TEACHER HANDBOOK TO SUPPORT LITERACY LEARNERS

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Dedication

This project is dedicated to my husband, Victor, and our son, Nic.

Their love, support, and ongoing encouragement have sustained and inspired me

to continue my journey, even when life presented its detours.

Thanks for always being there for me.

Abstract

Today's classrooms are comprised of very diverse populations and educators are continually faced with the task of determining the most appropriate method of instruction and required support based on the diversity within their classrooms. The purpose of this project was to develop a resource in the form of a handbook for educators and others working with students that struggle academically, including English language learners and those affected by poverty. The need for such a resource is based on the apparent increasing needs within an inclusive classroom setting and the writer's personal experiences within her school community with the identified populations. Educators in an inclusive education setting are often overwhelmed with the wide-range of needs present on a daily basis and this type of resource could potentially become a valuable component of their toolkit. This project provides readers with an easily accessed resource when determining appropriate and research-based supports for students. The primary emphasis is on literacy support through effective strategy implementation, involving the areas of reading, writing, and mathematics, with additional information related to English language learners, assessment, and technology. Key information regarding learning disabilities is included in order to provide the user with sufficient background information on disabilities and/or difficulties that affect learning. This type of resource can be used to guide instruction as well as inform best practices.

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Introduction

My role as a resource room and learning support teacher in a lower socio-economic neighbourhood elementary school has provided me with ample opportunities to observe the challenges faced by students who struggle with acquiring adequate reading and writing skills and the subsequent concerns voiced by the teaching staff as they attempt to address these needs. Many of the students I work with directly have been identified with a learning difficulty, while issues such as living in poverty affect the learning of others.

In their article, *Socioeconomic status and child development*, Bradley and Corwyn (2002) "review the history of socioeconomic status (SES) and provide an overview of the association between SES and children's well-being for three major domains of development (cognitive, socioemotional, [and] health)" (p. 372). These authors also cite several studies that document how "poverty and low parental education are associated with lower levels of school achievement and IQ later in childhood" (p. 375) including the fact "that SES indicators were strongly related to cognitive development from infancy through middle childhood" (p. 376). These studies also discussed a "strong relation between SES and verbal skills" (p. 376) and "possible correlations between lower SES with attendance issues and early school departure" (p. 377). The work of Snow (2001) also emphasizes the point that the language environment at home predicts not only language competence at school but also the development of reading skills and subsequent reading comprehension. Therefore, in addition to supporting students identified with a learning difficulty/disability, and working effectively as a resource teacher with school staff members, being aware of the correlation between SES and possible school

achievement provides me with further impetus to develop a handbook for my colleagues in an effort to reduce the negative effects that poverty may foster on literacy development.

Rationale

The development of this type of handbook will help meet and support the needs of key stakeholders within my school community: students, teaching staff, and parents/guardians. I reviewed current research connected to reading and writing instruction as well as recent brain research as a means of best meeting the needs of learners identified with learning difficulties and those impacted by the effects of poverty. Although much research has been conducted regarding the reasons behind lagging skills and specific disabilities, including the development of numerous programs and materials based on this research, I also believe it is important to review the previous research results along with recent breakthroughs in brain research in order to guide and inform my professional practice as well as that of my colleagues.

Of importance to this research is determining how to best meet the literacy requirements within an inclusive setting as supports for students with identified needs become more constrained and limited in scope. With that in mind, I believe that all teachers need to view themselves as teachers of reading and writing since new forms of literacy continually emerge that often require the acquisition of new skills.

Literature Review

In order to guide my research with developing a handbook for teachers to support at-risk students in the areas of reading and writing, I have focused my attention primarily on resources that connect directly to my area of inquiry and provide research-based

information. The resources listed are not an exhaustive compilation by any means but are rather a place to start with my own research. Each one presents a differing point of view or approach and fits well with my philosophy that each student has unique needs and thus benefits from an array of possible strategies and interventions. During my review of the literature I noticed that much of the research occurs outside of Canada and, although similarities exist, my specific population may require some differing approaches.

Dobson and Hurst (1998) in their text, *Keys to Literacy for Pupils at Risk,* present a cohesive approach to understanding reading and writing and provide examples of strategies through the use of narrative. This style allows for ease of reading by the educator. *The Learning Strategies Handbook* by Chamot, Barnhardt, El-Dinary, and Robbins (1999), highlights metacognition "as the hallmark of the successful learner" (p. 2) and introduces readers to the Cognitive Academic Language Learning Approach. This approach is both a three-part curriculum as well as an instructional framework and is used for teaching learning strategies. This resource was developed primarily for English as Second Language learners but can easily be adapted for all learners.

Using Literature to Support Skills and Critical Discussion for Struggling Readers, Grades 3-9 (Williams, 2004), underscores the importance of remembering that "students with reading difficulties, like all readers, represent a diverse group that includes cultural, racial, language, ability, and physiological differences" (p. xiii). Jobe and Dayton-Sakari (1999) add to that notion in their text *Reluctant Readers: Connecting Students and Books for Successful Reading Experiences* with their statement that "everyone faces being reluctant about something" (p. 7). Jobe and Dayton-Sakari (1999) identify several types

of reluctant readers as well as characteristics associated with each type to assist educators with identification and possible strategies to use with each style of learner.

Dayton-Sakari's (1997) research article, *Struggling readers don't work at reading: They just get their teachers to!* focuses primarily on issues that may hamper the acquisition of reading skills and the perception of teacher as helper is viewed ultimately as a hindrance. Teachers, in an effort to engage students in the learning process, often unconsciously enable those that struggle to perpetuate a "learned helplessness." To assist further with reluctant and/or at-risk writers, I located a resource that balances writing techniques with reading good literature. Katie Wood Ray (1999) wrote *Wondrous Words: Writers and Writing in the Elementary Classroom* and believes that the main concern when teaching writing is for students to "write what matters" (p. 8) in combination with "learning how to write from writers" (p. 11).

In order to determine possible supports, one needs to understand some of the underlying factors that prevent reading and writing success. A great number of students simply lack personal experiences and as a result often do not possess the necessary vocabulary to comprehend more complex text. Thus, as Dobson and Hurst (1998) state, "our first priority is to immerse them in reading" (p. 77). Of importance is the "inclusion of various genres" (Dobson & Hurst, 1998, p. 77), primarily through shared readings with a focus on building vocabulary, sharing of experiences, and using language that is natural, rhythmic, and predictable. As skills progress, there is a move towards a mutual responsibility of reading the text that gradually gives way to independent reading of the text. As students select texts for independent reading, it is important to guide them

towards "suitable materials" (Dobson & Hurst, 1998, p. 82). This can be accomplished by asking key questions and providing specific feedback.

A similar approach can be used to facilitate writing for at-risk students. It is essential for students to "engage in and to enjoy meaningful writing" with an emphasis on showing the "connections between the words in speech and in print" (Dobson & Hurst, 1998, p. 91). As with acquiring reading skills, at-risk writers will progress through several stages, beginning with an emergent stage where [written] "representations are not readable by others" (Dobson & Hurst, 1998, p. 92), through to independent work. Throughout the progression it is imperative for students to "continue to realize the communicative purpose of their writing" (Dobson & Hurst, 1998, p. 98).

The metacognitive method presented by Chamot, Barnhardt, El-Dinary, and Robbins (1999) focuses on four processes that include "planning, monitoring, problem solving, and evaluating" with "students [working] through each of these processes for any challenging learning task" (p. 11). Each of these areas lend themselves to various learning strategies such as predicting, seeking clarification, inferencing, relating to personal experiences, and summarizing what has been read (Chamot et al., 1999, pp. 15-17). These authors also emphasize the importance of "students' awareness of their learning processes" (p. 55) as well as "having access to appropriate learning strategies ... since an important aspect in viewing oneself as a successful learner is self-control over strategies use" (Chamot et al., 1999, p. 62).

I found the following statement presented by Williams (2004) provided clarity in my personal beliefs:

Struggling readers develop language and higher-level thinking skills when they

are given explicit examples and opportunities to talk about descriptive words and

figurative language, discuss and question authentic characters' conflicts and

problems, and make personal connections to the text and real-life situations.

(p. 20)

Of additional interest is McCormack's (2003) assertion "that spending time in

answering two or three higher-order questions may be more useful to some students then

(*sic*) asking them to respond to ten or more literal questions" (as cited in Williams, 2004,

pp. 21-22). Williams (2004) goes on to state that "writing extensions support written

language skills and reading comprehension" and "the writing process . . . provides

structure and support for struggling readers when they write their own stories, review, or

epilogues" (p. 41).

I also found the instructional strategies that Dayton-Sakari (1997) presents in her

article as being beneficial for struggling readers are also important to my interest and

research. Examples include opportunities for the reader to become more involved and

make decisions, involve physical activity to engage thinking processes, combine the

physical action of writing with active thought, research an area of interest, base content in

all areas of language instruction on reader's interest, and allow students to direct some of

the activities/learning in order to provide them with feelings of ownership. Suggested

changes of instructional practices for teachers include employing wait time by resisting

the urge to "assist," becoming more aware of our actions during the process and breaking

the cycle of passivity. It is vitally important for struggling students to develop into active

learners and become the "doers," instead of remaining in a "passive" role (Dayton-Sakari, 1997).

Hawken (2008), Levin (2004), and McAndrews (2008) are examples of other authors whose work I have reviewed and subsequently provided me with possible formats for organizing the handbook, reviewing current research, and presenting specific strategies to address lags with reading and writing skills.

As I researched information connected to readers that struggle and students identified with a learning disability or difficulty I found that the majority of researchers in this field include data highlighted by the National Reading Panel report completed in 2000 that "identifies five areas essential to effective early reading instruction: (1) phonemic awareness, (2) phonics, (3) fluency, (4) vocabulary, and (5) comprehension" (Roberts, Torgesen, Boardman, & Scammacca, 2008, p. 64). Roberts et al. (2008), also included and acknowledged this information in their research but went on to state that they would revise the categories put forth by the National Reading Panel report based on research conducted by Guthrie and Humenick (2004). Guthrie and Humenick's (2004) research emphasized the significance that motivation plays with older readers. With that in mind, Roberts et al. (2008) suggested changing the five areas to include: (1) word study, (2) fluency, (3) vocabulary, (4) comprehension, and (5) motivation (p. 64). This suggested change fits well with my personal and school focus as it is our belief that these areas are the key to success for all learners.

In summation, students identified as reluctant or struggling readers and writers benefit from a combination of working with materials that are of personal interest and receive systematic and explicit instruction with reading and writing skills that are

presented in the context of 'real' reading and writing activities. Within this context, educators need to be cognizant of the instructional levels of their students in order to ascertain which intervention(s) will achieve the desired results, and be prepared to allow sufficient time for the desired skills to be acquired. When possible, students benefit from a combination of research-based interventions and teacher observation. Just as one size does not necessarily fit all, utilizing one type of intervention may not achieve desired results. It is also important to note that current research emphasizes that the specific strategies and interventions, including those highlighted in this handbook, are beneficial for *all* learners, regardless of ability, learning style, cultural influences, or socio-economic status.

The above noted research has certainly reinforced, and, in some instances, clarified my understanding of student needs and also provided me with an excellent framework to organize this handbook. Prior to embarking on this research, I had not explored the importance that metacognition plays in the role of student learning or the aspect of limiting the number of strategies to implement for each child. As someone working closely with students requiring specific supports and interventions, I tended to focus on providing several strategies but now understand the significance of being selective and working towards independent use by the student.

Overview of Learning Disabilities

Definition of Learning Disabilities

The official definition of learning disabilities was adopted by the Learning Disabilities Association of Canada in January 30, 2002 (see Appendix A for complete definition). Several areas in this definition need to be highlighted:

- Learning disabilities refer to a number of disorders which may affect the acquisition, organization, retention, understanding or use of verbal or nonverbal information. (para. 1)

- Learning disabilities result from impairments in one or more processes related to perceiving, thinking, remembering or learning. (para. 2)

- Learning disabilities are lifelong. (para. 4)

- Learning disabilities are due to genetic and/or neurobiological factors or injury that alters brain functioning in a manner which affects one or more processes related to learning. (para. 5)

Harwell (2001) and the Learning Disabilities Association of Canada (2002) both indicate that students who are identified with a Learning Disability are generally in the average range of intelligence but have difficulties that interfere with their learning. These disabilities range in severity and may interfere with the acquisition and use of one or more of the following:

- oral language (e.g. listening, speaking, understanding);

- reading (e.g. decoding, phonetic knowledge, word recognition, comprehension);

- written language (e.g. spelling and written expression); and

- mathematics (e.g. computation, problem solving). (Learning Disabilities Association of Canada, 2002, para. 3)

Caveat: It is important to note that definitions that have been thoughtfully and carefully articulated and accepted by the learning disabilities and educational communities are best presented in their entirety, in order to keep the language consistent and prevent

miscommunication among educators. Therefore, I will be using precise terminology

taken directly from the Learning Disabilities Association of Canada and the Learning

Disabilities Association of Alberta.

Prevalence

Research indicates that the prevalence of learning disabilities affects

approximately one in 10 Canadians (Learning Disabilities Association of Canada, n.d.).

The following information was included in the Government of Canada's Public Health

Report (2009), indicating that,

> Data on the prevalence of learning disabilities among Canadian children are not
>
> readily available at the national level. It is difficult to establish the prevalence
>
> among Canadian children for many reasons, including lack of diagnosis and
>
> reluctance of parents to identify their children as learning disabled due to
>
> stigmatization. But the long-standing rate of one in 10 Canadians – although
>
> thought to be a low estimate – can most likely be applied to children as well as the
>
> population as a whole given that learning disabilities are lifelong. (p. 24)

Thus, today's educators are faced with teaching a very diverse group of learners that may

require a vast array of instructional techniques and strategies to support their learning.

Identification

Identification and diagnosis of a learning disability or difficulty often takes time

and indicators "are suggested by unexpected academic under-achievement or

achievement which is maintained only by unusually high levels of effort and support"

Learning Disabilities Association of Canada (2002). The association goes on to state that,

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

- specific skill instruction;

- accommodations;

- compensatory strategies; and

- self-advocacy skills. (Learning Disabilities Association of Canada, 2002, para. 7)

Types of Learning Disabilities

Several areas fall under the 'umbrella' of Learning Disabilities, comprising both academic and non-academic difficulties. Academic difficulties have been identified as reading (basic reading skills and/or comprehension), mathematics (computation and/or reasoning), and writing (handwriting, spelling, and written expression). Non-academic learning disabilities include perceptual, memory (short- and long-term, working, auditory, and visual memory), and visual-motor difficulties. In addition, some students may experience difficulties in the following areas: language (oral expression or listening comprehension), social-emotional (social skills deficits), attention and/or hyperactivity, cognition, and metacognition. (Smith, Polloway, Patton, Dowdy, & McIntyre, 2012, pp. 86-91).

Areas Potentially Affected by a Learning Disability
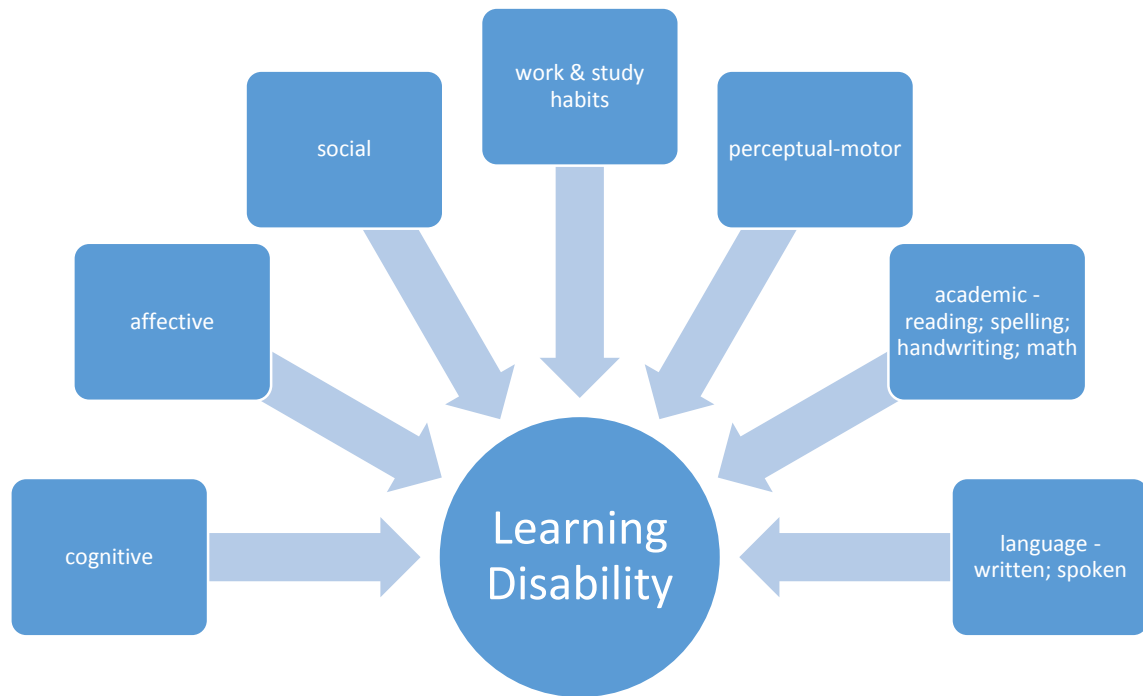
Figure 1. Areas potentially affected by a learning disability. From *A Handbook for Faculty on Learning Disability Issues*, University of Guelph, 2000, p. 7.

Categories of Learning Disabilities

The Learning Disabilities Association of Alberta has identified five main categories, listed below (used with permission), of learning disabilities which they have included in their *Learning Disabilities of Alberta: Learning Disabilities Reference Manual* (2010).

- **Visual Difficulties**: This means that the brain has difficulty handling information that the eyes see. These are conditions that cannot be eliminated by the use of glasses or contact lenses. Examples of visual difficulties are:

  - Poor visual memory. Unable to remember faces or words. There may be reversals in writing (e.g., *41* instead of *14*).

  - Difficulty in seeing the difference between similar objects (e.g., *b* vs. *d*).

- Problems with visual tracking. Not being able to follow a line on a page.

- Poor figure group discrimination. Not being able to find the place to write one's name on an application form.

- **Auditory Difficulties:** Examples of auditory difficulties include:

  - Difficulty remembering verbal information and instructions.

  - Trouble telling the difference between similar sounds or words (e.g., *bee* and *pea*, *seventeen* and *seventy*).

  - Confusing number sequences, lists or directions.

  - Trouble hearing sounds over background noises.

- **Motor Coordination Difficulties:** Motor Coordination difficulties affect various motor functions such as:

  - Eye/hand coordination causing difficulties with handwriting.

  - Small muscle control that results in misjudging where to place things.

  - Large muscle control causing clumsiness and difficulties with certain physical activities.

- **Organizational Difficulties:** Organizational difficulties involve difficulty with organizing time, space or sequencing. Examples of this include:

  - Poor sense of time.

  - Inability to organize tasks.

  - Difficulty organizing space such as a closet or desk.

  - The inability to analyze things or apply information in a new way.

- **Conceptual Difficulties:** Inability to understand abstract concepts, complex language, consequences and social cues.

- Difficulty interpreting non-verbal language. This includes facial expressions or body language.

- Difficulty understanding figures of speech.

- Difficulty anticipating the future. This may involve doing something impulsive without considering the consequences.

- Rigid thinking and the inability to see that flexibility is required to deal with a situation.

- Poor social skills and peer relations. The person may not be able to make eye contact during a conversation or behave with the appropriate tone.

  (pp. 5-6)

Common Terms Related to Learning Disabilities

The following common terms related to learning disabilities were developed by the Learning Disabilities Association of Canada, (http://www.ldac-acta.ca/learn-more/ld-basics/common-terms) and used with permission. Several of these terms will be expanded upon further in the handbook, accompanied by specific strategies to address these areas of need.

- **Attention Deficit Hyperactivity Disorder** (ADHD) – ADHD often affects people who have learning disabilities, and is beginning to be seen as a type of learning disabilities itself. It is also a term that changes very frequently, mostly because there are two distinct subcategories: one sort of ADHD includes hyperactivity, and the other does not. ADHD generally interferes with attention span, impulse control, and (sometimes) hyperactivity.

- **Auditory Processing** – the way we understand information we hear. Learning disabilities affecting this process can affect the accuracy of what's heard, memory of what's heard, organization of what's heard, or figure-ground discrimination of sounds.

- **Cognitive** – another way of talking about intelligence. Cognition means thinking.

- **Dyslexia** – a specific learning disability that affects language. Commonly misunderstood to be a condition that causes letters to appear backwards and upside down, but in reality is much more complicated. The bottom line of dyslexia is now thought to be a problem with the sounds in words (phonological awareness).

- **Dyscalculia** – a learning disability involving math. Arithmetic involves recognizing numbers and symbols, memorizing basic number facts, aligning numbers, and understanding abstract concepts like time, place value and fractions. Any of these can have serious impact on work and day-to-day life.

- **Dysgraphia** – a learning disability that affects writing abilities. Writing involves several brain areas and functions and networks for vocabulary, grammar, hand movement, and memory. All these must all be in good working order. So, a writing disorder may result from problems in any of these areas and can manifest itself as difficulties with spelling, poor handwriting and/or trouble putting thoughts on paper.

- **Executive Functions** – These skills are needed to plan, manage, organize, evaluate things in everyday life as well as school and work.

- **Fine-motor/Gross-motor Control** – the ability to accurately use either fine-motor or gross-motor muscle control. Fine-motor muscle control refers to small muscles doing small things—threading a needle, holding a pen. Gross-motor muscle control are large—like dancing or jumping.

- **Figure-Ground Discrimination** – this can refer to visual or auditory information, and describes the ability to distinguish important details from surrounding information. An example of visual figure-ground discrimination would be being able to see the words on a page and ignore a background design. Auditory is being able to pay attention to a lecture and ignore the sounds of rustling paper and people whispering.

- **Impulsivity** – people with poor impulse control do not always think before they act, or consider the consequences of actions.

- **Memory (Long-Term)** – memory that stores information for later use. For example, the phone number of your best friend or a family member that you have memorized is stored in your long-term memory.

- **Memory (Short-Term)** – memory that holds information briefly while you use it. For example, when you read a phone number and then dial it, the number is held in your short-term memory.

- **Memory (Working)** – memory that holds an idea while you are using it - for example, your working memory holds a formula when you are working on a math problem.

- **Multisensory Teaching** – using many senses (visual/auditory, kinesthetic-tactile) and pathways in the brain simultaneously in order to enhance memory and learning.

- **Nonverbal Learning Disabilities** – learning disabilities that affect all learning not related to language, including social skills and physical coordination. Also called NLDs or NVLDs.

- **Organizational Problems** – can include problems with managing time, organizing tasks, and organizing space.

- **Processing Speed** – how quickly or slowly a person is able to use, take in, or bring out information. It is not related to cognitive ability – just to speed and fluency.

- **Phonemic Awareness/Phonological Awareness** – the ability to recognize the distinct sounds in words, which is required for further language and reading development.

- **Social Perception** – the ability to interpret social situations, for example by 'reading' facial expressions, tone of voice, body language and other verbal and nonverbal cues. Individuals who have trouble using social perceptions to guide their behaviour may have social skills difficulties.

- **Social Skills** – the skills we use in society to get along socially. For example, we learn when it is appropriate to interrupt a conversation, and how close to stand to people when we're chatting. Some learning disabilities interfere with learning these rules, which causes social struggles – loneliness, conflict, or awkwardness for instance.

- **Visual Motor Integration** – the ability to use sensory feedback to guide physical movements—what is loosely referred to as "coordination". A deficit in this area can make it difficult to coordinate large or small movements—catching a ball while running, waving goodbye, to more complex tasks like brushing teeth or copying seatwork from the blackboard. Also known as dyspraxia.

- **Visual Processing** – the way we understand information from our eyes. learning disabilities affecting this can affect the accuracy of what's seen, memory of what's seen, understand what's seen, or figure-ground discrimination.

- **Visual Tracking** – the way we follow a line of text on a page can also be affected. (Used with Permission)

Skill Areas Associated with Learning Disabilities

A document developed by Saskatchewan Learning to support educators, *Teaching students with reading difficulties and disabilities: A guide for educators* (2004), (www.education.gov.sk.ca/reading-difficulties-disabilities-pdf), highlighted the following skill areas associated with learning disabilities.

- **Receptive and Expressive Language**: Ability to understand the language you hear and to clearly express yourself. (p. 19)

- **Auditory/Phonological Processing**: Ability to comprehend oral information. (p. 20)

- **Visual Processing**: Refers to organizing, analyzing, and understanding a visual message. (p. 22)

- **Visual/Motor Processing**: One's ability to take in information through the visual channel and to combine it with motor responses is important for gross and fine motor skills. (p. 23)

- **Attention**: Ability to filter out information in order to maintain attention to the task at hand. (p. 24)

- **Memory**: Information is received through the senses and when perceived and attended to, it can be held for a short time in working (short-term) memory. Depending upon its relevance and the way it is organized, it may be moved and stored in long-term memory. (p. 25)

- **Metacognition**: Efficient learning involves the active control, coordination, and monitoring of learning processes and strategies. (p. 26)

- **Study and Organizational Skills**: Ability to organize oneself and use effective study skills is related to metacognitive and attention skills. (p. 28)

- **Social Skills**: Socially competent individuals possess well-developed receptive and expressive skills, a positive self-concept, and a sense of control over their lives. Nonverbal communication skills (reading facial expressions and body language), paralinguistic information (sensitivity to the tone and intensity of a voice), attending skills, and impulse control also influence social skills. (p. 28)

Setting the Stage

As we move further into an Inclusive Education setting, many educators are beginning to "use a learning abilities approach or learning styles approach to education" that "stresses early identification of the learning problem and early intervention" (Guerin

& Male, Eds., 2006, p. 5). Using an abilities approach promotes the use of specific instructional techniques and strategies with an emphasis on abilities rather than dis/abilities. (Guerin & Male, 2006, p. 2). Guerin and Male (2006) also emphasize that "instruction can be built around how an individual approaches, perceives, and acts on a skill and the interventions that can enhance learning" (p. 2). I believe that this approach provides benefits to all students and promotes seeking out strengths to support student learning, while identifying areas of need. In addition, this type of approach will hopefully assist educators as they pursue avenues to decrease gaps in achievement.

Differentiated Instruction

The above approach ties in nicely with the concept of differentiated instruction. Aspects of differentiated instruction are utilized by a large percentage of educators, possibly on a daily basis, in an effort to support the diverse needs within their classrooms. Bender (2002) states that,

The concept of differentiated instruction is based on the need for teachers to differentiate instruction to meet the needs of diverse learners in the general education class with a focus on modifying (i.e., differentiating) the learning in three areas:

- Content (what is learned).

- Process (how the content is taught).

- Product (how the learning is observed and evaluated). (p. 2)

Alberta Education (2010) also believes "a differentiated approach supports an inclusive education system in which all students have the best possible learning

opportunities" (p. 116). In addition, this approach can be viewed as flexible in nature as it can be utilized throughout the instructional process, from planning through to assessment.

The Ontario Ministry of Education (2007), emphasized the following as key examples of differentiation for all students:

- Flexible groupings (similar abilities, similar interests).

- Instruction should include explicit (direct) teaching of information and verbal instruction/information is best supported with visuals.

- Vary levels of tasks to include independent as well as supported work.

- Include opportunities for peer support and small-group activities.

- Chunk longer tasks into smaller units and allow for additional time for completion.

- Be aware of learning profile and tap into personal interests when developing activities and locating materials. (p. 41)

Task Rotation: Strategies for Differentiating Activities and Assessments by Learning Style

Silver, Jackson, and Moirao (2011) developed a guide that focuses on Task Rotation that assists with planning and differentiation in relation to individual learning styles. According to these authors, when using this strategy,

teachers present students with four interrelated tasks that ask them to use different styles of thinking:

- Mastery tasks ask students to remember and describe.

- Understanding tasks ask students to reason and explain.

- Self-expressive tasks ask students to imagine and create.

- Interpersonal tasks ask students to explore feelings and relate

  personally. (p. 1)

Silver et al. (2011) go on to state that "by designing and assigning tasks that

represent the four learning styles, teachers can use Task Rotations to meet at least six

crucial instructional goals" (p. 12). These goals include the following:

- Goal #1: Differentiate Teaching and Learning

- Goal #2: Deepen Memory and Comprehension

- Goal #3: Increase Student Engagement

- Goal #4: Gather Meaningful Assessment Data

- Goal #5: Improve the Quality of Student Thinking

- Goal #6: Develop Students' Habits of Mind. (p. 12)

This particular approach provides support for all learners since "it is a framework

for differentiating assessment tasks and learning activities so that all students have the

opportunity to work in their preferred styles and to develop their weaker ones" (Silver et

al., 2011, p. 13).

Task Rotations can be used throughout the grades to support a multitude of

learning objectives and can be accomplished through targeting a specific skill

development or scaffolding student learning. When educators design a Task Rotation,

Silver et al. (2011) suggest in depth assessment, using the acronym 'DEPTH' to highlight

each step.

- *D*etermine your standards and clarify your purpose.

- *E*stablish a work plan.

- *P*rovide tasks in all four styles.

- *T*hink through assessment criteria.

- *H*elp students reflect on their learning. (p. 34)

The format is the same for all tasks and are organized by quadrants. One example provided by Silver et al. (2011) focuses on using a Task Rotation as a means of "scaffolding for a more complex task" (p. 66). These authors include the following steps:

(1) Identify the task that students must be able to complete, but that many students find challenging. A) Describe the task and B) What makes it challenging?

(2) Decide whether you will be working with

- the entire class;

- a group of students; or

- a particular student.

(3) Brainstorm activities in each style that will help students focus their attention on particular aspects of the task and develop the skills they need to succeed at the task.

- Quadrant One – Possible Mastery Activities (How will accuracy and recall help students succeed?)

- Quadrant Two – Possible Interpersonal Activities (How will personal feelings and experiences help students succeed?)

- Quadrant Three – Possible Understanding Activities (How will reasoning and analysis help students succeed?)

- Quadrant Four – Possible Self-Expressive Activities (How will

  imagination and divergent thinking help students succeed?). (Silver, et al.

  2011, p. 66)

Educators will require some pre-planning and student preparation prior to

initiating Task Rotations with their students such as ensuring students understand the

term "preferences" both "as a concept and as a vocabulary term" (Silver et al., 2011,

p. 52). This knowledge will assist students in understanding learning styles and how

differences benefit from a variety of strategies. As I explored this strategy, it began to

resonate as a viable strategy for educators to explore and use to support all learners and to

also draw less perceived 'negative' attention to students who benefit from very explicit

interventions. If all students have opportunities to work in their preferred style of

learning, students may also become greater advocates for their own learning.

Metacognition

Bender (2002) defines metacognition as "thinking about one's thinking" that

"may include a number of different components such as the following:

    (1) planning the steps necessary to complete a task;

    (2) ordering those steps into the correct sequence; and

    (3) monitoring one's progress on those steps" (p. 53).

Some examples of metacognitive techniques that Bender (2002) highlights

include scaffolded instruction, advance organizers, graphic organizers, and study guides.

Each of these techniques include a variety of strategies, providing choice for educators

based on type of activity and determined students' needs. For example, "In reciprocal

teaching, students are supported by the teacher initially" and "the teacher and the students take turns as instructional leader" (Bender, 2002, p. 70).

Harwell (2001) expands the definition of metacognition by stating that "It is an active process whereby the individual examines information and makes a decision regarding the best way to learn it" (p. 21). She also goes on to say that "Since metacognition requires an ability to think abstractly, strategies requiring metacognition are best taught after the age of seven" (p. 21). This is primarily due to the fact that prior to age seven, "they think concretely, rather than abstractly" (Harwell, 2001, p. 21). The following were emphasized by Harwell (2001) as valuable metacognitive strategies:

- **Think-alouds** – which can be used during reading sessions in all core subjects. (p. 22)

- **Note-taking** – this can range from basic copying tasks through to more complex such as making notes during research tasks. (p. 22)

- **Acronym strategy** – assists with "learning how to learn." (p. 23)

- **Verbal self-mediation or "self-talk"** – this is an organizational strategy that "involves 'talking to yourself' about the steps you need to go through to get something done." (p. 23)

- **Mnemonics** – "assists in memorizing new vocabulary and facts." (p. 23)

- **Mapping and Graphic Organizers** – these are visual methods for organizing information and can be used before, during, and after reading. (p. 23)

  - Story Maps – easily modified according to grade and ability. (p. 23)

  - Word Maps or Webs – brainstorming activities. (p. 24)

  - K-W-L Charts. (p. 24)

- Main Idea and Supporting Details and Summary Charts – "useful when reading nonfiction and content area curriculum." (p. 24)

- Making Inferences graphic organizers – "useful when reading fiction." (p. 24)

- Timelines and Sequence Charts – useful across content areas. (p. 24)

- Venn Diagrams – compare & contrast – also useful across content areas. (p. 24)

- Note-Taking graphic organizers – useful "when students are reading information that is difficult for them to retain." (p. 24)

McAndrews (2008) states that "Metacognitive awareness involves self-questioning and has to be built into all literacy instruction" (p. 126). Gunning (as cited in McAndrews 2008) expands on this point and suggests

> that instruction in metacognitive strategies must include the teacher modeling how he or she recalls prior knowledge, sets purposes for reading, decides on a reading strategy, carries out a strategy, monitors for meaning, takes corrective action, organizes information, and applies the knowledge gained from reading (p. 126).

Motivation

Motivation to read is also an important consideration when supporting students who are identified with learning difficulties as they often come to view themselves as incapable and may eventually begin to avoid any tasks related to reading. Since many of these students ultimately find reading challenging, "struggling readers should be supported within the context of a comprehensive reading program built around effective instruction on reading skills and strategies" (Roberts et al., 2008, p. 68). This statement

speaks volumes and really reinforces the importance of all teachers viewing themselves as teachers of reading and literacy. Roberts et al. (2008) credit Guthrie and Humenick (2004) with the identification of "four features that are critical to increasing and maintaining students' motivation to read: (1) providing interesting content goals for reading, (2) supporting student autonomy, (3) providing interesting texts, and (4) increasing social interactions among students related to reading" (pp. 67-68).

Kaufman and Wandberg (2010) highlighted the fact that "appropriately applied assistive technology and universal design for learning can engage learners" (p. 131) and also identified several factors to "increase student motivation and support effort" (p. 131). These factors include the following:

- providing choice;

- building authenticity;

- ensuring relevance;

- establishing goals;

- understanding and valuing the objective;

- using specific feedback that promotes mastery;

- varying the levels of challenge;

- designing opportunities for collaboration and communication;

- scaffolding reinforcement and coping strategies; and

- encouraging self-assessment and personal reflections. (p. 131)

Now that we have a firm foundation and clearer understanding of learning disabilities, my next step is to determine appropriate strategies based on identified needs. The next section provides essential background information on choosing instructional

strategies and includes key points related to self-regulation. This is an area that many students benefit from receiving explicit instruction since our ultimate goal is to develop learners that are able to problem solve, become less reliant on others to achieve success, and to realize when they need to seek clarification to ensure understanding. Unfortunately, many students who experience academic difficulties often do not recognize when the task does not make sense or how to address this if they do realize that their attempts are not being met with success.

Strategies Overview

Educators often find it a daunting task when determining which strategy or strategies to implement based on the variety of tasks and needs present on a daily basis. To make the decision more manageable, we need to determine which ones are most important and/or useful for the learner. Reid and Lienemann (2006) provide some guidance in this area. These authors highlighted key points identified by Alexander, Graham, and Harris (1998) indicating that strategies should be "facilitative and essential," and "willful and effortful" (p. 17), meaning that the chosen strategy needs to support the learner and the learner will also need to "make a conscious decision to use a strategy, and must commit time and mental effort to do so" (p. 17). They go on to state "that strategies and task requirements are linked" and "must be matched to an appropriate task" (p. 17).

In addition, Reid and Lienemann (2006) emphasize that educators also need to be aware that in order for strategy use to be effective, they need to

work with students until they are able to:

- Know where to use a strategy and why it should be used.

- Monitor the strategy to check whether it is effective.

- Shield themselves from maladaptive thoughts that could impair performance.

- Develop the strong belief that strategy use makes them better thinkers.

- Use a strategy fluently to the point where it becomes automatic. (p. 29)

Bender (2005) reiterates the importance of effective strategy instruction and sustainable use of strategies by stating that "the strategy to be learned is practiced repeatedly each day, until the strategy itself is memorized and therefore available for immediate use by the student" (p. 97). Although Bender's (2005) emphasis is on differentiating for math instruction, the following point that teachers should "aim for wide application and generalization to other problems" (p. 98) can potentially be applied to all strategy use.

Self-regulation skills are important to the success of strategy instruction since "Students also need active self-regulation to help both with cognitive processes such as comprehension monitoring and to maintain effort" (Reid & Lienemann, 2006, p. 29).

These authors present a model they use that is based on thorough research and connects to the above points. The Self-Regulated Strategy Development Model, from the *Strategy Instruction for Students with Learning Disabilities* (Reid & Lienemann, 2006) include six stages and practical considerations and tips:

Stage 1: Developing and Activating Background Knowledge

- Students require mastery of prerequisite skills for effective strategy use.

- Essential tasks at this stage

  - define the skills required to perform a strategy;

- assess the student's knowledge and/or ability to perform the skills; and

- address any areas of deficit that may negatively impact the

  implementation of the chosen strategy – could be as basic as providing

  alphabet strips or math charts. (p. 34)

Stage 2: Discussing the Strategy

- Teachers will most likely have to "*sell*" the strategy and get students to

  "*buy in*" – as "students need to believe that the strategy they are learning

  will help them perform better."

- Teachers should describe and demonstrate "the benefits of using the

  strategy."

- Finally, present each step of the strategy – ensuring the student is aware of

  "what each step of the strategy is for, how it is used, and where it is

  useful."

- Caveat – need to closely monitor and be open to student feedback as this

  will also guide the process and assist in determining the appropriateness of

  the strategy. (pp. 35-37)

Stage 3: Modelling the Strategy

- This is probably the most essential element "because modeling is the

  means to provide students with the metacognitive knowledge of strategy

  performance" (p. 37).

- Using a "think-aloud" process that incorporates the use of a

  "metacognitive task breakdown" to assist the teacher with providing

sufficient details to ensure the learner gets a clear understanding of the
'how' and the 'why' of the steps of the task. (pp. 37-38)

Stage 4: Memorizing the Strategy

- The goal is for students to quickly and easily remember the steps of the
  strategy and use them automatically. (p. 40)

  - Reminder – since students with learning disabilities often struggle
    with working memory, they may require additional practice to ensure
    greater recall. This can be accomplished through a game setting such
    as "round-robin" or "around the world" activities connected to a
    specific topic or skill.

- Students must memorize the strategy steps which means they "need to
  know and understand what is involved with each step of the process."
  (p. 40)

Step 5: Supporting the Strategy

- At this point, it is essential for teacher and student to work together,
  including guided practice, with the targeted goal of appropriate and
  independent use of the strategy.

- Support can be provided through scaffolded instruction such as content
  scaffolding, task scaffolding, material scaffolding, and use of cooperative
  groups or peers.

- NOTE: this stage will require the most time and concerted effort to ensure
  success. (pp. 40-42)

Stage 6: Independent Performance

- Teacher's main task is ongoing monitoring of student performance as well as proper and consistent strategy use.

- Students may adjust the strategy to meet their needs as long as they are able perform the task with a high degree of success.

- NOTE: adjustments in the form of reteaching the strategy or choosing a different strategy may be required if the student is not achieving or sustaining a high level of performance. (p. 42)

Practical Considerations and Tips for Strategy Instruction

- "Begin with a relatively simple strategy in an area where the student(s) are comfortable and can reasonably anticipate success" (p. 47). This provides a two-fold support system as teachers can become more familiar with the strategy process and students will not become overwhelmed and less interested in attempting the process.

- Emphasis should be placed on limiting the number of strategies to be used. It is more important to spend time focusing in-depth on one or two strategies to ensure higher level of mastery as this provides students with an opportunity to "develop a deeper understanding of the strategy and a realization of how strategy use can improve performance."

- Allow for students and/or small groups to proceed at their own pace – extremely important for mastery attainment at each stage prior to proceeding to the next.

- Need to use the strategy correctly and consistently and develop the metacognitive knowledge of "why" and "how" before they have truly mastered the strategy.

- Frequent repetition with practicing the steps of the strategy.

- "Teachers should continually remind students of opportunities to use a strategy, expose them to modeling and examples of how the strategy can be used, prompt strategy generalization, and encourage verbalization and sharing of strategy use" (p. 46).

- Sharing the results of the strategy use with other teachers connected with the student(s) – provides an opportunity for further use and provides the student(s) with an understanding that the strategy is not necessarily connected solely to one area of study – ability to transfer skill to new situations. (pp. 45-47)

In addition to the above, emphasis can be placed on universal strategies to support all learners. These can range from basic to more complex and/or visible supports such as fidgets (e.g., stress pucks/grips), pencil grips, visuals (e.g., charts, daily schedules), coloured overlays, near-point stimulus (e.g., sticky note on desk, mini white board), incline/slant boards, bungee cords, movement/wiggle seats, pacing strips, back rests, stand-up tables, and specific programs such as SuperFlex (cognitive behavioural curriculum for grades 3-5) that assists with developing better self-regulation. Kaufman and Wandberg (2010) also suggest that

assistive technology, including universally designed products and software, can be selected to support multiple:

- methods of responding;

- options to navigate;

- media for communication;

- tools for completing written responses;

- models of problem solving, goal setting, planning, and strategizing;

- opportunities to manage information and resources;

- methods of assessment; and

- means of monitoring progress. (p. 130)

Key Information to Guide Interventions

The following information is included to provide key information when navigating the areas most often identified by a student diagnosed with a learning disability or difficulty such as a speech/language delay. I have organized the information based on my research, keeping in mind that my goal was to support teachers and others who might find this resource helpful when working with children who struggle.

The following disabilities have been important in my practice working with students and teachers and will be discussed in further detail, including a definition or description, key characteristics of each highlighted disability/disorder, and possible strategies to support learning. This is not an exhaustive list and the areas included are not necessarily placed in order of importance or frequency of diagnosis. The highlighted disabilities/disorders are:

- phonological processing;

- expressive language processing/verbal expression;

- receptive language processing;

- visual processing;

- auditory processing;

- reading (alphabet, word recognition, decoding, spelling, comprehension, and fluency);

- listening comprehension;

- vocabulary;

- written expression;

- mathematical reasoning (basic facts, computation, problem solving);

- memory; and

- motor control (fine and gross motor skills).

Phonological Processing Disorder

According to the Elementary Teachers' Federation of Ontario (2014), "Phonological processing is an auditory processing skill" and "it relates to words, but occurs in the absence of print" (Webcast). Retrieved from

http://www.etfo.ca/Multimedia/Webcasts/SpecialEducation/Pages/Phonological%20Processing.aspx

Harwell (2001) indicates that "phonologically-based reading disabilities are characterized by difficulties acquiring alphabetic or phonetic reading strategies" (p. 35). This author goes on to state that "children who have difficulty learning to read tend to be slow to grasp the concept that letters have sounds and slow to encode those sounds" (p. 35). The Elementary Teachers' Federation of Ontario (2014) breaks down the difficulties into the following three categories:

(1) Speech Production Errors – "omitting a sound or sounds in spoken words; speaking in an inconsistent speech pattern; mispronouncing frequently-occurring words; making articulation errors in speech; and have difficulty in producing rhyming words" (Para. 4).

(2) Auditory Perception Errors – "misperceiving a word to be a similar-sounding word to that which was spoken" (Para. 5).

(3) Reading and Written Language Problems – "learning pre-literacy skills; sounding out words as they read; substituting words with the same initial letter when reading; using inventive spelling beyond the early primary grades; and omitting vowels when spelling words" (Para. 6).

As stated in *Supporting Students with Learning Disabilities: A Guide for Teachers* (Ministry of Education British Columbia, September, 2011), strategies to support learning are:

- Provide ongoing explicit practice with building words that have the same 'word family' patterns such as /at/.

- Practice with rhyming words using Nursery Rhymes and simple poems.

- Help student learn how to identify beginning, middle, and end sounds by focusing on root words, prefixes, and suffixes.

- Explicit instruction with adding a beginning sound to make blends.

- Breaking words into sound-parts including a physical action such as holding hand under chin to 'feel' the syllable break.

- Provide explicit instruction and practice with "stretching out" words.

- Reduce and/or eliminate extraneous noise if possible, especially when introducing new sounds or during practice sessions.

- Visual cues such as anchor charts, actions, vocabulary pictures, mini desk charts, and near-point stimulus.

- Word walls with visuals for similar sounding words.

- Personal dictionary to assist with written work. (pp. 60 and 165)

Combs (2012) suggests phonological and phonemic awareness activities:

- Focus on rhyme.

  - Frequent repetition of songs and poems (e.g. Draw-a-Rhyme).

  - Use rhyming books such as Dr. Seuss.

- Focus on syllable units.

  - Clap the number of units.

  - Student uses blocks/cubes to snap together as teacher says the word in syllable chunks.

- Focus on onset (initial consonant(s) and rime (remainder of word) /cl/ /ap/.

- Elkonin boxes strategy.

  - Letters are placed in separate cells according to sounds e.g. the word, 'sheep' has five letters but only three sounds /sh/ee/p/.

  - Boxes can also be sized according to the shape of the letter to provide more visual cues. (pp. 35-36)

Expressive Language Processing/Verbal Expression Difficulty

A verbal expression or expressive language processing difficulty is generally characterized with being "unable to either understand directions and information that is

spoken or to verbally communicate their knowledge, thoughts, and feelings" (Guerin & Male, 2006, p. 42). Also, according to *Supporting Students with Learning Disabilities: A Guide for Teachers,* (Ministry of Education British Columbia, September, 2011), students "may understand what is being said, or what they read, but have difficulty making the connection between their ideas and the words to express them" (p. 71).

As noted in *Addressing Learning Disabilities and Difficulties: How to Reach and Teach Every Student* (Guerin & Male, 2006) difficulties often/usually present as:

- Less willing to volunteer or participate in class discussions.

- Difficulty interacting with peers; may be shy with both peers and adults.

- Struggling to answer questions in a timely manner that are presented orally.

- Providing answers with minimal details.

- Struggling to provide clear and coherent responses, including difficulties with fluency and sentence structure.

- Finding or using the appropriate word - often conveyed through repeating and/or substituting words, or extended time required to determine the appropriate word. (p. 43)

As identified in *Supporting Students with Learning Disabilities: A Guide for Teachers* (Ministry of Education British Columbia, September, 2011), strategies to support learning are:

- Model the 'think aloud' process and draw student's attention to key points.

- Provide additional grammar support through modeling (conversations and answering questions).

- Pair oral instructions with visual and tactile input.

- Use learning strategies such as KWL, Think-Pair-Share.

- Provide opportunities to explore graphic organizers and include a variety of applications.

- Ensure students have opportunities to "play" with new vocabulary to enhance understanding such as Vocabulary Fold-ables and Riddles.

- Encourage students to listen for new words during classroom discussions, read-a-louds, and vocabulary building activities.

- Provide real life examples of verbal concepts. (p. 166)

Receptive Language Processing Disorder

According to Alberta Education's Inclusive Education Library for Classroom Teachers resource (n.d.), "receptive language is the comprehension of spoken language" and "students with a receptive language disorder have difficulty understanding and processing what is said to them" (Medical Conditions and Disabilities Information section, p. 88). This type of disorder impacts communication, academics, and social interactions with comprehension being one of the key areas most affected. Understanding what is being said, discussed, and ultimately what one reads, makes up a substantial part of a learner's day.

As presented in *Supporting Students with Learning Disabilities: A Guide for Teachers* (Ministry of Education British Columbia, September, 2011, p. 167) and Alberta Education's Inclusive Education Library for Classroom Teachers resource (n.d.) (Medical Conditions and Disabilities Information section, p. 88), difficulties often/usually present as:

- Difficulty in understanding oral, visual, and/or written information.

- Experience difficulty following verbal directions – often need directions repeated or require additional explanation.

- Appear to have poor listening skills or limited comprehension.

- May experience difficulty during conversations/verbal interactions – including what is being said, understanding the words, and being able to respond appropriately.

- Difficulty with abstract language.

- May struggle when answering questions.

- Can have difficulty organizing their thoughts – verbally and written.

- Difficulty with proper pronunciation and/or differentiating between sounds.

- Require additional processing time.

- May parrot words or phrases.

- Can appear confused or forgetful, especially with more complex language/sentences.

As stated in *Supporting Students with Learning Disabilities: A Guide for Teachers* (Ministry of Education British Columbia, September, 2011, p. 167) and *Teaching Students with Reading Difficulties: A Guide for Teachers* (Saskatchewan Learning, 2004, p. 70), strategies to support learning are:

- Have student repeat back directions – limit number of directions at any given time.

- 'Chunk' information.

- Pair verbal information with visual cues.

- Engage student in active listening through modeling and practice.

- Teach specific skills such as organization and how to read a variety of texts such as fiction, non-fiction, poetry, headings, and Math/Science/Social Studies texts.

- To ensure greater comprehension, provide opportunities to activate prior knowledge, pre-teach vocabulary, ongoing discussions, drawing their attention to key details, use of visuals to support more abstract concepts, etcetera.

- Use a variety of graphic organizers and teach students how to choose one that will help them to demonstrate their understanding.

- Partner students to provide opportunities to check directions and instructions and/or opportunities for peer tutoring.

Visual Processing Disorder

McAndrews (2008) points out that this disorder "involves the ability to process visual information, such as the identification and discrimination of letters and words, spatial awareness, and visual memory" (p. 3). The difficulties often/usually present as:

- Have difficulty recognizing the position and shape of what they see.

- Letters may seem reversed or rotated.

- These students may skip words, read the same line twice, or skip lines. (p. 3)

Harwell (2001) also highlights that students may present with an inability to copy accurately, have poor letter formation, and may find the task of printing/handwriting laborious. Strategies to support learning are:

- Provide concrete materials to support identification and formation of letters such as "Handwriting Without Tears," "Wiki sticks," and magnetic letters.

- Use a "window frame" or "coloured sentence strip" while reading and teach how "track" as they're reading.

- Teach specific strategies such as using the word 'bed' to assist with letter confusion/reversals.

- Teach handwriting and provide guided practice to support students who continue to struggle with spacing/word boundaries and reversals. (pp. 163-165)

Auditory Processing Disorder

Individuals diagnosed with this disorder "may have difficulties with auditory discrimination (distinguishing between similar sounds and words), auditory figure-ground (distinguishing between relevant speech and background sounds), or auditory memory (recalling what words were heard)" (McAndrews, 2008, p, 3). As noted by Smith et al. (2012) difficulties often/usually present as:

- Confuse similar sounding words.

- Be bothered by classroom noise or not pick up on key points in conversation or understanding directions.

- Difficulty decoding letters, sound blending, spelling.

- May appear to 'mishear' resulting in substitutions of similar-sounding words (p. 226).

Courter (2011) in *Here's How Children Learn Speech and Language: A Text on Different Learning Strategies*, identifies the following strategies to support learning**:**

- Use visualization to assist with recall.

- Retell familiar and less familiar stories by looking at pictures.

- Use songs and finger plays, especially for young learners, to support and increase auditory short-term memory such as "Wheels on the Bus," "Old MacDonald," "Five Little Ducks".

- Use games like "Simon Says."

- Use creative word play such as word games and puzzles. (pp. 48-50)

Reading Disorder

A student identified with a reading disorder often presents with difficulties that involve the alphabet, word recognition, decoding, comprehension, fluency, and/or spelling. Saskatchewan Learning (2004) emphasizes that "students who are at risk for reading failure require direct teaching through a systematic format" (p. 35).

(a) Alphabet Difficulties

Alphabet difficulties often/usually present as:

- Confusion between letters such as saying *b* for *d* or vice versa.

- May be able to recite the alphabet but not able to identify/name letters when not in sequence.

- May experience difficulties when attempting to print the letters of the alphabet.

Strategies to support learning for alphabet difficulties are:

- Display an anchor ABC chart with clear visuals to support learning of letters and sounds – possibly provide an individual desk copy for students who require more frequent exposure.

- Provide lots of practice with sorting letters in a variety of ways. For example, sort by uppercase/lowercase, shapes or features such as curvy letters and letters with sticks.

- Include multi-sensory learning – use a variety of textures for students to practice forming the letters (e.g. play dough, Wiki sticks, sand, shaving cream).

- To review letters, provide opportunities for students to become "alphabet detectives" with the objective of locating a specific letter or group of letters within a paragraph or mini booklet or various locations throughout classroom/school setting.

- Exploration of Alphabet books – selection should include familiar items and not include words that begin with blends (e.g. using a picture of *children* for the letter '*c*').

- Johnson and Keier (2010) caution that "Doing letter/sound work *only* in isolation, with no links to reading and books, will not accelerate the literacy development of struggling readers" (p. 119).

(b) Word Recognition Difficulties

Word recognition difficulties often/usually present as:

- May confuse the concept of word and letter.

- May simply "guess" and say a known word that begins with the same letter.

- Difficulty recognizing patterns such as Word Families.

- May present with limited automaticity during reading and there may be confusion with directionality of print/text.

Dorn and Soffos (2012), identified three key principles for teachers to explicitly teach to support word learning:

(1) Always work left to right when teaching, building, writing or checking a word. It will enable children to look across the letters in sequence.

(2) Use language so children understand you are talking about a word and not a letter. For example, run your finger under the word, left to right, as you say the word.

(3) Words must be encountered in different contexts (word study, and reading and in writing) many times before they are known. (pp. 91-93)

Other strategies include:

- Matching activities.

- Illustrating text (pre-drawn or student-drawn).

- Cloze activities with possible words provided in a text box.

- Using magnetic letters to build known words.

- Direct instruction in word meaning.

(c) Decoding Difficulties

According to *Supporting Students with Learning Disabilities: A Guide for Teachers,* (Ministry of Education British Columbia, September, 2011), decoding is defined as "the process of using one's knowledge of letters, sounds and word patterns to determine an unknown word" (p. 54). Decoding difficulties often/usually present as:

- May have a limited sight word vocabulary and continually attempt to "sound out" sight words.

- May add or omit letters.

- Difficulty identifying differences with similar speech sounds.

- Unable to blend sounds – may attempt to decode each letter separately.

- May not understand how to use letters, sounds, or word patterns to try to figure out unknown words. (p. 147)

Strategies to support learning of decoding difficulties are:

- Teach letter/sound relationships.

- Explicitly teach students how to 'chunk' words.

- Model how to skip words or make a logical guess.

- Explicitly teach phonemic awareness skills and word families.

- Include ample opportunities to practice – including application of skills taught.

- Provide a variety of reading support such as peers, technology (text to sound software), and audio books.

- Explicitly teach prefixes, suffixes, and root words. (p. 55)

(d) Reading Comprehension Difficulties

McAndrews (2008) credits Gunning (2007) with the identification of several factors essential for accurate comprehension. These factors include "adequate background knowledge; understanding of important concepts, vocabulary, and organizational structures and features; effective use of monitoring strategies; basic decoding skills and fluency; motivation and the ability to concentrate; and well-developed thinking and language skills" (p. 135). Reading comprehension difficulties often/usually present as:

- Children who experience delays with their expressive and/or receptive language skills often experience difficulties with comprehension. They may also present with a slower processing speed.

- Limited background knowledge.

- May be able to decode but not comprehend the text.

- Limited sight word knowledge.

- May reverse letters (e.g. *b* for *d*) or reverse word (read word backwards).

- Difficulties with predicting and being able to inference.

- Student may not be able to pinpoint why the text does not make sense or may not even notice that errors are changing the meaning of the text.

Strategies to support learning of reading comprehension difficulties are:

- Teach students how to monitor and be aware of their understanding as they read. This can begin with sentences—stopping at the end of a sentence and asking themselves if what they just read makes sense. As they become more proficient readers, the focus would change to stopping at the end of each paragraph to ensure understanding. Students would also need to be taught specific strategies to address difficulties.

- Activate prior knowledge.

- Include scaffolded instruction.

- Use of graphic organizers for visual representation.

- Visual organizers to support comprehension of words with multiple meanings such as charts to demonstrate word parts. For example, a celled chart with /bi/, /tri/, and /uni/ down the left-hand side and the word 'cycle' located at the top

as a heading. Discussion would include the meaning of each prefix. (Richards, 2008)

- Use of post-it notes for students during independent reading to record less familiar vocabulary for further exploration.

- When possible, provide hands-on experiences such as field trips or experiments – essential for more abstract concepts.

- Help build connections throughout each reading session.

- Emphasize visual cues/picture exploration and also teach how to "visualize" or make pictures in their minds to aid comprehension.

- Ask 'wh-'questions (who, what, when, where, why) and teach student how to "reread" by scanning paragraphs or page(s) for specific details to answer comprehension questions or clarify meaning.

- Have student retell story – focusing on beginning, middle, and end.

- Use leveled readers/stories to ensure appropriate level of vocabulary and content.

- Provide explicit instruction with a variety of genres.

- Preteach vocabulary.

- Teach predicting, monitoring, visualizing, inferring, and summarizing strategies – these should be based on level of reading acquisition – emergent readers will require additional modeling and guidance and will not be ready for the higher level skills.

- Use key questions to guide comprehension and teach students how to question as they read to clarify their understanding.

- Provide guided practice to assist with understanding non-fictional text, especially when using a science or social studies textbook. For example, draw attention to table of contents, headings, sub-heading, captions, text boxes, index, glossary, and italicized words.

- Break reading assignments/tasks into smaller chunks – this is especially useful when students are expected to read material from a textbook. Science and social studies textbooks are often written at a level approximately two years above the current grade level. As such, material should be presented over several periods, focusing on key points each time and providing essential vocabulary prior to reading. The focus of the initial reading can be on the title, main headings, and possibly the first sentence or two under each main heading. The second reading can involve reading text boxes or captions.

- Include read - aloud opportunities as many struggling readers generally understand oral text more easily since they are focusing more on the meaning than on the act of decoding. According to McAndrews (2008), "It is important for students to be able to hear, discuss, and comprehend text at and above their reading or word accuracy level to develop reading comprehension and a love of literature" (p. 195).

- Klassen (UBC, n.d.), highlights an instructional strategy involving questions identified by "On-the-line (factual), Between-the-line (students infer or figure out information provided by clues in the test and/or by making connections to their own personal knowledge and experiences), and Beyond-the-line

(questions challenge students to apply ideas from one situation to another)"
(p. 6).

- Use mnemonics such as TELLS to "preview the structure of stories, either
  fiction or non-fiction." There are five steps in the TELLS mnemonic:

  - **T** stands for Title: look for clues about the story;

  - **E** stands for Examine: examine the story for picture or word clues to assist
    with understanding;

  - **L** stands for Look: look at important words or pictures;

  - **L** stands for Look up: look up hard or unfamiliar words; and

  - **S** stands for Setting: identify where and when the story occurred.
    (Richards, 2008)

- Teach paraphrasing strategies, such as RAP:

  - **R**ead the paragraph.

  - **A**sk yourself what you just read – focus on main idea and two supporting
    details.

  - **P**lace main idea and two ideas into your own words. (Alberta Learning,
    2002, p. 100)

- Johnson and Keier (2010) emphasize the benefits of "interactive read-aloud
  time" as it provides opportunities "for having students actively involved in
  talking and reading about texts" (p. 103). This technique enhances
  comprehension and also provides the added benefit of supporting students
  who are learning English in addition to those who may be struggling. Johnson

and Keier (2010) believe this "provides a strong language model" (p. 103) for students learning English.

- Many of the strategies noted will require initial modeling and practice to ensure that students understand how and when to use them to support their learning.

(e) Fluency Difficulties

The authors of *Supporting Students with Learning Disabilities: A Guide for Teachers,* (Ministry of Education British Columbia, September, 2011) point out that "students who have limited fluency read less text than their peers and are less likely to remember, review and comprehend text or to integrate information with their own prior knowledge" (p. 57).

As stated in *Here's How Children Learn Speech and Language: A Text on Different Learning Strategies* (Courter, 2011, pp. 80-81) and *Graphic organizers and their effects on reading comprehension of students with learning disabilities: A synthesis of research.* (Kim, Vaughn, Wanzek, & Wei, 2004, pp. 105-118), fluency difficulties often/usually present as:

- Reading word by word with limited phrasing.

- Often disregard punctuation.

- Lack expression.

- May skip words or even complete sentences but not aware of these omissions.

- Speed appears laborious.

Strategies to support learning for fluency difficulties are:

- Provide a highlight strip or index card for tracking.

- Guided oral reading and 'echo' reading (reading along with proficient readers).

- Rereading of familiar stories to increase high frequency words and fluency.

- Repeated readings with instructional target words embedded.

- Use motivational and interesting activities during repeated readings to sustain interest.

- Encourage ongoing visualization.

- Paired /buddy reading with a fluent reader.

- Recorded readings.

- Choral reading/Readers' Theatre.

- Precision Reading sessions – includes the concept of repeated readings and is viewed by many researchers as one of the best fluency-building strategies.

- Read-alouds of big books and repeated readings of these selections.

- Teacher modelling of reading speed and reading with expression.

- Fluency instruction and practice most effective when combined with instruction on word-level reading skills and comprehension.

(f) Spelling (encoding) Difficulties

Spelling, as defined in *Supporting Students with Learning Disabilities: A Guide for Teachers* (Ministry of Education British Columbia, September, 2011), is "using one's knowledge of letters, sounds and word patterns in a verbal word to map (encode) those sounds onto a letter sequence in order to spell out a written word" (p. 73). They also go on to state that students that struggle with spelling may "have trouble

remembering and recalling the features of language that letters represent" (p. 73).

Spelling difficulties often/usually present as:

- Difficulty with recalling the beginning, middle, and ending sounds – may record last sound heard as the initial sound for the word.

- May add or omit letters.

- May misrepresent sounds – e.g. placing a /t/ to represent the suffix /ed/.

- Unable to break words into syllable parts to assist with distinguishing word parts.

Strategies to support learning for spelling difficulties are:

- Teach specific spelling skills to improve word spelling, fluency, and retrieval. The repetition/rehearsal strategy highlighted by Alberta Learning (2002) would be beneficial

  - **R**ead
  - **C**over
  - **R**ecite
  - **C**heck. (p. 100)

- Provide a variety of activities to practice spelling

  - Involving physical actions during practice may support some learners (e.g. placing hand according to letter shape – tall letters (hand goes above head), medial letters (hand at mid-section), and letters with hanging sticks (hand goes down towards leg).

- Word pyramids to provide repeated practice – top of pyramid is beginning letter, next line contains beginning letter plus next letter in sequence, and so on until complete word forms the base of the pyramid.

• Spelling and vocabulary building are intertwined since "word spellings and pronunciations support word reading, and the spelling also activates the word's meaning." (Vadasy & Nelson, 2012, p. 19)

• Research has shown that providing words with the goal of a weekly spelling test does not necessarily result in the words studied being retained in long-term memory. Instead, a focus on intensive vocabulary study of fewer words combined with spelling practice should produce longer retention.

• Provide opportunities to develop word processing skills so that students can access spell checkers during written assignments. Word recognition software such as RWG provide an excellent tool to further support students who struggle with spelling such as a visual dictionary. RWG software also includes tutorials for each aspect of the writing task.

• Blachowicz and Fisher (2004), emphasized the following research-based practices:

- Develop word awareness and love of words through word play – playing with words enables students to develop a metacognitive understanding of how words work. (p. 67)

- Deliver explicit, rich instruction to develop important vocabulary using the STAR model which stands for Select, Teach, Activate, and Revisit.

o   **S**elect – e.g. four to six words students would need to summarize a text.

o   **T**each – e.g. words that students may need before, during, and after reading.

o   **A**ctivate – e.g. reinforce student mastery of the selected words by connecting them to what students already know.

o   **R**evisit – e.g. review, games, writing, and word books. (p. 68)

- Build strategies for independence such as through learning word parts and supportive instruction on dictionary use. (p. 68)

- Engage students actively with a wide range of books including book clubs, guided reading, independent reading, and library time. Also include opportunities for reading aloud that involve discussions and student interaction with the text. (p. 69)

Listening Comprehension Disorder

Guerin and Male (2006) identify a listening comprehension disorder as generally being characterized by difficulties with "processing, attending to, or understanding verbally presented instruction" and "this sometimes presents as the student appearing to be inattentive when, in essence, is struggling to remain focused on a lengthy, verbally presented lesson or is struggling to fully comprehend what has been said" (p. 16).

As highlighted in *Addressing Learning Disabilities and Difficulties: How To Reach and Teach Every Student* (Guerin & Male, 2006), the difficulties often/usually present as:

• Appear to lose interest or become inattentive during oral presentations.

- Seem to daydream or become restless when listening is required.

- Have difficulty remembering things that are told to them.

- Have difficulty following spoken, sequenced directions.

- Ask the teacher or a classmate to repeat directions or facts just presented.

- Look to see what others are doing immediately after multistep directions have been given.

- Give answers that seem unrelated to the questions.

- Appear to be distracted easily by background noise.

- Appear unable to listen and to write notes simultaneously. (p. 17)

Strategies to support learning for listening comprehension are:

- Teach student to 'repeat back' instructions/directions.

- Chunk material into manageable units.

- Provide key visuals to guide discussion, completion of written task.

- Reduce and/or eliminate extraneous noise and distractions.

- Provide a simplified copy of notes containing essential information.

- Provide ample opportunities to practice listening skills.

- Provide peer support through "Think, Pair, Share" activities. (p. 18)

Vocabulary Difficulties/Disorders

An important observation put forth from vocabulary research is that "students identified with learning disabilities need interventions that accelerate their acquisition of new vocabulary and provide enough depth of knowledge about words so their meanings can be easily accessed in multiple contexts while reading" (Roberts et al., 2008, p. 66). It is also important to note "that word learning is an incremental process – and often more

extended and intensive for students with language and learning difficulties" (Vadasy & Nelson, 2012, p. 7). Blachowicz, Fisher, Ogle, and Watts-Taffe (2006) identified research that emphasized "that a gap in vocabulary development between economically disadvantaged and economically advantaged children begins in preschool and persists throughout the school years" (p. 526).

In addition, Vadasy and Nelson (2012) stated that "students must be able to understand at least 95% of the words in a text to comprehend it" (p. 87). These authors further indicated that "students at risk for reading problems, with learning difficulties, and from diverse language backgrounds are most likely to experience gaps in word knowledge" (p. 87). Difficulties often/usually present as:

- May be a result of delays with oral language and phonological development.

- Limited exposure to varied or rich vocabulary and personal experiences.

- Limited vocabulary knowledge which affects reading comprehension.

- Undeveloped or partial metacognitive understanding of how words work.

Strategies to support learning for vocabulary difficulties are:

- Specific vocabulary instruction is essential for reading comprehension.

- Instruction that focuses on words that are useful to know and will most likely be encountered across a variety of settings will probably have the greatest impact.

- Teach students how to use words in context to gain meaning.

- Explicit teaching and practice of spelling rules such as knowing the rule for adding a prefix or suffix to a word. (Vadasy & Nelson, 2012, p. 23)

- Scaffolded instruction for students to practice using the word(s) correctly. (Vadasy & Nelson, 2012, p. 25)

- Repeat exposure is essential – "It often takes up to 12 separate encounters with a word (speaking, reading, writing, or hearing it) to learn it well and be able to use it." (Vadasy & Nelson, 2012, p. 87)

- Provide opportunities for word play and spelling activities.

- Subject specific vocabulary – e.g. Science and Social Studies – provide direct instruction paired with simple definitions, examples & non-examples, and include the use of semantic maps. (Kim et al., 2004)

- To support students who struggle with finding specific words to convey meaning, teach new vocabulary appropriate to the writing situation.

- Teach brainstorming or prewriting skills and strategies.

- Use flexible grouping strategies so that students can work on key skills in small groups – e.g. beginning writers, ELL students learning new concepts, etcetera.

- Teach dictionary skills such as drawing their attention to the 'Guide' words and taking time to explore the various definitions provided. Students will require direct teaching of how to identify the meaning that best defines the word from their text, how to understand the word origins, and how to read the pronunciation guides. It is important to note that when selecting a dictionary for student use that care is taken to choose one with "learner-friendly definitions." (Vadasy & Nelson, 2012, p. 96)

- Directly assist students when they use a dictionary, glossary or thesaurus because many words have the same spelling or multiple meanings. (Canadian Language and Literacy Research Network, n.d. p. 54)

- Employ the use of graphic organizers to explore the multiple relationships between words. For example, word webs can be used to demonstrate how a key word is related to several other groups of words or Venn diagrams to compare similar concepts. Computer software such as Inspiration or Kidspiration provide excellent visuals for students and also allows them the opportunity to include pictures of key words to help place the new vocabulary into long term memory.

Written Expression Disorder

According to Saskatchewan Learning (2004) "Individuals with a written expression disorder have significant difficulties in using writing to communicate meaning" (p. 12). It has also been noted that students may not be formally diagnosed until the later years of elementary school as writing skills vary in acquisition and mastery.

As stated in *Addressing Learning Disabilities and Difficulties: How to Reach and Teach Every Student* (Guerin & Male, 2006), written expression difficulties often/usually present as:

- May write very slowly with illegible printing.

- Will often refuse to write or do work that involves writing.

- Letters may be out of order or even leave out words or letters.

- Difficulty remaining on the line or within margins.

- May focus more on the mechanics of writing instead of organization.

- Basic written vocabulary compared to more sophisticated verbal vocabulary.

- Limited knowledge with punctuation, capitalization, paragraph organization, lack general cohesiveness with ideas.

- Typically write incomplete or run-on sentences, often with misspelled words.

- May not refer back to brainstorming or mapping activities or may not use these strategies effectively.

- Often unable to follow a writing strategy, even when model is supplied

- Finished product is often disorganized or does not follow a logical sequence. (pp. 49-51)

As specified in *Strategy Instruction for Students with Learning Disabilities* (Reid & Lienemann, 2006); and Verdi and Polirstock *(*2011), strategies to support learning for written expression difficulties are:

- Scaffolding writing activities, including providing models to support writing such as Story Maps, and revision tools (e.g. **COPS** – capitalization, overall appearance, punctuation, and spelling).

- Use mnemonics to teach key strategies such as **POW** – pick my idea, organize my notes using TREE, and write/ say more; **TREE** – topic sentence, reasons (three or more), examples, and ending (Reid & Lienemann, 2006, p. 141).

- Provide opportunities for active participation in the writing process and guide their understanding of the elements of writing (planning, writing, and revising).

- Provide opportunities for work to be scribed, thus allowing the student to focus more on content, rather than the mechanics of their work.

- Emphasis on noting key concepts and explore/locate vocabulary connected to the topic.

- Provide paper with raised lines or use highlighter to identify letter placement on the line.

- Active use of Word Wall.

- Use organizational maps (i.e. compare/contrast, sorting/classifying, story sequences) and summary grids to respond to text.

- Provide opportunities for students to demonstrate their learning or understanding of a particular concept through visual form such as diagrams, graphs, or maps.

- Making Pictures "encourages students to use imagery and drawings to help them plan, write, and edit their stories" (Verdi & Polirstock, 2011, p. 237).

Mathematical Reasoning Disorder

A mathematical reasoning disorder is generally characterized by difficulties with basic facts, math problem solving, and computation skills which may be further hampered with language and/or memory difficulties. In addition, students struggling in any of these areas may use inappropriate or less developed strategies when attempting to complete mathematical tasks. (Reid & Lienemann, 2006, p. 169)

Alberta Education (2010) points out that "students with difficulties in mathematics will achieve greater mastery by focusing on quality (versus quantity) and working with key concepts for longer periods of time" (Chapter 12, Mathematics, p. 218).

a) Basic Facts Difficulties

Basic facts difficulties often/usually present as:

- May experience difficulty learning and recalling the basic facts.

- May struggle with number sense.

- Difficulty with recognizing patterns.

Strategies to support learning for basic facts difficulties are:

- Include games (card games, board games, computer games) that foster fluency of basic facts – e.g. 'Round the World', 'War', etcetera.

- When teaching multiplication facts, teach from easiest to more difficult (e.g., One Times Table, Two Times Table, Five Times Table, and then teach doubles. (Bender, 2005, p. 84)

- Teach specific techniques to assist with memorization of facts such as the Nine Times Table finger method. For example, to multiply 9 x 8, hold your eighth finger down and count "seven" (five fingers on left hand and first two on right hand), plus the remaining two (ninth and tenth fingers). Another example for the Nine Times Table involves adding the answer's digits together, you get "nine". E.g. 9 x 5 = 45 and 4 + 5 = 9. The only exception is 9 x 11.

- Use of chants and songs – there are several commercial versions available but students also enjoy creating their own raps.

b) Computation Skills Difficulties

Guerin and Male (2006) state that computation skills difficulties often/usually present

as:

- May struggle with number sense.

- Physical act of writing numbers and/or reversals with numbers – placement
  and spacing of numbers on the line.

- Have difficulties in memorizing and remembering basic facts, details, and
  procedures – will often count on fingers.

- Have difficulties when they are required to perform a sequence of
  computational steps.

- May struggle to copy accurately from the board or even from a book onto
  paper; tendency to lose their place when working on a full page of questions

- Have difficulties in recalling facts, details, and procedures that they appeared
  to have understood yesterday.

- Lack knowledge about mathematical language or terms. (pp. 28-29)

Strategies to support learning for computation skills difficulties are:

- Include base-ten instruction.

- Provide grid paper to assist with keeping numbers aligned.

- Provide a visual with required steps – keep steps to a minimum.

- When possible, provide a photocopy of text so student can highlight key areas.

- Provide a calculator and include explicit instruction of desired procedure.

- Limit number of questions.

- Include games that foster fluency of basic facts. (p. 30)

c) Math Problem Solving Difficulties

As noted in *Addressing Learning Disabilities and Difficulties: How to Reach and Teach Every Student* (Guerin & Male, 2006), difficulties in math problem solving often/usually present as:

- May struggle with number sense.

- Experience difficulty when attempting to read word problems as the language used in math problems is often quite challenging and difficult for the student to understand.

- Even if the student is able to choose the correct operation, they often struggle with taking appropriate information from the word problem and using the correct computational format.

- Most successful when understanding is based on concrete examples and/or using manipulatives – difficulties arise when problems are presented more symbolically or through written representation.

- Even though student may be successful with basic computation, often experience difficulty completing problems that require estimation and regrouping.

- May struggle with terms such as greater than and less than.

- Have difficulty in creating a problem or discussing problems with peers.

- Have difficulty in understanding proportions and relative size, especially in fractions and decimals.

- Have difficulty in understanding fractions.

- Difficulty understanding charts or graphs that include math data. (p. 31)

Strategies highlighted by Guerin and Male (2006) to support learning for math

problem solving difficulties are:

- Pre-teach vocabulary specific to concept being studied.

- Break word problems into smaller tasks/steps.

- Use real-life examples when working with fractions and decimals – increase
  use of visuals and manipulatives.

- Use classroom data to build graphs such as surveys – connect problems to
  "real" situations within the school setting.

- Explicitly teach how to read various graphs, charts, calendars – cross-
  curricular.

- Provide opportunities to role-play or "act out" problem prior to paper/pencil
  tasks – assists with identifying essential facts.

- Provide examples for students to reference – create a math dictionary with
  visuals and key terms.

- Display reference charts.

- Include ample guided practice while student is learning concept.

- Partner students and/or involve peer tutoring.

- Include computer games that connect to area of study and also for review.

- Explore a variety of methods to approach problems, including working
  backwards through the problem.

- Use "think-aloud" strategy to model and demonstrate how to solve a variety of
  problems. (pp. 33-34)

- Incorporate math games, incorporating dice, cards, coins, teaching clocks, etc. *Box Cars and One-Eyed Jacks* is an excellent resource.

- Bender (2005) encourages that "new concepts in math should be presented at three levels: concrete (e.g., manipulatives), pictorial or representational, and abstract." (p. 12)

Memory Disorder

A memory disorder is generally characterized by difficulties with working memory and short- and long-term memory. Everyone experiences lags in memory from time to time but at-risk students tend to require additional support in order to move their knowledge from short-term to long-term memory. Sprenger (2003) cites Hopper (2000) who identified four factors that affect memory and are significant to learning – interest, intent, understanding, and prior knowledge (p. 52). Tileston (2011) also stressed semantic memory which "holds the information that was learned from words, symbols, and abstractions" and "either has to be rehearsed a sufficient number of times for the learner to remember it, or it has to have a hook or attachment so that the learner can retrieve it" (p. 51). Tileston (2011) goes on to state that this is a difficult area for English Language learners and is "the most difficult to retrieve from long-term storage" (p. 51).

As already identified, memory involves several factors and Integra (2009) highlights a "model [that] differentiates between verbal memory, visual memory and working memory" (p. 11). These authors define verbal memory as "the ability to take in oral information and hold it in mind" (p. 11); working memory as "the ability to hold information in mind while reorganizing or manipulating it" (p. 12); and, visual memory as "the ability to take in visual information and to hold it in mind" (p. 12).

As stated in *Supporting Students with Learning Disabilities: A Guide for Teachers* (Ministry of Education British Columbia, September, 2011), memory difficulties often/usually present as:

- Deficits with working memory affect the ability to remember what they are supposed to be doing while actually working on the task.

- Deficits with short-term memory affect the ability to remember and follow instructions that were just given, recalling what they just read, recollect what was said/ discussed during conversations and class lessons, and keeping track of several pieces of information for a short time.

- May have difficulty copying items from the board – recording only a few letters or a word at a time.

- May have difficulty with recall of material that has been practiced – even as recent as earlier in the day or the previous day.

- Deficits with long-term memory affect the ability of retrieving information such as facts studied in preparation for a test or new vocabulary.

- Comprehension – primarily in the areas of listening and reading.

- Difficulty recalling the beginning of a sentence or a story.

- May present with attention difficulties. (pp. 152 and 155)

Guerin and Male (2006) explain that "Memory activities are most effective when they are tied to the content to be recalled" and "Students tend to remember better the material that they find meaningful than the material that they believe is irrelevant to them" (p. 25). Other strategies to support learning include:

- Have student repeat back or paraphrase instructions.

- Chunking material and including rehearsal assists with working memory.

- Use of mnemonics – e.g. HOMES to recall the Great Lakes.

- Provide charts to assist with recall such as multiplication charts, mini chart for desk of problem solving steps; alphabet charts with visual clues for example.

- Guided practice and repetition.

- Pair with another student – peer tutoring – to review information.

- Use music as it often provides a 'hook' to assist with recall. Music also enhances the rhythm and rhyme of language.

- Provide organizational charts, post daily schedules, use visual cues to trigger memory.

- Provide pre-teaching of concepts and essential vocabulary, paired with visuals.

- Access to teacher notes (simplified) in preparation for test taking and also personal dictionary to refer to during written tasks.

- Recommendations based on psycho-educational results when student has been identified with a specific memory difficulty – choose one or two of the recommendations to provide focused intervention.

- Use the 'Every Pupil Response' strategy to promote everyone providing an answer – this can be accomplished through pre-determined hand signals or use of individual mini erasable whiteboards. (Saskatchewan Learning, 2004, p.75)

- When information is relevant, interesting, and well-organized, there is a greater chance that it will be placed in long-term memory. (Saskatchewan Learning, 2004, p. 25)

- Use of 'hooks' for semantic memory retrieval such as relevance or meaning
  and patterns created by prior knowledge or experience. (Tileston, 2011,
  pp. 51-52)

Motor Control Disorder

A motor control disorder is generally characterized by difficulties with fine and/or gross motor skills.

As highlighted in *Supporting Students with Learning Disabilities: A Guide for Teachers* (Ministry of Education British Columbia, September, 2011), motor control difficulties often/usually present as:

a) **Fine Motor Skills**

- Printing/writing which may include difficulty with appropriate spacing, letter
  size, and forming letters.

- Remembering how to produce letters appropriately.

- Excess pressure of pencil on paper.

- Holding and using scissors correctly. (p. 156)

b) **Gross Motor Skills**

- Difficulty writing on the board.

- Remaining seated – may even have the tendency of falling out of their chair or
  sitting appropriately at their desk.

- May bump into things and/or others – appear less aware of their physical
  environment.

- Speech difficulties.

- Interacting socially. (p. 156)

Strategies to support learning of motor control difficulties are:

- Access Occupational Therapy support for informed intervention.

- Provide pencil grip and/or specialized scissors.

- Raised or highlighted lines to assist with printing tasks

- Incline/ Slant board.

- Wiggle or Sit & Move seat.

- Backrest.

- Bungee cord attached to front legs of desk.

- Movement breaks

- Specifically teach "personal" space boundaries – such as "Space Invaders" from SuperFlex program.

- Practice printing/writing using a variety of mediums/textures.

It is also essential for teachers to remember to continue to be cognizant that "students with learning disabilities will need instruction and support to self-regulate their use of strategies; they will need to know which strategy to use, when to use it, and why" (Roberts et al, 2008, p. 67). In my experience, many students, even those identified as capable readers, require ongoing modelling and mentoring to successfully apply these strategies. The noted disorders and possible strategies presented should be viewed as a partial list but are recommended as key areas of focus when supporting learners that struggle.

Guidelines/Strategies/Interventions to Support English Language Learners

Students identified as English as a Second Language (ESL) or English Language Learners (ELL) are increasing in number in our classrooms and often present learning

challenges for our teachers, such as determining what the student already knows and how to ensure the student will continue to acquire the necessary skills while also acquiring a new language. Some of these challenges are identified below accompanied by possible strategies and interventions.

- Students with ELL backgrounds arrive in our classrooms from all over the world; therefore, we should expect that some sounds may not be part of the student's first language. This aspect may then affect their ability to properly pronounce certain words or even be able to hear or detect any differences which are often essential when learning English. Students will most likely benefit from explicit instruction of letter-sound relationships and word identification strategies to support these areas.

- Educators also need to understand that other languages do not necessarily contain the same alphabetic writing systems as English and, as such, will present challenges for non-English speaking students. Areas potentially affected are: vowel letters/sounds, syllable breaks, lack of knowledge of prefixes, suffixes, for example.

- Vocabulary development is key for students acquiring English. To ensure sufficient levels of comprehension, students must understand most of the words presented in their reading. This point is true for all readers. Educators can provide leveled text, hands-on learning, and visuals to support key vocabulary development.

- As the student becomes more fluent, it is also important to explicitly teach how to use a picture/regular dictionary, how to use prefixes and suffixes to

decipher word meanings, and how to use context clues. (Center for the Improvement of Early Reading Achievement, 2001)

- Fluency-building strategies include read-alouds of big books, reading along with proficient readers, echo reading, and repetitive listening to books read aloud. Chosen books should also include visuals to assist with comprehension.

- Total Physical Response supports comprehension and speaking as "students physically act out words and phrases being taught by the teacher" (Ferlazzo & Hull Sypnieski, 2012, p. 12). You begin with simple commands that focus primarily on verbs then progress to more complicated with two or three actions incorporated into the commands. The teacher generally models the actions first, which is essential when working with students in the emergent stages of English language acquisition. An extension of Total Physical Response is to use alphabetically arranged boxes or bags that contain realistic miniatures of nouns. Cartoon-based miniatures are not recommended as these may confuse the student. Educators can use these objects initially to assist students with learning the label/name of the object and then gradually progress to assist with sentence development and teaching prepositional phrases.

- Understanding cultural behaviours is essential as educators may unknowingly misinterpret behaviours and respond with inappropriate strategies.

- Fung and Farrugia (2013) highlighted the work of Cummins (1979) who developed a theory of language development that identifies the differences between social and academic acquisition for ESL learners. Cummins (as cited

in Fung and Farrugia 2013), titled these as Basic Interpersonal

Communication Skills (BICS) and Cognitive Academic Language Proficiency

(CALP). BICS focuses on "conversational language" or language skills

needed in social situations and CALP refers to formal academic learning that

includes listening, speaking, reading, and writing about subject area content

material. Skills related to BICS tend to "take one to two years to acquire,

utilize high-frequency vocabulary, use simple language structures, more

concrete in nature, and generally found in low-pressure situations" (Fung &

Farrugia, 2013, p. 11). On the other hand, skills related to CALP tend to

"require five to 10 years to acquire, involve low-frequency vocabulary,

complex language structures, abstract contexts, and often occur in high-

pressure situations" (Fung & Farrugia, 2013, p. 11).

- In addition, Ferlazzo and Hull Sypnieski (2012) presented the findings of

  "more recent research [that] has extended CALP to include the following

  three dimensions of academic English: linguistic (knowledge of word forms,

  functions, grammatical elements, and discourse patterns used in academic

  settings), cognitive (higher-order thinking involved in academic settings), and

  sociocultural-psychological (knowledge of social practices involved in

  academic settings)." (pp. 7-8)

- Educators need to be aware that in order for ELL students to become

  proficient in academic areas, they require time and support. It is generally

  recognized that ELL students need approximately five to seven years to reach

  a level of proficiency that will support further academic learning and students

with Limited Formal Schooling, may require up to ten years. In addition, ELL

students should be encouraged "to develop literacy skills in their home

language as well as in English" (Snow, Burns, & Griffin, 1998, p. 324) to

further support comprehension of more complex concepts and vocabulary.

- Ferlazzo and Hull Sypnieski (2012) recommend that educators "validate

  students' primary languages and encourage them to continue reading and

  writing in their L1" (p. 12). They also emphasize that it's important for

  educators to refrain from "*banning* students' use of their native language in

  the classroom" (p. 12) as this may negatively impact learning and level of

  relationship with their teacher. It is important, therefore, to encourage students

  to use their primary language within the classroom to "promote a positive

  learning environment where students feel safe to take risks and make

  mistakes" (p. 12).

- According to Vadasy and Nelson (2012), "academic vocabulary is an

  important content component for school-age language-minority students to

  master in order to be successful in reading and comprehending academic

  texts." (p. 166)

- In Alberta, educators use the "K–12 English as a Second Language

  Proficiency Benchmarks" to assist with identifying specific levels of English

  Language Proficiency in the areas of Listening, Speaking, Reading, and

  Writing. The Benchmark Tracking sheets are an essential tool for educators to

  guide their planning to support ELL learners.

- LearnAlberta.ca also has an excellent resource to assist educators with organizing for instruction for their ELL students and would be most beneficial reviewed by the entire staff. This resource can be accessed online at: http://www.learnalberta.ca/content/eslapb/organizing_for_instruction.html.

- For assessment purposes, LearnAlberta.ca provides a document, *Assessment tools and strategies: Language proficiency assessment* (2012). This resource includes information for determining the level of English language proficiency, including aspects to consider, such as: recognizing diversity, choosing developmentally appropriate assessment, age-appropriate content and graphics, differences between receptive and productive language skills, transfer of first language literacy and skills, difference between social and academic language, and addressing cultural bias. This document also includes information on home language assessment and assessment tool developed and normed for Native English speakers (pp. 3-7). In addition, this document connects to the ESL proficiency levels and the Alberta K-12 ESL Proficiency Benchmarks This assessment resource can be accessed from http://www.learnalberta.ca/content/eslapb/languageproficiencyassessment.html.

- The Alberta Teachers' Association developed a document, *Understanding ESL Learners: Differentiating Instruction* (2010), which identifies direct language instruction, culturally inclusive environment, differentiation and modification. This document also includes specific learning strategies in the domains of Metacognitive, Cognitive, and Social Affective areas.

- The Delta School District of British Columbia created a document, *The ESL Kids in My Class: Students with Diverse Language Needs in the Regular Classroom,* that highlights essential information for educators of ESL/ELL students and provides an extensive list of strategies such as 'Supportive Teacher Talk,' 'Emotional Support,' 'Content Support,' and strategic 'Instructional Support.' These areas were discussed in detail as well as condensed into an easy to read chart format (see p. 25 of document). An important point brought forward was the use of cooperative learning to enhance social interaction and academic success. These writers indicated that "Research studies show that the use of carefully structured learning groups has many positive outcomes in terms of academic achievement, communication skills, race relations, the development of socially responsible and cooperative behaviour and attitudes, and self-esteem" (p. 14). In addition, this document included valuable information regarding cultural considerations which provided key points on perceived behaviour and the possible cultural explanation. The above information is vital knowledge to ensure educators meet the diverse needs of ELL students. This resource can be accessed from http://web.deltasd.bc.ca/files/839__ESLKidsInMyClassFAQs.pdf

Assessment to Support Learning

As educators, we realize the importance of assessment for learning. Therefore, it is extremely important for teachers to think about how we assess, how data informs our teaching, and also how appropriate interventions are ultimately chosen and implemented. There appears to be substantial evidence to begin interventions early, be constantly aware

of progress, provide specific strategies, and ensure that explicit instruction occurs, all of which should be based on sound assessment practices. We know that it is difficult to close the gap and increasing curricular demands add to the difficulties faced by students identified with learning disabilities or difficulties as they progress through the grades.

Smartt and Glaser (2010) developed a resource, *Next Steps in Literacy Instruction: Connecting Assessments to Effective Interventions* that incorporate the above recommendations. These authors utilize the visual of steps to emphasize how to teach students who are struggling and also provide valuable and immediate feedback for teachers. The emphasis is on

the goal of learning [that] provides the basis for the decision of what to teach at each step:

(1) Set-up: Prepare for learning through review of previously learned material. (3 minutes)

(2) Teach: Model and explain new learning using teacher voice. (3 minutes)

(3) Engage student responses: Use oral responses. (3 minutes)

(4) Practice activity: Guide with immediate feedback and scaffold. (15-20 minutes)

(5) Show you know: Assess quickly as students demonstrate new knowledge. (Build this in 1x week) (Smartt & Glaser, 2010, p. 33).

Smartt and Glaser (2010) include a variety of activities such as language games for individuals and/or groups to support instruction in phonemic awareness, phonics, fluency, vocabulary, comprehension, and written and oral language. They also provide guidance regarding what to do if the student doesn't demonstrate the desired growth and

encourage a scientific-method type of approach by changing only one aspect at a time to determine what is needed. The guidelines they suggest are: change instruction, change group composition, change materials, and change amount of instructional time. This type of structured assessment would provide ample information and opportunities for explicit instruction which is key for students who struggle.

To ensure greater success for all students and particularly students identified with a learning disability, I believe it is vitally important that we keep abreast of current research and include that as part of our professional development. Being aware of the research as well as becoming more knowledgeable on how to evaluate quality research provides a greater guarantee that teachers will make more and better informed decisions.

Technology Supports

I have identified various technology supports throughout this project but also wanted to provide specific research-based best practices and strategies that support literacy skill development for students who struggle. Students who have been formally identified with a learning disability generally receive recommendations to support their learning based on the results of their formalized assessment. These recommendations often include the use of technology to enhance acquisition of desired skills and also reduce some of the barriers connected to their area of need. When choosing the most appropriate assistive technology, one should consider Joy Zabala's "SETT framework" that "considers the *s*tudent, the learning *e*nvironment, the learning *t*asks, and then the *t*ools needed by the student to address the tasks" (Alberta Education, 2010, p. 137).

As our classrooms become more inclusive in nature, some of the assistive technology used previously for a very select population is becoming more common-

place. These include the use of laptops for research or software that includes a text-to-speech component that enhances creative writing. However, there continues to be a need for more specialized supports, with several options presented below.

- **Read&Write Gold (RWG)** – This software provides text-to-speech output with individual words, sentences, paragraphs, or complete pages of text, including websites and PDF files. This is a very flexible program since educators and/or students can customize the program for their specific needs, using the toolbar to select specific tools to support both teaching and learning of desired outcomes. This includes selecting the speed, pitch, and even the gender of the voice which is important for many students. The speech needs to be easily understood and can be heard via headphones or the computer's speakers which may be required at times for assessment purposes or providing timely assistance. An excellent aspect of this software is the word prediction option. When this support is selected, students who struggle with written expression are provided with several choices as they attempt to spell specific words. This tool provides an opportunity to increase fluency during the writing process and hopefully a greater desire to attempt and ultimately complete written tasks since students identified with fine motor difficulties, for example, often struggle with getting their thoughts down on paper. The student can also have the program reread specific words that are selected/highlighted or all text at any time during the writing activity. Another excellent tool is the visual dictionary. When students replay their text, the vocabulary chosen may 'sound' correct but spelled incorrectly (e.g.

homonyms). The student highlights the desired text and selects the visual dictionary tool. Any words that can be displayed visually will be presented in a box next to the selected text, thus confirming the choice or providing an opportunity to edit their work. RWG also includes a Teachers' Toolkit.

- **Writing with Symbols** – This program combines text with graphics such as rebus symbols and supports students who are struggling with reading text. This program is generally used with students with more severe literacy difficulties but can also be used as a potential support for more visual learners while in the emergent reading stage.

- **Microsoft Word** – Educators can teach students how to use the format features to assist with adjustments to font size, easier to read font, changing the text and/or background colour (especially for students with visual processing difficulties who find text 'moves' on the page), or using highlighting to draw attention to specific text or vocabulary.

- **Portable Spell Checkers** – These are often provided to students who struggle with spelling and may also include a mini-dictionary feature to support comprehension.

- **iPads** – Accessing specific aps to support learning. These have proven beneficial when working with students who require speech/language support and providing visuals to support students developing their communication skills such as English language learners.

- **Jolly Phonics for the Whiteboard** – provides leveled, structured, interactive activities for primary grades. Available at www.jollylearning.co.uk

- **2Include Me Website** (www.2Learn.ca) – This site includes a multitude of technological tools and resources to support the learning of all learners. Some of the areas contained within this site are: Universal Design for Learning [UDL], Differentiated Instruction [DI], Assistive Technology, and Technology Tools [Speech to Text, Text to Speech, Vision Enhancement, Math & Science, Reading, Research, and Writing]. I've included a few sites that I believe would be valuable for teachers, especially for remedial or additional practice of specific skills. Please Note: all sites were functional at time of writing.

  - *Rewordify* – This looks like a promising site to support vocabulary development and comprehension because once you are on the website, you are able to paste in a section of text and receive a simplified version. If you hover over highlighted text, you are given synonyms that may assist with increasing vocabulary. There is an Educator's Page where teachers may create pages for additional practice, include specific worksheets, etcetera. Available at https://rewordify.com.

  - *Reading Bear* – This is also a free site and provides a visual way to learn to read. It is based on a systemic phonics program and aimed primarily at ages 4-7 but can also be used with ESL students. The program provides opportunities to work through all the vowel sounds and word families. It also sounds out words and pace can be selected [slowly or quickly] dependent upon student level. It includes flashcards for additional practice and teachers can make individual accounts for individual student

practice. The one caveat presented was that students would need to be able to readily identify consonant letters and their sounds. It was developed in the United States so may have more American content. Available at http://www.readingbear.org.

- *Word Talk* – This is from Microsoft Word and provides options for the document to be 'spoken'. Similar to RWG, text can be highlighted and it includes a talking dictionary. An interesting feature is the ability to include text-to-mp3 through a converter. Available at http://www.wordtalk.org.uk/Home/.

- *SetBC: Free Accessible Books* – This site includes both teacher and student-made accessible books, as well as some extension activities. Teachers would need to spend some time exploring the titles and determining if they are suitable for the particular needs of their students and intended audience. All files included are in a compressed format through 'zip' files. Available at http://www.setbc.org/setbc/accessiblebooks/freebooksforyou.html.

- *Time for Time* – a virtual analog clock that can also be shown in digital time. The time shown is current and has options to explore increments. Available at http://www.time-for-time.com/swf/myclox.swf.

Closing Remarks

Literacy surrounds us and impacts our lives every day, from the time we get up until we retire for the night. The types of literacy range from basic to more complex such as reading the front of a cereal box to deciphering the intricacies of a legal document. In

addition, the "new" literacies seem to be constantly changing to meet the demands of today's society. As a result, there is a more urgent need to support students diagnosed with a learning disability/difficulty or those who experience academic struggles to ensure they meet with success.

As I explored the vast amount of research connected to literacy needs, I realized that a common thread runs through the majority of suggested strategies and supports. This 'thread' consists of the following: ensure timely intervention, provide explicit instruction, repeated exposure, ongoing modeling, teaching self-talk, include vocabulary development across the curriculum, endeavor to include real-life connections/relevance so students "buy-in" more readily, allow adequate 'wait time' for processing, and possibly most importantly, that all educators should view themselves as teachers of literacy. This last point is gradually gaining ground as educators are realizing that reading skills continue to develop beyond elementary grades and the literacy demands for learners become more complex.

My goal as I embarked on this journey was to develop a resource that would be easy to use, flexible in nature, and also beneficial for educators and others that work with students that struggle. To assist colleagues and other key stakeholders with using this document, I foresee providing it in CD and PDF formats and include an informal in-service to highlight key components. I believe that providing these formats will be viewed as more 'user-friendly' and a more efficient use of the user's valuable time. I would also demonstrate how this resource connects to programs and procedures already in place. These include accessing our Pyramid of Intervention that moves from universal supports (benefits all students), to targeted (benefits students with more specific needs),

through to specialized supports (benefits a small percentage of students with sensory, physical, cognitive, or behavioural needs that require more intensive, individualized interventions) and also include the involvement of outside agencies such as speech/language, occupational, and physio therapists. *All* students benefit from a variety of supports and students identified with specific and ongoing needs definitely benefit from a team approach.

The research I conducted was quite broad in scope which subsequently created a challenge in determining which elements to include in my final product. I touched on brain-based research but feel this is an area of study unto itself. There have been several recent scientific discoveries in brain research that will hopefully provide educators with a clearer vision regarding how students learn and process. I also explored the concept of visual and digital literacy presented by Steve Moline in his resource titled, *I See What You Mean: Visual Literacy K-8* (2012). His resource explores the importance on learning how to read and use visual texts, maps, diagrams (simple, analytic, process, and structure), graphs, and graphic designs. I believe this is another important area for educators to become familiar with as "it is the means by which we manage in the everyday world" and "a classroom program needs to include explicit instruction in how visual information works" (Moline, 2010, p. 9). The other area that I initially thought I would include relates to motivation and engaging boys in literacy who are often described as "at-risk". I incorporated a small section on motivation that is applicable to all learners but later determined that including a section that focused specifically on boys and reading was a topic to explore at a later time.

The intent of this journey was to further support my colleagues but I am also reaping the rewards. I mentioned earlier about the importance of being able to add to our teacher toolboxes. Well – mine has undergone a well-needed makeover and, as I reflect on my research and development of my handbook, I feel better equipped to provide suitable and sustainable interventions for students identified as 'at-risk.' Numerous researchers emphasized early intervention as a key to success for 'at-risk' students. Taking that into consideration adds to my determination to develop literacy bags to support early learners impacted by low literacy skills or affected by poverty. If I needed proof, I needn't look any further. I look forward to continuing in my role as a learning support teacher, utilizing my newly-honed tools, and also promising myself to make time to explore those areas that I touched on only briefly.

I would like to close off by including a couple of quotes that I believe sums up my journey.

> *The more that you read,*
>
> *the more things that you will know.*
>
> *The more that you learn,*
>
> *the more places you'll go.*
>
> ~ Dr. Seuss (1978)
>
> *Tell me and I'll forget.*
>
> *Show me, and I may remember.*
>
> *Involve me, and I'll understand.*
>
> ~ Author unknown

If we can make this possible for our students who struggle, then we will have been successful in our endeavors.

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Appendix A

Official Definition of Learning Disabilities

Adopted by the Learning Disabilities Association of Canada January 30, 2002.

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

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

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

- oral language (e.g. listening, speaking, understanding);

- reading (e.g. decoding, phonetic knowledge, word recognition, comprehension);

- written language (e.g. spelling and written expression); and

- mathematics (e.g. computation, problem solving).

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

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

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

Learning disabilities may co-exist with various conditions including attentional, behavioural and emotional disorders, sensory impairments or other medical conditions. For success, individuals with learning disabilities require early identification and timely specialized assessments and interventions involving home, school, community and workplace settings. **The interventions need to be appropriate for each individual's learning disability subtype and, at a minimum, include the provision of**:

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

Appendix B

Suggested Resources to Access

- ABC Life Literacy Canada provides links to several different aspects of promoting life-long literacy – accessible at http://abclifeliteracy.ca/

- Alberta Education. (2005). Our Words, Our Ways manual. – focuses on the education of Aboriginal students with a chapter dedicated to learning disabilities.

- Alberta Education. (2010). *Making a Difference: Meeting diverse learning needs with differentiated instruction.* Edmonton, AB: Crown in Right of Alberta. http://education.alberta.ca/teachers/resources/cross/making-a-difference.aspx

- Alberta Education. (2012). Supporting English Language Learners: Assessment Tools and Strategies – Language Proficiency Assessment. http://www.learnalberta.ca/content/eslapb/languageproficiencyassessment.html

- Alberta Education – Administrators Tab on Main Page – "Supporting Every Student: Diverse learning needs." This is the main link for several topics and is accessible at http://education.alberta.ca/admin/supportingstudent/diverselearning.aspx

- Alberta Learning. (2002). *Unlocking Potential: Key components of programming for students with learning disabilities.* Alberta: Learning and Teaching Resources Branch. Available online at https://education.alberta.ca/media/511999/unlocking.pdf

- The Alberta Teachers' Association. (2010). Here Comes Everyone: Teaching in the intercultural classroom.

- Alberta Teachers' Association (English as a Second Language Council) Available online at http://www.eslcata.com/

- Can Learn Society. (2013). Best Practices in Teaching Learning Disabilities. Available online at www.canlearnsociety.ca/wp-content/uploads/2013/08/BestPracticesInTeachingLD1-final-2013-pdf

- Can Learn Society. (2013). Take Ten Spotlight Series. This document is available online at www.canlearnsociety.ca/resources/take-ten-series/ in both English and French and includes five videos and six complimentary Tip Sheets.

- Foundations for Numeracy: An evidence-based toolkit for early learning practitioners. Canadian Language and Literacy Network for the Canadian Child Care Federation. This resource is available online at

  http://foundationsfornumeracy.ca/pdf/EYNumeracyKit09_ENG.pdf

- Teaching Refugees with Limited Formal Schooling is available online at

  www.teachingrefugees.com

- The Best of Bilash: Improving Second Language Education was developed by Dr. Olenka Bilash and her team at the University of Alberta. Their focus involves the embodiment of the 21st Century learner, combined with curriculum theory, identity studies, teacher education, pedagogic content knowledge, second language education, professional development, learner voices and system's theory. The Home Page includes a link to Strategies and Activities with seven sub-links that focus on: Oral Language Development, Literacy Development, Expanding Your Repertoire, Tasks and Projects, Picture Cues, Templates and Learn More About Your Students. Some of the activities are geared toward older students but could possibly be modified for younger learners. This document is available online at

  http://www.educ.ualberta.ca/staff/olenka.Bilash/best%20of%20bilash/home1.html

- The Engaging All Learners guide was developed through a collaboration between Edmonton Regional Learning Consortium, Alberta Education and Alberta Mentoring Partnership. This is a great resource when developing peer mentorship roles within your school community. The 11 topics included in this guide are: (1) Importance of Natural Supports; (2) How Peer Mentors Can Provide Natural Supports; (3) How Educational Assistants Need to Work Differently; (4) How Peer Supports Differ from Adult-delivered Supports; (5) Providing "Just Enough" Supports; (6) Signs of Too Much Support; (7) Everyone Needs a Valued Role; (8) Benefits for Student Mentors; (9) Training for Peer Mentors; (10) Activities Peer Mentors Should NOT Do; and (11) Where Can We Start? This guide is accessible at www.engagingalllearners.ca/sal/peer-mentoring/documents/erik_carter_learning_guides.pdf

- The Movement for Canadian Literacy includes links for parents, children, teenagers, and professionals and is accessible at http://thisisliteracy.ca/

- The Power of Ten site provides information for hands-on sequential learning for teaching base ten concepts. It is accessible at http://poweroften.ca and also includes a link for Virtual Manipulatives Base Ten Blocks to assist with teaching. This tool is available online at http://olc.spsd.sk.ca/de/math1-3/baseten-1.html