation Project, which asked practitioners to review various instructional strategies, found that cueing strategies were essential in assisting adults with learning disabilities to read. They found the use of cueing strategies must be taught first by modeling. In addition, time must be taken to "sell" the use of cueing by explaining why these strategies are important. **They listed the following cueing strategies in order of importance:**

CUEING STRATEGIES	EXAMPLES
Background knowledge	What do we already know about: The time of the story? The story setting? The people in the story? The story events?
Pictures	What can we predict about the story from the pictures? Pictures can jog background knowledge of setting, time, or familiar experience.
Meaning	Understanding the context of a story helps to get the particular meaning of a word, e.g. the word "warrant" in text. What does it mean in this passage?
Structure/Grammar	What word would "make sense" here? e.g."She ate____and eggs for breakfast."
Sound/Symbol Correspondence	This helps to support/deny our guess about what a word might be, based on past experience or common sense. For example, in the sentence below, the initial consonant would help us to support/ deny a guess. "She ate b____ and eggs for breakfast. "If we had guessed "bacon", our guess would be supported. If we had guessed "ham", our guess would be denied and we would think again.
Supporting techniques	Examples
Re-tell periodically during the discussion of background information and pictures	What do we know so far? Use symbols for whom, what, where, when and how as memory devices.
Re-read when needed to consolidate meaning	This also helps in proof-reading. As learners read over the passage each time they gain more word recognition – initial reading is focusing on the meaning of the words not the meaning of the text, but as word recognition increases there is less interference with the meaning of the text.
Pause-Prompt-Praise	When a learner struggles with an unknown word or has misread a word, practitioners should pause, prompt and praise.[29]

Practitioners need to help learners increase their automatic reading by decoding and sounding out words without breaking the flow of the reading process. The following are suggested strategies:

- Have learners read orally with the use of a tape recorder. Have them listen to the recording and then have them do silent reading or a combination of these – with the first reading to be focused on the words and then eventually focused on the meaning.

- Have two learners read together. One reads and one follows along and then the roles are reversed. This helps increase the practice time for the learners.

- Utilize a chunking strategy by using familiar text and dividing it into phrase groups of words and use a slash mark to indicate the phrases. Learners practice reading the phrases until they can read them fluently and then the slash marks are removed.[30]

Vocabulary development

Before reading

- Pre-teach unfamiliar words from the text

- Have learners use mapping techniques, such as Semantic Mapping, to help them think about the meanings of the new words

- Help learners relate new vocabulary to their prior knowledge and experiences

During reading

- Have learners add new words and concepts to their maps

- Use content-area word walls as a resource

- Teach learners to use word parts such as prefixes and suffixes to read new words

- Teach learners how to use the context of expository text to figure out word meanings

After reading

- Teach unfamiliar words that were not learned before or during reading

- Have learners use their own words to explain the meaning of new words

- Play vocabulary games (e.g. using synonyms, antonyms) to provide enrichment of new word meanings

- Provide numerous opportunities through activities and reading to extend word knowledge and to develop a deeper understanding of word meanings.[31]

Suggested strategies

The best method of vocabulary instruction depends on the goals of instruction, the words to be learned, and the characteristics of the learners.

Word building: is a strategy to teach prefixes, suffixes and combining forms. Learners select a root word, select a prefix and/or suffix, and add them to the root word. Learners write a sentence using the newly created word. Root words should be selected from the text to be read.

Illustrate and associate: is a strategy to introduce associations among words, including synonyms, antonyms, and analogies. The strategy involves listing the vocabulary word, writing a brief definition, drawing a picture to illustrate the meaning, and identifying an antonym for the word, if possible.

Word map: is a strategy for learners to map concepts (key vocabulary) by identifying characteristics of the concept and providing examples for the word.[32]

Reading Comprehension

"Adults with learning disabilities often fail to realize that they must pay attention to how well they understand a text as they read so that they can go back and reread as necessary. It is essential for learners to understand "repair strategies" to use when they find themselves not understanding the text they are reading. They also process information inactively and they have difficulty differentiating relevant and irrelevant associations. Possible solutions could include techniques that force learners to focus attention on the material being read."[33]

Comprehension is a process of combining new information with prior knowledge, a process that involves both understanding and memory. It is an active process with the participant interpreting and making inferences from readings. We know that adults with learning difficulties often find this hard to do. Finding and understanding the structure such as picking out important information, making inferences and identifying characters is an ability that is difficult for adults with learning disabilities.

Strategies should attempt to increase understanding by giving meaning to new information by relating it to past experiences, and to increase memory skills by providing strategies that trigger memory associations.

Studies have shown that children with learning disabilities can learn reading strategies, which in turn improve their reading skills. Techniques to teach learners to ask questions, paraphrase, and summarize what they have read have proven to increase reading comprehension.[34]

Typically, adults with learning disabilities must learn self-monitoring techniques, such as asking themselves questions after reading a passage or summarizing in their own words the material they have read. Generally, learners who are taught self-monitoring strategies experience more improvements in comprehension, than by learning only one specific comprehension skill.

Adults with learning disabilities may not see the difference between relevant and irrelevant information in a text or passage. Possible solutions include using techniques that help them to focus attention on the material being read and help them more readily identify the theme of the passage. Those who cannot process meaning easily may benefit from multiple organizers. This could include reading the passage, listening to the passage on tape, taking down notes while listening to what they hear, and then organizing their notes to make meaning of what they heard. The multi-sensory approach involves a combination of seeing, hearing, speaking, and organizing.[35]

Regardless of the reading strategy, the following guidelines should be used.

Before reading: learners should become familiar with related vocabulary, make connections with background knowledge, understand the purpose for reading the text and be given strategies to help them preview the text.

During reading: learners should be taught self-questioning strategies, and utilize graphic organizers such as story mapping.

After reading: teach learners self-questioning strategies to reflect on what they have read, and encourage them to summarize and retell what they have read.[36]

Reading strategies

Many of the following strategies have incorporated the recommended guidelines. These guidelines can be helpful if practitioners want to look at developing their own strategies in cooperation with the learners and/or to evaluate pre-existing strategies prior to using them. There are many reading comprehension strategies available and they are too numerous to include them all. However, we have included a few that have been frequently mentioned and/or when research studies have shown significant evidence to support their effectiveness.

Story Grammar: is an organizing guide for reading. It refers to the principal components of a story: main character, action and outcome. Many of the strategies incorporate the components of story grammar in their steps. For example, this technique has been applied using story maps and by asking generic questions based on the components.[37]

Questioning and paraphrasing (Reciprocal Teaching- Brown and Palincsar 1988): involves questioning, summarizing, clarifying and predicting. It is organized in the format of a discussion. The practitioner models the strategy first by:
- Reading a portion of the text orally and summarizing the main idea in his/her own words
- Self-questioning during the reading and posing post-reading questions for the learners
- Clarifying the meaning during the reading
- Predicting what will happen next.[38]

Once the practitioner has modeled this process a few times, learners can be encouraged to take a leadership role. This strategy is designed to improve comprehension by focusing on the important information in the material and stimulating active involvement with the material.

Story mapping (Idol 1987): uses the elements of story grammar. The learners can fill a map with the setting, characters, time/place of the story, the problem, the goal, the action that took place and the outcome. Once again, this strategy is only effective if the learner is taught how to use the strategy first.[39]

PASS reading strategy:

P - **Preview, review and predict**: learners read the heading and one or two sentences, they think about what they already know about the topic and what the text might be about.

A - **Ask and answer questions:** learners ask content-focused questions (5 – w's), monitoring questions (is my prediction right? does this make sense?) and problem-solving questions (do I need to reread this section? should I get help?).

S - **Summarize:** learners ask what the passage is about?

S - **Synthesize:** learners state how the short passages fit in with the full passage, what they have learned and how it fits with what they already know.[40]

The following are strategies for understanding textbooks – for more advanced readers:

ConStruct procedure: this strategy involves doing several readings of a passage and developing a diagram that depicts the context of the passage. There are four steps to this procedure:

1) Learners quickly read the passage and determine the main topic and any subtopics; they try to discover as much as possible from the title, subtitles, introductory paragraphs, illustrations or figures.

2) Then the learners read the text thoroughly to find meaning and add information to the framework developed above; non-essential information is to be ignored at this point.

3) Before the learners read again, they look over the diagram to see if there is information they don't understand and if so they should go back for clarification.

4) Finally the learners scan the text for non-essential information and determine if it should be added to the diagram.[41]

Multipass: this strategy is helpful when learners only need to gain the essential information from the text. It is similar to the ConStruct procedure but doesn't require the thorough reading and diagram. It recommends that learners make three "passes" through the text.

- **First pass**: become familiar with the main ideas and organization of each chapter.

- **Next pass**: look at the questions at the end to determine what should be learned from the text and take a guess at the answers.

- **Final pass**: read the text to find the answers and self-test by answering each question with the information gained from the final pass.[42]

A simpler method encourages learners to go through the text and use symbols to indicate their understanding by recognizing:

- What they already know (use a checkmark).
- What new things they are learning (use an exclamation mark).
- What questions remain or have been raised (use a question mark).

The above methods or models follow basic good reading practices that many of us take for granted. The process of thinking about what we have read and monitoring our understanding has become so automatic for us that we may not even be conscious of the activity, let along view it as a strategy. In summary, any of the strategies can be helpful as long as the teaching of the strategies is carefully developed, given sufficient time and is closely monitored by the practitioner.

- **Additional Strategies**. Go to:
  http://www.resourceroom.net/index.asp
  British Dyslexia – resource room
- **On-line training to use the SQ3R technique for comprehending textbooks.** Go to**: http://www.ucc.vt.edu/stdysk/stdyhlp.html

Expressive Writing

If learners are hesitant about their writing, start with tasks that interest them and that can lead to quick success. As learners' confidence in their writing skills increase, begin introducing more difficult writing tasks.[43] The areas to focus on will depend on the assessment of the learners' strengths and struggles and their end goals. Many adults with learning disabilities have

always struggled with their writing and try to avoid it as often as possible. Generally, they have problems with product and process. Product problems include the use of few words, incomplete and/or very limited sentences, poor organization and structure, spelling and punctuation errors, etc. Process problems include learners having trouble with putting ideas on paper, monitoring their writing, and editing.

Graham and Harris 1999 conducted a meta-analysis on instructional approaches for teaching written expression to students with learning disabilities. Based on their analysis, the following three components stood out as consistently leading to improved outcomes in teaching expressive writing to learners with learning disabilities:

- **Adhering to a basic framework of planning, writing, and revision.**

- **Explicitly teaching critical steps in the writing process through modeling.** Explicit teaching of how to write different types of expressive text. The more explicit the examples, the more effectively students learn these writing conventions (i.e. components for an essay, a thesis and supporting arguments and/or a narrative writing, characters, theme, etc.).

- **Providing feedback** requires showing learners how to develop and organize what they want to say and guiding them in the process of getting it down on paper. Feedback can be about the quality of work, missing pieces, and the strength of their work. Feedback from a practitioner or a peer helps learners develop a writing style. This process is combined with ongoing instruction. It takes learners through self-reflection, realization and redress of problems.[44]

Most of the strategies use a basic framework based on planning, writing and revising, modeling and providing feedback. The steps are not necessary linear, for example learners may revisit the planning stage during their writing process, if they are running into organizational difficulties based on the feedback given by the practitioner.

The following two strategies incorporate the three components:

Cognitive strategy - **instruction in writing** (Englert et al.,1995; Englert & Mariage,1991). This strategy includes brainstorming strategies for preparing to write, organizing strategies to relate and categorize ideas, comprehension strategies as students read and gather information for their writing, and monitoring strategies as they clarify their thoughts and the relationships among their items of information. All of these strategies are applied prior to the actual writing.[45]

Self-regulated strategy development (SRSD) (Graham & Harris, 1989b)
An important outcome in instructing expressive writing is to help learners to integrate self-monitoring processes into their writing and promote the development of a positive attitude about writing. One means for accomplishing this outcome is by explicitly instructing them on the SRSD procedures.

The SRSD technique involves self-directed prompts that require the students to (a) consider their audience and reasons for writing, (b) develop a plan for what they intend to say using frames to generate or organize writing notes; (c) evaluate possible content by considering its impact on the reader; and (d) continue the process of content generation and planning during the act of writing.

Within the SRSD other strategies may be used at different stages of the writing process. For example, often learners when faced with a writing task struggle to think of subject matter. A THINK sheet may help them to brainstorm and discover that they already have subject matter for writing. The THINK sheet should be set up with write-in lines after the questions. In addition, adults with learning disabilities often don't use revising and editing as an automatic process. Thus a learner may utilize the COPS (capitals, overall appearance, punctuation and spelling) strategy to assist with this part of the writing process.

For more details on the Cognitive Strategy Instruction in Writing and the Self-Regulated Strategic Development Strategies refer to the following websites:

- http://www.msu.edu/user/suwalaco/link.html

- http://faculty.washington.edu/gtroia/chapter2.PDF

- http://www.ldonline.org/ld_indepth/writing/harris_writing.html

- http://www.msu.edu/user/suwalaco/link.html

- http://olam.ed.asu.edu/barak/barak1.html

- http://ncrtl.msu.edu/http/rreports/html/pdf/rr917.pdf

Support strategies that can be integrated into the writing process

For Planning

The "Planning Think Sheet" uses a series of prompts:
- Who am I writing for?
- Why am I writing?
- What do I know?
- How can I group my ideas?
- How will I organize my ideas?[46]

Writing

The next step of putting the information into actual sentences can prove difficult for adults with learning disabilities. It includes dealing with grammar, spelling, and producing properly formed letters and symbols. The use of the computer has proved helpful along with a spell checker, a list of common spelling mistakes, a list of spelling rules, the Horn spelling method, and the use of a tape recorder to dictate what learners want to say and then translating it into written form.

POWER is an acronym to highlight the steps in the writing process.

Planning: learners think of audience, purpose, and background knowledge

Organizing: learners may choose to use a graphic organizer

Writing: practitioners demonstrate and use self-talk; then individual learners apply

Editing: self-evaluation includes rereading and starring things the learner likes and using question marks for those areas of which they are unsure. The learner creates two questions for the peer editor and then reads aloud the paper to the peer editor. The peer editor points out areas where writing can be strengthened and together they brainstorm how the paper can be improved

Revise: the learner revises his/her own writing

DEFENDS: is the acronym for a strategic approach that helps secondary students write a composition in which they must take a position and defend it (Ellis, 1994). Each letter stands for a strategic step, as follows:

Decide on audience, goals, and position
Estimate main ideas and details
Figure best order of main ideas and details
Express the position in the opening
Note each main idea and supporting points
Drive home the message in the last sentence
Search for errors and correct.[47]

Semantic mapping
The learners develop a map prior to writing to organize information and questions. The center has the topic and then the learners organize their thoughts around the topic by addressing the key questions: what, when, where, how, who, why.[48]

Sentencing combining
Use a graphic organizer for the content such as semantic mapping. Take each word or item and write a sentence on an index card. Next, organize the sentences by topic or subject. For each topic, prioritize the sentences as to which one should come first. Then prioritize the topics and input the information either by entering it into a computer or by handwriting.

Editing
This process of reviewing is not automatic for adults with learning disabilities. They not only need to be taught about what areas to edit, but some learners may also need to utilize cues because they do not easily see their own mistakes.

Simple strategies to help with editing:

- Use a diary or index cards (areas of difficulty are noted in the diary and/or problem areas are noted in the index cards and listed alphabetically for quick reference while reviewing).

- Have rules for spelling, punctuation and capitalization available.

- Pair learners together to edit each other's writing and have them go over their editing together. Give them one thing to edit at a time, i.e. capitalization then punctuation, etc.

- Use the tape recorder to read the information and listen to it. Make changes if it doesn't make sense.

COPS: This strategy helps learners to monitor their writing.

- **C** = Edit capitalization
- **O** = Overall editing and appearance (handwriting, margins, complete sentences)
- **P** = Punctuation
- **S** = Spelling[49]

- **Helping students with the writing process – tips for tutors**. Go to:
  http://literacy.kent.edu/eureka/strategies/help_writing_process.pdf

- **Resource room has strategies for communication and math**. Go to:
  http://www.resourceroom.net/index.asp

- **Writing and proofing strategies database**. Go to:
  http://www.muskingum.edu/~cal/database/writing.html#Strategies

Spelling strategies

"Spelling is a process which involves a variety of skills including visual, auditory, memory, language, attention and motor abilities. Proficient spellers must form a clear, sharp image of the correct spelling of a word, associate sound-to-letters, remember the correct sequence of letters, have an understanding of language which will aid in word analysis, and possess the visual-motor skills necessary to write the correct form of the word."[50]

It is not surprising given the many processes that are involved in spelling, that many of our adults with learning difficulties seem to have very frustrating experiences with spelling. Both visual and auditory processing disabilities can clearly create challenges for adult learners. Learners may find that their minds go blank or they may find it difficult to hear sounds accurately, and even if they can, they discover that English spelling is not consistently phonetic. If learners have auditory processing difficulties, a selection of visual imaging strategies may be helpful. Likewise for a visual processing disability, a number of auditory or pronunciation strategies may prove beneficial. In addition, practitioners should understand learners' memory strengths and weaknesses and incorporate appropriate strategies.

The initial assessment results and ongoing evaluation of learners' spelling will help determine what areas to focus on and appropriate strategies to help with the challenges learners may face.

When planning what strategies to utilize, consider the following principles:

- Select words that learners want and need to learn and provide instruction in the context of writing and language activities.

- Encourage learners to generate their own lists of words for spelling practice.

- Incorporate a multi-sensory approach by utilizing as many modalities as possible (visual, auditory, kinesthetic and tactile).

- Actively involve learners in selecting strategies and discuss existing strategies they may use.

- Encourage learners to access a small pocket dictionary and teach appropriate dictionary skills.

- Help learners to develop their own personal dictionaries of commonly misspelled words.[51] The words should be from different types of writing assignments.

- Encourage learners not to try to learn all the words at once. Even if an adult learns them all in one sitting, practice them a few at a time. Find out what works best for learners; it may be one or two words or as many as three or four. Encourage learners to go back and practice the ones they have learned before, to increase retention.[52]

Findings indicate that most learners have insufficient spelling strategies. Learners need to be taught various spelling strategies and when they should be applied.

"Students with learning disabilities do not use appropriate strategies when spelling words, so they need curricula which provides an intense, systematic method for teaching specific spelling strategies." … students with learning disabilities who frequently experience problems with spelling, benefit from programs that incorporate rule-based strategies that are intensive and skill-directed, and provide specified correction and practice procedures".[53]

Questions to help determine learners' existing spelling strategies

- When you spell words, what kind of things do you do to help you spell correctly?
- If you are having trouble with a word, what do you do to try and spell it correctly?
- How do you feel if you can't spell words when you are writing?

If learners have difficulty answering these questions, have them do a spelling activity and then ask the following questions about the actual activity they just completed:

- Tell me the words you had trouble spelling.
- Why did you spell this word like that?
- How did you come up with this word?

Suggestions for adults with visual memory/perception disabilities

- Use structural phonic programs.
- Exaggerate the pronunciation of words to help learners focus on auditory cues.
- Help learners to understand the structure of words (i.e. root words, suffixes and prefixes); provide a word format table indicating the participle, noun, verb, adjective and adverb for related words, i.e. empowered.
- Work with syllables – if they can't distinguish the syllables, have them put their hand under their chin and count how many times it drops for each word.
- Use spelling drills where learners are asked to spell the words out loud.
- Use word searches, exercises that have letters omitted from the words, and spelling games such as Spill and Spell or Scrabble to help strengthen visual perceptual abilities.
- Incorporate tactile and kinesthetic cues.[54]

Suggestions for adults with auditory memory/perception disabilities

- Reinforce the spelling of words by focusing on words with similar patterns.
- Utilize the chunking technique by breaking words into smaller chunks.
- Teach syllabication rules which help learners see the syllables even when they may not hear the vowels within the syllables i.e. when there are two or more consonants between vowels the words are generally divided between the first and second consonant - *fac/tor, chal/lenge.*
- Continue practice with breaking words into parts for learners who have difficulty tracking the sound sequence.
- Utilize various visualization techniques.[55] (For spelling, visualize the difficult part of the word to help improve retention of the correct way to spell.)

Sample strategies

Word sorts:

This strategy helps learners identify and remember spelling patterns by associating words with the same visual or structural formation, e.g. *pine, rate, like*, all of which have the final silent *e* that has an effect on the preceding vowel. Word sorts change learners' perceptions of spelling from the attempt to spell hundreds of unrelated words to a more systematic approach. Words for word sort activities are printed on cards or pieces of paper. The sorts are either open (sorted into whatever categories learners can identify for themselves), or closed (sorted with the direction of a practitioner who wants to demonstrate a particular pattern at that time). Words for open sorts are drawn from learners' own sources of words, so they can be identical to the personal spelling lists that they may have composed.[56]

"Trace, Copy and Recall"

- Make a 3-column chart with the headings: Trace, Copy and Recall. Fold over the "recall" part, so that only the first two columns show. Select three or four spelling words learners want to learn.

- Encourage learners to say the word, then trace the word in the first column and say the letters as they trace it, and say the word again.

- Learners then go to the second column, say the word, and write it the same way. While the rhythm, the sound and the feeling are fresh in their minds, have them flip the paper over and say the word and spell it out -- the same way, saying each letter.[57]

Reverse chaining by letter

1. Learners say the word. Then they write it, saying each letter (being enthusiastic and expressive!) W - O - R – D
2. Learners skip a line and say the word and write it again -- minus the last letter. They say the last letter, but they don't write it. W - O - R - ____
3. Learners skip a line and say and write the word again - minus the last two letters.
   Learners say them, but they don't write them. W - O - ___ ____
4. They do that until they're only writing one letter.
5. Learners go back to the top, read the word, and then they spell it out loud.
6. Learners fold the page over so they can't see the whole word. They say the word, spell it, and add that last letter.
7. Learners fold the page back again. They say the word, spell it, and add the last two letters.
8. They keep going until they spell the whole word.
9. Learners should GO BACK AND CHECK -- making sure they didn't leave out a letter![58]

Reverse chaining by syllable (this is more difficult, for longer words)

1. Learners say the word. Then they write it, saying each letter (being enthusiastic and expressive!) S-E-P-A-R-A-T-E
2. They skip a line and say the word and write it again -- minus the last syllable. Learners say the last syllable and spell it out loud, but they don't write it.
   S-E-P-A-_____
3. Learners continue until they aren't writing anything -- but they still say the spelling out loud.
4. They go back to the top. They read the word, and then they spell it out loud.
5. Learners fold the page over so they can't see the whole word. They say the word, spell it, and add the last syllable.
6. They fold the page back again. They say the word, spell it, and add the last two syllables.
7. Learners continue until they spell the whole word.
8. They should GO BACK AND CHECK -- making sure they didn't leave out any letters!
   [59]

Highlight the difficult parts

This is a good strategy for learning rules and patterns, or remembering how to spell a word that learners continue to struggle with. Have learners make the 'hard part' a different color than the rest. Encourage learners to make a mental picture of that card, read the word aloud and spell it aloud, and change the way they would *say* the "hard part," maybe by saying it louder. When they write the whole word, encourage learners to think about the hard part, what it looks or sounds like.[60]

Use a tape recorder

Have learners read the words – make sure they are pronouncing them correctly into the tape recorder. Have them record the word in a format similar to a spelling test i.e. word, example sentence, and word. Once they have done this, have learners play it back - and try to say the spelling before the tape plays it.[61]

Multi-sensory Sight-word Strategies found at:
http://www.resourceroom.net/Sharestrats/sightwords.htm

These procedures can be used to teach any rote skill: i.e. math facts, formulas, an alphabet, foreign languages, periodic charts, etc.

1. Practitioners write the letters of the word in the air in front of them, using whole hand and whole arm motion. Learners follow this example.
    Practitioners fade their spelling prompt. Practitioners say the word before and after the spelling.

2. Closed-Eye Visualization (visual and auditory):
    Learners close their eyes and try to visualize letters as the practitioner says them.

3. Blind Writing (auditory, visual, tactile and kinesthetic):
    This is similar to Closed-Eye Visualization, but adds the tactile and kinesthetic. As the practitioner says the letters, the learners, with eyes closed write the words. Use the following sequence:
    · Air Writing: learners use index fingers and middle fingers to write.
    · Chalkboard: learners use index fingers and middle fingers to write words on board. Then they use "chunky" chalk to write on board.

4. Velvet Board (auditory, visual, tactile and kinesthetic):
    Learners use lapboards covered with a rich textured fabric to write their words. Learners say the word, use their index fingers to write the letters as they say them and repeat the word.

- **For additional strategies go to:**
  http://www.resourceroom.net/index.asp
  British Dyslexia – resource room

Listening strategies

In most cases, adults with listening challenges may not even be conscious of their behaviour. They may not realize that they interrupt conversations or tune out when someone is speaking. The first step is to help learners become aware and understand how their struggles impact their listening abilities and social interactions with others. When learners are conscious of the behaviour, they can develop self-monitoring strategies that are the best fit for them.

The following are additional tips to help improve adults' listening skills:

- Be sensitive to the fact that some learners with auditory disabilities may miss parts or misinterpret what is said

- Use eye contact, appropriate touch and individuals' names

- To help with listening – provide visual summaries that outline what the learners will be hearing or learning

- Vary your speech (loudness, inflection, and speed, etc.)

- Provide information in smaller chunks; confirm learners' understanding and repeat if necessary

- Be brief, concrete; carefully define directions, etc.

- Complete directions before handing out materials

- Have learners paraphrase what they heard

- Encourage learners to take brief notes to help with their retention of what was stated and to help them focus on the information they are receiving

Math **challenges**

The most common areas that adults may struggle with are:

- Remembering basic mathematical facts

- Having difficulty with word problems and terminology as a result of language disabilities

- Being reliable in written computation – they frequently reverse numbers and/or symbols and make careless errors

- Having an inability to develop a connection between math and meaning- that it is more than memorizing numbers and computations.

Individual adult learners may have unique strengths and struggles with math. They could have a combination of difficulties, which may include language processing problems, visual spatial confusion, and memory and sequencing difficulties. In most cases, if adults have struggled with math as a result of their learning disability, they will likely bring related anxiety to the tasks.

To meet the varied processing needs for each learner it is important to use a multi-sensory approach when teaching math. Objects should be visual, touchable and moveable. In addition, applying math to real life examples will help build meaning for math. This helps to make problems functional and applicable to everyday life. Information should be taught both orally and visually to meet the varied learner needs and to help strengthen areas of weakness.

Sample math strategies

- **Remembering the multiplication table**:

    - Make use of regularities in the number system – i.e. 2, 5, 10

    - Show shortcuts to memorizing i.e. if 8x7 = 56 then 7 x 8 = 56.[62]

- **Computation:**

    - Build on existing knowledge and work from what learners know: i.e. if they know 2 x 6 = 12 then 3 x 6 = 12 + 6 or 9x facts can be estimated as 10x facts and then adjusted (10 x 7 = 70:70 – 7 = 63: 9x7 = 63).[63]

    - Use modeling. Practitioners demonstrate, while verbalizing the key words associated with each step; the learners then perform the steps while verbalizing and looking at the practitioner's model; and then learners complete the process with just the model available.[64]

    - Break down new information into the sequential predicating concepts that need to be known before the new skills can be learned, i.e. you have to know addition before you multiply.[65] Steps can be shown visually with the use of flow chart or verbally modeled – all depending on learners' needs.

    - Present various methods for computation, and together with the learners, determine which strategy works best for them. Go to http://www.ldonline.org/ld_indepth/math_skills/adapt_cld.html for examples of various algorithm strategies.

- **Calculation difficulties**:

    - Teach learners sufficient understanding so that they can estimate, and then have them use the calculator. By having enough knowledge to estimate, learners can at least recognize if the answer appears within range or determine if they entered in a number wrong.

- **Word problems**:

    - Practice what operations are needed and have learners 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 learners to explain how the answer was obtained.

    - Help learners with auditory disabilities visualize the word problem i.e. if the problem mentions two cars at different prices –have the learner draw the cars with the prices.[66]

    - 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
        - Check your answer
        - Correct your errors[67]

- **Makes careless mistakes and errors in copying:**

  - Help learners to recognize this challenge

  - Use matrix paper to keep numbers aligned

  - Identify common errors made and practice checking over work

  - Practice tracing and writing any numbers that are reversed, omitted or inverted

Overall, practitioners need to provide a flexible environment and recognize that math can be solved in a number of ways. Focus on the process; not just the outcome. Provide as many opportunities for manipulation and real life application as possible. Focus on understanding; not just memorizing. Encourage reinforcement and continually practice to encourage retention. Provide extra processing time when teaching new skills.

Break the learning into small units and move at the learners' pace. Provide positive reinforcement on the process even though the final answer may be wrong.

For more tips and sample lesson plans for teaching math – go to:

- http://www.resourceroom.net/Math/index.asp

- http://www.gsu.edu/~wwwrld/Resources/math.htm

- http://www.gsu.edu/~wwwrld/Resources/strategiesmath.htm

- http://www.ldonline.org/ld_indepth/math_skills/geary_math_dis.html

- http://www.ldonline.org/ld_indepth/math_skills/garnett.html

Storing and remembering information

In this section we will not attempt to capture all of the memory strategies but instead identify some common factors and key principles. Strategies for storing and remembering information are often integrated into the various strategies that we have covered. A key point to understanding memory is to think of how all us seem to retain information in general. The literature often talks about learning styles and that everyone has a preferred way of learning (visual, auditory and kinesthetic). However, research often states that when information is presented frequently, in a variety of forums, our retention increases regardless of our "so-called" preference for learning. Now this is not to say that learners who have an auditory disability will prefer to see information rather than hearing it, but that by offering information in a variety of ways it will help to strengthen their weaknesses and build on their strengths. A key role as practitioners is to build learners' independence. Often when adults are confronted with information outside of the learning environment, it may not be presented in a variety of formats, nor presented in a way to favour their preferred learning style. Thus, a key role of practitioners is to help learners recognize their difficulties and give them strategies to help store information independently.

Understanding how the memory works will help practitioners to instruct more effectively. Mnemonics is a common strategy found in the learning disability research. Mnemonics are strategies that help a person remember information, especially isolated details that a person often has the hardest time retaining. Mnemonic systems use mental images and unusual situations to link new information with familiar memories already stored in long-term memory. They rely on linking and framing information .The following four principles for mnemonics build on our knowledge of how the mind stores information. For example, it is a known fact that information is stored in an organized way and to learn anything we need to associate it to something that we already know. However, adults with learning disabilities that affect their ability to store information need to be conscious of how our memory works and be given strategies to help them with the breakdown in storage that they experience.

Four principles of mnemonics

Association
Mnemonic principles include associating thoughts. This is accomplished by substituting words, exaggerating out of proportion, or action associations. Simply put: set cues with sound-alike words or visually associate words using some outrageous exaggeration connecting the two. Visualize the picture out of proportion.[68] The more outrageous and exaggerated the association, the more likely you are to remember it later.

Concreteness
A second principle revolves around the concreteness of the items being associated. Tangible objects are much easier to visualize than intangibles. Picturing an apple in your "mind's eye" is not a difficult task, but picturing "truth" is difficult. Connect it to what you already know. Another way to get information into long-term memory is to connect it to information already stored there. If some facts or ideas in a chapter seem to stay in your memory easily, associate other facts with these concepts.[69] Transfer of information from short-term to long-term memory is aided by making it meaningful.

Automaticity
A third principle is that the other principles can be automated. Learning the principles and using them leads to a point where no conscious effort is needed to apply them.

Forced awareness
A forth principle is the forced awareness resulting from actively observing your memory habits. You are becoming "mindful", actively perceiving your environment and observing the nature of your thoughts.[70]

Difficulties with memory can affect all skill areas rather than just causing problems in one specific area. Adults with learning disabilities often struggle due to problems with storing and retrieving information. As previously mentioned, the first step is to discover together with learners how they learn or process information best. In addition to using mnemonics, practitioners can adapt their instruction and presentation of information to help aid in the storage and retrieval of information.

The following are possible instructional tips that can assist learners with their memory challenges:

- Use concrete examples before teaching abstract concepts

- Break demonstrations and/or assignments into segments of shorter tasks

- Use short sentences

- Relate information to the learners' world - build on individuals' interests and likes

- Provide an overview of the lesson prior to beginning

- Continue to review material before any new information is presented - teach one concept at a time

- Repeat and restructure continually

- Continue to monitor and discuss learners' comprehension of what is being learned

- With adults, have them take notes on verbal directions

- Highlight important concepts to be learned in the text

- Encourage learners to explain the new concepts in their own words

- Use a variety of senses when doing a task (read, write, visualize, manipulate, apply) - physical performance of sequential activities[71]

Web sources for strategies – Go to:

- http://www.demon.co.uk/mindtool/memory.html

- http://snow.utoronto.ca/Learn2/resources/memorylinks.html

Strategies to deal with behavioural challenges

The following strategies were obtained from Wilson, Pamela. How Learning Disabilities are Addressed in Adult Education and Literacy Programs: Project Summary and Findings of a Michigan Focus Group for Development of Future Practitioner Training. Michigan: Michigan Adult and Literacy Technology, Central Michigan University, Michigan Department of Education and National Institute for Literacy.1998

Difficulty Remembering

Signs:

- Unable to remember tasks from day to day
- Unable to remember new information

What to do:

- Establish a routine of daily tasks
- Encourage the consistent use of memory aids such as calendars and notebooks to plan, record and check-off tasks as completed
- Encourage learners to write down new information in their memory notebook
- Encourage review and rehearsal of information frequently throughout the day
- Provide opportunities for repeated practice of new information
- Try to pair new information with things that learners are able to recall
- Provide spoken cues as needed for recall and, if necessary, help fill in memory gaps
- Allow extra time for learners to respond to any request or question as it sometimes takes longer for them to respond to questions

Difficulty with Initiation

Signs:

- Has trouble getting started
- Appears disinterested

What to do:

- Help learners develop a structured daily routine
- Provide specific choices for daily tasks (would you like to do A or B?)
- Simplify tasks - break tasks down into simple steps and complete one step at a time
- Encourage the use of a notebook or calendar and set specific deadlines for tasks to be completed
- Praise individuals when they get started without assistance

Difficulty Carrying Out a Plan of Action

Signs:

- Lack of follow-through with a task
- Difficulty in planning a sequence of tasks
- Appear disorganized

What to do:

- Provide a clear and detailed explanation of an activity before starting
- Begin with small, realistic projects (i.e. find skills and knowledge required for the job they are pursuing – short order cook)
- Include learners in planning the activity (i.e. where, how, when and who will get the information)
- Ask learners to verbally repeat the task to be done to ensure understanding
- Break down new or complex tasks into several easier steps (i.e. to address where to get information, both the internet and local employment centre were identified – so steps to connect with each resource will need to be identified)
- Have learners write down the sequence of steps to the task
- Encourage learners to refer to their plan, and check off each task as it is completed
- Repeat and explain the sequence of activities as needed
- Keep abrupt changes to a minimum
- Encourage learners to "stop and think"
- Allow extra time for learners to complete tasks

Attention Problems

Signs:

- Short attention span
- Distractibility
- Difficulty in attending to one or more things at one time

What to do:

- Be sure you have learners' attention before beginning a discussion or task
- Decrease distractions when working with learners (turn off noises)
- Praise any improvement in length of attention to activity
- Gently refocus learners' attention to the details of activity as needed
- Keep abrupt changes to a minimum
- Ask learners to repeat the information they have just heard to be sure they followed the conversation

Difficulty with Decision-Making – Poor Judgment

Signs:

- Hesitation with decisions
- Inappropriate decisions
- Difficulty reasoning
- Ineffective problem-solving

What to do:

- Help learners explore various options to problems
- Have learners write down possible options in their notebook
- Discuss advantages/ disadvantages of each option
- Simplify new or unfamiliar tasks
- Practice role-playing to prepare learners for various situations
- Encourage learners to "stop and think"

Impulsivity or Lack of Inhibition

Signs:

- Acts or speaks without all the information or without considering the consequences
- Has difficulty taking turns
- Is socially out of place, displaying inappropriate behaviour or comments

What to do:

- Explain and simplify the steps and reasons for tasks
- Encourage learners to slow down and think through tasks or responses
- Limit options from which learners can choose
- Encourage a break in activity when frustration is evident
- Encourage learners to "stop and think"
- Plan or rehearse social situations to reduce unfamiliarity and unpredictability
- Establish cues to signal the need to improve social skills
- Praise and reward desired behaviour
- Provide verbal and non-verbal feedback for reassurance
- If undesired behaviour occurs, discuss the consequences privately in a calm and confident manner
- Treat learners appropriately for their age
- Provide clear explanations of expected behaviour

Case studies

The following three case studies are fictional, but have been developed from an extensive review of learning disabilities research and collections of case studies gathered from Canadian, American and international sources.

Case study A – Tom

Information gathered during initial meeting
- Male, age 29, resides on his own.
- Divorced 4 years ago and has one son age 8 with whom he spends every third weekend.
- Attended high school until he was 16 but left due to poor attendance, lack of interest and failing grades.
- Worked in a beer manufacturing plant for 13 years and recently lost his job due to plant closure – he was making good money and is bitter about the plant closure.
- Over the past 6 months he has tried to get a "good paying job" at the local factories but they won't look at him since he doesn't have his Grade 12 diploma
- Tom often mentioned that it is the "company's" fault that he is in this situation.

Tom came to the learning centre to get high school upgrading. After three months he was close to dropping out because he was continually failing his written assignments. However, Tom's English teacher convinced him to give it another chance and referred him to the "literacy program" in the learning centre.

Assessment results

Expressive writing:
- Tom had frequent and some inconsistent spelling errors.
- He tended to add or miss parts of multi-syllabic words.
- Tom had spelling problems with suffixes and prefixes.

- Tom used poor grammar: mixed tenses, fragmented and run on sentences.
- He used limited vocabulary when writing, most likely due to poor spelling because his verbal vocabulary is strong.
- He had difficulty organizing thoughts in his writing. He just put down the thoughts as they occurred.
- Tom's handwriting was poor – his letters were hard to distinguish.
- Tom was unable to see most of the errors in his writing – but could spot a few spelling errors when he really struggled with the words.
- He had difficulty hearing the letters when he asked for the correct spelling of a word - the letters had to be stated very slowly in order for him to write the word.

Reading and comprehension:
- Tom struggled with oral reading when confronted with new words or multi-syllabic words – poor word attack problem skills (could not sound out the word and missed parts of the word).
- While reading orally, he was faced with a number of words he was unable to pronounce and his comprehension declined, as compared to when he was able to read silently.
- Tom's comprehension was much stronger when he was given time to silently read the passage versus when he heard the passage orally.
- He was able to find factual answers, predict and discuss inferences from the passage and he enjoyed making conclusions and judgments.
- His verbal expression of his understanding of the passage was stronger than his written expression.
- Tom was able to follow multi-step instructions when he read them, versus when he heard them orally.

Oral communication:
- Tom often interrupted before the speaker was able to finish his/her comments.
- He often picked up on one point and seemed anxious to express himself by blurting out his response, even though it wasn't the key point in the discussion.
- He often asked the practitioner to repeat what they said.

- His verbal vocabulary appeared stronger than his written vocabulary, however when he was asked to read some of his words that were misspelled, he did not notice that he mispronounced them as well (i.e. valentime, libary).

Auditory versus visual:
- Tom's score was much higher when he was asked to circle the word that was different versus having to hear the different word.

Math skills:
- Overall, Tom's math skills appeared to be fairly strong.
- He tended to rush through and thus made careless mistakes.
- He did not see his mistakes and often it was a result of recording the numbers incorrectly (i.e. 256 he would write 265).
- His poor writing also created errors since he was unable to read his work and had difficulty keeping the column of numbers straight – this was problematic when he had to do 3 digit calculations (+, -).
- When making change he found it difficult without the use of scrap paper to figure out the answer.
- Although he did struggle with fractions, once he was reminded of the rules he improved.
- Tom appeared to understand calculations but once they were combined in a word problem, he could not figure out what calculation to use and which one to do first.
- Tom had difficulty verbalizing large numbers (i.e. 156,342 – he got his thousands and hundreds mixed up).

Overall attitude and motivation:
Tom tends to minimize the importance of spelling and writing, given that he really hasn't had to use it a lot in his job; his verbal skills have compensated for these areas. He feels that teachers are picky and don't know what you really need to survive. He is motivated to get his Grade 12 diploma but tends to want immediate action. He appears to know when he has a problem but hasn't ever thought of why and how he can fix it.

Areas to focus on and suggested strategies

Reading:
- Work on vocabulary development by having Tom go through the text and identify unfamiliar words, break down the prefixes and/or suffixes and the content of the text to help decode the words.

- Work on reading comprehension by building on his strength of predicting and teach him strategies to help increase his comprehension. Point out the difference in his comprehension when reading versus listening, and discuss ways to help deal with this. Provide strategies for dealing with more advanced reading (textbooks) to help prepare for credit programs (Construct and Multipass).

Expressive Writing:
- Reinforce the writing process and provide editing strategies (COPS) to help him recognize his errors. Encourage the use of the word processor for his writing assignments.

- To work on spelling, discuss his possible auditory disability and its impact on his spelling and find out what strategies he presently uses. Teach him the basic rules for spelling, develop a personal dictionary with rules and troublesome words, and work on chunking, word groups, and syllables.

Math:
- Help Tom manage his errors by making him aware of them and develop a checklist to "edit" his math work. Suggest that he utilize graph paper to help keep his work organized.

- Work on word problems by helping him highlight the key information in the problem. Encourage him to develop his own word problems from number statements and teach problem-solving steps with an emphasis on checking his answers for errors.

Listening:
- Help Tom to recognize and be sensitive to his listening skills and the impact of the auditory disability.

- Develop some listening techniques to ensure that he hears all the information and build on his ability to decrease his tendency to disrupt. Encourage him to write down his thoughts before speaking and to pace himself.

Case study B – Samantha

Observations and information gained from the general intake
- A 24-year old female who just enrolled into the LBS program at a local college to work towards her ECE certification.
- She left school at 16 due to pregnancy – her son is now 7 and attending Grade 1.
- Samantha is highly motivated and is ready to make this step, although she is nervous since her previous school experience was not positive.
- She has a good support system – her grandmother provides daycare when needed.
- Samantha indicates she struggled throughout elementary and high school with her reading skills and often disrupted the class during quiet time when they were required to read.
- She took basic courses during her short time at high school and remembers being sent to a small group for extra help in reading during elementary school.
- Her rebellious behaviour began to interfere with her academics in Grade 7. Samantha's parents went through a difficult divorce at that time and limited attention was focused on her.
- She reports no medical history that would interfere with her learning and has had her eyes checked in the past 8 months.

- During her upbringing, Samantha recalls her mother always reinforced the need for her to do well in school and get a college degree, so that Samantha would not wind up like her mother.
- Samantha's mother worked as a cashier in a grocery store and currently is working at a major department store. Although her mother has average reading abilities, Samantha knows that her mother avoids reading when possible.
- Samantha hasn't seen her father since her parents' divorce and believes he did get his Grade 12 diploma. He was a mechanic.

Initial test results: (CAAT – Canadian Adult Achievement Test and Math Skills Inventory)

- Vocabulary 10.3, reading comprehension 6.5 and spelling 7.7.
- Math results indicate that she can add, subtract and multiply single-digit numbers but has difficulty with double-digits and division. As a result, she struggled with her percentages and fractions. Although her adding and subtracting were strong, when they were put into a word problem format she was unable to solve them.

Need to assess her reading further to understand her difficulties

- Her reading was slow and she struggled with decoding the words, which interfered with her comprehension.
- She often missed words and left endings off.
- Samantha often lost her place when reading the passage.
- She would read some of the syllables backwards (*saw* for *was*).
- Her comprehension was excellent when the passage was read to her orally along with the questions, as compared to her oral and silent reading of the passage.
- When given sight words she was able to read them, but when nonsense words were mixed in she struggled with breaking the units down in the word to sound it out. She most likely scored higher on her vocabulary due to her good memory skills and ongoing exposure to reading materials.
- Samantha struggled with cloze paragraphs.

Expressive writing and spelling

- Samantha was asked to write why she was interested in getting her ECE certification. She did take time to think about what she wanted to say.
- Although her grammar and spelling were weak, there were some signs of process (she used an opening and concluding sentence).
- Some common errors found in the written passage were:
  - Samantha omitted and sometimes substituted vowels and consonants.
  - She would leave out silent letters (i.e. instead of an "ous" ending, she would write "us").
  - If she wasn't able to recall a word from her memory she relied only on her phonetics for spelling (wrote payn for pain and laf for laugh).
  - She left out punctuation and often didn't capitalize her sentences.
  - Her writing included a number of run on sentences.
  - She left little space between her words.
  - There were letter reversals and she only caught them when she read over her work, not when she looked over her work (she said this weakness has been drilled into her head so she is very aware of it).

Math skills:

- Samantha had difficulty with multi-step calculations.
- She found it very difficult to find information on a graph or a chart.
- She struggled with operations when they involved more than two digits that required columns (long division, multiplication).
- Samantha was able to make change and deal with simple math involving single digits.
- She was able to recite her multiplication tables based on her strong memory skills.

Overall conclusions:

Samantha appears to have some visual learning disabilities that affect her reading, writing, spelling and math. Her strong verbal skills and good memory have helped her cope with her weaknesses and have allowed her to develop good comprehension skills when information is given to her orally.

Areas to focus on and suggested strategies

Reading:
- Work on decoding and fluency first before comprehension – help Samantha recognize when she leaves off endings and reverses words, so that she builds in a self-monitoring system.
- Provide Samantha with decoding and cueing strategies.
- As her fluency increases begin to build in comprehension strategies, especially for dealing with textbooks.

Expressive Writing:
- Build on Samantha's strengths of organizing material and using beginning and closing sentences.
- Teach her the writing process with a focus on editing and sentence structure (grammar and capitalization) – could use COPS for editing.
- Create a personal resource book that identifies common errors so she can monitor these errors.
- Samantha relies completely on phonetics when spelling – integrate word groups and structure of words, spelling rules, and incorporate word searches and games to help her visualize the words.

Math:
- Focus on strategies that help Samantha with multi-step calculations.
- Investigate different strategies together for completing algorithms that involve more than two digits.
- Develop steps and use a mnemonic technique to help her find information on graphs.

Case study C – Frank

Information gathered during initial meeting:
- Frank is 52 years old and has been unemployed for the past 2 years, since his company shut down.
- He is currently receiving Ontario Works benefits.
- He has learned about the "new way "to search for a job, but recognizes that he needs to upgrade his skills.
- He is quite handy, has done renovation projects and is interested in starting his own business.
- He was referred to the community-based literacy program from the school board credit program because he was having difficulty in the classroom environment and with submitting assignments on time.

General observations from the interview:
- Frank has a good vocabulary and appears to understand what is spoken to him.
- He did seem a bit disorganized at the beginning of the interview – he had to look through his wallet several times before he could find the report the school had sent with him.
- He was quite fidgety and he was given 4 breaks during the 1.5 hour interview.
- He had no problem reading the self-assessment tool and completed it independently.
- His writing was sloppy when he added information on the self-assessment form and his sentences although brief were coherent.

Overall conclusions
- Although no informal assessment has been completed, the CAAT results indicate that he is not struggling with his basic communication and math skills. However, he is struggling with completing his homework and assignments based on the report from the credit program.
- Based on Frank's description of his academic background, his self-assessment and his most recent upgrading experiences, it appears that he may have some type of organizing or cognitive processing breakdown and may have attention problems that interfere with his learning.

Assessment areas

Frank needs to focus on the process and not just the product. How does he go about completing a task?

Writing sample:
Frank was asked to prepare 3 to 4 paragraphs about why he wants to start his own business and what skills he has to offer. The topic was written on the top of the paper that was given to him. After 10 minutes he had nothing completed and was quite frustrated. He had no idea where to begin. As a result, a dynamic assessment technique was used. Frank was given the steps for composing a small report, one step at a time. He was able to complete the task only when each step was given to him. Most of the errors found in his writing were minor and any spelling errors were a result of a lack of understanding of basic spelling rules. During this process it was observed that Frank was easily distracted and needed several breaks before he could move onto the next step.

Reading:
- Overall, Frank's decoding and comprehension was good with short passages.
- As the length of the passage was increased, his attention span, decoding skills and comprehension deteriorated even though the reading level was the same as the short passages.

Overall conclusions:
Frank appears to have organizational learning disabilities and a short attention span. He struggles with how and where to begin with any writing assignments. His short attention span interferes with his reading and ability to comprehend meaning when the text is detailed. Further observation of Frank's attention span would be valuable to develop appropriate strategies. Some suggested ways to assess this area further are by self-monitoring, self-assessment, practitioner observations, and learner participation. All of these approaches emphasize the importance of the learner/practitioner relationship.

Areas to focus on and suggested strategies

Writing:

- Frank needs help with organizing his thoughts and putting them down on paper.   Possible strategies could include: planning think sheets, using graphic organizers such as semantic mapping, and putting sentences on index cards and then having him organize them into paragraphs.

- Encourage Frank to use a word processor for his writing which will make it easier for him to move material around and organize.

Reading

- Build on Frank's reading strengths for short passages – help him see that a reading passage of many paragraphs is really a combination of many small passages. Incorporate strategies that help to break down the units of information and build in graphic organizers to help pull the key information from each section to increase his overall understanding of the text.

Attention and organizing

- Frank will need help to organize tasks. Help him to learn to break large tasks into small tasks – incorporate his renovation work to help him identify with the tasks. Build in time management and organizing tools (checklists, etc.) to help him recognize signs that he is getting overwhelmed. Provide stress management techniques and encourage him to stop and think before going any further.

- Encourage Frank to rephrase what has been said to ensure he understands and build in short breaks.

- Incorporate decision-making strategies to help decrease his frustration when he feels overwhelmed or does not know what to do first.

Summary of key points

- Any approach that successfully works with adults with learning disabilities must address their psychosocial, technological and educational needs.

- An effective training plan is:

    - **Individualized** - based on learners' strengths and struggles

    - **Participatory** - input comes from both learners and practitioners

    - **Flexible** - able to adapt to change according to the effectiveness of particular strategies or approaches

    - **Balanced** - covers a number of learners' strengths and struggles

    - **Continuous** - it is ongoing and is revised and modified as needed

- Strategies help learners process and manipulate information and help them to plan, monitor and self-evaluate. They need to be chosen and developed for learners based on an assessment of their strengths and weaknesses.

- Strategies that are both effective and efficient share the following features:
    - **Content** - the steps in the strategy and what they are designed to facilitate during the learning process

    - **Design** - the steps are put together to facilitate learning and future use of the strategy

- **Usefulness** - the strategy has the potential to be transferable to everyday needs

- The actual "teaching process" of the strategy itself, is the key to success. If a strategy is not taught properly then it is less likely that learners will see success, repeat the strategy and learn to use it independently.

- Regardless of the strategy being taught the following practices should be followed:

    - **Use real life examples**

    - **Explain what strategy will be learned and why**

    - **Model what is to be learned**

    - **Guide learners through a series of prompts and/or questions**

    - **Provide lots of opportunity for practice**

    - **Provide corrective feedback**

    - **Ask frequent questions to ensure learners understand the steps**

Appendix A

Characteristics and strategies chart

The following information was adapted from Bridges to Practice: Guidebook 1 *Preparing To Serve Adults With Learning Disabilities*. Washington, D.C.: National Adult Literacy and Learning Disability Center. 1999 at http://www.nifl.gov/nifl/ld/bridges/materials/bridges_docs.html; Ontario Literacy Coalition. *Learning Disabilities: Best Practice and Innovations*. Toronto, ON: Ontario Literacy Coalition. Issue 3 of 3, 2001.; Johnston, Janet. *Literacy and the Learning Disabled Adult*. St. Catharines, ON: Learning Potentials. 1994.

Reading characteristics	Potential Strategies
Engages in leisure activities other than reading; prefers more active pursuits.	Discuss with learners why they have limited interest. Find out about other interests and begin introducing material that is related to their interests.
Cannot easily use materials like newspapers and classified ads to obtain information.	Demonstrate how the documents are organized. Provide reading comprehension strategies such as PASS, questioning and paraphrasing and provide a step-by-step process to search the material in an organized manner.
Does not attempt to sound out words in reading or does so incorrectly. May read words with syllables backwards (*was* for *saw*; *net* for *ten*)	Introduce phonetic strategies such as word-to-word matching, blending and overt word parts. Build a list of words that are challenging to help learners to learn to self-monitor by watching for reversals and encourage learners to self-correct.
May encounter a newly learned word in a text and not recognize it when it appears later in that text.	Before reading, pre-teach unfamiliar but important words, during the reading have learners add new words to a list and after reading have learners review the words and use their own words to explain the meaning. Use word-building strategies to teach prefixes, suffixes and combining words. Use the illustrate and associate strategy for synonyms, antonyms, and analogies. Have them build their own dictionaries of new words.

Reading characteristics (continued)	Potential Strategies
Reads slowly and labouriously, if at all. Words may be skipped; endings can be left off and there are frequent repetitions. May refuse to read orally.	Work on fluency and use a variety of cueing strategies such as background knowledge, pictures, meaning, structure/grammar and sound/symbol correspondence. Build on word identification and overt word parts strategies. Offer to read together to build confidence in oral reading.
Loses the meaning of text, but understands the same material when it is read aloud. – Visual processing disabilities	Have them read the text or passage in a tape recorder and then listen to increase reading comprehension. Introduce reading comprehension strategies for silent reading.
Does not understand the text when it is read to him/her (auditory disability).	Provide a copy of the material so they can follow along – help them recognize this disability and encourage them to review chapters prior to lessons if in a classroom format or if they plan to access further education/training.
When prompted to do so, does not describe strategies used to assist with decoding and comprehension of text.	Introduce the concept of strategies. Teach reading and decoding strategies and work with learners to build their ability to use the strategies independently.
Recognizes and uses fewer words, expressions, and sentence structures than peers.	Before reading, pre-teach unfamiliar but important words, during the reading have learners add new words to a list and after reading have learners review the words and use their own words to explain the meaning. Use word-building strategies to teach prefixes, suffixes and combining words. Use the illustrate and associate strategy for synonyms, antonyms, and analogies. Build personal dictionaries.

Writing Characteristics	Potential strategies
Rarely writes letters or notes. Needs help completing forms such as job applications.	Start with tasks that interest them and as they see success begin to introduce more difficult writing tasks.
Struggles to produce a written product. Produces short sentences and text with limited vocabulary. Makes spelling errors, may confuse letter order, misses middle syllables, spells exclusively by sound and/or some words may be completely unrecognizable.	Teach the basic framework for writing (planning writing and revision) within this, incorporate strategies to assist with the process such as: planning think sheets, semantic mapping, put sentences on index cards and organize into paragraphs. Work on vocabulary and spelling by introducing word-building strategies to teach prefixes, suffixes and combining words. Use the illustrate and associate strategy for synonyms, antonyms, and analogies. To also help with spelling you may choose to access some of the following strategies: overt word parts, develop a list of trouble words and highlight the problem areas, use chunking, help with tracking the sound sequence, use trace copy recall to increase visualization of the word.
Omits critical parts or puts information in the wrong place. Writing lacks transition words.	Build vocabulary and writing process. Teach self-regulated strategy development. Build vocabulary list of transition words (chronological, cause effect, comparison and contrast words). Work on using the words in sentences and understand the meaning.
Does not communicate a clear message. Expresses thoughts that don't contribute to the main idea.	Introduce story grammar so they understand the basics of a narrative. Use semantic mapping to help organize thoughts. Use DEFENDS strategy to help write a composition.
Uses sentences that contain errors in syntax or word choice. Fails to clearly indicate the referent of a pronoun. Unable to determine which noun they are referring to, i.e. She glanced at him while looking through the window.	Work on sentence structure – provide grammar checklist to help them recognize and self-monitor problem areas.

Writing Characteristics (continued)	Potential strategies
Spells only phonetically. Leaves out letters. Writes numbers or letters backwards or upside down. Refrains from writing words that are difficult to spell.	Discuss spelling strategies with learners to help determine cause of errors. Develop a list of words and letters they reverse to help them recognize and self-monitor. May choose to incorporate some of the following spelling strategies: Horn Spelling method, trace, copy and recall, use a tape recorder to make sure they are pronouncing the word correctly, chunking, highlight the hard parts so they visualize the correct spelling. Regardless of the strategy selected, use a multi-sensory approach.
Omits or misuses sentence markers such as capitals and end punctuation, making it difficult for the reader to understand the text.	Determine their level of understanding for capitals and punctuation – teach them the basics if necessary and model editing strategies such as COPS to help them self-monitor for these types of errors.
Has awkward writing grip or position. Letters, words, and lines are misaligned or not spaced appropriately. Makes frequent punctuation errors and mixes capital and lower-case letters inappropriately.	Check learners' writing positions, their pencil grip, paper angle and general balance. If learners sit side-by-side, ensure that left-handers are correctly placed so as not to crowd out their right-handed neighbours. Encourage a cursive hand writing style, linked to the printed form, so that a movement memory can be established.
Is reluctant to proofread or does not catch errors. May spell the same word differently in the same writing sample. Focuses mostly on the mechanics of writing	Introduce story grammar along with semantic mapping to work on style and content. Use DEFENDS or POWER to help understand the whole writing process including editing and revising. Teach them editing strategies such as COPS.

Listening characteristics	Potential strategies
Misunderstands a message with a word mistaken for a similar word. Might say, "Pick up the grass," instead of, "Pick up the glass."	Ask learners to repeat what they heard or encourage them to paraphrase to make sure they heard the instructions correctly.
Recognizes and uses fewer words than peers when engaged in conversation or when gathering information by listening.	Build vocabulary through word-building, illustrate and associate strategies.
Requests repetitions or more concrete explanations of ideas. Frequently asks for examples.	Reinforce this strategy and encourage them to paraphrase their understanding instead of asking the person to continue to give examples. Teach listening skills and clarifying questions.
Will eat lunch first if given the direction, "Eat lunch after you take this to the mail room."	Help them become aware of this challenge – encourage them to paraphrase to make sure they heard the instructions.
Doesn't remember directions, phone numbers, jokes, stories, etc.	Help them become aware of why they have this challenge – encourage learners to ask people to write out directions and phone numbers , and/or encourage the person to record the information.
Gets lost listening in classroom or to large group presentations, complaining that people talk too fast. Becomes inattentive during the presentation.	Help learners become aware of this disability and of ways to advocate for themselves, such as asking the teacher to give details on what will be covered in the classroom so they can read the material prior. Ask the teacher for an outline of the lesson prior to class. Teach note-taking strategies.

Speaking characteristics	Potential Strategies
Adds, substitutes, or rearranges sounds in words, as in *phemomenon* for *phenomenon* or *Pacific* for *specific*.	Help learners recognize this challenge. Work on vocabulary and phonetic skills such as: overt word strategy, and visually highlighting the differences in the words. Make a list of words that they commonly substitute to help them increase their awareness and ability to self-monitor. Provide practice listening for, identifying and producing the sounds.
Omits or uses grammatical markers incorrectly, such as tense, number, possession, and negation.	Help learners become aware of this challenge. Determine what areas are incorrect most frequently and make these the focus areas for remediation.

Speaking characteristics (continued)	Potential Strategies
Uses a similar-sounding word, like *generic* instead of *genetic.*	Help them recognize this challenge. Work on vocabulary and phonetic skills such as: overt word strategy, and visually highlighting the differences in the words. Make a list of words that they commonly substitute to help them increase their awareness and ability to self-monitor. Provide practice listening for, identifying and producing the sounds.
Uses the wrong form of a word, such as calling the *Declaration of Independence* the *Declaring of Independence.*	Same as above
Uses the same words over and over in giving information and explaining ideas. Has difficulty in conveying ideas.	Work on building vocabulary. Encourage learners to write down their thoughts prior to speaking.
Uses mostly simple sentence construction. Overuses *and* to connect thoughts and make statements.	Build vocabulary through the use of word-building, word maps and illustrate and associate strategies.
Has problems giving directions or explaining a recipe; talks around the topic, but doesn't get to the point.	Help learners recognize this challenge. Have them write down key points and use as a reference when talking or providing information. Teach learners to plan, make notes and rehearse when preparing for important communications.
Interjects irrelevant information into a story. Starts out discussing one thing and then goes off in another direction without making the connection.	Help learners recognize this challenge. Utilize story grammar to help them understand the components of a story. Encourage learners to write down their thoughts before speaking. Encourage learners to slow down and pace themselves.
Can't call forth a known word when it is needed and may use fillers, such as *"ummm,"* and *"You know."* May substitute a word related in meaning or sound, as in *boat* for *submarine* or *selfish* for *bashful.*	Help learners recognize this challenge.
Does not follow rules of conversation like turn taking. Does not switch styles of speaking when addressing different people.	Help learners recognize this challenge. Provide individualized practice listening for and identifying different styles of speech, and practice taking turns and following the rules of conversation.

Thinking characteristics	Potential strategies
Asks to see ideas on paper. Prefers hands-on ways of learning new ideas.	Provide information visually where possible.
Resists new ideas or ways of doing things and may have difficulty adjusting to changes on the job.	Help learners develop a daily routine. Model how new tasks can be broken down into manageable chunks and make tasks simpler. Encourage them to complete tasks one step at a time. Build in praise and constant feedback.
May have good ideas that seem disjointed, unrelated, or out of sequence.	Teach strategies to help organize information. Encourage learners to take time prior to speaking to organize thoughts.
Pays too much attention to detail and misses the big picture or idea when encountering specific situations at home or at work.	Use a form of semantic mapping to look at all aspects of the task or situation. Teach and model problem-solving.
"Shoots from the hip" when arriving at decisions. Doesn't use a structured approach to weigh options.	Help learners explore various options to problems, model problem-solving strategies and integrate into training activities. Encourage them to stop and think. Practice role-playing to prepare learners for various situations.
Approaches situations without a game plan, acting without a guiding set of principles.	Model effective action planning – involve learners right from the beginning in assessment and training plan development. Begin with small and realistic projects to practice and model. Encourage learners to refer to their plan and check off each task as it is completed. Encourage them to stop and think. Utilize mnemonics to help remember steps to effective planning.

"Other difficulties" characteristics	Potential strategies
Doesn't focus on a task for an appropriate length of time. Can't seem to get things done. Does better with short tasks.	Help learners break tasks into manageable chunks, teach and model time management techniques.
Doesn't know where to begin tasks or how to proceed. Doesn't work within time limits, failing to meet deadlines. Difficulty prioritizing tasks. Workspace and personal space are messy.	Model effective action planning – involve learners right from the beginning in assessment and training plan development. Begin with small realistic projects to practice and model. Encourage learners to refer to their plan and check off each task as it is completed. Encourage them to stop and think. Utilize mnemonics to help remember steps to effective planning.
Omits or substitutes elements when copying information from one place to another, as in invoices or schedules. Often confuses left from right and up from down.	Help learners recognize and understand why they are having this challenge. Encourage them to double-check work and make note of words or numbers that they often miscopy. Get them to stop and think before acting.
Avoids jobs requiring manipulation of small items. Becomes frustrated when putting together toys for children.	Help learners break down tasks into smaller chunks. Encourage a break in an activity when they become frustrated.
Stands too close to people when conversing. Doesn't perceive situations accurately. May laugh when something serious is happening.	Discuss undesired behaviour with learners. Work on role-playing and discuss appropriate behaviour in certain situations. Helping learners become aware of their behaviour is the first and most critical step.
Does not seem to know how to act and what to say to people in specific social situations and may withdraw.	Discuss undesired behaviour with the learner. Work on role-playing and discuss appropriate behaviour in certain situations. Helping them become aware of their behaviour is the first and most critical step.
Demonstrates over reliance on others for assistance or fails to ask for help. Blames external factors on lack of success. Doesn't set personal goals.	Provide modeling and teach goal-setting. Actively involve learners in the learning process by encouraging self-assessments. Involve another learner who has experienced similar challenges but has learned to work with them.

MATHEMATICS CHARACTERISTICS	POTENTIAL STRATEGIES
Uses a calculator or counts on fingers for answers to simple problems; e.g. 2 x 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. 2x 5 = 10 then 5x 2 = 10. Build on existing knowledge and work from what learners know: 2 x 6 = 12 then 3x 6 = 12 + 6 = 18. Encourage them to use the calculator 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 practice frequently but in small doses (two - 15 minute sessions per day). Have them chart their progress.
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 learners 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 teach 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 x 4= 2 x 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 are completed.
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 learners become aware of this challenge – encourage review of work and double-checking of information. Practice tracing numbers they reverse or misread. Build in self-monitoring strategies. In most cases learners understand the concepts but make mistakes with their calculations. Encourage the learner to circle the symbols.

MATHEMATICS CHARACTERISTICS	POTENTIAL STRATEGIES
Leaves out steps in math problem-solving and does them in the wrong order. Cannot 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 learners 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.
Doesn't translate real-life problems into the appropriate mathematical processes. Avoids employment situations that involve this set of skills.	Practice what operations are needed and have learners make up their own word problems from number statements. This helps learners to understand how the language is structured. Highlight key words, numbers and /or calculations. Alter instruction, i.e. give the answers and allow learners to explain how the answer was obtained. Help 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.

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A select listing of articles and books is available on the subject of learning strategies. Some of these materials present overviews of the entire field, from research to practice, while others are short, detailed descriptions of actual strategies taught to learners in the classroom. The bibliography is divided into the following sections:

- Three general strategy materials
- Three strategies for studying, thinking, test-taking
- Three strategies for reading
- Three strategies for writing
- Three strategies for mathematics
- Three strategies for science and other subjects
- Three strategies for teaching social skills

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Learning Disabilities Training:
A New Approach

Accommodations, Self-
Management and Transition
Planning: Keys for Success

Learning objectives:

- Develop effective strategies
    - Social skills
    - Organizational/study skills
    - Self-determination and transition planning

- Understand motivational strategies and how to incorporate them into training

- Learn strategies to engage learners

- Identify various accommodations and implement a selection process using evaluative criteria:
    - Understand when and how to incorporate assistive technology
    - Develop fair demonstrations

Chapter outline

- Developing effective strategies
  - Strategies need to address more than educational needs in order to be successful

- Psychosocial strategies
  - Social skills
  - Practitioner tips for helping learners improve their social skills
  - Study and organizational skills
  - Examples of organizational, study and test-taking strategies
  - Helping adults deal with their behavioural challenges

- Self-determination: A key part of the transition process
  - Transitions
  - Self-determination
  - Assessment of self-determination skills
  - Helpful website resources
  - Practitioner tips to help learners with transition planning to further education
  - Practitioner tips to help learners with transition planning to employment

- Understanding motivation strategies and how to incorporate them into training
  - How do I motivate my learners?
  - Creating a learning environment to foster motivation and engagement

- Identifying accommodations
  - Process to select accommodations
  - Criteria to help rate accommodations

- Learning disability characteristics, related strategies and potential accommodations
  - Reading
  - Writing
  - Listening
  - Speaking
  - Thinking
  - Other characteristics
  - Mathematics
  - Sample accommodations taken from real-life situations

- Assistive Technology
  - Why use technological tools?
  - A holistic approach to using assistive technology
  - The SETT model to help implement assistive technology
  - Examples of assistive technology
  - Helpful website resources

- Developing fair demonstrations using accommodations

- Case studies

- Summary of key points

- Appendix A: Examples for using accommodations in different situations

- Appendix B: Helpful websites for practitioners and learners

- Appendix C: Types of assistive technology

Developing effective strategies

Strategies need to address more than educational needs in order to see success

"It appears that the best educational tool for people with disabilities is patience. Self-esteem, building on strengths, advocacy for a student's disability, and increasing the awareness of other staff and students are paramount. These students need to gain respect from others by having knowledge about their rights as a student with a disability. Often, individuals have struggled their whole life not having been diagnosed with a disability, but knowing that learning was more difficult for them."[1]

"Their disability has a psychosocial, a technological, and an educational impact. Any approach that successfully works with these students will address all three of these parameters."[2] Practitioners should: consider learners' needs for support and the types of strategies that may meet their needs; acknowledge their previous experiences of frustration; and consider possible accommodations and access to appropriate assistive technology. All of these factors must be recognized and considered to develop the best training plans possible.

Psychosocial assistance pertains to building self-esteem, motivation and independence. Often adults' self-esteem may be low due to previous negative experiences with school and possible ongoing struggles with employment. Many adults may not understand why they struggle and accept their difficulties as a lack of "smarts".

Technological assistance pertains to the use of technology as an accommodation, a tool for organizing and/or developing skills. Often technology is used to help compensate for specific learning deficits.

Educational assistance refers to helping adults build their skills through the development of strategies, appropriate instruction and/or accommodations. In Module 3, various strategies for communication and numeracy skills were addressed along with details on how to effectively teach learning strategies.

This module will deal specifically with psychosocial strategies, accommodations and assistive technology. Successful adults with disabilities have identified that the awareness and enhancement of their social skills were the key factors that contributed to their successes. This includes interactions with others, organizational skills and the ability to take control. This clearly points to the need for these skills to be integrated into literacy programs. When social skills are not addressed, it is these factors that often interfere with an adult's success in employment and/or social relationships.

Psychosocial strategies

Social skills

Cognitive processing difficulties can impair an individual's ability to: deal with pressure, change, or criticism; hold conversations; use receptive and expressive language and appropriate humour; be able to make inferences; and be sensitive to others' feelings and moods. These social skills impairments may be reinforced by negative emotions adults may have experienced throughout their school and work histories.[3] However, it is important to note this may not be the case for all adults with learning disabilities. In fact, in some cases adults have developed strong social skills to help them compensate for their reading and writing weaknesses.[4] This reinforces the need for practitioners to recognize the uniqueness of each adult learner, a key principle that has been emphasized throughout the modules.

Challenges with short-term memory, receptive communication, attention and the inability to interpret predisposes adults with learning disabilities to poor social skills. "Common signs of this social disability may include clumsiness, lack of eye contact, asking inappropriate or blunt questions and giving

inappropriate responses, poor control of voice volume and tone, failure to take turns in conversation, and difficulty initiating conversation."[5]

Social problems typically can be described in four different ways. First, some adults do not know what to do in certain situations. They have difficulty with their social problem-solving skills. They are unable to identify problem behaviour, possible alternatives, or select the most appropriate solution and evaluate its effectiveness.[6] They are not able to learn what to do because of social anxiety and because they don't pick up the clues. They may know what to do but they are unable to perform because of anxiety or because they do not pick up on clues. In both of these cases, adults lack social awareness. They don't know how to monitor their behaviour by paying attention to reactions of others and are not cognizant of others' personal space. Their lack of understanding and recognition of non-verbal communication often prevents them from understanding both negative and positive cues. Some adults know what to do and are able to do it, but choose not to. This is seen more as an antisocial behaviour type. Most often a social skill deficit is due to the lack of opportunities to have learned the behaviour or the lack of role models. But individuals with learning disabilities may not be able to demonstrate the appropriate social skills even when they have been exposed to modeling of proper skills.

A lack of social skills can impact all aspects of adults' lives: in the home, in training, in the community and in the workplace. For some adults with learning disabilities, the same learning disability that makes it difficult to process language also makes it difficult to process social information effectively. This can affect their ability to understand what is heard and/or their ability to express their thoughts. Adults with learning disabilities may not have difficulties with language per se, but instead do not effectively process the nonverbal elements of social interaction. Nonverbal social perception plays an essential role in our ability to relate to one another: without it, our interpersonal skills can suffer. Without a conscious understanding of the impact of their behaviour, adults cannot evaluate its effectiveness nor make adjustments where necessary.

Effective intervention requires identification and remediation of the specific type of social skill deficit exhibited by the learner. This reinforces a common theme that is found throughout the research - the first step for any type of

intervention is recognition, acceptance and understanding by the learner. Practitioners need to help adults learn various social skill strategies by providing direct instruction, ample demonstrations, modeling, assisted practice with feedback, and opportunities for independent practice.[7]

Two primary goals for practitioners to build into any type of social skills training for their adult learners:

1. Help them recognize their social disability.

2. Provide instruction and self-monitoring techniques for the social skill challenge areas.

"If you break a non-verbal rule of language, it has a negative emotional impact on the receiving person. Persons with non-verbal learning disabilities do not know when they have a social processing deficit and therefore cannot stop the inappropriate behavior."[8]

When teaching social skills, it is critical to address any social processing challenges first. Practitioners need to help learners increase their recognition and awareness of their non-verbal behaviour as well as other people's non-verbal behaviour and the impact it has on how information is communicated, received and interpreted. Because non-verbal behaviour takes place without awareness and is continuous, learners need to gain knowledge of and recognize its presence and impact in order to reduce and, if possible, stop any inappropriate behaviour.

Regardless of the specific social skill that is taught, practitioners need to demonstrate, model and provide strategies for learners to learn how to:

- Interpret social situations
- Select appropriate social skills
- Apply skills
- Modify social skills as situations change
- Integrate a variety of social skills to meet the demands of a variety of life situations[9]

Practitioner tips for helping learners improve their social skills

- Be honest about inappropriate behaviour that is displayed

- Help learners to stop and think before they react – guide them through alternatives and possible solutions

- Assist learners with monitoring voice tones and emotions by providing direct feedback

- Demonstrate appropriate social skills through modeling, guiding, role-playing and/or utilizing social peer groups

- Practice how to give praise and pay sincere compliments

- Explain the difference between humour and sarcasm: provide examples of inappropriate humour

- Demonstrate and practice how to handle interruptions as well as how, and when, it is appropriate to interrupt

- Clarify when and when not to discuss personal matters

- Explain and model how to attend and respond to what someone is saying

- Teach conversational skills through small group interaction and peer training[10]

Lesson Plan: Teaching social skills (listening, problem-solving, and negotiating) in cooperative learning groups using teacher-directed instruction for students with disabilities.

Go to http://www.uncc.edu/sdsp/resource_list/prater.pdf

Study and organizational skills

At one time or another, everyone has felt disorganized and a sense of loss of control. However, what makes it different for persons with organization disabilities is that their lack of organizational skills often impact on all aspects of their life and is constant. In some cases, adults may not even be conscious of the disability and live in constant disarray. Their weak organizational skills can affect how they approach tasks, conversations and overall life-management skills. These adults may be impulsive with their responses and may not think before they speak, which can lead to the delivery of unclear messages. They may start tasks without thinking through the steps, which can lead to frustration and incompletion of the tasks. Unless these adults become aware of their limited organizational abilities and the impact on all aspects of their lives, the continued frustrations they experience can lead to withdrawal from social settings and reluctance to try new activities or tasks.

Most adults recognize when they feel disorganized. They access strategies and take control before it is too late. Unfortunately the ability to recognize and access strategies is not automatic for persons with this type of disability. As a result, before practitioners present any type of organizational strategy, they first need to help learners recognize and understand their disabilities and see how they can impact on everyday functioning.

Prior to implementing any type of strategy, it is beneficial for learners to conduct self-assessments of their organizational skills and current strategies. Have them explore the following factors:

- Identify their top five time wasters
- Identify strengths and weaknesses in their time management practices
- How do they stay organized currently?

Overall, to help reduce impulsiveness when approaching tasks, encourage learners to pause and read instructions or think through tasks before beginning them. Teach learners to break work into smaller tasks and encourage them to decide what task to do first, second, etc. Help them set time goals for each task and develop checklists for each step.

Organizational strategies

Overall when organizing, whether for studying or preparing for employment, the following four strategies can be used and transferred/adapted into any type of setting.

1. Create a ¼ schedule (i.e. per semester, for a three month period)

2. Assess and plan the work load each week

   - Make a list of what has to be accomplished during the coming week
   - Include co-curricular activities - work hours, errands, exercise, meals, and time with friends - on the list of things to do for the week
   - Estimate how long each task will take
   - Identify the day on which each task will be accomplished, keeping in mind the amount of time the task will take and other things that must also be done on that day

3. Adjust the plan each day

   - Write out a daily schedule at the beginning of each day. Include uncompleted tasks from the previous day as well as new tasks
   - As the daily schedule is written, priorities should be assessed

4. Evaluate your schedule

   - Evaluate it in the morning and in the evening[11]

Practitioner tips to help learners be prepared and organized

- Actively involve learners in developing and monitoring their training plan.

- Have an agenda for each lesson – go over it at the beginning and at the end of the training session. List what will be done next and how learners can prepare.

- Have structure and routine in small group or classroom settings.

- Be clear on the criteria and expectations of the demonstrations.

- Give directions and assignments both orally and in written form whenever possible.

- Allow practice and determine which way is best suited for individuals to demonstrate their knowledge and skills.

- Have a class discussion in which learners share their ideas about keeping organized.

- Make organization of time, space, and materials as explicit as possible. Post weekly, monthly, and long-term jobs and responsibilities; classroom calendars; homework assignments; and other important information in regular locations on bulletin boards, blackboards, or posters. Use visual organizers, references and reminders.

- Encourage the use of checklists for daily tasks, weekly tasks, etc.

- Allow learners to experience the consequences of their disorganization to help demonstrate the impact. Begin problem-solving to help them prevent the situations from occurring again.

- Praise and reward learners for improved organization.[12]

Study and test-taking strategies

Herringbone:
This strategy provides learners with a framework for the material they read to help make decisions about main ideas and important supporting details. After reading the article/text, have the learners go into pairs or groups of three. Ask them to consider possible answers to the questions on the herringbone, and decide cooperatively upon the answer that seems best to them (i.e. where, why, what, etc.). Then have them share their answers with the larger group. The focus of this discussion should be on decisions and reasons rather than on right answers.[13]

Example:
Along the main line write the "main idea." On each bone coming out from the main line (spine) write who, what, where, why, when and how. Write the applicable responses in the area to the right of the bone.
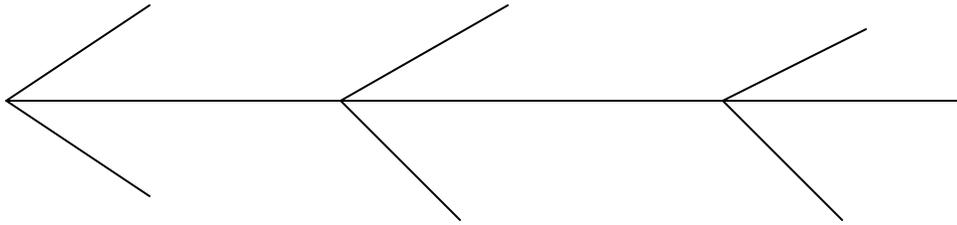
Matrices or charts:
Matrices or charts are used to provide a framework for comparing and contrasting similar concepts. Use any texts that contain elements for comparison. Some examples are: characters from a piece of fiction; a content article about environmental threats; and candidates for election. To develop a matrix or chart, first prepare a grid. Along one axis of the grid list the concepts to be compared (e.g. characters, environmental threats, candidates). Along the other axis of the grid, list key characteristics that distinguish the concepts (e.g. personality, legal solutions, candidates' positions on issues). Have the learners make notes in the boxes on the grid by thinking about each concept in light of each key feature. Using the "characters chart" as an example, they would make notes about each character's personality in the corresponding box on the grid.[14]

Example: Comparing shrubs for a garden

Product	Price	Warranty	Size of adult shrub	Length of flowering
Lilac shrub	12.99	1 year	3 by 5 feet	2 months
Spirea bridal	14.95	1 year	3 by 3 feet	3 months
Hydrangea	18.95	2 year	2.5 by 3 feet	3 – 4 months

Problem and solution outline and text frame:
This strategy is used to give learners a graphic representation of a problem, attempted solutions, the results of those solutions, and the end result. This outline and frame can be used with narrative or informational text. The following text frame is helpful when working with problem and solution outlines.

1. What is the problem?
2. Who has the problem?
3. What is causing the problem?
4. What are the effects of the problem?
5. Who is trying to solve the problem?
6. What solutions are attempted?
7. What are the results of these solutions?
8. Is the problem solved? Do any new problems develop because of the solutions?[15]

Semantic mapping:
Helps learners identify important ideas and how these ideas fit together. It provides an alternative format to an outline. Practitioners should model mapping a few times before learners do this on their own. There are three components to a semantic map:

- Core question or concept: this is a key word or phrase that is the main focus of the map.
- Strands: subordinate ideas that help explain or clarify the main concept. These strands can be generated by the learners.
- Supports: details, inferences and generalizations that are related to each strand. Supports clarify the strands and distinguish one strand from another.[16]

Example:

```
                    ┌─────────────────────┐
                    │   Buying a house    │
                    │                     │
                    └─────────────────────┘
                   ╱          │          ╲
                  ╱           │           ╲
      ┌──────────┐   ┌──────────┐   ┌──────────┐
      │ location │   │   size   │   │   cost   │
      │          │   │          │   │          │
      └──────────┘   └──────────┘   └──────────┘
```

rural   four bedroom   down payment required
urban   two baths   mortgage rates
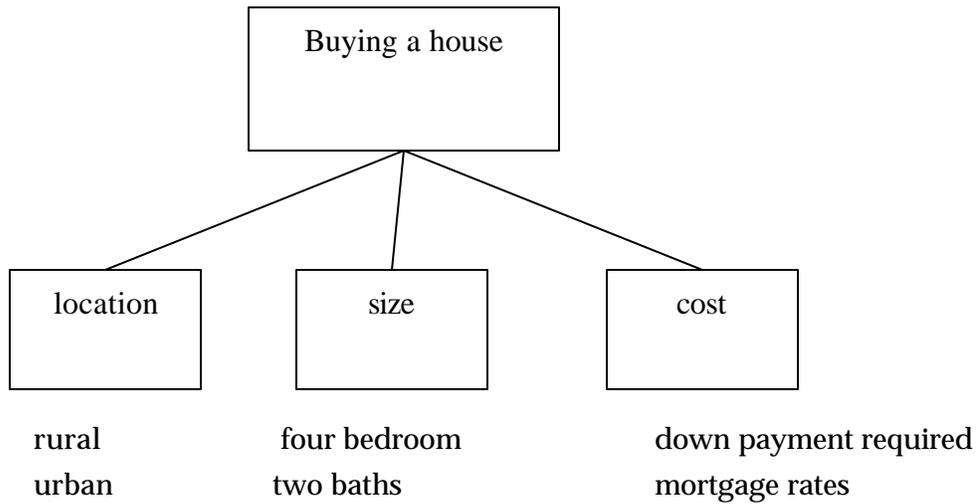
Test-Taking Strategy:
This strategy is for learners to use during a test. Learners are taught to allocate time and read instructions and questions carefully. A question is either answered or abandoned for later consideration. The obviously wrong answers are eliminated from the abandoned questions and a reasonable guess is made. The last step is to survey the entire test for unanswered questions.

5-step study method:

- Read material and read it more than once

- Cover material with hand

- Recite out load what has just been read

- Write down important parts in paraphrased wording

- Uncover material and check against the written words[17]

Venn Diagrams:

Venn diagrams enhance understanding, foster learners' abilities to make connections between texts, and encourage thoughtful reflection and categorization. Comparison is the basis for Venn diagrams.

1   Have learners look for contrasts and comparisons as they read or after they have read.

2   Work in small groups of two or three, brainstorming and then drawing a Venn diagram together.

3   Have the groups share and discuss the diagrams and expand on the ideas within the circles.

4   Encourage learners to keep the diagrams in their portfolios for future writing activities.[18]

Example:
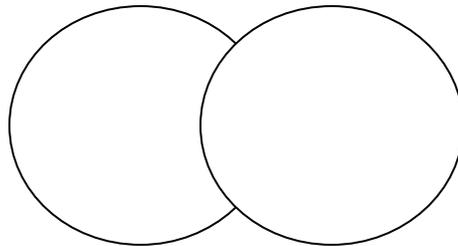
When comparing two articles on an issue, put the facts from each article that are different from each other in the outside circle and the points that both articles share are put in the section where the circles overlap.

Assignment Completion Strategy:

This strategy teaches learners to monitor their assignments from the time an assignment is given until it is completed and submitted to the practitioner. Learners write down assignments; analyze the assignments; schedule various subtasks; complete the subtasks and, ultimately, the entire task; and submit the completed assignment.

Helping adults deal with their behaviour challenges

Quite often behaviour difficulties can interfere with effective classroom and one-to-one tutoring interactions, the completion of tasks and management of assignments/homework. Many of the characteristics are associated with Attention Deficit Hyperactive Disorder. However, as cautioned throughout the training, practitioners are not in the position to offer a diagnosis to learners. They should only help learners be aware of their weaknesses and develop strategies with learners to assist them in either improving their skills or managing the challenges through the use of accommodations.

Adults with ADHD may exhibit the following characteristics

- **In a small group or classroom setting learners may:**
    - Interrupt or answer out of turn
    - Be unable to take good notes
    - Have trouble with commands or instructions

- **While doing homework or working on tasks learners may:**
    - Have trouble concentrating
    - Be inattentive to details or make little mistakes
    - Forget things like turning in their homework

Helpful strategies to deal with the behaviours

- **To help follow instructions**
    - Simplify instructions to just one or two and build from there.
    - Encourage learners to break down assignments and to ask for clarification when necessary.

- **To contribute in class and reduce interrupting**
    - Encourage learners to write down their questions or comments on paper before speaking.
    - Encourage them to stop and think before blurting out answers or practice raising their hands before volunteering (only if appropriate to the setting).

- **Help learners become aware of the behaviour problem and how to self-monitor**

  - Practitioners need to select the behaviour and precisely explain to the learners the nature of the problem and what exactly would constitute improvement.
  - Practitioners can then assist learners by developing a rating scale to rate behaviour and document improvement.
  - Practitioners can demonstrate how they would rate the behaviour and verbalize aloud their process of decision-making.[19]

How to use a rating scale

A rating scale may be developed to help assess learners' behaviour and help them self-monitor the effects of various strategies. The scale can be established with 0 representing the ability to focus and the number 5 referring to learners being totally off task. Learners are taught how to chart their focus levels. Next, they identify what level of concentration is needed to complete a task effectively. For example, proofreading a document might require a level 2 or less, and doing research on the computer or surfing the net would be possible at all levels of concentration. Learners are encouraged to match their focus level with the tasks at hand. If during 30 minutes learners rate a 0 on their ability to focus but choose to surf the net instead of doing proofreading, then they have wasted the opportunity to do a task that requires a higher level of focus. The scale can be used to evaluate their use of time and also to evaluate their progress on changing behaviour, as illustrated in the next example. An adult tends to use sarcastic remarks while participating in a small group setting. He/she tends to use sarcastic remarks about once every 20 minutes. The learner, together with the practitioner, wants to work on decreasing the frequency of using sarcastic remarks. They may set the time interval for every 25 minutes and increase the time as the learner improves in the time period and eventually phases the behaviour out.

Learners and practitioners need to work as teams, identifying areas of difficulty and agreeing on strategies to use to begin the process of overcoming these difficulties. Learners can often participate in planning for improvements in their own behaviour which allows them to experience more ownership for change and pride in accomplishing improvements. Adult learners have mastered self-monitoring when they are aware of their problem behaviours and the control they need to exhibit to improve the situations.

Self-determination: A key part of the transition process

Transition planning

The term transitions refers to identifying learners' end goals and building in the necessary skills to help make the transition from the current literacy program to the workplace, from job to job and/or further training. According to the Ministry of Training, Colleges and Universities' guidelines, agencies need to provide learners with training in the literacy and basic skills necessary for further training/ education, employment, and independence. The following key LBS principles support the need for transition planning.

- **Program commitment to learners:** A quality literacy program values, plans for, and provides opportunities for learners to increase literacy and numeracy skills, life skills, critical thinking, and problem-solving skills.

- **Learner-centred approaches and methods:** A quality literacy program is learner-centred and uses approaches and methods that respect learners as individuals. It helps learners to participate individually and collectively in order to take control of their learning.

LBS agencies are already in a good position to support effective transition planning for adults with learning disabilities. They hold values that support transitions and they recognize the need for skills training beyond basic literacy by offering self-management learning outcomes.

Self-determination

"The concept of self-determination was defined by Field, Martin, Miller, Ward, and Wehmeyer (1998) as a combination of skills, knowledge, and beliefs that enable a person to engage in goal directed, self-regulated, autonomous behavior. An understanding of one's strengths and limitations together with a belief in oneself as capable and effective are essential to self-determination. When acting on the basis of these skills and attitudes, individuals have greater ability to take control of their lives and assume the role of successful adults."[20]

Self-determination is not just an important term for adults with learning disabilities, but for all adults who enter LBS programs. The components of self-determination make up the foundation upon which many literacy programs are built. These programs recognize the importance of looking beyond the basic skill needs of adult learners and look at "soft skills" as well.

When referring to self-determination the following skills have been included:
- Decision-making
- Goal-setting and attainment
- Problem-solving
- Self-evaluation and management
- Self-advocacy
- Person-centered planning
- Self-awareness[21]

Four key areas to address for effective transitions

Some learners may know exactly what they want to work towards, but the majority have either very broad goals or are unsure of where they are heading. Both practitioners and learners should identify what information and skills learners need to acquire in order to make effective transitions. Often the knowledge and transition skills are determined as learners near completion of their goals. However, to help increase independence and learner ownership, the knowledge and skills required to make a smooth transition should be addressed right from the beginning and should be monitored and adjusted as the learner moves through the training program.

As a team both practitioners and learners want to know:

- What are learners' goals?

- What is needed to help learners reach their goals (skills, strategies, accommodations)?

- Who needs to be involved (employment counselors, Ontario Works caseworkers, potential employers, family members, community based agencies)?

- How will the goals be met (development of a training plan, one-to-one, small group, peer tutoring, etc.)?

Addressing these 4 key questions will help provide a framework to include transition planning in the training plan. Regardless of learners' goals and beyond the literacy skills required to meet these goals, the four areas also need to be addressed.[22]

To be self-determined requires a high level of knowledge about oneself in any situation. When LBS agencies offer a truly learner-centred approach to training, the stage is set for adults to build their self-determination skills. Working with learners to identify their strengths and weaknesses is a good place to begin. Practitioners need to be guides to help learners though this process. If adults are unclear about their goals, then they can begin to apply self-determination skills by researching information to help identify potential goals that are right for them. Although each adult's ability to do this may require different levels of assistance, the key is that learners are in control of the process. Encourage learners to discuss problem areas and ask for their input on possible strategies, accommodations or modifications that they may need. Help them explore the possible solutions by discussing the pros and cons. Actively involving adult learners in the initial assessment, training plan development and ongoing assessment is essential to building their self-awareness and helping them become more self-determined.

"One of the most important goals of transition planning is to help the student become an independent, self-determining adult."[23]

Transition planning needs to incorporated right from the beginning of the training process. What skills and supports are required for learners to reach their goals? For example, if a learner's goal is to gain the necessary skills to enter a credit-based program, then part of the transition planning could be to identify and develop strategies to work in a classroom setting and develop organizational skills to handle homework assignments. If a learner wants to improve his/her basic skills to seek employment in a department store then he/she may be encouraged to interview an existing employee to find out what specific skills are required and other realities of the job. Together the practitioner and learner need to individualize the strategies based on the task demands of the specific work environment. For each job description, a list of skills and modifications that will assist with the transition needs to be identified and monitored throughout the learning process.

Building self-awareness is critical in helping learners to determine the direction that transition planning will take. In order to learn these skills, self-determination skills should be identified and built into their training plan. Through the training process, adults should be given opportunities to practice their self-determination skills, increase their self-reliance and reduce dependence on practitioners and learning environments.

"Too often students are taught that dependence, passivity, and reliance on unseen forces will take care of them. Throughout transition planning, students should be encouraged to express concerns, preferences, and conclusions about their options and to give facts and reasons. They may need to learn how to express their thoughts in a way that others listen to them and respect their views. In order to learn these skills, students need to practice them within a supportive environment. The transition process is a good place to start. Transition planning should be an ongoing opportunity for students to learn and practice responsibility and self-knowledge. Transition is an ever-changing process, and students need to be skillful enough to adapt to the challenge of those changes."[24]

As previously mentioned, self-determination training should be integrated throughout adults' training plans and not be viewed as an individual module. Creating an environment that fosters self-determination thinking, such as a learner-centered approach, and/or actually teaching specific skills can do this. The area of self-determination should not be viewed as one more thing to

teach adults within an already challenging environment of learning outcomes and demonstrations development, but as more of a recognition of the culture that programs need to foster. In fact, most LBS agencies are well suited to offer opportunities for adults to develop their self-determination skills through services that they offer such as:

- Learner participation in goal-setting and training plan development

- Learner involvement in problem-solving, decision-making

- Learner-directed learning strategies for applicable areas (communication, numeracy and self-management skills)

- Ongoing assessment and evaluation of progress, learning strategies and the training plan

Information that should be addressed throughout the training process:

- How to make informed decisions

- How to set goals

- How to communicate interests, needs and rights to achieve goals

- How to take responsibility for decisions and advocacy

- How to apply self-advocacy information, skills and strategies across a variety of situations

- How to link with support resources or agencies in the community that will provide adults with opportunities to develop self-advocacy skills over time.[25]

Through this type of intervention adults become more engaged, as they work with ideas and actively use information as it is acquired to meet their needs. The information is personally relevant to their situations and they learn to go beyond just trying to absorb facts. Thinking about their answers and providing rationales for their thinking helps learners realize that there are a number of ways to arrive at an answer and/or understanding.

Assessment of self-determination skills

Assessing learners' self-determination skills can be done by using a variety of assessment tools such as checklists, self-assessments, observations and standardized transition assessments like the Brigance Life Skills Inventory. Assessment should cover students' abilities to speak for their interests; knowledge of their preferences, needs, rights, satisfaction with life; and abilities to act as their own advocates.

The LBS learning outcomes that are included under self-management are a good source for assessment criteria. Refer to http://www.transitioncoalition.org/assessing/book01/ch2a.htm#tpi for a list of various transition assessment tools. Go to table 2.7 at the bottom of the web page for a summary of the available tools.

The National Center for Learning Disabilities proposes that there are stages in the process of becoming a self-determined person. This module has adapted the information so that practitioners can use it to assess learners' self-determination and/or for learners to conduct self-assessments.

1) How well do learners know themselves?

 Can they identify and describe**:**

- Areas of strength?

- Tasks that are difficult?

- Their learning disability?

- What they like to do?

- What kinds of activities they avoid?

- Their ideal job?

- What is important to them?

2) How do they value themselves? Do they accept responsibility for their successes and failures?

Can they identify and describe:

- How their learning disabilities have made them stronger?

- Their recent successes, either big or small?

- Who helps them with things they don't do well?

- What they do for others?

- What habits do they have that could cause problems for themselves?

3) Are they able to plan ahead to the future and set goals?

Some individuals with learning disabilities have trouble thinking ahead and figuring out the consequences of their actions. Other people with learning disabilities are great at planning because it taps their creativity.

- Do they set long-term goals?

- Can they break down their long-term goals into manageable steps?

- How well do they stick to a plan?

- Are they willing to get others' input when they make a plan?

- How well can they match their strengths and work around their areas of need when they make a plan?

4) Self-determined individuals take action.

Taking action usually involves communicating with others. Skills such as listening, negotiating and compromising are important at this stage.

- What are the learners' communication strengths and weaknesses?

- How well can they accept another person's point of view?

- How well do they respond when they get a negative reaction?

- If necessary, are they willing to find another way to reach their goal?

5) Learners' abilities to learn from their experiences.

When their actions pay off and they get the intended results, can they figure out what contributed to the success? If so, can they repeat those actions and meet success again? When the opposite happens and their actions don't get the results they wanted, can they figure out what they should have done differently?

6) Learners are aware of the environment around them and the environment they are working towards.

Another step in learners' self-determination is becoming aware of their different environments. Can learners recognize what features of an environment are going to help or create potential barriers for them?

For example:

If learners are thinking about progressing to further training, do they know:

- How quickly reading and writing must be done?
- How many learners will be in the classroom?

If learners are thinking about progressing in employment, do they know:

- If there is time to check their work?
- How directions are given?
- If they will be given enough time to learn new work skills?

Adults need to understand that matching their strengths to the environment they are moving towards, and identifying potential accommodations, will increase their opportunity to experience success. This self-knowledge will help them to self-advocate for what they need to be successful.[26]

A good understanding of the learners' level of self-determination can be achieved through practitioners' observations and learners' self-assessments. As noted by the Learning Disabilities Center – developing self-determination is a process that is ongoing and becomes stronger each time adults apply their skills. The depth of self-determination skills learners need to exhibit to assist with their transition planning is dependant upon their goals.

Outcomes of having self-determination skills

- Increased self-esteem
- Ambition
- Responsibility for oneself
- A greater belief in one's control over the environment and one's life
- A higher level of expectation and clarity in decision-making and planning[27]
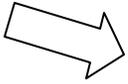
Helpful website resources

◆ **Self-Determination Curriculum** at
www.uncc.edu/sdsp/sd_curricula.asp A downloadable pdf file that
lists resources for curriculum on the following topics: choice-making,
decision-making, goal-setting/attainment, problem-solving, self-
evaluation, self-advocacy, training plans, relationships with others,
self-awareness

◆ **Lesson Plans for Promoting Self-Determination** at
http://www.uncc.edu/sdsp/resource_list/sd_lesson_plans.asp

◆ **Enabling students to assume a more meaningful role in the
transition planning process** - **sample lesson plan at
http://www.uncc.edu/sdsp/resource_list/wehmeyer_final.pdf**

Practitioner tips to help learners with transition planning to further education

- Ensure that adults learn effective study, time-management, test-
preparation and test-taking strategies.

- Use actual reading materials that are used in the vocational program
or on the job.

- Help learners determine, select and use a range of academic
accommodations and technological aids, such as electronic date books,

videodisc technology, texts on tape, grammar and spell checkers, and word processing programs.

- Help learners develop appropriate social skills and interpersonal communication abilities.

- Help learners develop self-advocacy skills, including a realistic understanding of the learning disability and how to use this information for self-understanding and communication with others (i.e. to explain to the Human Resources department why they could benefit from the use of an accommodation and increase their production level).

- Foster independence through increased responsibility and opportunity for self-management.

- Promote learners' self-esteem and self-confidence.

- Inform learners about admission requirements and demands of diverse postsecondary settings.

- Inform learners about services that postsecondary settings provide, such as disabilities services, academic services, and computer-based writing services.

- Ensure the timely development of documentation and materials in keeping with application time lines.

- Help learners select and apply to postsecondary institutions that will offer both competitive curriculum and the necessary level of learning disability support services.

- Develop ongoing communication with postsecondary personnel.[28]

"For a student to have a good experience in the world of work, the amount and type of preparation that leads up to employment can make the difference between success and failure"[29]

Practitioner tips to help learners with transition planning to employment

- Encourage learners to apply for job positions for which they have the knowledge, skills, and abilities to perform at the level required by the employer. Suggest they use the Internet to gain knowledge about different jobs or visit a local employment center.

- Help learners to know their strengths, be able to describe them and identify how they relate to different kinds of work roles.

- Encourage learners to pursue informational interviews and on-site visits in order to get a feel for different workplace environments and job tasks.[30]

- Identify vocabulary pertinent to reading to do tasks and assess learners' knowledge of the meaning of the vocabulary. If a word is not understood, teach its meaning first and then teach learners how to read the word.[31]

- Use actual reading materials that are used in the vocational program or on the job.

- Have learners request and review job descriptions before applying for positions.

- Address related transition issues like money management, transportation arrangements, interpersonal and communication skills, and time management.

- Provide information on how learners can handle their disabilities within the employment setting. For example, discuss the pros and cons of disclosing learning disabilities; explore how learners can integrate their strategies into the work environment; and know when and how to request appropriate accommodations.[32]

Understanding motivation strategies and how to incorporate them into training

"How do I motivate my learners?"

Many practitioners ask this question frequently. Ironically the solution to this question ultimately is up to the learners. This does not imply that practitioners don't impact or influence learners' motivation. Practitioner can certainly help guide or facilitate opportunities for learners to increase their motivation. The role of practitioners is to set the stage for positive and motivational learning experiences.

The first step for adults with learning disabilities is to understand and recognize their disabilities and the impact they have on every aspect of their lives. Self-awareness is critical in enhancing one's motivation. When adult learners understand their disability, they can begin to understand why they have struggled with learning. They begin to accept that their failures were not a reflection of their intellectual ability, but a reality of how they were taught and how they process information differently. Unfortunately, many adults entering the LBS programs have not developed this self-awareness. They have experienced a number of negative factors that have impacted their motivation levels such as a continual fear of failure, anger and frustration, and possibly depression. As a result, recognizing and understanding one's disability, although an important step, is only the first step to improving one's self-esteem and motivation. Additional supports such as ongoing feedback, relevancy and success also play a critical role.

Research indicates that there are two major ways to enhance self-esteem, one being through the use of self-enhancement strategies which focus on eliminating self-doubts, and the second being through skill identification which focuses on positive reinforcement by skill achievement. A major study looked at both approaches to determine which would be best for increasing the self-esteem of learning disabled students. The results indicated that using a combination of both approaches had the greatest effect on self-esteem.[33]

"A key component of many of the successful academic interventions was an emphasis on students working collaboratively with their classmates and receiving feedback from classmates on their progress. These interventions appear to give students with learning disabilities a dual payoff: they do better academically and self-concept is enhanced. Enhancing and highlighting new abilities and academic successes seems essential."[34]

Creating a learning environment to foster motivation and engagement

"Creating a learning environment that meets the needs of adult learners is a key element of successful adult education programs. The challenge is to create a non-threatening atmosphere in which adults have permission and are expected to share in the responsibility for their learning."[35]

Build an adult-to-adult understanding
- Use positive nonverbal communication
- Deal with the whole person
- Address learners as equals
- Share responsibility by actively involving learners in developing learning expectations for performance and behaviour

Create a relaxed environment:
- Put chairs in a circle or a U shape
- Discuss general topics of interest and, as a practitioner, share information about yourself
- Be accessible to the learners
- Share common ground (coffee, newspaper, etc.)

Create a learning environment that encourages all learners to participate
- Provide every opportunity to encourage learners to take responsibility for their learning through involvement and open dialogue (continually ask inquiry type questions such as "What would you do in this situation? How could you find out more information?")

- Involve learners right from the beginning during the initial assessment
- Ask for learner input on self-assessment, goal-setting, training content, tutoring and/or small group management guidelines, instructional materials and strategies, and ongoing evaluation including input on program evaluation
- Respond positively to learners' questions, and praise them verbally for work well done – help them recognize their sense of discovery

Providing multiple learning options

Provide a multi-sensory environment by conveying information in a number of different formats or venues. For example, to present information on a reading activity in an organized fashion, arrange information in meaningful ways by verbally summarizing, chunking the information, or providing information in a visual outline or a web visual design.

- Tune in to what interests learners through active discussion and attentive listening.
- Ensure that the learning materials relate to learners' lives and highlight ways learning can be applied in real-life situations. When learners are curious about the subject, they are more likely to become engaged in the tasks.
- Incorporate real-life demonstrations, case studies, and simulation exercises.
- Show how new skills learned can be applied in a number of situations at home, at work, etc.
- Design projects that allow learners to share new knowledge with others.

Facilitate adult independence

- Facilitate and guide the learning process rather than lead the process.
- Encourage adults to learn on their own.
- Break large tasks into a series of smaller goals to provide a more immediate sense of accomplishment.
- Help learners concentrate on the tasks rather than becoming distracted by fear of failure.

- Respond to learners' frustrations by having them retrace their steps to find their mistakes or figure out alternative ways of approaching a problem.
- Help learners to understand that "failure" is success**:** learning what doesn't work is on the same path as learning what does work.
- Provide opportunities for learners to work with other peers (i.e. study buddies).
- Provide decision-making, organizational, problem-solving and team-building opportunities.
- Encourage learners to keep track of their progress and make decisions on what to learn next. Reinforce the efforts and progress of students through the use of progress charts or graphs.[36]

Identifying accommodations

Accommodations are sometimes referred to as the removal of barriers or modifications to help adults reach their goals. The aim is to enhance adults' learning through modified instructional methods, the use of adaptive technology and opportunities for alternative assessment and examination procedures. In other words, it is a different way to do a task.

Often the terms strategy and accommodation are used interchangeably **– but they are different.**

- **A strategy** is a different way to teach a skill, whereas
- **An accommodation** is a way to bypass or compensate for one's difficulty.

How an accommodation might be used instead of a learning strategy:
A learner wants to start a carpentry business, but needs help to do handwritten cost estimates. Unfortunately he/she was unsuccessful after trying several strategies to learn to write and add the costs manually. An accommodation was pursued to help bypass the task. The adult developed a preprinted form with common materials and costs so he/she only had to circle the applicable costs and use a calculator to add up the totals.

"The use of compensatory strategies and tools (chosen originally to bypass the problem) may eventually result in learning. For instance, repeated use of the Quicktionary Pen may teach new sight words, improve spelling, improve comprehension by increasing accuracy of word identification, or build vocabulary and fluency by allowing more independent reading."[37]

"Sometimes accommodations are the only way to complete a task. When learning a skill is not the goal, or when learning that skill is too stressful or difficult, then consider accommodations. Accommodations are task-oriented and not learning-oriented. Likewise, the use of technology is often task-oriented. Using that same technology to teach a skill is learning-oriented."[38] For example the use of a spell checker can be seen as task-oriented. It ensures the learners' spelling is correct, but it does not teach learners how to spell. Another example is the use of a calculator for a learner who just cannot master the multiplication table. Again the calculator performs a task, but it does not teach the learner how to multiply.

Research has shown that the use of accommodations can be very beneficial. However, there are potential pitfalls of which practitioners should be aware. First of all, a potential overdependence on the use of accommodations both by practitioners and learners can occur. Although adults with learning disabilities may struggle with certain literacy skills, the use of various strategies and different teaching approaches should be explored first before accommodations are considered. For example, if an adult struggles with taking notes in a classroom or lecture environment, the teacher may provide the lecture notes to him/her after the class. The adult may become passive during the lecture since he/she begins to rely on the notes that will be provided. Instead of automatically providing the notes, teach the adult various note-taking strategies that have proven to be effective organizational tools. Through the process of taking the notes, the adult will begin retaining the information learned.[39]

The second potential pitfall in the use of accommodations is not providing the necessary skills to support the effective use of the accommodation. For example, providing the use of spell checkers is not sufficient on its own. In order for learners to utilize the accommodation effectively they need to be

taught how to use the spell checker and other basic proofreading techniques.[40] Accommodations cannot be viewed in isolation. Accommodations should be used in combination with effective strategies and instructions to permit achievement.

"Appropriately selected instructional accommodation not only provides equal access to learning opportunities but also minimizes the learner's likelihood of failure. Appropriate educational accommodations are determined by taking into account the adult's unique learning needs."[41]

Any consideration of the use of accommodations should be based on the individual strengths of the accommodation, the potential utility and the applications across different situations. For example, two adults who both have poor hand coordination may access totally different types of accommodations based on their individual situations. One adult may be taught alternative methods of grasping the writing utensils and the other adult may have someone write for him/her.

Working together with the learner, you will want to consider the following factors when deciding what needs to be modified or accommodated to meet the learner's needs.
The accommodations make alterations to the place, time or the performance conditions which allow learners to process information that will meet their needs.

Do you need to?

- **Adjust the setting/environment**: alter the environment or provide ways to screen out disrupting stimuli (i.e. provide individual work spaces or increase/decrease lighting).

- **Adapt the task**; find ways to bypass the problem to help lessen the impact of the problem (i.e. create short-form spelling for difficult words for a waitress who takes food orders).

- **Adjust instruction/presentation of information**: alter the way information is presented or adapt the instruction (i.e. leave notes on the board as long as possible to allow time for copying, provide outlines of lessons prior to lessons and provide photocopies of summary notes at the end of lessons).

- **Make accommodations in testing/performance**: work around specific difficulties to devise a true measure of abilities (i.e. allow the use of calculators for word problems if testing an adult's ability to follow sequence and solve problems).[42]

Process to select accommodations

Initial:
- Look at learners' goals – modify/revise if needed
- Identify the strengths and resources available to learners
- Identify possible accommodations
- Identify pros and cons for each by using the criteria developed by Kansas University (see list following)
- Encourage learners to select accommodations

Ongoing:
- Gather information that describes the results of accommodations
- Discuss the results with the learner
    - What benefits are they seeing?
    - Are they reaching their goals?
    - Are there problems?
    - Are they experiencing any difficulties?
    - How has it helped them?
    - What needs to be changed/revised?
    - Have they used the accommodation in other settings? If not, why? What needs to be changed/modified?[43]
- Revise accommodation use/choice based on initial implementation and associated outcomes

Criteria to help rate accommodations

Once the decision to access accommodations for a learner has been made, the next step is to select which one. The University of Kansas Institute for Adult Studies has developed a list of criteria to help evaluate and compare accommodations. Each individual's needs and circumstances will dictate the importance or impact each criterion may have on the final decision. Together the learner and the practitioner should consider the following criteria:

- Availability
- Expense
- Effectiveness with the learner
- Ease of use
- Portability
- Degree to which difficulty can be bypassed
- Potential for increase in independent study/work
- Utility for a variety of tasks
- Credibility – i.e. approved by GED Testing Services (applicable if the adult has an official diagnosis and is considering taking the GED)[44]

Learning disability characteristics, related strategies and potential accommodations

Reading characteristics	Potential Strategies	Potential accommodations
Engages in leisure activities other than reading; prefers more active pursuits.	Discuss with learners why they have limited interest. Find out about other interests and begin introducing material that is related to their interests.	Listen to books on tape or books on computer disk. Use scan and read software.
Cannot easily use materials like newspapers and classified ads to obtain information.	Demonstrate how the documents are organized. Provide reading comprehension strategies such as PASS, questioning and paraphrasing, and provide a step–by-step process to search the material in an organized manner.	Use scan and read software.
Does not attempt to sound out words in reading or does so incorrectly. May read words with syllables backwards (*was* for *saw*; *net* for *ten*)	Introduce phonetic strategies such as word to word matching, blending and overt word parts. Build a list of words that are challenging to help learners learn to self-monitor by watching for reversals and self-correcting.	Use a Quicktionary reading pen, use larger print, allow extra time, tape the material and allow reading along.
May encounter a newly learned word in a text and not recognize it when it appears later in that text.	Before reading, pre-teach unfamiliar but important words, during the reading have the learners add new words to a list and after reading have the learners review the words and use their own words to explain the meaning. Use word-building strategies to teach prefixes, suffixes and combining words. Use the illustrate and associate strategy for synonyms, antonyms, and analogies. Have them build their own dictionaries of new words.	Use a Quicktionary reading pen.

Reads slowly and labouriously, if at all. Words may be skipped; endings can be left off and there are frequent repetitions. May refuse to read orally.	Work on fluency and use a variety of cueing strategies such as background knowledge, pictures, meaning, structure/grammar and sound/symbol correspondence. Build on word identification and overt word parts strategies. Offer to read together to build confidence in oral reading.	Use scan and read software. Allow for extra time on assignments or tasks. Provide verbal directions. Pair with other learners who are comfortable with reading and have them read first, tape the material and allow reading along, use larger print, encourage learners to use a typoscope
Loses the meaning of text, but understands the same material when it is read aloud. – Visual processing disabilities.	Have learners read the text or passage in a tape recorder and then listen to the recording to increase reading comprehension. Introduce reading comprehension strategies for silent reading.	Highlight or colour code important information on handouts, go over all written directions orally, allow for a reader during testing situations. Use scan and read software. Allow and encourage learners to read aloud so they both see and hear the material.
Does not understand the text when it is read to him/her (auditory disability).	Provide a copy of the material so they can follow along – help them recognize this disability and encourage them to review chapters prior to lessons if in a classroom format or if they plan to access further education/training.	Ask for lecture notes or outlines, have a note-taker, ask for handouts prior to a presentation so they follow along while the person speaks.
When prompted to do so, does not describe strategies used to assist with decoding and comprehension of text.	Introduce the concept of strategies. Teach reading and decoding strategies and work with learners to build their abilities to use the strategies independently.	Use cue cards that outline steps to various comprehension and decoding strategies.
Recognizes and uses fewer words, expressions, and sentence structures than peers.	Before reading, pre-teach unfamiliar but important words, during the reading have learners add new words to lists and after reading have the learners review the words and use their own words to explain the meaning. Use word-building strategies to teach prefixes, suffixes and combining words. Use the illustrate and associate strategy for synonyms, antonyms, and analogies. Have them build their own dictionaries of new words.	Access word prediction and word completion software programs.

Writing Characteristics	Potential strategies	Potential accommodations
Rarely writes letters or notes. Needs help completing forms such as job applications.	Start with tasks that interest learners and as they see success begin to introduce more difficult writing tasks.	Allow plenty of time, use hand held electronic dictionaries and spellers.
Struggles to produce a written product. Produces short sentences and text with limited vocabulary. Makes spelling errors, may confuse letter order, misses middle syllables, spells exclusively by sound and/or some words may be completely unrecognizable.	Teach the basic framework for writing (planning, writing and revision), incorporate strategies within this to assist with the process such as: planning think sheets, semantic mapping, putting sentences on index cards and organizing into paragraphs. Work on vocabulary and spelling by introducing word-building strategies to teach prefixes, suffixes and combining words. Use the illustrate and associate strategy for synonyms, antonyms, and analogies. To also help with spelling practitioners may choose to access some of the following strategies: overt word parts, developing a list of trouble words and highlight the problem areas, using chunking, helping with tracking the sound sequence, using trace-copy-recall to increase visualization of the word.	Suggest that learners use tape recorders to dictate what they want to write, then play it back and write it down. Use word processors, speech to test voice input. Give extra time for written assignments and shorten the amount required if possible. Accept alternative forms of reporting (i.e. oral reports, tape recorders, debates).
Omits critical parts or puts information in the wrong place. Writing lacks transition words.	Build vocabulary and writing process. Teach self-regulated strategy development. Build vocabulary list of transition words (chronological, cause and effect, comparison and contrast words). Work on using the words in sentences and understanding the meaning.	Develop a sheet with transition words to use as reference.
Does not communicate a clear message. Expresses thoughts that don't contribute to the main idea.	Introduce story grammar so they understand the basics of a narrative. Use semantic mapping to help organize thoughts. Use DEFENDS strategy to help write a composition.	Encourage the use of word processor and the cut and paste function. Have learners prepare an outline, brief notes, or short phrases to show knowledge.
Uses sentences that contain errors in syntax or word choice. Fails to clearly indicate the referent of a pronoun. Unable to determine which noun they are referring to.	Work on sentence structure – provide grammar checklist to help them recognize and self-monitor problem areas.	Encourage the use of word prediction or word completion software.

Spells only phonetically. Leaves out letters. Writes numbers or letters backwards or upside down. Refrains from writing words that are difficult to spell.	Discuss spelling strategies with learners to help determine cause of errors. Develop a list of words and letters they reverse to help them recognize and self-monitor. Practitioners may choose to incorporate some of the following spelling strategies: Horn Spelling method, trace, copy and recall, using tape recorders to make sure they are pronouncing the word correctly, chunking, highlighting the hard parts so they visualize the correct spelling. Regardless of the strategy selected, use a multi-sensory approach.	Encourage the use of number and alphabet strips; spell checkers, cue cards that list problem areas.
Omits or misuses sentence markers such as capitals and end punctuation, making it difficult for the reader to understand the text.	Determine their level of understanding for capitals and punctuation – teach them the basics if necessary and model editing strategies such as COPS to help them self-monitor for these types of errors.	Create pocket size cue cards for problem areas.
Has awkward writing grip or position. Letters, words, and lines are misaligned or not spaced appropriately. Makes frequent punctuation errors and mixes capital and lower-case letters inappropriately.	Check the learners' writing position, their pencil grip, paper angle and general balance. If learners sit side-by-side, ensure that left-handers are correctly placed so as not to crowd out their right-handed neighbours. Encourage a cursive hand-writing style, linked to the printed form, so that a movement memory can be established.	Encourage the use of a triangle shaped pencils, or felt-tip markers, use word processors, lined paper or graph paper to encourage appropriate spacing. Use number lines and alphabet strips as reminders for forming letters and numerals. Allow extended time to complete work, use wide line paper, and use stabilizing devices.
Is reluctant to proofread or does not catch errors. May spell the same word differently in the same writing sample. Focuses mostly on the mechanics of writing.	Introduce story grammar along with semantic mapping to work on style and content. Use DEFENDS or POWER to help learners understand the whole writing process, including editing and revising. Teach them editing strategies such as COPS.	Encourage the use of word processors with spell check and grammar check capabilities, predictive word processors. Develop lists of words that they spell inconsistently to use as a self- monitoring tool.

LISTENING CHARACTERISTICS	POTENTIAL STRATEGIES	POTENTIAL ACCOMMODATIONS
Misunderstands a message with a word mistaken for a similar word. Might say, "Pick up the grass," instead of, "Pick up the glass."	Ask learners to repeat what they heard or encourage them to paraphrase to make sure they heard the instructions correctly.	Provide directions in writing. Reduce competing background noise. Provide directions one or two steps at a time using visual aids or demonstrations.
Recognizes and uses fewer words than peers when engaged in conversation or when gathering information by listening.	Build vocabulary through word building, and illustrate and associate strategies.	Seat them near the lecturer – engage them in eye contact.
Requests repetitions or more concrete explanations of ideas. Frequently asks for examples.	Reinforce this strategy and encourage them to paraphrase their understanding instead of asking practitioners to continue to give examples. Teach listening skills and clarifying questions.	When possible seat learners near the lecturers. Encourage learners to use tape recorders and/or take notes to review discussion and if necessary ask for clarification.
Will eat lunch first if given the direction, "Eat lunch after you take this to the mail room."	Help them become aware of this challenge – encourage them to paraphrase to make sure they heard the instructions.	Provide directions one or two steps at a time using visual aids or demonstrations.
Doesn't remember directions, phone numbers, jokes, stories, etc.	Help them become aware of why they have this challenge – encourage them to ask people to write down the directions and the phone numbers, and/or encourage the person to record the information.	Allow them to audiotape their presentations or submit written presentations.
Gets lost listening in classroom or to large group presentations, complaining that people talk too fast. Becomes inattentive during the presentation.	Help them become aware of this disability and have learners advocate for themselves, possibly by asking the teacher to give details on what will be covered in the classroom so they can read the material prior. Ask the teacher for an outline of the lesson prior to class. Teach note-taking strategies.	Provide outlines of lessons, use tape recorders to listen to lessons afterwards and record the notes.

Speaking characteristics	Potential Strategies	Potential accommodations
Adds, substitutes, or rearranges sounds in words, as in *phemomenon* for *phenomenon* or *Pacific* for *specifi*c.	Make learners aware and help them recognize this challenge. Work on vocabulary and phonetic skills such as: overt word strategy, and visually highlighting the differences in the words. Make lists of words that they commonly substitute to help them increase their awareness and ability to self-monitor. Provide practice listening for, identifying and producing the sounds.	Allow adults to demonstrate knowledge and abilities by writing instead of speaking. Allow preparation time and the use of notes for required oral presentations.
Uses a similar-sounding word, like *generic* instead of *genetic*.	Make them learners aware and help them recognize this challenge. Work on vocabulary and phonetic skills such as: overt word strategy, and visually highlighting the differences in the words. Make lists of words that they commonly substitute to help them increase their awareness and ability to self-monitor. Provide practice listening for, identifying and producing the sounds.	Allow adults to demonstrate knowledge and abilities by writing instead of speaking. Allow preparation time and the use of notes for required oral presentations.
Uses the wrong form of a word, such as calling the *Declaration of Independence* the *Declaring of Independence.*	Same as above.	Allow adults to demonstrate knowledge and abilities by writing instead of speaking. Allow preparation time and the use of notes for required oral presentations.
Uses the same words over and over in giving information and explaining ideas. Has difficulty in conveying ideas.	Work on building vocabulary. Encourage learners to write down their thoughts prior to speaking.	Give them advance notice prior to having them speak and encourage them to use notes. Give them specific questions to answer and guide them through the discussion to help organize the information that is conveyed.
Omits or uses grammatical markers incorrectly, such as tense, number, possession, and negation.	Help them become aware of this challenge. Determine what areas are most frequently incorrect and focus on these areas for remediation.	Allow adults to demonstrate knowledge and abilities by writing instead of speaking. Allow preparation time and the use of notes for required oral presentations.

Uses mostly simple sentence construction. Overuses *and* to connect thoughts and make statements.	Build vocabulary through the use of word building, word maps and illustrate and associate strategies.	Allow adults to demonstrate knowledge and abilities by writing instead of speaking. Allow preparation time and the use of notes for required oral presentations.
Has problems giving directions or explaining a recipe; talks around the topic, but doesn't get to the point.	Make learners aware and help them recognize this challenge. Have them write down key points and use as a reference when talking or providing information. Teach learners to plan, make notes and rehearse when preparing for important communications	Allow time for learners to think before speaking.
Interjects irrelevant information into a story. Starts out discussing one thing and then goes off in another direction without making the connection.	Make learners aware and help them recognize this challenge. Utilize story grammar to help them understand the components of a story. Encourage them to write down their thoughts before speaking. Encourage them to slow down and pace themselves.	Make specific and limited requests to provide structure for learners.
Can't call forth a known word when it is needed and may use fillers, such as *"umm*m," and *"You know*." May substitute a word related in meaning or sound, as in *boat* for *submarine* or *selfish* for *bashful.*	Make learners aware and help them recognize this challenge.	Use written notes prior to presentations. Give notice prior to having them speak.
Does not follow rules of conversation like turn taking. Does not switch styles of speaking when addressing different people.	Make learners aware and help them recognize this challenge. Provide individualized practice listening for, identifying and producing the sounds, practice taking turns and following the rules of conversation.	Use video cameras to help them recognize challenge areas and to monitor progress.

Thinking characteristics	Potential strategies	Potential accommodations
Asks to see ideas on paper. Prefers hands-on ways of learning new ideas.	Provide information visually where possible.	Build work teams to include a balance of strengths. Build in routines and regular schedules.
Resists new ideas or ways of doing things and may have difficulty adjusting to changes on the job.	Help learners develop daily routines. Model how new tasks can be broken down into manageable chunks and make them simpler. Encourage them to complete one step at a time. Build in praise and constant feedback.	Build work teams to include a balance of strengths. Build in routine and regular schedules.
May have good ideas that seem disjointed, unrelated, or out of sequence.	Teach strategies to help learners organize information. Encourage them to take time to organize their thoughts prior to speaking.	Provide cue sheets or prompts (list of jobs or steps in a process). Build in routines and regular schedules.
Pays too much attention to detail and misses the big picture or idea when encountering specific situations at home or at work.	Use a form of semantic mapping to look at all aspects of the task or situation. Teach and model problem-solving.	Highlight or colour code written material to draw attention to critical features and show relationships. Help them set time goals for each task and provide a checklist for each step of the task. Use a timer.
"Shoots from the hip" when arriving at decisions. Doesn't use a structured approach to weigh options.	Help them explore various options to problems, model problem solving strategies and integrate into training activities. Encourage them to stop and think. Practice role-playing to prepare learners for various situations.	Provide cue sheets or prompts (list of jobs or steps in a process). Build in routines and regular schedules.
Approaches situations without a game plan, acting without a guiding set of principles.	Model effective action planning – involve learners right from the beginning in assessment and training plan development. Begin with small and realistic projects to practice and model. Encourage learners to refer to their plan and check off each task as they are completed. Encourage them to stop and think. Utilize mnemonics to help remember steps to effective planning.	Allow extra time to complete tasks. Encourage them to use index cards with the steps to planning to use for reference. Teach students to break work into smaller units and allow them to decide what task to do first, second, etc.

"Other difficulties" characteristics	Potential strategies	Potential accommodations
Doesn't focus on a task for an appropriate length of time. Can't seem to get things done. Does better with short tasks.	Help them break tasks into manageable chunks, teach and model time management techniques.	Allow more time. Provide one or two tasks larger demonstration at a time. Access an electronic organizer, and a "to do list". Use a carrel, earplugs, or use earphones if music decreases distractibility.
Doesn't know where to begin tasks or how to proceed. Doesn't work within time limits, failing to meet deadlines. Difficulty prioritizing tasks. Workspace and personal space are messy.	Model effective action planning – involve learners right from the beginning in assessment and training plan development. Begin with small and realistic projects to practice and model. Encourage learners to refer to their plans and check off each task as they are completed. Encourage them to stop and think. Utilize mnemonics to help remember steps to effective planning.	Use colour codes or visual tasks to organize tasks, use a timer, and assign peer coaches or a study buddy. Access an electronic organizer, and a "to do list". Develop a checklist for tasks.
Omits or substitutes elements when copying information from one place to another, as in invoices or schedules. Often confuses left from right and up from down.	Help them recognize and understand why they are having this challenge. Encourage them to double check their work and make note of words or numbers that they often miscopy. Get them to stop and think before acting.	Have another person check their work, use cut and paste if invoices are on a word processor.
Avoids jobs requiring manipulation of small items. Becomes frustrated when putting together toys for children.	Help them break down tasks into smaller chunks. Encourage a break in an activity when they become frustrated.	Encourage them to access jobs that focus on their strengths and avoid jobs that require manipulation of small objects.
Stands too close to people when conversing. Doesn't perceive situations accurately. May laugh when something serious is happening.	Discuss undesirable behaviour with learners. Work on role-playing and discussing appropriate behaviour in certain situations. Helping them become aware of their behaviour is the first and most critical step.	Utilize feedback from trusted friends and/or mentors to monitor social interactions at work and in daily living.
Does not seem to know how to act and what to say to people in specific social situations and may withdraw.	Discuss undesirable behaviour with the learner. Work on role-playing and discussing appropriate behaviour in certain situations. Helping learners become aware of their behaviour is the first and most critical step.	Utilize feedback from trusted friends and or mentors to monitor social interactions at work and in daily living.
Demonstrates over reliance on others for assistance or fails to ask for help. Blames external factors on lack of success. Doesn't set personal goals.	Provide modeling and teaching of goal-setting. Actively involve them in the learning process by encouraging self-assessments. Involve another learner who has experienced similar challenges but has learned to work with them.	Access a mentor.

MATHEMATICS CHARACTERISTICS	POTENTIAL STRATEGIES	POTENTIAL ACCOMMODATIONS
Uses a calculator or counts on fingers for answers to simple problems; e.g., 2 x 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. 2x 5 = 10 then 5x 2 = 10. Build on existing knowledge and work from what learners know: 2 x 6 = 12 then 3x 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 x 4= 2 x 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 lists, 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 lists 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).

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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. More information on assistive technology and the various tools available will be provided later in this module.

Sample accommodations taken from real-life situations

- A custodian was assigned several duties and had trouble remembering them. As an accommodation, the custodian was assigned only one job task at a time. The same custodian had difficulty reading the job postings. As an accommodation, when a position was open, it was brought to the person's attention rather than relying on the custodian to read the written job postings. These accommodations were provided with no cost to the employer.

- A clerk with a learning disability maintained files and had difficulty categorizing and sorting paperwork. The office was rearranged to eliminate visual distractions. Task sequencing was used in the office. Also provided were reading templates, coloured marker tabs, and incandescent lighting. The total cost for these accommodations was $20 for the reading templates.

- A child-care assistant with a learning disability had low reading skills. A video was provided to the employee to teach a children's story as were the hand motions that accompanied the story. The employee viewed the video to prepare for lessons. The total cost of the accommodation was $50 for the videotape.

- A clerk/receptionist with a learning disability had difficulty typing from the printed original. To avoid skipping lines, an automatic "line guide" was provided. The total cost of the accommodation was $256 for the copyholder/line guide, a lamp and a magnified cursor.

- A dishwasher with a learning disability had many tasks to complete. Using a list of job duties, especially at closing time, with words and/or pictures, helped the person stay on task. The list also helped with organization and efficiency. There was no cost for this accommodation.

- A worker in retail sales with ADD was increasingly frustrated by day-to-day responsibilities on the floor. The worker divided the day into highly structured chunks and there was no cost for this accommodation.[46]

Assistive Technology

More and more programs are exploring technological options – hardware and software to use with their learners. There are a number of ways technology can be integrated into adult learning:

- **Technology as a curriculum** - i.e. offer mini courses such as "Exploring the Internet" or "How to effectively use a spell checker".

- **Technology as a delivery mechanism** - use individualized software learning systems i.e. AlphaRoute, Skills Bank, etc.

- **Technology as a complement to instruction** - use various software to work on weak skill areas and to gain practice

- **Technology as an instructional tool** - use technology to enrich the learning goals i.e. using the Internet to access information on a topic or using the word processor to complete a written assignment.[47]

- **Technology as an assistive device** - Use any item, piece of equipment, or product to increase, maintain, or improve the abilities of people with disabilities.[48]

The use of technology as highlighted can enhance and enrich learning not only for adults with learning disabilities, but all learners alike. However, this section will look at how technology can be used as an assistive device for adults with learning disabilities. A piece of equipment can range from "simple" such as a highlighter, to "complex" such as a personal laptop to take notes. It all depends on the unique profile of learners' strengths, weaknesses, and goals. Assistive technology can also include tools for daily life such as cheque-writing templates, tools for learning such as tape recorders to help learners review class material and/or tools for working such as software to ease spelling and grammar concerns.[49]

Practitioners need to determine how the disabilities hinder adult learners'
performance before any type of assistive technology is considered. Together
adult learners and practitioners need to understand the functional limitations
learners' exhibit and how these limitations impact their learning, and their
potential or current work and home situations. Assistive technology may be
used alone or in conjunction with other technologies to meet the unique and
varied needs of individual adults. The focus should not be on the device, but
on what the device can do for the learner. There needs to be a good fit.[50]

Why use technological tools?

- There is a proven track record – the benefits of assistive technology
  have been demonstrated through research studies.

- Despite remediation, adults are unable to improve the skill area – the
  use of technology doesn't fix the deficit, but helps adults work around
  it and build on their skills.

- The persistence of learning problems - adults do not grow out of their
  learning problems.

- The potential to increase learner independence and help them perform
  tasks on their own.

- It is a portable tool and can help adults function in a variety of
  contexts (training, work, home, while traveling).[51]

"**THE 80/20 RULE**: Eighty percent of the effective Assistive Technology
solutions for persons with disabilities are simple, low-tech devices. Only
twenty percent of the necessary modifications involve high-tech options."[52]

A holistic approach to using assistive technology

There are a number of factors to consider when thinking about using assistive technology. Practitioners should take a holistic approach, which involves looking at learners' prior experiences or knowledge, the interests of the learners and their specific strengths and weaknesses. Any assistive technology that is being considered must serve the learners' needs in their current situation and be useful in other settings related to their goal (i.e. work, further training and independence). The assistive technology that is used does not eliminate the need for instruction in social and academic skills; it is only one piece of the overall support identified in the learners' training plans.

"Assistive technology can be thought of as system that resembles a jigsaw puzzle consisting of several pieces. In a typical jigsaw puzzle the puzzle is incomplete and the final image is indistinct until all pieces are in place. The same situation exists with assistive technology systems. Without each piece of the puzzle, the intervention is incomplete, and is more likely to fail".[53]

Each piece of the puzzle interacts with the other. It is critical to integrate any type of assistive technology into the overall training. Each piece of the puzzle needs to work together for the assistive technology to be successful.
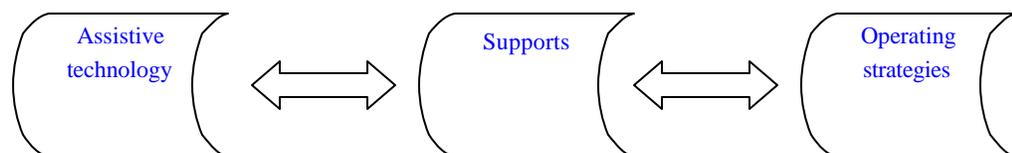
Assistive technology

This refers to the equipment that is being considered i.e. adapted keyboards, specialized software, reading aids, etc. and the match between the functional needs of adult learners (i.e. learners need to eliminate the spelling errors in their quality service reports at their work setting).

Supports
The level of supports can make or break the success of the assistive technology intervention. Examples of supports could include modifications to learners' environments such as adequate lighting, practitioners with adequate knowledge of assistive technology, financial resources and transferability to other settings.

Operating strategies
It is necessary for learners to learn how to operate assistive technology. They need to learn about the features and maintenance, operations, how to integrate assistive technology into typical routines and how to problem-solve and cope with malfunctions, etc.

The SETT model to help implement assistive technology

Joy Zabala developed this material while she was an Educational Consultant in Assistive Technology at Region IV Education Service Center in Houston, Texas. The SETT model was first introduced at the 1995, "Closing the Gap" Conference in Minneapolis, MN. It has been published in a number of publications since then and has also been used by many others in the development of their materials. The model was developed to help reduce the misfits and under usage of technology. Professionals agreed that a set of questions needed to be explored to help select the most efficient and effective assistive technological equipment that would best meet learners' needs.

The SETT (student, environment, tasks and tools) model is a guideline for gathering data in order to make effective assistive technology decisions. The SETT Framework considers the **S**tudent, the **E**nvironment(s), the **T**asks required for active participation in the activities within the environment, and finally, the system of **T**ools needed for the student to address the tasks.

The questions under each section of the SETT Framework are expected to guide discussion rather than be complete and comprehensive in and of themselves. As each of these questions is explored, it is likely that many other questions will arise. The team continues the exploration until there is consensus that there is enough shared knowledge to make an informed, reasonable decision that can be supported by data.

The student (learner)
- What is the functional area(s) of concern? What does the student need to be able to do that is difficult or impossible to do independently at this time?
- Special needs (related to area of concern)
- Current abilities (related to area of concern)

The environment
- Arrangement (instructional, physical)
- Support (available to both the student and the staff)
- Materials and equipment (commonly used by others in the environments)
- Access issues (technological, physical, instructional)
- Attitudes and expectations (staff, family, employees, others)

The tasks
- What **specific** tasks occur in learners' natural environments that enable progress toward mastery of their goals and objectives?
- What **specific** tasks are required for active involvement in identified environments (related to communication, instruction, participation, productivity, environmental control)?

The tools
In the SETT Framework, tools include devices, services and strategies; everything needed to help learners succeed. Analyze the information gathered to address the following questions and activities.
- Is it expected that the learner will not be able to make reasonable progress towards his/her goals without assistive technology devices and services?
- If yes, describe what a useful system of assistive technology devices and services for the learner would be like.
- Brainstorm tools that could be included in a system that addresses learner needs.
- Select the most promising tools for trials in the natural environments.
- Plan the specifics of the trial (expected changes, when/how tools will be used, cues, etc.)
- Collect data on effectiveness.

It is expected that the SETT Framework will be useful during all phases of assistive technology service delivery. With that in mind, it is important to revisit the SETT Framework information periodically, to determine if the information that is guiding decision-making and implementation is accurate, up to date, and clearly reflects the shared knowledge of all involved.
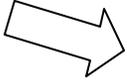
◈ **To learn more about how SETT was developed go to** http://www.ldonline.org/ld_indepth/technology/zabalaSETT2.html

◈ **To access computer forms that can be used to work through the SETT model go to** http://www.joyzabala.com/

Examples of assistive technology

There are a variety of assistive technology supports that can be accessed; however, they are too numerous to cover them all in this module. In addition, it would not be beneficial to include all supports since what will work for one learner may not work for another. What have been provided are a few examples for each of the functional needs. In addition, website resources are listed that provide comprehensive information on assistive technology.

The following examples were accessed from the Job Accommodations for People with Learning Disabilities and Attention Deficit Disorder Website at http://janweb.icdi.wvu.edu/media/employmentldaddfact.doc

Assistive technology for reading:
- Tape-recorded directives, messages, and materials
- Reading machines ($1200 +)
- Screen reading software for computer use ($250 +)
- Coloured Mylar templates (coloured transparencies) for reading and scanning
- Scanners which allow the user to enter hard copies into the computer system
- Reading pens ($300 approx)

Assistive technology for writing:
- Personal computers/laptop computers
- Voice output software that highlights and reads (via a speech synthesizer) what is keyed into the computer ($250 +)
- Speech recognition software that recognizes the user's voice and changes it to text on the computer screen
- Talking note-takers ($1000 to $1600)
- Spell checking software/electronic spell checkers and grammar checking software
- Software with highlighting capabilities
- Word prediction software
- Form producing software that computerizes order forms, claim forms, applications, credit histories, equation and formula fields

Assistive technology for mathematics:
- Fractional, decimal, statistical, and scientific calculators
- Talking calculators ($25+)
- Computer Assisted Instruction (CAI) software for arithmetic/ mathematics
- Large display screens for calculators, adding machines
- Coloured Mylar templates, coloured coding for maintaining ledger columns

Assistive technology for organizational skills, memory, and time management:
- Day planners / Electronic organizers/schedulers ($50+)
- Software organizers with/without highlighting capabilities
- LCD watches, data bank watches, timers, counters, and alarms
- Personal Information Managers (P.I.M.S.) ($150+)
- Use of electronic mail (e-mail) for memory deficits

Assistive technology for managing the physical environment:
- Room enclosures/cubicles to reduce auditory and visual distractions
- Use of "white noise" by using a sound soother/environmental sound machine
- Use of coloured files
- Mapping of the workspace/office
- Use of headphones or ear plugs

Helpful website resources

- Website with information on tech supports for a variety of areas that are geared to adults. Go to: http://www.ldonline.org/ld_indepth/technology/nalldc_guide.html

- Homepage for Job Accommodation Network. Go to: http://janweb.icdi.wvu.edu/

- A PDF that provides examples of AT to use for various functional challenges such as reading, writing etc. Go to: http://www.gatfl.org/ldguide/documents/AT%20Resource%207-00.pdf

- University of Toronto Adaptive Technology Product Resources at http://snow.utoronto.ca/technology/products/index.html

- Access a software summary and comparison chart developed by Action Read Community Literacy Centre. Go to: http://home.golden.net/~actionr/adaptech/contents.html -

Developing fair demonstrations using accommodations

The purpose of providing various assessment strategies is to minimize the impact of the learners' disabilities on their performance. Accommodations help learners to be on a more equal footing with non-disabled adult learners. Accommodations don't make it easier for learners, just possible. The use of accommodations does not give adults any additional advantage. When accommodations are provided, improvements in learners' performances are a result of their actual abilities. When poor performances are evident they are usually reflections of adults' learning disabilities. All adults with learning

disabilities do not need accommodations. They should only be used when the current format does not permit demonstrations of learning. If learners have difficulty with their reading comprehension, allowing them extra time to complete an exam only allows them time to implement some of their comprehensive strategies; it does not give them an advantage over the other learners. Learners are still required to demonstrate their comprehensive skills just like all of the other learners who are taking the exam.

Accommodations for testing of skills fall under the following categories: time or schedule of the assessment, test directions, presentation of the questions, learner response to questions and the setting or environment.

The following are examples of accommodations:

- Avoid complicated language in test questions

- Consider other forms of assessment such as hands on demonstrations, open book exam

- Provide material in large print, which may be easier for learners to process

- Avoid answer sheets where learners have to transfer their answers, especially for learners with perceptual problems

- Have a person read the test, or provide audiotape questions and allow extra time for learners with reading difficulties

- Allow learners with writing difficulties to record their answers on tape, provide oral answers to the examiner, use personal computers or offer multiple choice questions instead of long answers

- Permit the use of dictionaries, thesaurus' and/or calculators during testing

- Provide separate testing areas to reduce distractions

When using accommodations, the complexity of the activity must be maintained. It is important that the skill integrity be kept. To maintain the integrity with the incorporation of an accommodation means that learners can still demonstrate the skills they have learned.

For example: One of the common struggles for adults with learning disabilities is their spelling. If a learner still has difficulty with spelling after exploring and trying a number of spelling strategies, then the use of a spell checker may be considered. In this situation one of the learner's outcomes is to be able to write cover letters for his/her employment search. The key components in the outcome are to demonstrate letter organization skills, knowledge of sentence structure, grammar and general proofreading skills. The demonstration would be accepted when the learner is able to complete a cover letter with the key components even though he/she has used a spell checker. The integrity of the key components has been maintained despite the spell checker accommodation.

The above example shows how the accommodation used has the learners do the tasks in a different way. The accommodations provide the platform for the learners to demonstrate their skill mastery. The essential skills required to meet the outcome are not modified or minimized, and the integrity of the demonstrations is maintained. To ensure that the integrity is maintained, the critical skills for each demonstration need to be identified by the practitioners.[54] In the case of a letter, the ability to organize the content, demonstrate sentence structure, use correct grammar and demonstrate overall editing skills were the critical skills.

"The use of accommodations should not become long term crutches, without ongoing efforts to help the adult to learn. Allowing accommodations does not lessen the need to provide learners with strategies to overcome the problem."[55]

Case studies

The following case studies are fictional but have been developed from an extensive review of learning disabilities research and collections of case studies gathered from Canadian, American and international sources.

Case study A – Tom

Information gathered during initial meeting

- Male, age 29, resides on his own.
- Divorced 4 years ago and has one son age 8 with whom he spends every third weekend.
- Attended high school until he was 16 but left due to poor attendance, lack of interest and failing grades.
- Worked in a beer manufacturing plant for 13 years and recently lost his job due to plant closure – he was making good money and is bitter about the plant closure.
- Over the past 6 months he has tried to get a "good paying job" at the local factories but they won't look at him since he doesn't have his Grade 12 diploma
- Tom often mentioned that it is the "company's" fault that he is in this situation.

Tom came to the learning centre to get high school upgrading. After 3 months he was close to dropping out because he was continually failing his written assignments. However, Tom's English teacher convinced him to give it another chance and referred him to the "literacy program" in the learning centre.

Assessment results (to access full details refer to Module 3)

Summary of expressive writing:
- Tom had frequent and inconsistent spelling errors.
- Tom used poor grammar, mixed verbal tenses, and used fragmented and run on sentences.
- He used limited vocabulary when writing, most likely due to poor spelling because his verbal vocabulary is strong.
- He had difficulty organizing thoughts in his writing. He just put down the thoughts as they occurred.

Reading and comprehension:
- Tom struggled with oral reading when confronted with new words or multi-syllabic words – poor word attack problem skills (could not sound out the word and missed parts of the word).
- While reading orally, he was faced with a number of words he was unable to pronounce and his comprehension declined, as compared to when he was able to read silently.
- His verbal expression of his understanding of the passage was stronger than his written expression.

Auditory versus visual:
- Tom's score was much higher when he was asked to circle the word that was different versus having to hear the different word.

Math skills:
- Overall, Tom's math skills appeared to be fairly strong.
- He tended to rush through and thus made careless mistakes.
- He did not see his mistakes and often it was a result of recording the numbers incorrectly (i.e. 256 he would write 265).
- His poor writing also created errors since he was unable to read his work and had difficulty keeping the column of numbers straight – this was problematic when he had to do 3 digit calculations (+, -).

Overall attitude and motivation:

Tom tends to minimize the importance of spelling and writing, given that he really hasn't had to use these skills a lot in his job; his verbal skills have compensated for these areas. He feels that teachers are picky and don't know what you really need to survive. He is motivated to get his Grade 12 diploma but tends to want immediate action. He appears to know when he has a problem, but hasn't ever thought of why and how he can fix it.

Transition planning and possible accommodations to consider

As noted earlier, it appears that Tom has difficulty processing auditory information. He typically learns best with visual information. However, if Tom wishes to pursue his high school diploma he will be exposed to information that is presented orally. It will be important for him to understand his strengths and weaknesses so that he can ask for the appropriate information or accommodations as needed. For example, if a teacher is providing the material on a subject orally, he may ask if he could tape the lesson and possibly receive a copy of the teacher's lecture notes. The following ideas will help with Tom's current learning in the literacy program, as well as when he is back in the adult learning center and, eventually, in a manufacturing employment setting.

Areas to focus on to support his transition plans:

- Encourage Tom to ask that verbal instruction be repeated.
- Help Tom learn to advocate for himself and ask for important information to be drawn or written on the board.
- Allow Tom extra time if needed, for reading and writing tests and assignments.
- Encourage Tom to sit near the front of the class to maintain auditory attention and minimize visual distractions.
- Provide Tom with visual information (pictures, videos, graphs, charts, etc.) to help him understand verbal information and teach him to explain to other teachers and potential managers why he could benefit from information being presented in this manner.
- Provide a clear and simple **overview** or **summary** of what will be learned before each lesson so that he can make more sense of some of the auditory information that confuses him.

- Encourage Tom to ask for overviews or summaries from future teachers and potential managers.
- Provide examples and demonstrations of what is expected from assignments and projects and encourage Tom to ask for examples from teachers and/or potential managers.
- Help Tom to write brief points before he is going to present information to make his points clearer and to help him stay on track.
- Involve Tom in a small group setting that works on building social skills to help with his tendency to interrupt conversations. Within this setting, work on organization and time management skills. Tom would also benefit from learning various study strategies.
- Help Tom break down his writing assignments into smaller units and provide the amount of time needed to complete each unit. Using a checklist would help with this process.
- Encourage Tom to use the word processor for his writing assignments.
- Provide training on how to effectively use the spell checker and thesaurus.
- Explore the following potential accommodations with Tom to help with mathematics:
  - Large display screens for calculators, adding machines, coloured Mylar templates, and coloured coding for maintaining ledger columns.

Case study B – Samantha

Observations and information gained from the general intake
- A 24-year old female who just enrolled into the LBS program at a local college to work towards her ECE certification.
- She left school at 16 due to pregnancy – her son is now 7 and attending Grade 1.

- Samantha is highly motivated and is ready to make this step, although she is nervous since her previous school experience was not positive.
- She has a good support system – her grandmother provides daycare when needed.
- Samantha indicates she struggled throughout elementary and high school with her reading skills and often disrupted the class during quiet time when they were required to read.
- She took basic courses during her short time at high school and remembers being sent to a small group for extra help in reading during elementary school.
- Her rebellious behaviour began to interfere with her academics in Grade 7. Samantha's parents went through a difficult divorce at that time and limited attention was focused on her.
- During her upbringing, Samantha recalls her mother always reinforced the need for her to do well in school and get a college degree, so that Samantha would not wind up like her mother.
- Samantha's mother worked as a cashier in a grocery store and currently is working at a major department store. Although her mother has average reading abilities, Samantha knows that her mother avoids reading when possible.

Initial test results: (CAAT – Canadian Adult Achievement Test and Math Skills Inventory)
- Vocabulary 10.3, reading comprehension 6.5 and spelling 7.7.
- Math results indicate that she can add, subtract and multiply single-digit numbers but has difficulty with double-digits and division. As a result, she struggled with her percentages and fractions. Although her adding and subtracting were strong, when they were put into a word problem format, she was unable to solve them.

Expressive writing and spelling
- Although her grammar and spelling were weak, there were some signs of process (she used an opening and concluding sentence).
- Some common errors found in the written passage were:
    - Samantha omitted and sometimes substituted vowels and consonants.

- She would leave out silent letters (i.e. instead of "ous" endings, she would write "us").
- If she wasn't able to recall a word from her memory, she relied only on her phonetics for spelling (wrote payn for pain and laf for laugh).
- She left out punctuation and often didn't capitalize her sentences.
- Her writing included a number of run on sentences.
- There were letter reversals and she only caught them when she read over her work, not when she looked over her work (she said this weakness has been drilled into her head so she is very aware of it).

Math skills:
- Samantha had difficulty with multi-step calculations.
- She found it very hard to find information on a graph or a chart.
- She struggled with operations when they involved more than two digits that required columns (long division, multiplication).

Overall conclusions:
Samantha appears to have some visual learning disabilities that affect her reading, writing, spelling and math. Her strong verbal skills and good memory have helped her cope with her weaknesses and have allowed her to develop good comprehension skills when information is given to her orally.

To determine whether Samantha would benefit from assistive technology to ensure smooth transition to her end goal the SETT framework was used
Samantha exhibits visual processing challenges. She appears to learn best with auditory information. She will find however that her training as an ECE teacher will require that a lot of information be obtained from textbooks and research articles.

Questions to consider	Responses to questions
The student What does the student need to do?	Take effective notes. Read and comprehend various textbooks.
What are the student's special needs and current abilities?	Samantha has a visual processing disability, which affects her reading and comprehension skills. She is very motivated, aware of her weaknesses and has made attempts to develop strategies to help her deal with them.
The environment What are the instructional and physical arrangements? Are there any special concerns?	At present, Samantha's environment is a combination of individual and small group formats. She is concerned with the level and amount of reading and note-taking she will face during her ECE training. She may face instruction that is only visual such as overheads.
What materials and equipment are currently available in the environment?	Computers, tape recorders, highlighters, and individual work stations are currently available.
What supports are available to the student and the people working with the student on a daily basis?	There are three practitioners in the department and they have limited access to the Special Needs Department in the college.
How are the attitudes and expectations of the people in the environment likely to affect the student's performance?	At present, a college-wide professional development initiative on learning disabilities is occurring. Most likely the instructors will be open to accommodations. The current college preparation program is a very open and supportive environment.
The Tasks What activities occur in the student's natural environments that enable progress toward mastery of identified goals?	The development of individualized training plans occurs and learning strategies are being used to help improve Samantha's reading fluency and comprehension. Material is presented at her pace.

What is everyone else doing?	At present each learner is working under similar conditions – however when Samantha enters the ECE program she will be expected to work at the pace of the program along with the other learners. She will be expected to keep up with the text readings and assignments.
What are the critical elements of the activities?	The critical elements are reading comprehension, spelling, and sentence structure.
The Tools Is a system of assistive technology tools and strategies required for the student to do the tasks in the environments?	At present, Samantha is using a variety of strategies and minor accommodations such as listening to books on tape and using a spell checker for her writing. The increase in reading and writing demands in the ECE program may require additional supports, other than what is being used at the present time.
What no-tech, low-tech and high-tech options should be considered for inclusion in the assistive technology system for the student?	Outlines or summaries of notes could be given to Samantha prior to each lesson. Samantha could be provided with material that already has the most important information highlighted (only if necessary). Samantha could use a tape recorder during the lesson/lecture. She could be provided with the opportunity to use a word processor for her written assignments and taught how to use the spell checker and thesaurus. She may benefit from word prediction software. Samantha could be allowed more time on tests to help accommodate her reading comprehension difficulties. She could also use a reading pen to help with spelling and decoding. She could access reading text hardware and software as well as voice to text software for lengthy writing assignments.

How could the student's needs be accommodated without changing the critical elements of the activities?	Have the instructors provide her with a simple overview or summary of what will be learned before each lesson so that some of the confusing visual information can make more sense. Allow more time for her to complete tests. For lengthy written assignments have Samantha provide a written outline of her assignment, but allow her to use the voice to text software to produce the full report.
Will modifications in the critical elements of the activity be necessary to promote the student's participation?	No – it is expected that with the right combination of learning strategies and assistive technology Samantha should be able to meet the critical elements.
What strategies might be used to invite increased student performance?	The following strategies might be used: textbook reading comprehension strategies, strategies for writing and note-taking strategies. Provide Samantha with verbal descriptions to help her understand visual information and encourage her to clarify and confirm her understanding of written information by verbalizing to her instructors.
How might the student and others try out the proposed system of tools in the customary environments in which they will be used?	Have Samantha ask permission to attend some of the ECE classes to practice her note-taking skills. Get a list of reading and writing requirements from the program to help determine the amount of time she will need to access the reading text and voice-to-text assistive technology, in relation to her own attempts at reading and writing using a word processor.

Case study C – Frank

Information gathered during initial meeting:
- Frank is 52 years old and has been unemployed for the past 2 years, since his company shut down.
- He is currently receiving Ontario Works benefits.
- He has learned about the "new way "to search for a job, but recognizes that he needs to upgrade his skills.
- He is quite handy, has done renovation projects and is interested in starting his own business.
- He was referred to the community-based literacy program from the school board credit program because he was having difficulty in the classroom environment and with submitting assignments on time.

General observations from the interview:
- Frank has a good vocabulary and appears to understand what is spoken to him.
- He did seem a bit disorganized at the beginning of the interview – he had to look through his wallet several times before he could find the report the school had sent with him.
- He was quite fidgety and he was given 4 breaks during the 1.5 interview.
- He had no problem reading the self-assessment tool and completed it independently.
- His writing was sloppy when he added information on the self-assessment form but his sentences, although brief, were coherent.

Overall conclusions
- Although no informal assessment has been completed, the CAAT results indicate that he is not struggling with his basic communication and math skills. However, he is struggling with completing his homework and assignments based on the report from the credit program.
- Based on Frank's description of his academic background, his self-assessment and his most recent upgrading experiences, it appears that he may have some type of organizing or cognitive processing

breakdown and may have attention problems that interfere with his learning.

Assessment areas

Frank needs to focus on the process and not just the product. How does he go about completing a task?

Writing sample:
Frank was asked to prepare 3 to 4 paragraphs about why he wants to start his own business and what skills he has to offer. The topic was written on the top of the paper that was given to him. After 10 minutes he had nothing completed and was quite frustrated. He had no idea where to begin. As a result, a dynamic assessment technique was used. Frank was given the steps for composing a small report, one step at a time. He was able to complete the task only when each step was given to him. Most of the errors found in his writing were minor and any spelling errors were a result of a lack of understanding of basic spelling rules. During this process it was observed that Frank was easily distracted and needed several breaks before he could move onto the next step.

Reading:
- Overall, Frank's decoding and comprehension were good with short passages.
- As the length of the passage was increased, his attention span, decoding skills and comprehension deteriorated even though the reading level was the same as the short passages.

Overall conclusions:
Frank appears to have organizational learning disabilities and a short attention span. He struggles with how and where to begin with any writing assignments. His short attention span interferes with his reading and ability to comprehend meaning when the text is detailed. Further observation of Frank's attention span would be valuable to develop appropriate strategies. Some suggested ways to assess this area further are by self-monitoring, self-assessment, practitioner observations, and learner participation. All of these approaches emphasize the importance of the learner/practitioner relationship.

Transition planning and possible accommodations to consider

- Frank's biggest challenge is his inability to pay attention and stay organized. He likely has a sequential processing challenge. He has great difficulty organizing and memorizing details. Frank's goal is to improve his skills to help open his own carpentry business. Therefore, any accommodations should be designed to support him in that environment. Frank will need to appear organized to his potential customers and will need to stay on track with his carpentry contracts.

Areas to focus to support his transition plans

- Develop a supply order form listing all of the potential supplies, so that Frank can circle the right items and add up the items' costs for the customers. Use carbon forms so that he has a copy and the customer has a copy. This will ensure that the material is presented in an organized, legible fashion, and will help Frank stay organized when costing out a potential project.
- Include on the form the steps Tom needs to follow when meeting with a customer and so he can check off each step as he covers it with his customer (i.e. introduce self, provide a description of experiences, provide reference contacts, identify customer needs, etc.) This will help him stay on task and he will have a reference point to go back to if the customer sidetracks him with other "irrelevant" conversation.
- Model and teach Frank how to use the forms and stay focused.
- Encourage Frank to break down his actual carpentry job into smaller units and corresponding time lines. Teach him to self-monitor his progress.
- Encourage Frank to take breaks when he begins to feel like he is "spinning his wheels".
- Help Frank explore potential software technology that will help him manage his business and help him practice using it.
- Use real-life examples to help with the "big picture" and show Frank why this lesson is relevant.

Summary of key points

- An adult's learning disability has a psychosocial, a technological, and an educational impact. Practitioners need to: consider learners' needs for support and the types of strategies that may meet their needs; acknowledge their previous experiences of frustration; and consider possible accommodations and access to appropriate assistive technology. All of these factors need to be considered and recognized to develop the best training plan possible.

- The same learning disability that makes it difficult to process language also makes it difficult to process social information effectively. This can affect learners' abilities to understand what is heard and/or their abilities to express their thoughts. Practitioners need to:

    - Help adults recognize their social disability
    - Provide learners with instruction and self-monitoring techniques for the social skill challenge areas

- Weak organizational skills can affect how adults approach tasks, conversations and overall life-management skills. Unless adults become aware of their limited organizational abilities and how they impact all aspects of their lives, the continued frustrations they experience can lead to withdrawal from social settings and reluctance to try new activities or tasks.

- Transition planning needs to be incorporated right from the beginning of the training process. Transition planning is the identification of the skills and supports that are required to reach learners' goals. These skills and supports could include choice/decision-making, goal-setting/attainment, problem solving, self-evaluation/management, and self-awareness.

- Self-awareness is critical in enhancing one's motivation. When adult learners understand their disabilities, they can begin to understand why they have struggled with learning. They begin to accept that their failures were not a reflection of their intellectual ability, but a reality of how they were taught and how they process information differently.

- The aim of accommodations is to enhance adults' learning through modified and/or different teaching methods, the use of adaptive technology and the provision of opportunities for alternative assessment and examination procedures which incorporate learners' requirements. In other words, it is a different way to complete a task. Practitioners need to determine if the accommodation is needed to:
    - Adjust the setting/environment
    - Adapt the task
    - Adjust the instruction/presentation of information
    - Make accommodations in testing/performance

- A holistic approach should be taken when accommodations or assistive technology is being considered. Assistive technology does not eliminate the need for instruction in social and academic skills; it is only one piece of the overall support identified in the learners' training plans.

- The use of accommodations does not give adults any additional advantage. The purpose of providing various assessment strategies and accommodations is to minimize the impact of the learners' disabilities on their performance. This helps learners to be on more equal footing with non-disabled adult learners. It doesn't make it easier for the learners, just possible.

Appendix A

Examples for using accommodations in various situations

Learning disability challenge…	Coupled with this strength…	Try this possible accommodation/adaptation
Perseverant: has trouble moving onto new tasks	Can follow a strict time schedule	Specify a time limitation for each activity. Have the individual check off the tasks completed and keep charts of tasks to do. Give feedback to the student (e.g. if work is accurate, give extra credit for completion before specified time allotted).
Learns erratically (sometimes knows, sometimes does not know)	Short term memory is good	Keep a model of the finished product near the learner. Tape record instructions from prior time periods, which are prerequisites to doing a given activity.
Easily distracted; cannot sustain attention on tasks	A) Functions well in a quiet environment B) Works well when given short time periods to do a specific task	A) Locate the learner in a stimulus-free environment, possibly a carrel or small office. B) Give the learner a time chart to complete with the expected time to finish and the learner's finish time. • If possible, have the learners do one step of a task at a time. • Tell the learner to focus on the speaker's eyes when listening to instructions.
Easily frustrated; lacks self-confidence	Responds to positive reinforcement Responsive to keeping track of work quality	Assign short tasks and have the learner self-rate the quality of work and his/her personal interest in individual types of tasks. Have individual keep track of work productivity. Give feedback to the learner on the activity and an overview of the progress to date from the beginning of program. Repeat work the learner enjoys and can succeed in doing.

Directionality confusion (left vs. right, north vs. south, etc.)	A) Communication skills B) Copies visual model or demonstration well	A) Motivate the learner to ask questions when confused with directions. B) Show the model to the learner; and then have him/her copy it. Use a distinguishing feature on the body or an area as a landmark (e.g. if a learner is confused by right and left, place an "R" in the upper right hand corner of desk).
Impulsive; rushes through task making many errors	Responds well to clear, concise directions	Emphasize the intent of the task, such as accuracy being more important than time.
Difficulty integrating parts of items into whole unit (finished product)	After visualizing a whole unit, can see how parts integrate into it	Show the learner the finished products so he/she may see how parts integrate into a meaningful whole (e.g. show a learner in electronics assembly a harness before he/she is given directions to make it).
Difficulty functioning when people or environment changes	Functions well in familiar environments	Put the learner in a highly structured and if possible, familiar area where change and distractions would be at a minimum.
Difficulty reading directions	Listening comprehension and visual comprehension are strong	Tape record or read written directions for the learner. Demonstrate the task and have the learner model the demonstration.
Difficulty remembering basic math facts	Understands basic math concepts; has good finger dexterity	The learner should use a calculator when required to do basic math functions. Utilize "fact sheet" for basic facts.

Adapted from Learning Disabilities Association of America at
http://www.aelweb.vcu.edu/publications/LDGuide/Sec3/Compensatory%20strategies%20complete.htm This document was designed and created by the Virginia Adult Learning Resource Center http://www.vcu.edu/aelweb

Appendix B

Helpful websites for practitioners and learners

Coping with LD/ADD in the workplace

http://www.ldpride.net/work.htm

Useful strategies to combat commonly found difficulties in the workplace. Dyslexia
Best Practices: Table 2, page 25 of PDF

http://www.dyslexia-inst.org.uk/pdffiles/adltprac.pdf

Tips for self-advocacy in the workplace

http://www.ldonline.org/ld_indepth/adult/self_advocacy.html

Appendix C

Types of assistive technology

Reference for information in Appendix C

This Publication can be viewed on the Internet:

http://student.admin.utas.edu.au/services/options/assistive.htm.

Opening All Options was funded by the Universities Disabilities Co-operative Project (NSW). The University of Western Sydney also generously donated additional funds for the completion of the project. The resource was developed by **Regional Disability Liaison Officers** - Anna Mungovan, Trevor Allan & Hazel England.

Word Processors

The benefits of word processors for people with a learning disability are that they:

- Allow straightforward editing, formatting or revision of documents
- Incorporate spell checking and grammar checking facilities
- Enable the user to produce a draft document to get ideas down, then edit later
- May be combined with voice recognition or screen reader programs.
- Have screen colours and text size that may be changed.

Screen Readers or Speech Synthesizers

These programs will allow text on a computer screen to be "spoken" by a synthetic voice. This allows a person to hear the text that is typed on the computer screen, and to review and edit the text. The screen reader may be internal, using the computer's existing sound facilities, or external, with its own sound system. These programs may be of assistance to people who have difficulties with reading, either on paper or on a computer screen, and whose oral and listening skills are stronger.

Some examples: are JAWS; Window-Eyes; Keynote Gold; OutSPOKEN; TextHELP! (Specifically designed for people with LD); WYNN What You Need Now! (Specifically designed for people with LD)

Voice Recognition

Voice or speech recognition programs allow the user to dictate information into the computer through a microphone and, to varying degrees, control the computer by voice.

There are three main categories of Voice Recognition programs available:

- **Voice Control** - allows complete control of all the computer's functions by voice alone. The user can open programs, move the cursor around the screen, click to perform different functions and manipulate most computer operations and functions. These programs usually incorporate a discrete speech recognition facility. Indicated for use with people who have difficulty using a keyboard or mouse.

- **Discrete Speech Recognition** - allows the user to dictate information directly into the computer through a microphone. The words dictated must be separated by a small pause between words, which results in an artificial speaking style. The program must be trained to recognize each individual voice, and to develop a user-specific vocabulary. This may take some time to develop and the more the program is used, the better the recognition of words will be. Advantages are that these programs can be used on more basic computers and can be beneficial to people who are better dealing with individual words, rather than complete sentences and phrases. The programs allow correction, spelling and training through the use of voice alone.

- **Continuous Voice Recognition** – allows the user to dictate information directly into the computer using continuous speech, without pauses between the words. This is a much more natural and faster way of speaking than discrete voice recognition. The programs incorporate voice controlled editing, formatting and navigation around the document with spelling, training and correction functions also being voice controlled. Continuous voice recognition needs to be trained to recognize individual voices and to develop specialized vocabularies. Most current continuous voice recognition programs will operate directly into a word processor or other programs. There are no continuous voice recognition programs currently available for Macintosh computers. These programs require certain minimum computer requirements to operate.

Names of programs: Dragon NaturallySpeaking and Dragon Dictate; Learnout & Hauspie Voice Xpress; Computing Out Loud; 21st Century Eloquence; Speak to Write

Learning Disability Specific Programs

Two new programs specifically designed for use by people with learning disabilities have recently been released. The following are summaries from the programs' web sites:

TextHELP is a vocabulary support package that talks, types, checks spellings, corrects mistakes, predicts, magnifies and more. It will operate within any Windows application - word processing, spreadsheets, databases, desktop publishing, email or the Internet.

Features:

- Auditory feedback as the user types letter-by-letter, word-by-word, and sentence-by-sentence or by highlighted block of text.
- Speaking spell checker and speaking thesaurus. As the user types, TextHELP provides Spell-Alike and Sound-Alike suggestions, allowing the extra cues of speech to help users choose a correction from a list of similar sounding words. The audible on-line spell checker can be turned off, but still marks the misspelled word for later correction.
- Word prediction including word suggestion and completion - for slow typists and those whose word recognition is much better than their spelling.
- Abbreviation expansion - copies the most frequently used words, phrases or paragraphs into the abbreviations database for instant reuse with perfect spelling.
- Automatic correction - frequently made phonetic spelling mistakes can be mapped to the correct orthography.
- Homophone discrimination - optionally speaks aloud the meanings of like sounding words.
- Word-by-word highlighting when speaking marked blocks of text, helping learners to associate words with their spoken sounds.
- Screen magnifications of text, toolbars, help files, etc., assisting those with visual impairments.
- textHELP! will read aloud any kind of on-screen text, including WEB pages on the Internet. Text and background colours can be changed to suit as research has shown this can help people with specific forms of learning difficulty.

System Requirements
For Windows 3.1: IBM PC compatible with a 486DX processor running at 25 Mhz
minimum and a minimum of 6 MB of RAM. For Windows 95: IBM PC compatible with a
486DX processor running at 66 Mhz minimum and a minimum of 8 MB of RAM. For
both Windows 3.1 and Windows 95: up to 16 MB free disk space before installation
and an 8 or 16 bit SoundBlaster compatible sound card or a parallel port sound device.

To access further information go to: http://www.loriens.com/

WYNN – What You Need Now

WYNN is software that helps the user read, study, and comprehend text more easily and
effectively.

- Used with a standard PC, **WYNN** lets the user open a file and hear it read
  aloud.
- The user can scan a page using a flatbed scanner, and read that aloud. Once a
  file is opened, the user can alter the way the page is presented on the screen as
  well as the way it is read aloud.
- The user can also insert notes and bookmarks, highlight sections, or look up
  words in the dictionary.

Features:
- Text to Speech synthesizer
- Screen enlargement using adjustable spotlight
- Speech synthesized spelling function
- Highlight function / Bookmarks
- Readback function on scanned material from books, work sheets, etc. (needs
  scanner)
- 80,000 word Dictionary & Thesaurus

System requirements:
IBM PC/AT or Compatible 486/66+ or Pentium, Windows 95, Video Display,
VGA video card & monitor capable of 640 x 480 resolution, 256-colour mode,
16 Mb RAM, Hard Disk 30 Mb Free, CD-ROM.

Web site: http://www.synapseadaptive.com/wynn/wynnsite.htm

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Learning Disability Training: A New Approach

Effective Instructional Methods

Learning Objectives

- Understand characteristics of appropriate learning disability instruction

- Explore instructional models

- Describe teaching methods specifically for reading, writing and mathematics

- Learn standards for selecting instructional materials

- Learn about the collaborative teaching/tutoring approach

- Learn to apply learning styles to training

- Incorporate ongoing review and modifications of:
    - Progress
    - Skill-building strategies
    - Instructional strategies
    - Accommodations

Chapter outline

- Introduction to Module 5

- Characteristics of effective approaches to instruction
    - Practitioner efficacy

- Practitioner-based strategies: Content enhancement routines
    - Enhance instructional planning
    - Case study integration – Tom
    - Enhance ideas and supporting details
    - Enhance critical concepts
    - Enhance recall and meeting outcomes
    - Case study integration - Tom

- Instructional models
    - Strategic Instructional Model (SIM)
    - Direct instruction
    - Case study integration - Samantha
    - Information processing model
    - How to use the information process model
    - Case study integration - Frank

- Instructional methods for reading, writing and mathematics
    - Reading
    - Writing
    - The TRIP model
    - Mathematics
    - Effective techniques to enhance math instruction
    - Examples of collaborative math learning activities

- Collaborative approach to learning
    - Elements of the collaborative approach
    - Examples of collaborative group activities
    - Tips on how to begin using this approach
    - Collaboration approach web resources

- Standards for selecting instructional materials

- Learn to apply learning styles/multiple intelligence to instruction
    - Incorporating theory into instruction
    - Incorporating theory into reflection

- Ongoing assessment
    - Ongoing assessment of learning strategies
    - Ongoing assessment of accommodations

- Summary of key points

Introduction to Module 5

Previous modules identified: characteristics of learning disabilities; suggestions for screening and assessment, along with supports such as learning and organizational strategies; accommodations; and assistive technology. The need for practitioners to increase their knowledge of assessment and supports in order to develop effective training plans was emphasized. In Module 3, the focus was on the **learner's approach** to learning a task. A variety of learning strategies, including a description of how to teach a learning strategy using the Strategic Instructional Model (SIM), were addressed. The SIM provides learning strategy instruction that focuses on training learning disabled adults how to learn. In this final module, the focus will be on the **practitioner's approach** to an instructional task. This practitioner approach encourages the learning of critical skills and knowledge. It is based on learning mechanisms that help learners with diverse needs. The approach focuses on how practitioners think about, adapt, and present skills and critical knowledge in a "learner-friendly" fashion.

The Center for Research on Learning has concluded that both practitioner-focused interventions and learner-focused interventions are needed if learners are to succeed and be capable of demonstrating real-world use of listening, speaking, reading, and writing skills.[1]

Effective instruction that focuses on becoming more responsive to individual needs will be beneficial to all adults, regardless of a disability. Practitioners are not expected to provide an approach to instructing adults with learning disabilities that is different from the instruction they provide for the rest of their learners. The focus in this module will be to provide strategies and tools to enhance practitioners' instructional outcomes by becoming more responsive to learners' needs.

"This will require practitioners to move beyond simple observation of performance to an exploration and understanding of the cognitive and metacognitive strategies that their students use to learn and perform tasks."[2]

Characteristics of effective approaches to instruction

A significant amount of research has been conducted regarding methods that practitioners can use to enhance and transform content in ways that will accommodate different modes of processing information. A number of strategies have been developed to help practitioners shift their approaches to be more sensitive to the ways that learners process information. Research in the field of learning disabilities supports instruction that is direct, intensive, and systematic. When working with a diverse group of learners, practitioners need to focus more of their time on the following instructional characteristics:

Selecting the critical information (skills, strategies, and knowledge)

- Involve the learners as much as possible.

- Ensure that information is functional and relevant.

- Teach learners to master fewer but important skills, rather than trying to teach a wide range of skills.

Provide structure (determine the best way to think about and organize the information)

- Break tasks down into a logical sequence of discrete steps.

- Provide sequential stages designed to promote mastery at each level.

- Follow a similar structure or routine for each instructional session so that learners know what to expect and become comfortable with the learning process. Following an established routine will enable adults to learn how to approach learning. They can then become more involved in shaping future instructional sessions.

- Offer a variety of strategies and techniques for promoting learning.

Ensure instruction is sensitive to the information process (identify potential problems in information processing)

- Slow down the rate of speech and emphasize important points.

- Maintain eye contact in order to assess the level of comprehension, encourage participation, give and get feedback, and maintain attention.

- De-emphasize oral reading, as this may interfere with comprehension and may also embarrass the student. Use oral reading only for select purposes and in private.

- Help learners to prepare passages for oral reading in advance of the group instruction as this may help prevent failure and embarrassment. Choral reading may be helpful.

- Call on learners with learning disabilities only if they volunteer to participate when instruction takes place in small groups.

- Use colour, highlighters, enlargement of print, and underlining to strengthen visual input and enhance visual memory.

Provide instructional activities that facilitate good information processing

- Provide multiple opportunities for learners to respond, interact and participate with the practitioner and peers. The more active the learners, the greater the learning that is taking place.

- Use multi-media approaches such as audio-cassettes with text or video-tape to preview story lines of novels and supplement information from print.

- Encourage the use of compensatory strategies (e.g. tape recording sessions, directions, assignments, and discussions) as aids for those with memory deficits.

- Teach memory enhancement strategies that will aid recall such as listing, rewriting, categorizing, alphabetizing, visualizing, and using associations and acronyms.

- Integrate scaffolds by asking critical questions about what the learners know. Provide new information based on learners' responses, ask additional questions to clarify, and then continue to interactively shape students' learning.

- Model what is to be learned by offering a clear demonstration of the skill or strategy.

- Promote generalization by showing how the skills or information taught can be transferred to other situations.

Provide explicit explanations and leadership during instruction

- A systematic approach to instruction appears to be more powerful than trial-and-error teaching.

- Direct and explicit teaching is more effective than more "discovery" types of approaches.

- Keep learners informed about the instructional procedures being used to instruct them.

- Explain what is to be learned and why it is important - highlight the relevancy.

- At all stages of instruction and decision-making, learners should be offered instructional choices related to what, how fast, when, and where they are learning.

- Show learners how to think, use and manipulate information.

- Teach learners how to learn and how to link previous information with new information.

Check frequently to ensure that adults have made appropriate connections and have learned the information

- Encourage learners to tell how they learn best and use this information to design future lessons. Provide frequent feedback that describes what was done well and how it might be improved.

- Provide practice, practice and more practice!

- Ask frequent questions to help adults stay involved and check for learners' understanding of the material that is being taught.

Enduring (ensure that adults have fully mastered critical information before moving on to additional content)

- Maximize success and enhance self-esteem by providing opportunities for the learners to be successful.

- Pre-test, instruct, test, reinstruct as needed, and review.

- Provide learners with helpful feedback and further instruction as needed, to promote mastery.[3]

The importance of thinking through what critical content needs to be presented, the instructional process, and how the information can be integrated are all important to effectively instruct any learner, but especially adults with learning disabilities. Most often their disabilities can negatively impact and weaken the following areas:

- Organizing content information
- Differentiating major ideas from supporting information
- Comparing and/or contrasting information
- Reading and understanding large amounts of content information
- Relating their background knowledge to new information
- Holding large quantities of information in memory[4]

Practitioner efficacy

One often hears about the importance of learners increasing their self-efficacy (the belief that they can succeed at a task) because it impacts their motivation to persist in learning. However, the importance of instructor-efficacy and the impact it has on the adults' learning is often not discussed. Practitioners can incorporate many of the effective instructional characteristics into their programs, but if they exhibit a low teacher-efficacy then good instructional principles will have less impact on the learners.

The following factors of practitioner-efficacy can impact on learners' motivation to succeed. Practitioners should:

- Exhibit a sense of personal accomplishment and view teaching as meaningful and important.
- Hold positive expectations for learners' behaviour and achievements.
- Feel personal responsibility for students' learning, accept accountability and show a willingness to examine performance.
- Plan for students' learning and identify instructional and learner strategies.
- Feel good about teaching, about themselves, and about learners.
- Believe they can influence students' learning.
- Develop a joint venture with learners to accomplish goals.
- Involve learners in making decisions regarding goals and strategies.[5]

A high level of practitioner-efficacy can lend to a positive learning environment. This creates an excellent foundation for encouraging learners to be open about their needs and to build trust in the practitioner and learner relationship. Often learners have had negative experiences with school and need to see that the current learning environment is different. As learners acknowledge the difference and begin to feel safe in the current environment, they become more receptive to sharing their learning needs and more willing to engage in active learning.

Practitioner-based strategies:

Content enhancement routines

To address the instructional challenge presented by adults with learning disabilities, literacy programs need to develop and embrace systematic teaching behaviors that focus on how adults learn and approach tasks."[6]

Given the diverse needs that practitioners are expected to meet in a small group or classroom environment, they need to become very effective with their instructional planning. Effective planning should involve three components:

- **Content** (the critical information and skills that need to be covered)
- **Process** (how it will be presented)
- **Integration** (how the information provides meaning for each individual)

Practitioners within the LBS programs often struggle with how they can plan for the individualization of instruction for learners with disabilities in the context of small group and classroom environments. Content enhancement routines are ways of instructing an academically diverse group of learners. The following four conditions must prevail for content enhancement routines to be successful:

1. Both group and individual needs are valued and met.
2. The integrity of the material that is to be covered is maintained, not simplified or watered down.
3. Critical features of the content are selected and transformed in a way that promotes student learning (i.e. offer various ways to learn and practice the skills and material, illustrate relevancy and provide real-life examples).
4. Instruction is carried out in a partnership with learners.[7]

All of the routines promote direct, explicit instruction. There are a number of content enhancement routines that help practitioners to enhance:

- Instructional planning
- Ideas and supporting details
- Critical concepts
- Ability to recall
- Meeting outcomes

The amount of questions practitioners pose to their learners increases significantly when content enhancement is integrated into practice. This helps to foster problem-solving, reasoning, discussion and higher order thinking. By asking more questions and presenting fewer facts through lecturing, learners can become more engaged in the learning process rather than being passive participants.[8]

The routines were designed for use during group instruction to help practitioners provide instruction that is more sensitive to the learning needs of individuals in the group. Some content enhancement routines help practitioners think about and organize content and present it in such a way that learners can see how it is organized. Other routines help teach complex concepts, so learners can gain a deeper understanding and develop a vocabulary for talking about important information. Still other routines help learners to recall the information being taught.[9]

This module highlights each of the content enhancement routines associated with the above categories and provides one detailed example for each type of routine. Web links have also been included for practitioners who wish to pursue additional information on the subject.

Enhance instructional planning

The SMARTER Routine helps to effectively connect all the phases of planning, instruction and learning for each student. This model helps practitioners to meet the range of information-processing differences by teaching SMARTER. This process is also effective when working on a one-to-one basis, especially if a tutor has to plan instruction for more than one learner.

The key components of the SMARTER routine s

Select critical outcomes: What is really critical and important for students to learn to truly understand this information? Goals and interests of learners should determine content.

Map critical content: How can the information be organized into chunks? Create a map to show how the information will be presented and it can serve as a road map for learning.

Analyze for learning difficulties: Consider difficulties in acquiring information, storing and retrieving information, expressing information and demonstrating competence. What might make this information difficult to learn (is it too abstract, is it relevant, is there prior knowledge, is it too complex)?

Reach enhancement decisions: What instructional tools can be used to reduce the level of difficulty (graphic, story, concrete aid, mnemonic, analogy, comparison to prior knowledge)?

Teach strategically: Provide informed and explicit instruction. Inform learners about the device, and why and how it will be used. Explicitly cue them that the device is being used, review what has been learned and how it has been learned. The use of the device in this CUE-DO-REVIEW manner creates the teaching routine.

Evaluate mastery: Determine if the material has been learned – don't wait for the test, do an on-the-spot reality test. Once this is done, either review or go on.

Revisit outcomes: If a learner has not mastered the critical content that has been selected, what does that say about the instruction? Was the device ineffective?[10]

When organization is not clear or is poorly structured, learners need to have the organization made more explicit for them.

Learners should be taught how to:

- Survey materials and identify text organization
- Read to confirm organization of ideas
- Reorganize information for their personal understanding and use.[11]

Additional enhancement routines

- Course Organizer Routine: helps practitioners to introduce and maintain courses so that all learners in the class have a clear understanding of the courses.

- Unit Organizer Routine: helps practitioners to introduce units so that all learners see and understand the key ideas of the units, the relationships and the outcomes to be achieved.

- Lesson Organizer Routine: helps practitioners to initiate lessons that last one or more days so that the learners are aware of their relationship to the larger units of instruction.[12]

A website specific to unit organization. Go to:
http://www.dldcec.org/pdf/teaching_how-tos/dont_water_down.pdf -

Case study integration – Tom

Brief profile of Tom

Tom needs help with his expressive writing. He has difficulties with organization, spelling, grammar and editing. Tom has enrolled in the LBS program at the local adult learning centre. There are 11 other peers in his small group who share challenges with writing and individually possess specific strengths and weaknesses. Although Tom has not been officially diagnosed with an auditory learning disability (based on his initial assessment), he exhibits a number of characteristics of this type of disability.

The challenge faced by the practitioner is how to instruct the writing process and meet the individual learner's needs, including potential learning disabilities.

Content enhancement to help with organizing the big picture

The practitioner wants to use the POWER (Plan, Organize, Write, Edit and Revise) strategy to help with writing. This writing strategy will be addressed over a period of time, given the amount of content and the number of steps involved in the writing process. Tom entered the program in November and the group had already begun to work on their writing. However, the practitioner has just participated in an online training session and wants to use the POWER strategy with the group.

In October, the practitioner had already introduced the concept of planning, but now wants to use the POWER strategy because it presents the writing process in an easy manner and will help the learners to remember the steps in the writing process. The practitioner has decided to introduce the strategy from the beginning since it will provide a good review on planning and will help the learners understand how the POWER strategy fits with what they have already learned. The practitioner had to think about how he/she would plan, present and instruct the content. He/she decided to use the unit content enhancement routine to introduce the POWER strategy and show how it fits into the "big picture" of writing for all learners, regardless of individual training needs.

Steps to introduce the POWER strategy using the unit organizer

- **Introduce the goal**: to write effectively.
- Ask the group to brainstorm on how they approach writing.
- **Cue:** Introduce the term POWER using handouts and an overhead that allows the learners to hear and see the information.
- Give out blank copies of the Unit Organizer device and explain that the group will be beginning a new unit using the Unit Organizer.
- Show a blank Unit Organizer format on an overhead projector and explain that the group will complete this one together.
- In addition, spend a few minutes talking about what it means to be organized at home and with schoolwork, and then talk about the value of the Unit Organizer for organizing information.
- **Do:** engage learners in completing the Unit Organizer, using guided questions.

Sample of group discussion:

Practitioner: When we look at the term planning, what do we need to think about before we write?

Learner (Joe): We need to think about what we are going to write about.

Practitioner: Yes Joe, we need to think about the topic – what we plan to write about.

The practitioner wrote this down on the unit organizer under planning and encouraged the learners to do the same. When the learners were unable to come up with an answer, the practitioner provided the information and demonstrated how it was included in the unit organizer. To encourage group involvement the practitioner also asked the learners how this was reflected in their experiences.

Review:

Once the unit organizer is complete, ask the learners a series of questions on what they will be covering and how the unit organizer can be used to help understand the big picture.

Sample of discussion

Practitioner: Who can tell me what POWER stands for?

Learner (Tom): It is the steps that we need to take to do our writing.

Practitioner: Yes Tom, the POWER model outlines the five steps that we should follow when we write. The P in POWER stands for?

Learner (Frank): It stands for planning and the things we should do to when we plan our writing.

Practitioner: How could the planning steps be used in our everyday life?

Learner (Tom): I could use the steps for my job search.

Practitioner: Great idea Tom. As a group, let's look at how we could do this…

Through **questioning and feedback** the practitioner can get an understanding of the group's grasp of the writing process content. Each time the group moves on to the next part of the POWER model, they should review the unit organizer and use it to address each individual's learning needs. For Tom, he needs to focus on the editing and revision part of the POWER model. As a result he should choose to use a highlighter to make these two steps stand out on his unit organizer.

Example of how the unit organizer looked during development
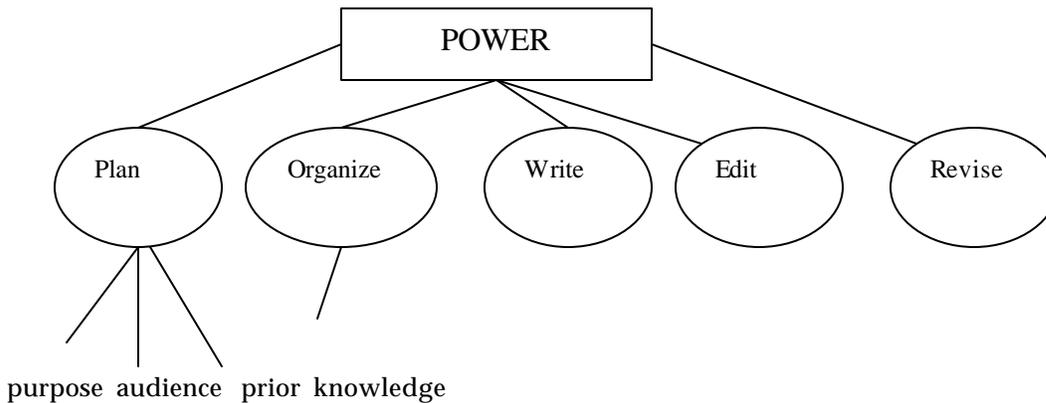
Learning outcomes: (include both group outcomes (broad) and individual outcomes for each learner)

Learning strategies: list the strategies that will be covered – you may want to list them directly under each section of power (i.e. planning sheets under planning, semantic mapping/sentence organizing under organizing, etc.)

Enhance ideas and supporting details

The following enhancement routines help practitioners effectively teach main ideas and supporting details. The routines can help turn abstract main ideas into concrete ideas to help learners think and talk about key topics.

Clarifying routine: can be used by practitioners to help learners gain a clear understanding of the meaning associated with terms, events, places, people or ideas that are included in the materials presented. While instructing, the practitioners highlight the targeted terms and present the associated features to help clarify the meanings of the terms. Practitioners are encouraged to present terms or ideas using a variety of processing mechanisms. They should help the learners connect personal meanings to the terms. Emphasizing relevancy, clarifying the terms and using a variety of formats will help the learners to develop a solid understanding of the terms. Practitioners can use this routine to introduce a new idea or as a review routine.[13]
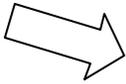
Example of using this routine for teaching vocabulary
Go to:
http://www.ldonline.org/ld_indepth/teaching_techniques/ellis_clarifying.html

Additional enhancement routines

- Framing Routine: helps practitioners turn abstract ideas into concrete ideas. It helps the learners to focus on the most essential information and see the relationships between main ideas and details.

- Survey Routine: helps practitioners to work with a diverse range of reading levels to successfully comprehend reading passages, text, articles, etc.[14]

Enhance critical concepts

This enhancement routine is quite helpful, especially when working with adults who have learning disabilities that interfere with their ability to understand broad concepts or theories. They often do not know how to link new concepts with previous knowledge. A learner's understanding of a concept and of its application increases when a concept is associated with prior knowledge. Learners should be taught to ask appropriate questions of relevance, search for personal connections, and to explore ways to make content relevant.

Concept Anchoring Routine
The main purpose of this routine is to help learners connect new information with information that is already familiar to them. This enhancement is especially helpful when working with abstract or complex concepts. There are three components:

- The use of an anchoring table
- The linking steps
- The cue-do-review sequence.

The anchoring table is an instructional tool that practitioners can develop as a framework to help plan their lesson. The table is used to explain to learners how critical aspects of the new concept are related to something with which the learners are already familiar. During group time, the practitioner can use the table as a framework to direct the process of learning and together the learners complete the table.

The linking steps serve as a guide for the process of going through the comparison of the concepts. There are 7 steps:

1)   Announce the new concept

2)   Name the known concept

3)   Collect known information

4)   Highlight characteristics of the known concept

5)   Observe characteristics of the new concept

6)   Reveal characteristics shared

7)   State understanding of the new concept

Prior to going through the steps, the practitioner **cues** the learners that they will be using this type of enhancement routine and encourages them to participate. The **do** phase is the actual process of going through the seven linking steps to construct the table. In the **review** phase, the practitioner reviews the learners' understanding of the concept, the related information and the thinking process that was used to construct the table.

An example of a new concept could be positive and negative numbers and showing how they relate to a thermometer (known concept).[15] The learners would be encouraged to identify characteristics of the thermometer. By using the anchoring table and linking questions, the learners will begin to see the similarities of negative and positive numbers as relevant to a thermometer. This will help increase the recall of the new concept.

The following anchoring table was adapted from Deshler, Donald, Schumaker, Jean, Bulgren, Janis, Lenz, Keith, Jantzen, Jean-Ellen, Adams, Gary, Carnine, Douglas, Grossen, Bonnie, Davis, Betsy and Marquis, Janet. Making Learning Easier: Connecting To What Students Already Know. *Teaching Exceptional Children.* Vol.33., No.4. 82-85. At http://www.dldcec.org/teaching_how-tos/content/default.htm

Concept Anchoring Table

Anchors	3. Known Information	2. Known Concept		1. New Concept
1. Announce the New Concept	Information	Saving and finding a file in our computer		Understanding how our memory works
2. Name the Known Concept	Give a name for the file	**4. Characteristics of the Known Concept**	**5. Characteristics Shared**	**6. Characteristics of the New Concept**
3. Collect Known Information	Can forget things	Information must be entered into the file before it can be saved	Information must be entered correctly	Information must be processed correctly before it will enter into our short-term memory i.e. hear it, see it, feel it, smell it before it can be saved
4. Highlight Characteristics of the Known Concept	Must save it			
5. Observe Characteristics of the Known Concept	Stored	Have to give the file a name that makes sense	Need something to trigger our memory to find the information	Need some way to help remember the information i.e. through associations, mnemonics etc.
6. Reveal Characteristics of the New Concept	Organized	Saving to a disk can only hold a certain amount of information	Limited capacity when saving information	Our short-term memory can only hold a small amount of information before it goes into our long-term memory
7. State Understanding of the New Concept		Have to organize the files into folders if you have a lot of files	Information must be organized to easily retrieve it	To retrieve information from our long-term memory we must have stored it in an organized way

7. State Understanding

An analogy can be drawn between the computer filing system and the human memory system - in both systems the information must be processed correctly in order to save it because in order to retrieve information from both systems it must be saved using a device that will trigger our memory as to what information has been saved and the information in both the computer file and in our long term memory must be organized so it can be retrieved easily.

Additional enhancement routines

- Concept Comparison Routine: helps the practitioner to pause and consolidate the learners' understanding of two or more critical concepts by analyzing the important characteristics of each, sorting them into similar and different categories, and then synthesizing their conclusions about the concepts.

- Concept Mastery Routine: used as an interactive tool to review a previously introduced critical concept, using a graphic organizer. Through the interactive process, the learners are encouraged to identify characteristics of the concept, sorting examples and non-examples and synthesizing their understanding of it.[16]

Enhance recall and meeting outcomes

"Their particular use is in developing better ways to take in (encode) information so that it will be much easier to remember (retrieve)."[17]

Recall Enhancement Routine
This routine is employed by practitioners to cue learners to lists and small groups of facts that need to be memorized. Practitioners instruct through demonstrating, modeling and providing scaffolds on how to transform the information into formats by using a variety of mnemonic devices (keywords, first letters, visual imagery, and rhymes). Mnemonic strategies help enhance memory by providing an effective way to encode the information so that it is easier to retrieve. One of the key tasks in developing mnemonic strategies is to find a way to relate new information to the information students already have locked in their long-term memories.

Pictures can also provide a memory advantage. Use pictures on a chalkboard or on an overhead projector. Bring in photographs or other illustrations. The enhancement routine provides an approach to help learners understand how to remember, as well as what to remember.[18]

Case study integration - **Tom**

Content enhancement recall

Tom has been progressing with the writing process using the POWER model. The group is beginning to work on editing. Because there are many things to examine when editing, the practitioner has decided to use the acronym COPS - edit capitals, overall appearance, punctuation and spelling.

The following steps helped enhance recall of the editing acronym COPS:

- Direct instruction was provided on the skills required to edit (spelling, punctuation, etc.).

- A picture was put on an overhead of a police officer directing traffic (who was holding up a stop sign, but had COPS on the sign instead of STOP) - a handout was provided with the same picture.

- The role of police officers in stopping people from breaking rules and directing traffic was discussed and related to the role of editing (i.e. learners need to stop and edit their work before they are finished; if they don't edit, they are breaking the rules of the writing process).

- The acronym COPS was introduced, the practitioner went through each letter stating what it stands for, and then the group discussion was as follows:

Practitioner: So what does the "C" stand for in the acronym COPS?
Learner (Tom): Capitals.
Practitioner: Yes, and what do we need to do with our writing related to capitals? Learner (Tom): I need to make sure that the sentences start with capitals.
Practitioner: Yes Tom, and what other words should have capitals?

The practitioner then asked another learner for the answer and the process continued until the practitioner felt that all learners understood what COPS represents.

- Once the practitioner provided direct instruction on the skills and demonstrated and modeled how to use COPS for editing, then the practitioner provided opportunities for collaborative group work.

- The practitioner broke the learners into 3 groups and asked each group to practice editing a paragraph with one group looking for capitals (the C) and one group looking for overall appearance (the O), etc. Each group was given a handout with the letter bolded that related to the editing step they were working on. Once the activity was completed, the groups passed their editing to another group, and asked them to compare and note any differences (peer review). At the end of the activity, the practitioner collected the paragraphs and with the group reviewed their work by modeling COPS and using their edited paragraphs.

- Independent review was the next step and each learner was asked to use the different fonts and colours on the computer to design one page with the acronym COPS on it for homework.

- The next day the learners were encouraged to share their designs with the small groups and then the practitioner regrouped the learners to go through the COPS process with minimal instructor scaffolds.

- Once this was completed, the practitioner broke the group into peers. It was suggested that Tom work with another learner who has stronger editing skills to help model good editing practices.

Additional enhancement routines

- Quality assignment routine: allows practitioners to co-create differentiated assignments with learners so that the completion rate and quality of their products is increased. This is accomplished by

engaging in a three-phase process of planning the assignments on a graphic organizer, sharing options with students as they apply the REACT strategy (ensure that they have the necessary information, set goals, and make plans for completing the assignment), and co-evaluating the final products.

- Vocabulary LINCing routine: designed to facilitate student use of two powerful tools - an auditory memory device and a visual memory device - that help adults learn and remember the meanings of complex terms.[19]

Content enhancement routines help learners to see the structure and develop mental tools for organizing information. However, they are not enough on their own, especially for learners who appear to be struggling. Some learners will need a variety of supports including the development of learning strategies, additional support through one-to-one tutoring and the possible integration of accommodations. Although learning strategies were addressed in Module 3, it important to highlight that both supports need to be provided for adults with learning disabilities, especially for those who are lagging significantly behind. This is where both group work and individual instruction may need to be offered according to each individual's need for supports.

Instructional models

Practitioners can access a number of instructional models. Deciding which one to choose depends on a couple of factors: the practitioner's knowledge base and the desired learning outcome for the learners. For example, if a practitioner wants to instruct on a specific skill such as using prefixes and suffixes, the use of direct instruction may be most suitable, but if the desired outcome is to improve social relationships among the learners, then the use of a collaborative approach may be more appropriate. If the desired learning outcome is for the learners to master three-step word problems, then a combination of direct and collaborative approaches could be utilized for

instruction. The direct instruction would provide specific instruction on how to do word problems and the collaborative approach would give the learners opportunity to practice, manipulate and discuss their understanding of word problems to enhance active learning. These examples demonstrate the importance of specifying desired outcomes and their measures before decisions are made as to the implementation of specific instructional methods.

Strategic Instruction Model (SIM)

Any approach that is taken needs to balance both the learning strategies for skill development and instructional enhancements for understanding content and concepts. Because of this, the Strategic Instruction model that was addressed in Module 3 will be covered again. The SIM model incorporates both strategic instruction and content enhancement. It helps to meet the performance gaps through the teaching of learning strategies and the information demands through content enhancement routines. This model for instruction helps practitioners deal with managing content and helps to close the performance gap for learners. It has incorporated most, if not all, of the instructional principles that have been identified as being effective with students with learning disabilities.[20] The SIM addresses how learners acquire information, helps learners work with information once they acquire it, and helps learners express themselves.

"It offers ways for both teachers and students to change, and it provides a framework for working toward meeting state standards and mandatory testing requirements."[21]

To be optimally effective, SIM must be put into action by practitioners who have clear visions of their roles, who possess high levels of efficacy, and who seek to show a strong sense of respect for their learners. In the absence of these things, all of the well-designed instructional procedures in the world will have an uphill battle in trying to improve the performance of students who are struggling to learn and struggling to feel good about themselves.[22]

SIM involves six main steps:

1) **Pretest learners and encourage them to become interested in learning the strategy.** Practitioners should determine how much the learners might already know about using the strategy and secure their commitment to learning the strategy from top to bottom. It is important to explain to the learners what strategy they are going to learn and how it can help them in skills development.

2) **Describe the strategy.** Give a clear explanation of the strategy, the various steps, as well as some of the benefits to learning the strategy. Identify real assignments or tasks where the learners can apply the strategy. Ask learners if they can think of other work where the strategy might be useful.

3) **Model the strategy.** Modeling the strategy for learners is an essential component of strategy instruction. In this stage, practitioners use the strategy to help them demonstrate a relevant classroom assignment or authentic task. Practitioners should talk aloud as they work so that learners can observe how a person thinks and what a person does while using the strategy, including: deciding which strategy to use to perform the task at hand, working through the task using that strategy, monitoring performance (i.e. is the strategy being applied correctly, and is it helping the learner complete the work well?), revising one's strategic approach, and making positive self-statements.

4) **Practice the strategy.** Provide repeated opportunities to practice the strategy. The more learners and practitioners work together to use the strategy, the more the learners will internalize the strategy. Initial practice may be largely practitioner-directed, with practitioners continuing to model appropriate ways of thinking about the task at hand and deciding (with increasing student direction) which strategy or action is needed to work through whatever problems arise in completing the task.

5) **Provide feedback.** Providing feedback to learners on their strategy use is a critical part of helping them learn how to use a strategy effectively and how to change what they are doing when a particular approach is not working. Much of the feedback can be offered as learners become

involved in thinking aloud about the task and about strategy use during the modeling and practice steps described above. It is also important to provide opportunities for students to reflect upon their approaches to, and completion of, the task. What aspects of the task did they complete well? What aspects were difficult? Did any problems arise, and what did they do to solve the problems? What might they do differently the next time they have to complete a similar task? It may be valuable to incorporate these questions into a self-evaluation checklist for the learners' reference.

6) **Promote generalization.** It is important for learners to apply the strategy in various situations and with other tasks. This transfer is often not automatic for adults with learning disabilities. Consistent, guided practice at generalizing strategies to various settings and tasks is therefore vital for adults with learning disabilities.[23] It would be favourable for practitioners and learners to document the demonstrated success of generalizing the strategy so that it is not only learned, but is also confirmed at the same time.

The steps outlined in the SIM are not linear. In fact, quite often a practitioner may model the strategy, encourage the learner to practice, provide feedback and go back to modeling the strategy again to help the learner use the strategy more effectively. The modeling phase of the model can be a process within itself. The transfer from modeling to having the learner practice will most likely be gradual, with the practitioner providing less and less supports (scaffolds) as the learner practices with the strategy.

Direct Instruction

There is ample research supporting direct instruction as an effective instructional method for individuals who may enter a learning situation with skill deficits.[24] The direct instruction model provides a framework to teach basic skills, such as understanding how to make simple sentences to more advanced skills, like finding the main idea in a reading passage. In direct instruction, skills are taught in sequence until learners can master them and generalize them to new untaught situations. The acquisition of the big picture does not come easily for many adults with learning disabilities. Therefore,

skills need to be broken down into sub-skills. The use of direct instruction can be compared to trying to climb a set of stairs – learners cannot reach the top until they have mastered each step. The following example helps to illustrate this point: when teaching reading skills, the first area is basic phonics, followed by more complex phonics, then decoding skills, then beginning comprehension and then more complex analysis, etc. Each new skill area builds on the previously learned knowledge.

PHASE 1

Prior to the lesson:

- Establish the objectives (what learners will be able to do or understand as a result of the lesson).
- Determine the standards of performance.

At the start of the lesson:

- State the objectives and standards of performance (type of lesson to be presented, procedures to be followed and behavioural expectations related to it, what the learners are expected to do, what knowledge or skills are to be demonstrated and in what manner).

Introduce the skill:

- Consider using a "hook" to grab learners' attention.
- Attempt to relate the experiences of the learners to the objectives of the lesson.
- Focus learners' attention on the lesson.
- Create an organizing framework for the ideas, principles, or information that is to follow.
- Extend the understanding and the application of abstract ideas through the use of example or analogy.

PHASE 2

Presentation of new information:

- **Input** - provide sufficient information for learners to gain the skill or knowledge (use a variety of tools such as lectures, films, tapes, video, and pictures).

- **Model** - once the material has been presented, the practitioner uses the material to show learners examples of what is expected as an end product of their work. Make sure that the skill is presented both verbally and visually.

- **Check for understanding** - determine whether learners have "got it", before proceeding. It is essential that learners practice **doing it correctly** so the practitioner knows when they understand, before proceeding to practice. If there is any doubt that the learners have understood, then the concept/skill should be re-taught before practice begins.

Questioning strategies:

- Ask questions that go beyond mere recall to probe for higher levels of understanding.
- Ask questions to check for learner knowledge, comprehension, application, analysis, synthesis, and evaluation.

PHASE 3

Guided practice:

- Provide opportunities for each learner to demonstrate his/her grasp of new learning by working through an activity or exercise under the practitioner's direct supervision.
- Provide feedback that is immediate and specific. Learners benefit both from praise that clearly targets what they have done well, and from corrective feedback.

- Move around the room to determine the level of mastery and to provide individual remediation as needed.

Closure:

- Review and clarify the key points of a lesson, tying them together into a clear summary and ensuring that the learners can apply the information to their own individual circumstances.
- Give learners an opportunity to bring things together in their own minds, to make sense out of what has just been taught.
- Help learners to form a coherent picture, to consolidate information, eliminate confusion and reduce frustration.
- Reinforce the major points that were learned.

PHASE 4

Independent practice:

- Provide reinforcement practice once the learners have mastered the content or skill.
- Offer opportunities for independent practice via homework or in the learning environment without the practitioner's assistance.
- Use in subsequent projects.
- Ensure that the independent practice provides enough different contexts so that the skill/concept may be applied to any relevant situation...not only to the context in which it was originally learned.[25]

The failure to provide independent practice that incorporates different contexts is responsible for most learners' failure to be able to apply something learned.

Lesson using DI to teach conditional sentences. Go to: http://meltingpot.fortunecity.com/zaire/131/directlesson.html#8 –

Case study integration with Samantha

Brief profile of Samantha:
Samantha has entered the college career preparation program to improve her skills so she can earn her ECE diploma. Based on her initial assessment, a potential visual processing learning disability was identified. She has difficulty reading and often will reverse words and leave off endings, which interferes with her comprehension. Samantha is very motivated to learn and has a good support system.

Direct Instruction Method:

Prior to the lesson (this goal can be shared by all learners in the group)
Samantha will be able to identify, explain and create a prefix. Samantha will use her knowledge of prefixes and root words to help with decoding words while reading.

At the start of the lesson
Practitioner: Today we are going to learn about prefixes. By the end of the lesson you will be able to identify a prefix, understand its meaning, find the root word and create a prefix on your own. I will introduce you to the new skill and information. You will have a chance to practice the new skill in a game and then you will have the opportunity to try the skill on your own.

Introduce the skill
The hook: Put the word Prefix on the white board and hand out a sheet with the word on it. Ask the group if they see two words in the one. Encourage them to say the word and break it into two parts where they think the syllables connect. The practitioner may need to model. Then look at the two new words. Ask the group what "fix" means and discuss (i.e. to repair, to change, to modify). Then ask the group what "pre" means (i.e. before, at the beginning). The practitioner provides meaning to clarify when necessary. Then put the two words together (to fix or change the beginning of a word) to help understand what it means.

Practitioner: We all come across unfamiliar words when we are reading and when I encourage you to try to guess the word you have asked me in the past, how?

Learners (All): Yes (with a sigh).

Practitioner: What ways have we learned so far to guess the word?

Learner (Samantha): By looking at the sentence and predicting what the word would be based on the meaning of the sentence.

Practitioner: Yes Samantha, this is a good way to guess a word's meaning. Sometimes a word can change the meaning of the sentence depending on how it is put together. This is what we are going to learn about today - prefixes.

Present instruction of what prefix means. "Prefixes are added to the beginning of a root word to give a different meaning to the word."

Present new information

The practitioner provides a couple of examples showing the prefix "un." Using cards, the practitioner presents the root word, adds the prefix, and then takes it away. The group is asked if they know of other examples. The practitioner models how the word can be broken down to get meaning (i.e. refill, fill, and unhappy and unlock).

Model the use of a prefix by doing the following:

Re = again

Redo = re + do = do it again

Rebuild = re + build = build it again

Check for understanding. Present additional words and ask for learner participation to define the meanings of the words by using the same format as was modeled above:

recapture, reenter, remodel.

Then demonstrate and model how to deal with "un". Provide the meaning of "un"- *not* or *the opposite* and model.

Unhappy = un + happy = not happy

Undo = un + do = to reverse what has been done

Questioning strategies
Practitioner: What other words do you think have prefixes?
Learner (Samantha): Incorrect. I heard this word a lot when I went to school.

The practitioner writes the word and encourages the group to write the word and then asks for a learner to break the word down into root and prefix. Ask the group for the meaning. Continue this to help ensure the learners are getting the skill. In addition, ask how else this new knowledge of prefixes could help with language skills. Discuss how it can help with spelling, writing, etc.

Guided Practice (two possible examples using a collaborative model)
1) Break the learners into groups of three and give them each a sample reading passage. Together have each group read it over orally (if comfortable) by taking turns to read each sentence and allowing time to read it over silently. Ask them to highlight or list the prefixes they see in the reading and attempt to put meaning to the words. Have the groups come back and report and together go through the answers. The practitioner provides continuous feedback throughout the process. The practitioner should interact with the groups during the activity to model and give feedback.

OR

2) Do a prefix game by offering the prefixes that they have learned (un, re, in) and a list of root words. Hand out root words on cards and distribute an equal number to each learner. Use a dice that has the prefixes on the sides. Each person roles the dice - if they have a root word that would go with the prefix, then they can discard the card (if everyone agrees the correct meaning has been identified).

Closure
Bring the groups together and ask them to identify the prefixes that were learned today. Learner (Samantha): Un
Practitioner: Yes and how does this prefix change the meaning Samantha?
Learner (Samantha): It can make it mean the opposite.
Practitioner: Give me an example of this.
Learner (Joe): Unhappy means not happy.

The practitioner continues this process to ensure the group understands what was learned.

During the group activities, the learners identify other words with prefixes such as illegal and words with the prefix *dis*. The practitioner gives positive feedback on this discovery and identifies that there are other prefixes that the group will work on throughout the week.

Independent practice

With the time remaining, each individual learner is given a list of words that have a combination of the prefixes learned today (*un, re, in*) and new ones such as *il, dis,* and *im*. The learners are asked to begin to highlight the prefix and attempt to match the meanings. This will be explored tomorrow along with looking at further reading passages to help decode by looking at the prefix and root word.

Additional strategies that may be built into the process to meet the individual needs:

- Develop cue cards with the prefix and the meaning.
- Provide manipulative tools such as cards with root words and prefixes for the learners to use instead of a work sheet for their independent practice.
- Encourage learners to write words they come across in their reading that have a prefix in their journals (reinforces spelling, as well as comprehension).
- Develop picture clues for the prefix meaning.

Information Processing Model

This theory offers a useful framework that represents the multi-faceted processes involved in learning information and thinking skills. Information-processing theory is particularly useful when working with individuals with learning disabilities because it helps practitioners think about how information can most clearly and explicitly be presented, so that learners are actively and appropriately involved in the learning process.[26]

When practitioners are aware of their learners' processing disabilities, they can use this information to ensure that strategies are incorporated into the instructional model that will help compensate for the processing breakdown. For example, if practitioners know they have adults with auditory disabilities, they may provide both oral and written information. This will also help meet the needs of adults who have visual processing disabilities since they prefer to hear information, rather than see it written. Organizational processing disabilities often go hand-in-hand with either visual or auditory disabilities. By understanding how information is processed, practitioners can integrate organizational strategies into their instruction to help learners effectively retrieve information from their long-term memory.

Five processes that impact the learning process
- Input
- Attention
- Perception
- Working memory (short-term memory)
- Long-term memory

Input
One or more of our senses gathers information. It is not the role of the practitioner to teach to the preferred sense, but to provide information in a variety of modes to ensure that all learners can input the information. For example, when teaching problem-solving skills, practitioners will want learners to see the steps visually via a sequential chart, hear the steps orally, read over the sequences through an assignment and actually try out the steps by doing a case study. The first step is to use multiple channels to help learners input the information.

Attention
It is not only important that learners input, they must also attend to the information at this initial stage in order to transfer it to the next one. It is important for the practitioner to make sure the learners are paying attention to the right information. A person's level of interest and ability to relate to the information often increases one's attention. Practitioners need to highlight an interesting feature and provide examples of how this information relates to prior learning or knowledge. When learners pay attention to the information, there is a greater chance that the information will be processed further.

Perception

A number of factors can interfere with a person's perception of the attended information, which can result in a breakdown in information processing. A person's values, previous experiences and ethnic origin, along with the presence of a learning disability, can interfere with information processing. How someone hears the information and sees the information can be interpreted differently than what was intended. If an adult has a visual learning disability, he/she may substitute words or letters and lose the meaning of the written information. This highlights the importance of presenting information in a variety of formats to help reduce the potential breakdown of information.

Working memory

Our short-term memory has a limited capacity to take in large amounts of information and limited time to hold the information. To help improve the learning process, practitioners need to use a number of strategies to help the short-term memory to work effectively. The absolute capacity of short-term memory can be increased by combining bits of information into meaningful units or chunks. This process is called "chunking." Chunking is a major technique for getting and keeping information in short-term memory; it is also a type of elaboration that will help get information into long-term memory. Focusing on **meaning** also helps with chunking. Understanding the **meaning** of information to be learned involves understanding how new information relates to other new information or to information already known. This seems to help new information to move into long-term memory.[27]

Other methods to help information go into the short-term memory and become embedded into long-term memory include: imaging (creating a mental picture), using mnemonics, and rhyming.

Long Term

Once information is moved into the long-term memory it needs to be organized so that it can be effectively retrieved. As previously mentioned, one of the most effective ways is when new information is related to previous experience or knowledge. Many adults with learning disabilities do not automatically do this so they need help to make the connection.

Techniques such as semantic mapping (where information to be remembered
is grouped into clusters based on similarities that can be used as a cue for
recall), elaboration (when information is added to or elaborated on to be
remembered), and the use of visual images and mnemonics all help to move
information into long-term memory.

How to use the information process

PROCESS	INSTRUCTION APPLICATION
Input.	Use a variety of methods to convey the information: overheads, charts, handouts, videos, case examples, role play, computers, manipulative, discussions, etc.
Get their attention and bring to mind relevant prior learning.	Use cues to signal when you are ready to begin. Move around the room and use voice inflections. Review the previous day's lesson. Have a discussion about previously covered content.
Perception - point out important information.	Provide handouts. Write on the board or use transparencies.
Present information in an organized manner.	Show a logical sequence to concepts and skills. Go from simple to complex when presenting new material.
Move from short to long-term memory. Provide opportunities for students to elaborate on new information.	Present information in categories. Show students how to categorize (chunk) related information. Connect new information to something already known. Look for similarities and differences among concepts.
Long-term memory: organization and retrieval. Show students how to use coding when memorizing lists. Provide for repetition of learning.	Make up a silly sentence with the first letter of each word in the list. Use mental imagery techniques such as the keyword method. State important principles several times in different ways during presentation of information (STM). Have items on each day's lesson from previous lesson (LTM). Schedule periodic reviews of previously learned concepts and skills (LTM).
Provide opportunities for over learning of fundamental concepts and skills.	Use daily drills for arithmetic facts. Play a form of trivial pursuit with content related to class.

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Case study integration – Frank

Brief profile of Frank:
Frank enrolled in an adult high school credit program, but was referred to the local community-based program to receive one-to-one assistance. His test scores on the CATT were quite high, but he was unable to complete any assignments and found it hard to function in a classroom setting. It appears that Frank has an organizing learning disability and has difficulty maintaining his attention for long periods of time. Frank wants to build his organizational and planning skills to prepare him for starting his own home renovation business. Frank has difficulty staying on task, focusing on what has been said and pulling information together.

Overall goal for Frank
- To listen to acquire information and understanding.
- To speak and write to acquire and transmit information by asking probing and clarifying questions, interpret information in his own words, and present the information clearly, concisely, and comprehensively.

Using the information processing model of instruction - **Planning for a tutoring session:**
The tutor will integrate the information-processing model into his instructional method. Although Frank does not plan to take further educational training, he will be instructed on how to take effective notes to help improve his ability to understand his potential customers' needs.

Skills to learn during tutor session:
- Identify the main idea and key points of the oral passage [knowledge]
- Dissect notes for the most important information [analysis]
- Organize ideas to write on index cards and post-it notes [application]

Input and relevancy:
Tutor: Frank, you mentioned a few weeks ago that you had renovated your brother-in-law's bathroom. Think back to when he first said he wanted to renovate his bathroom. What information did you need to gather to figure out what work was required to do the job?
Frank: Well that took some time – he is a bit of a big talker. It was two months and several beers later before he put his money where his mouth is.
Tutor: Yeah, I know a few people like that. When he finally came around to becoming serious what did you do?
Frank: We went and looked at the room and I asked him what he wanted to change. Tutor: Like what?
This discussion continued between Frank and the tutor. The tutor took notes while they discussed the conversation between Frank and his brother-in-law.

Perception:
The tutor showed Frank what notes he had written and together they read through the information to pull out the important points (i.e. budget, changes needed, time to complete, outline of work to be done, etc.).

Present the information in an organized manner:
The tutor took a piece of paper and put a line down the middle. On the left side he listed the key information and on the right he listed points that related to the key topics (i.e. On the left, he wrote budget and on the right he wrote the monetary amount. On the left, he wrote work to be done and on the right, he wrote plumbing – remove old toilet and install new one, replace bathtub with a new shower stall, etc.).

Move from short-term to long-term memory:
The tutor asked Frank to look over the notes and consider if there was any other information that he would need to get in order to complete a job. Frank said yes and began to list other information he would have to get. The tutor helped Frank to organize the information into key headings on the right. When they were done – the tutor asked Frank if the key headings on the left hand page were common to all renovation jobs. He said yes. Based on this, the tutor and Frank together developed a note-taking form that could be photocopied to use with each potential contract job.

Long-term memory - learn how to retrieve:
The note-taking form was used as a minor accommodation and aid to help Frank organize and remember the information that he needs to obtain to cost and plan out a potential renovation job. The tutor and Frank talked about what he had done in the past and Frank said he used to have a number of pieces of paper with notes on them and would have to communicate with his brother-in-law whenever he came across a step in the renovating process for which he did not have information. Together the tutor and Frank talked about how the new note format could help eliminate Frank's organization problems.

Provide opportunities for over learning:
The tutor asked Frank to look over the note format and key headings and to use this to collect information on a "mock renovation" job he could do in his house or for a family member. This will help him practice, will ensure that the note form works for him and will enable Frank to see if other key headings need to be included. Frank was asked if he could come to the tutor's house next week to do a role-play. Frank will pretend that the tutor is a potential customer and he will use the form to find out what the customer needs for the renovation of his kitchen.

Goal of the note taking form and process:
- To customize the note-taking process and form, so that it works for Frank.

- After continued use, it is hoped that Frank will rely less on the key points to be asked and will begin to be able to recall the questions on his own.

- To decrease the number of times Frank needs to ask the customer clarifying questions and eliminate any miscommunication about renovation needs.

Instructional approaches for reading, writing and mathematics

In Module 3, various reading, writing and math learning strategies were covered. It is not the intention of this module to repeat this information, but to emphasize the critical areas that need to be addressed when teaching these subject areas. In this section, key factors will be highlighted for each content area, and instructional tips and potential instructional models will be provided.

Reading

As identified throughout the modules, adults with learning disabilities often have difficulty with reading comprehension. Depending on adults' disabilities, their comprehension may improve when they read the information via their strength i.e. adults with visual learning disabilities would most likely comprehend a passage better when they hear it versus when they read it. However research has shown that the main challenge experienced by people with learning disabilities is the lack of understanding for the importance of self-monitoring strategies, such as rereading a text when one doesn't understand the meaning. This form of self-monitoring is inherent for many of us, but not for people with learning disabilities. In addition to these challenges adults often have difficulty processing the difference between relevant and irrelevant material.

Now that it is known why adults have difficulties, the next question is "How can they be helped with these challenge areas?"

- First we need to instruct, model and generalize various self-monitoring strategies such as paraphrasing, questioning and rereading.

- Second, practitioners need to help adults understand the basic framework of text and how it is organized, by using structures such

as story grammar (setting, main character, major problem, character clues, attempts, resolution, conclusion, and theme). This will help adults to understand the difference between relevant and irrelevant information.

- Third, practitioners need to continually model and generalize how the above reading comprehension strategies can be applied to various reading materials and situations. Research has shown that even when adults learn various comprehension strategies they don't automatically know how to apply them to a situation that involves reading.[29]

Writing

Writing can cover a large number of skills and concepts from mechanics to structure. Many adults with learning disabilities experience difficulties with their spelling, grammar, vocabulary and the ability to pull their ideas together cohesively. Research continually emphasizes that the most successful intervention is using a basic framework for writing that includes three phases: planning, writing and revising. Within each phase there are a number of strategies to assist with each area. The types of strategies that are used will depend on the individual learner's needs. Inherent in teaching the framework is the use of modeling, frequent feedback, and teaching scaffolds. In addition to focusing on the writing framework, practitioners will need to emphasize through modeling and demonstrating that different types of writing require different organization and context.

Not unlike reading, it is critical to provide explicit examples and demonstrations on how the writing process can be generalized to other writing tasks. Research done with children also suggests that teaching skills, such as spelling and punctuation, in conjunction with the writing processing skills has proven to be beneficial.[30]

The TRIP reading and writing integration approach

"Knowledge of text structure appears positively correlated with reading comprehension and writing ability. Learning and understanding the elements of a story framework resulted in increased composition and comprehension abilities among students with and without disabilities."[31]

The TRIP model was developed based on a predominant theme found among a number of research studies, "that integrating reading and writing appears to engage learners in a greater variety of reasoning operations than when writing or reading is taught separately or when students perform a variety of other tasks in conjunction with their reading."[32]

The TRIP model has 4 phases and has incorporated effective instructional strategies such as providing scaffolds, integrating feedback and review, presenting information in sequence and providing the big picture. Movement from one phase to the next occurs only when mastery of the skills taught in the preceding phase is evident in a number of contexts.

Phase 1
- Teach students narrative text structure and the importance of summarizing while reading short stories.
- Focus on the big idea.

Phase 2
- Instruct students on how to integrate the text structure comprehension and composition strategy with a process to plan, organize, write, edit, and revise story summaries.
- Teach the POWER strategy and apply in story summaries (mnemonic: plan, organize, write, edit, and revise).
- Provide note sheets to learners (material scaffold).
- Model the process, use peer review, and then encourage learners to practice the new knowledge and skills on their own (teacher scaffold).

Phase 3 (two focuses: first on story reading, then integration by using the
story grammar elements)

- Encourage learners to apply the same writing strategy to create their
  own stories from pictures once they have mastered story summaries.
- Repeat the process with learners by having them generate stories
  with practitioner-selected topics.
- Utilize POWER cards (plan, organize, write, edit and revise) for
  necessary assistance (strategy and scaffolding).
- Prompt the edit/revise step through the use of checklists and peer
  assistance (scaffolding).
- Assign a final topic with no prompting except the POWER cards.

Phase 4 (focus is on reading comprehension and writing)

- Transfer the narrative text structure to novel reading (big idea).
- Utilize text structure note sheets to record events in novels and to
  plan and organize summaries (scaffolding).
- Encourage learners to utilize all steps in the writing process in this
  phase (strategy).

Review in reading and writing persists over time, with newly introduced
skills and strategies receiving the most frequent practice and review. Reading
and writing opportunities should vary in their content, while remaining
consistent in the skills and strategies used. This assists learners in transferring
their skills and strategies to novel situations.
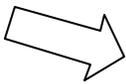
- **To access a copy of the curriculum timelines, story note sheet,
  prompted writing sheet, and prompted edit/revise checklist.**

- Go to: **http://www.calstat.org/integrated.htm**

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]

Effective techniques to enhance math instruction

- **Increase instruction time:** instead of giving shorter instruction time and more time on practice examples, spend more time on instruction, demonstration, modeling, and feedback procedures. Work with learners one-to-one or in a small group as they go through the practice questions, giving feedback and correction after each question. Small numbers of facts should be mastered at one time ...and then, frequent practice with mixed groups can be encouraged.

- **Use effective practice**: provide a review period of previously covered materials, and then provide directed instruction on the concept for the day. Provide scaffolds with a reduction of support i.e. guided practice with direct practitioner interaction, then independent practice with corrective feedback and small group format with peer interaction.

- **During practice periods**: ensure that learners are allowed opportunities to manipulate concrete objects to aid in their conceptual understanding of the mathematical process. Provide interactive and intensive practice with motivational materials such as games. Discuss the overall process involved in the lesson through small peer groups or one-to-one interaction with their tutor.

- **Varying group size:** use large groups for brainstorming and problem-solving activities. Break learners into smaller groups with similar functioning levels to allow them to progress through the skills at a comfortable level. If a high level of trust is established, you may want to mix the levels in the groups so they have the opportunity to interact and learn with all members of the group.

- **Using real-life examples:** introduce new concepts through everyday situations instead of worksheets. This helps learners to see the importance and relevancy of the math concept and increases their motivation to attend and learn.

- **Review opportunities to ensure mastery of skills:** because mathematics depends heavily on previously learned skills, it is important to ensure that prerequisite information is obtained prior to the introduction of new skills. Review opportunities should be (a)

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 generalization.[36]

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]

Collaborative approach to learning

A collaborative approach helps promote active learning and engaged learners. It encourages collaboration between the practitioner, the learner (both in a one-to-one and group setting) and among peers when in a small group or classroom setting. This approach shares similar principles with effective approaches for working with adults with learning disabilities. Both approaches encourage active learner involvement in goal-setting and assessment, encourage hands-on learning, and stress the need for relevant learning activities and opportunities to reinforce and generalize the learning.

The facilitator is an equal participant and not the source of information. All members take on active roles, without each person's involvement the group, as a whole cannot meet their goal. When integrating this approach into practice, it should be cautioned to ensure that direct and explicit instruction is provided first. Adults with learning disabilities need to have concrete, explicit instruction on a particular concept before they can use the information in a collaborative approach involving group discussions or problem-solving activities.

Project-based learning is often associated with collaborative learning. This is a learning approach that supports the principles of collaborative learning. It requires the participants to work as a team and the ownership of the project is shared. The learning-by-doing environment keeps adults active and engages them in the learning process. The learning becomes less abstract as learners perform more skills and acquire knowledge.[39] Projects can vary in complexity and length depending on the groups' composition. Projects can be as simple as learning how to balance a chequebook or as complex as planning a learner conference. Regardless of the project, the key outcome is that both the learners and facilitator learn new knowledge and skills.[40]

Elements of the collaborative approach

- It **promotes meaningful learning** by using real-life situations.

- **Learners' previous knowledge bases** are added to with newly acquired information.

- The **content and direction** of the project is **determined by the learners**, with the teacher as facilitator. Group members should discuss how well they are achieving their goals and maintaining effective working relationships. Groups need to describe what member actions are helpful and unhelpful and make decisions about what behaviours to continue or change.

- A **positive learning environment** is created. Each group member's efforts are required and indispensable for group success. Each group member has a unique contribution to make to the joint effort because of his or her resources and/or role and task responsibilities.

- **Learners learn by doing** - through finding information and making decisions. Learners need to do real work together in which they promote each other's success by sharing resources and helping, supporting, encouraging, and applauding each other's efforts to achieve.

- **Learners** are encouraged to **assess their own learning.** The group must be accountable for achieving its goals and each member must be accountable for contributing his or her share of the work. Individual accountability exists when the performance of each individual is assessed and the results are given back to the group and the individual in order to ascertain who needs more assistance, support, and encouragement in learning. [41]

Tips on how to begin using this approach

Plan - the practitioner must:
- Consider where, and in how much of the learning activity, collaboration is appropriate
- Establish and communicate clear objectives
- Use suitable techniques
- Prepare content materials, including meaningful questions or problems for group work
- Structure groups
- Provide a clear sense of expected outcomes of group work[42]

Discuss roles

Role of practitioner
- Facilitator
- Enters into a process of mutual inquiry
- Relates to learners as a knowledgeable co-learner
- Establishes an appropriate environment for cooperative learning
- Prepares learners for collaborative work by providing a rationale and the necessary training so that learners can engage in the process

Role of the learner
- Problem solver
- Contributor
- Accepts low or moderate to high expectations for class preparation
- Collaborates with peers
- Views oneself, peers and the thinking of the group as sources of information and authority
- Is prepared to take turns with different roles during group work activities such as facilitator, reporter, and recorder or motivator[43]

Implementation

- Introduce the learning strategy: explain benefits, process and roles of the instructor and the learners
- Provide handouts on the learning process appropriate to the reading level of learners
- Utilize various team-building activities that are designed to help learners get to know one another and/or to work together
- Provide a learning environment where everyone is valued
- Actively involve the learners in deciding on the topic(s) for discussion
- Encourage learners to draw connections between what they know and what they are learning
- Allow time for ongoing responses
- Utilize practical activities and hands-on materials that are relevant to the real-life experiences of the learners
- Model the strategy to be used and provide only minimum input that helps learners to see new possibilities and new problems[44]

Examples of collaborative learning activities

Jigsaw Groups

Jigsaw groups can have 3 to 6 members. Each member becomes an expert on a subtopic of the material being studied and then teaches the material to the rest of the group. Group members who have the same subtopic meet in "expert" groups to discuss what they are reading and learning. They use resources provided by the practitioner to help them in their exploration of the material. When the members of the expert groups have learned the material, they return to their original groups to share what they have learned. Each group member is responsible for listening and taking notes on the information being presented.

Student Teams Achievement Divisions (STAD)

This strategy combines whole class discussion with small group activity. The practitioner presents new information to the class and then divides the class into teams. Each team should contain students with different levels of ability. Team members help each other learn the new material through discussion, problem-solving and using guide materials provided by the practitioner.

Learning Circles

Learning circles are similar to STADs in that whole class discussion is followed by small group activity. Learning circles are suitable for brainstorming, prediction, problem-solving, and mapping.

Structured Problem-solving

Structured problem-solving can be used in conjunction with several other cooperative learning structures.

- Have participants brainstorm or select a problem for them to consider.
- Assign numbers to members of each group (or use playing cards). Have each member of the group be a different number or suit.
- Discuss the task as group.
- Each participant should be prepared to respond. Each member of the group needs to understand the response well enough to give the response without help from the other members of the group.
- Ask an individual from each group to respond. Call on the individual by number (or suit).

Uncommon Commonalities: can be used to foster a more cohesive group

Uncommon Commonalities

1	2	3	4

Team Name

- Groups get together and list individual things about themselves that define them as people.
- Groups then discuss each item, finding things that 1, 2, 3, or 4 of them have in common.
- When the group finds an item that all of them have in common, they list that item under 4; when they find something that 3 of them have in common, they list that item under 3, etc.

Group Investigation
Teams of 2 to 6 students work together to find information on a topic of
interest to them within a thematic unit. Each group plans the inquiry in
consultation with the practitioner. Group members need to decide how to
investigate the topic, which tasks each member will be responsible for, and
how the topic will be reported to the rest of the class. The practitioner's
evaluation can include individual performance as well as the overall quality
of the group performance.

Send-A-Problem: can be used as a way to get groups to discuss and review
material, or potential solutions to problems related to content information.

1. Each member of a group generates a problem and writes it down on a
   card. Each member of the group then asks their question to other
   members.
2. If the question can be answered and all members of the group agree on
   the answer, then that answer is written on the back of the card. If there
   is no consensus on the answer, the question is revised so that an
   answer can be agreed upon.
3. The group puts a Q on the side of the card with the question on it, and
   an A on the side of the card with an answer on it.
4. Each group sends its question cards to another group.
5. Each group member takes ones question from the stack of questions
   and reads one question at a time to the group. After reading the first
   question, the group discusses it. If the group agrees on the answer,
   they turn the card over to see if they agree with the first group's
   answer. If there again is consensus, they proceed to the next question.
   If they do not agree with the first group's answer, the second group
   writes their answer on the back of the card as an alternative answer.
6. The second group reviews and answers each question in the stack of
   cards, repeating the procedure outlined above.
7. The question cards can be sent to a third, fourth, or fifth group, if
   desired.
8. Stacks of cards are then sent back to the originating group. The
   sending group can then discuss and clarify any question

Group Retellings

Each member of the group reads a different text on the same topic. The difficulty of the material can be matched to the level of the student. After reading, each member shares what she/he has read. The other members listen and share additional information and insights based on their reading.[45]

Variation: A variation on the send-a-problem is to use the process to get groups to discuss a real problem for which there may not be any one set answer.

1. Groups decide on one problem they will consider. It is best if each group considers a different problem.
2. The same process is used, with the first group brainstorming solutions to a single problem. The problem is written on a piece of paper and attached to the outside of a folder. The solutions are listed and enclosed inside the folder.
3. The folder is then passed to the next group. Each group brainstorms for 3-5 minutes on the problems they receive without reading the previous group's work and then they place their solutions inside the folders.
4. This process may continue to one or more groups. The last group reviews all of the solutions posed by all of the previous groups and develops a prioritized list of possible solutions. This list is then presented to the group.[46]

Collaboration approach web resources

A great resource that lists teaching strategies that use a combination of collaborative, thinking skills and visuals. Go to:
http://edservices.aea7.k12.ia.us/framework/strategies/

Instructional Framework. Go to:
http://edservices.aea7.k12.ia.us/framework/download.html

Standards for selecting instructional materials

The following standards were developed by the National Adult Literacy and Learning Disability Center. They have used 8 standards to evaluate a number of commonly used instructional materials, including Laubach Way to Reading, Breakthrough to Math (3) and Challenger 6 Adult Reading Series. The standards should be used as a guide for reviewing existing and potential material that agencies are considering for purchase. It is not expected that every instructional material will meet all 8 standards. However, each agency needs to look at what standards are most critical to meet the learning needs of the adults they serve.

The instructional material is effective for teaching adults with learning disabilities.

- Look for a description of research that indicates that the material is effective for adults with learning disabilities (i.e. results that describe how the instructional material worked with adults)
- Make sure the information is presented in a visually friendly manner with good font size, lots of white space, and clear layout of information

The instructional material is appropriate for an adult, regardless of the person's age, gender, race, ethnicity, and primary language.

- Look for studies that include adults with the same characteristics as persons whom your organization serves (i.e. either the material was tested with similar groups of learners, or the examples used, reading passages and questions are adult-oriented and would not offend the group you work with)

The instructional principles used to promote learning are clearly stated and are consistent with what is known about learning disabilities.

- Look for teaching practices that have learners question each other, encourage learners to correct their own work, and ask them to generate more than two work samples

- A description of how the material was developed might include theories or incorporate learning principles

The learning outcomes that can be expected are clearly described.

- Look for a list of measurable skills or knowledge that is required for mastery of tasks

The results achieved by using the instructional material can be used to make decisions regarding further instruction.

- Look for suggestions of materials to use and specific skills/competencies that the learner should address next upon mastery of the skills

The procedures for checking the learner's progress are clear and easy to use.

- Look for guidelines on how to assess the learner's progress (suggested prompts for questions to ask, a description of the process and/or a graph for documenting progress)

The requirements for literacy practitioners to learn to use the instructional material are reasonable.

- Look for guidelines to determine if the practitioner meets the requirements to use the material (i.e. could be as simple as needing to read over the procedure manual to something more difficult like actually attending a workshop to be trained on how to use the materials)

The instructional material can be used in a variety of instructional situations within the literacy program. [47]

- Look for suggestions on how the material can be used/adapted to a variety of instructional settings (small group, one-to-one, independent study)
- Look for suggestions on how to use the material in different instructional contexts (presentation style, collaborative approach, etc.)

The following instruments have a completed report card: you can access them at http://www.nifl.gov/nifl/ld/reports/bridges_pt3.pdf. Go to Appendix B (page 73 document reference and page 93 PDF reference)

The ADD Program

Affective Skills Curriculum

Building Learning Power for

Children and Adults Breakthrough to Math, 3

Challenger 6, Adult Reading Series

Cooper Sight/Sound Reading System

Cooper Individualized Spelling Program

English Day by Day

Everyday Reading and Writing

Framing Your Thoughts

Jordan Prescriptive Reading Tutorial

Keystrokes to Literacy

Language!

Laubach Way to Reading

Learning Wrap-Ups and Math Facts

Number Sense, Fractions

Paraphrasing Strategy

Personal Stories, Book 2

Pre-GED Writing

Reading in the Content Areas, Lit. 2

The Self-Advocacy Strategy for Ed. and Transition Planning

Starting Over

Studying for a Driver's License

Tic Tac Toe Math

Visualizing and Verbalizing

VAK Tasks for Vocabulary and Spelling

Wilson Reading System

Learn to apply learning styles/multiple intelligence to instruction

By now most practitioners are familiar with the different theories about learning styles. The idea that an adult has a preferred way of learning such as auditory, visual, or kinesthetic has been part of the literacy program's repertoire for quite some time. More recently practitioners have been introduced to the Multiple Intelligence theory (MI), which states that people have strengths in various types of intelligence. The question that often is pondered by practitioners is, "how do we integrate the theory into practice?" In this section both a general application for the theories and specific examples of how the theories can be used for **both personal reflection and instruction** will be provided**.**

Learning theorists share a common belief that adults have different strengths or ways of learning. Professionals who work with adults with learning disabilities also share this belief. The caution echoed by both groups is that practitioners **should not** teach to an adult's learning style, but should recognize the varying strengths and offer a variety of learning formats/tools that will meet the different needs. Providing materials and learning tools that are only geared to learners' strengths does not help them to improve the other learning avenues. This practice does not encourage them to become independent learners because outside of the classroom or tutoring environment they will be exposed to information that is presented in formats that may not favour their particular learning style or strength.

Impact of learning styles/MI on literacy instruction

- Practitioners are now aware that all adults learn differently
- Practitioners have become aware of their own learning preferences
- Practitioners ensure that the design of the lesson meets the needs of all learners
- Learners are able to self-reflect on their own preferences and understand how they learn best

Incorporating theory into instruction

Learning styles and MI are theories, not instructional models. Practitioners are not expected to throw out the old and replace it with a new approach, but rather use the knowledge gained from the theories to enhance their existing practices.

A typical group reading activity would involve:

- A pre-reading question

- The group reading the story while incorporating skills they have learned such as decoding

- After each chapter, the group may discuss what they read, review difficult words and reread the paragraph if needed

- Once the story is read, a few questions are asked and the instructor may ask the learners to write a paragraph in response to the questions

When MI is applied the same process takes place, but additional activities are added and choices are given.

- Additional post-reading activities could include: drawing a picture or using modeling clay to show any part of what was read; using a diagram or map to illustrate the story; writing or discussing with someone an interesting part of what was read; or designing individual projects for the passage that was read.

- The additional options give learners choice and opportunities to express their preferred way of learning.

Practitioners who have used this approach found that their learners had a greater understanding of the reading passage. The learners became invested in the final results and wanted to make sure their projects were accurate. "Reading became a tool to do the projects, whereas a book report makes the reading the focus."[48]

Application to instruction

- Lesson formats that give learners choices that correspond loosely to the 8 intelligences or different learning styles. The learning goals do not change, but the enriched learning activities help learners to reach their goals more effectively. To be effective the content and approaches need to be meaningful to the learners. This is why choice is the key.

- Emphasis is on using students' particular learning strengths to assist in areas of particular difficulty.

- Develop project-based curriculum using MI/learning styles as a framework. This emphasizes authentic problems and activities. [49]

Incorporating theory into reflection

Learning style/MI theories can be used as a tool to plan appropriate instruction and curriculum, whereas learning style/MI reflection uses the theories as tools to reflect on individuals' strengths and related learning strategies. Examples of reflection activities could include: showing pictures of people engaged in work or activities and identifying the various MI that can be observed, or taking pictures of adults engaged in the activities they have chosen and talk about why they chose them and the related intelligences or learning styles. [50]

 Using reflection practices

- Reflect on and identify students' strengths and preferences. This approach helps learners who view themselves as unintelligent because they equate intelligence with book learning.

- Utilize learning theory as a basis for discussion and consider why it is incorporated into lessons. This will help learners to understand the rationale for unconventional learning activities, and to consider them a positive and promising change.

- Emphasize learner participation in learning style-based reflections to "learn about their ways of learning." It helps learners to find learning strategies that fit their strengths/interests. Learner-practitioner dialogue and frequent promotion by the practitioner will help learners begin to link the information about their intelligences/learning styles with new learning strategies.[51]

Examples of how to teach spelling by incorporating the various learning styles and MI
This approach is an example of a multi-sensory approach.

- Language: write down words and look up their meanings, spell out loud, discover how to change a word to mean the opposite.

- Spatial: write the words vertically, write words so their shapes make pictures of the words, break words into syllables and write each syllable in a different colour.

- Logic/math: build word families, teach spelling rules which are the most consistent, practice prefixes and suffices in pattern exercises, and use proof writing for errors.

- Body movement (kinesthetic): use the computer, use stencils to write words, trace letters in the air, make up words to show stress or spelling patterns.

- Musical: use familiar tunes to memorize the letters in a word, use rhymes to remember words.

- Social (interpersonal): play spelling games, play Scrabble.

- Self (intrapersonal): picture a word in your head - What colour is it? Spell it backwards. How many letters are in it? Make a personal dictionary of words that are important to you.

Source http://literacyworks.org/mi/practice/teaching-spelling.html

This example illustrates many different ways to approach spelling. Practitioners are not expected to use all of the strategies at once, but are encouraged to use a variety in the learning environment and/or offer the list to the learners and have them choose what they would like to try. The basic principles can be adapted for many literacy skills. For example, if a learner is working on math: offer math games, objects to manipulate, sequencing activities, and software; highlight the operations with different colours; and use visual pictures to represent numbers, etc.[52]

"When practitioners give learners choices in how they learn and demonstrate what they have learned, they are effectively giving some control to learners. Over time, as learners experience diverse MI/learning style-based learning activities, they begin taking more initiative and control over the content or direction of the activities."[53]

Using this approach may require practitioners to take some risk and perhaps step out of their comfort zone. Practitioners who have taken this risk found they were rewarded with an increase in learner engagement and level of output. They found that sharing some of their insecurities with the learners and taking the time to learn about and discuss the learning style theories led to a greater willingness by the learners to try the enhanced activities. Building trust and mutual respect enables learners to take risks and try new activities such as role-playing, telling a story or building something. Practitioners who took this approach acknowledged that change did take time, but the results were well worth the planning and risks taken by all.[54]

To access sample lessons/strategies and resources for reflection go to the following websites:

- http://pzweb.harvard.edu/ami/thematicunit.htm
- http://literacyworks.org/mi/practice/index.html offers strategies for each of the 8 MI
- http://literacyworks.org/mi/assessment/index.html offers an interactive form to assess your MI – it emphasis that everyone has some degree of the 8 intelligences, but some are stronger than others
- http://literacyworks.org/mi/practice/additional.html additional strategies - ways to incorporate music

Ongoing assessment

Module 2 covered assessment and focused on the initial assessment to help both practitioners and learners understand the impact of their learning disabilities. This section includes ongoing assessment since it is such an integral part of the instructional process.

The need for ongoing monitoring and assessment is critical when working with adults with learning disabilities. The ongoing assessment process needs to be inclusive (both the learner and the practitioner) and it needs to be constructive and elaborative by providing suggestions to improve or enhance their learning. The ongoing assessment not only focuses on the learner's skill acquisition but also examines any learning strategies the learner is accessing, related accommodations and practitioner instructional approaches. Any one variable or combination of these variables could impact a learner's success. This emphasizes the need for frequent monitoring to help isolate any barriers immediately and the need to problem-solve together with the learner to identify alternative strategies, accommodations and instructional approaches.

Module 4 highlighted the need for learners to be responsible for charting their progress, which helps to increase motivation and self-determination and helps learners become responsible for their own learning. Although inquiry questions have already been addressed in previous modules, to help evaluate the use of learning strategies and accommodations, it is pertinent to cover them again.

Ongoing assessment of learning strategies

Providing feedback to learners on their strategy use is a critical part of helping them learn how to use a strategy effectively and how to change what they are doing when a particular approach is not working. It is also important to provide opportunities for learners to reflect upon their approach to and completion of the task. What aspects of the task did they complete well? What aspects were difficult? Did any problems arise, and what did they do to solve

the problems? What might they do differently the next time they have to complete a similar task? It may be valuable to incorporate these questions into a self-evaluation checklist for the learners' reference.

Ongoing assessment of accommodations

- Gather information that describes the results of accommodations
- Discuss the results with the learner
  - What benefits are they seeing?
  - Are they reaching their goals?
  - Are there problems?
  - Do they experience any difficulties?
  - How has it helped them?
  - What do they need to change or revise?
  - Have they used the accommodation in other settings? If not, why? What needs to be changed/modified?[55]

The ultimate aim through this process of ongoing monitoring, assessment and feedback is to encourage learners to move toward self-evaluation and self-correction. Ongoing assessment does not mean that a practitioner needs to set up separate times to review progress, although this may be integrated into the process. But it can be built into the day-to-day instruction by observation of the learning activities, asking the learners to engage in self-evaluation, through the group process and through various instructional techniques such as scaffolding, questioning, and feedback.

Summary of key points

- Effective instruction should be: direct, structured, explicit, information process sensitive, relevant, and reinforced.

- Providing instruction on a strategy is a **learner's approach** to learning a task. The practitioners **approach** to an instructional task encourages learning of critical skills and knowledge. This approach focuses on how practitioners think about, adapt, and present the skills and critical knowledge in a "learner-friendly" fashion.

- Effective instructional planning should involve three components:

    - **Content** (the critical information and skills that need to be covered)
    - **Process** (how it will be presented)
    - **Integration** (how the information provides meaning for each individual)

- Content enhancement routines are instructional techniques to help organize large amounts of information, present information logically, further understanding of new concepts, and enhance the recall of information.

- When deciding on what type of instructional model to access, practitioners need to determine their current knowledge and skill in utilizing the method, the desired learner outcomes and their measures before decisions are made. In addition, any approach that is taken needs to balance both the learning strategies for skill development and instructional enhancements for understanding content and concepts. The 3 methods that were addressed in the module were:
    - Strategic Instruction Management (SIM)
    - Direct Instructional Method
    - Information Processing

All 3 instructional models incorporate the use of demonstrating, modeling, practicing, giving feedback and generalizing the skills and knowledge to be learned.

- Collaborative approach involves the use of group activities that foster shared responsibilities and contributions for learning. The practitioner acts as a facilitator. The collaborative approach is helpful for learners to practice what they have learned through guided practice and peer review. 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. Practitioners need to use a concrete-to-abstract teaching sequence.

- Learning theories can be applied to **enhance instruction** and provide structure for **reflective practice**. Learning styles and MI are theories - not instructional models. Thus practitioners are not expected to throw out the old and replace it with a new approach, but rather to use the knowledge gained from the theories to enhance their existing practice. This approach helps learners who view themselves as unintelligent because they equate intelligence with book learning. Using learning theories for reflective practice helps learners to identify their strengths and preferences and helps learners to not only understand the rationale for unconventional learning activities, but to consider them a positive and promising change.

- The ongoing assessment process needs to be inclusive (of both the learner and the practitioner) and it needs to be constructive by providing suggestions to improve or enhance learning. The ongoing assessment not only focuses on the learner's skill acquisition, but also examines any learning strategies the learner is accessing, related accommodations and practitioner instructional approaches. The ultimate aim through this process of ongoing monitoring, assessment and feedback is to encourage learners to move toward self-evaluation and self-correction.

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