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
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    - Study and organizational skills
    - Examples of organizational, study and test-taking strategies
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- Understanding motivation strategies and how to incorporate them into training
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- Identifying accommodations
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- Learning disability characteristics, related strategies and potential accommodations
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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.
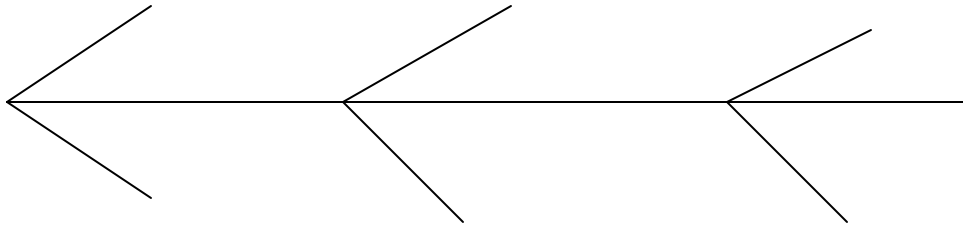
Matrices or charts:
Matrices or charts are used to provide a framework for comparing and contrasting similar concepts. Use any texts that contain elements for comparison. Some examples are: characters from a piece of fiction; a content article about environmental threats; and candidates for election. 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

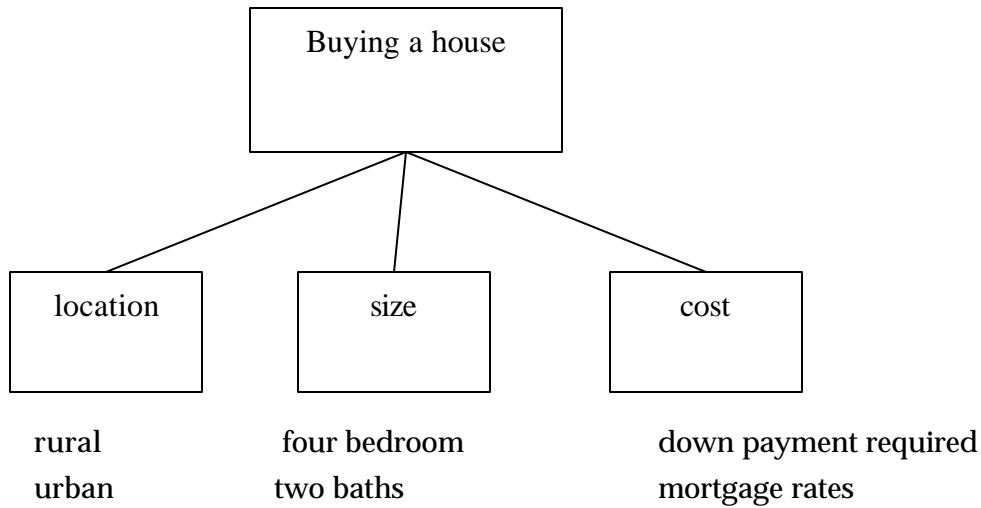**Problem and solution outline and text frame:**
This strategy is used to give learners a graphic representation of a problem, attempted solutions, the results of those solutions, and the end result. This outline and frame can be used with narrative or informational text. The following text frame is 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:
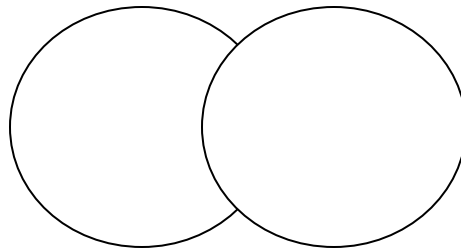
When comparing two articles on an issue, put the facts from each article that are different from each other in the outside circle and the points that both articles share are put in the section where the circles overlap.

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 *specific*.	Make leamers 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.
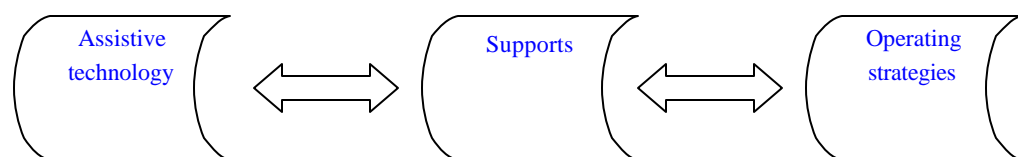
Assistive technology

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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