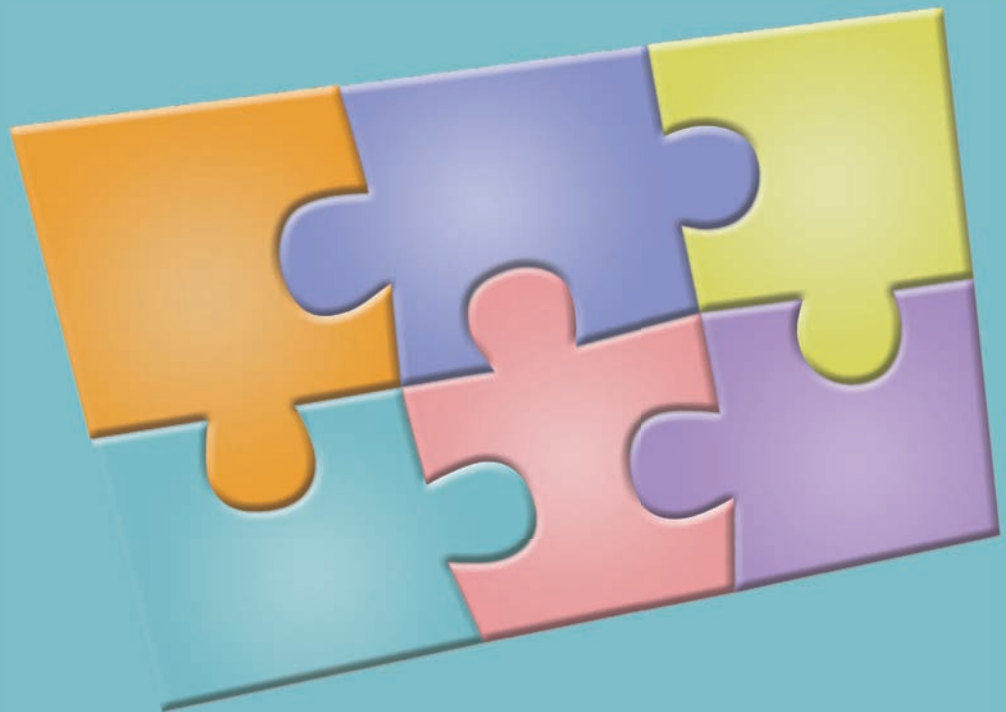


Toward a “Whole Life” Perspective
on Learning Disabilities in Adult Literacy Settings

A Conceptual Framework to Guide Professional Development



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August, 2007

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I. Introduction

The impact of learning disabilities on teaching and learning in adult literacy settings is receiving greater attention in research literature, and in adult literacy practice. According to the Learning Disability Association of Canada's PACFOLD project, an average of 15-20% of Canadians is affected by learning disabilities, though this figure varies considerably across age groups and according to diagnostic processes across jurisdictions (LDAC, 2007). The Movement for Canadian Literacy (MCL) reports that between 30% and 70% of adults in adult literacy programs may have a learning disability (2001). This review explores current debates and issues related to the research and practice of learning disabilities in adult literacy settings, with the purpose of developing a conceptual framework to inform everyday practice and long-term professional development strategies for adult literacy educators.

According to the Literacy Link Central (2003), observations of WWI veterans who had lost cognitive functioning following the war, spurred an interest in cognitive difficulties that were not related to intelligence. Kirk (1963) coined the term "learning disability", launching a new field of research largely focused on learning disabilities in children. It was not until the late 1980s and early 1990s when researchers began to expand their studies of learning disabilities to adolescents and adults.

Learning disabilities among adults, particularly in adult literacy settings, is under-researched. Most literature tends to extrapolate the findings of studies carried out among children, to adult learners, hence disregarding the complexity of adults' lives and learning experiences. Historically, the field of adult education has tended to de-emphasize the presence and consequences of learning disabilities for adult learning, attributing learning difficulties to "literacy issues" more generally. Additionally, as is explored in more detail later in this review, diagnosing learning disabilities in adulthood is fraught with complexities that makes systematic study difficult (Erkstine & Seymour, 2005). Nevertheless, research on learning disabilities is undergoing rapid change and expansion as technologies such as MRI (Magnetic-Resonance-Imaging) permit images of living brain tissue, that offer new insights into the relationships between brain activity and learning. In addition to new technologies, researchers are increasingly interested in classroom-based adult literacy strategies that attend to adults' complex life roles and learning histories (Pannucci and Walmsley, 2007). The

literature on learning disabilities in adult literacy settings is thus characterized by rapid changes, intense debate and scrutiny of instructional settings and diagnostic practices.

1.1. Scope and limitations

This review presents a selection of recent research evidence in the area of learning disabilities in adult literacy settings, and considers the implications of this research for supporting professional development in adult literacy settings. The analysis resulted in the development of a conceptual framework, presented in Section Three, that draws together the major strands of LD research into a cohesive tool to inform teaching, learning and professional development strategies. For the purposes of this review, adult literacy settings include Adult Basic Education, Career Preparation and other academic upgrading programs based in colleges and school districts, as well as community-based adult literacy initiatives that may or may not feature structured academic upgrading. The resources and policies in place to support adults with learning disabilities and their instructors vary considerably across these diverse settings. Consequently, this review attends to promising practices and approaches to supporting adult learners with LD with this diversity and disparity in mind. Moreover, many adults who participate in adult literacy programs experience significant barriers to learning over and above the possible presence of a learning disability. This review thus foregrounds issues and debates surrounding the diagnosis of LD in adulthood, the effects of labelling and stigma, and promising practices for responding to the significant emotional difficulties that adults with un-diagnosed or untreated learning disabilities often experience.

Without downplaying its importance, the review does not consider learning disabilities in adult learning settings such as workplaces, ESOL (English as a Second or Other Language) programs and university or college level programs. The resources, policies and practices related to LD in these institutional settings cannot be readily transferred to adult literacy contexts, which tend to be more poorly resourced than workplace and post-secondary settings, with less access to assessment and diagnostic services, materials and adaptive technologies. Since learning disabilities usually have roots in childhood, the review considers current research on learning disabilities in both children and adults, across the diverse fields of neurology, psychology, sociology, education, cognitive science and medicine.

1.2. Organization of the review

The review is organized into four sections. Section Two presents definitions of learning disabilities, including descriptions of specific learning disabilities. Here we consider the concepts of disability and difference, within the context of neurological deficits, human diversity and inequalities in learning and learning conditions, and the complexity involved in teasing out primary learning disabilities from other physical and mental conditions that often “walk beside” learning disabilities in adult literacy settings. Section Three proposes a “whole life” approach to LD that not only incorporates appropriate learning accommodations and strategies, but also attends to the physical and emotional health and well being of adults with learning disabilities who have likely struggled for many years in school, work and everyday life. Section Four concludes the review with recommendations for implementing “whole life” conceptual framework to LD through education policy and practice, professional development strategies and further research.

2. Defining learning disabilities

Definitions of a “learning disability” typically describe broad characteristics of neurologically-based information processing difficulties that are most evident in reading, writing, math and social skills. These difficulties are usually categorized into visual, auditory, organizational, motor and social (Hatt, 2001; 2003; Learning Disabilities Association of Canada, 2002). The definition of learning disabilities supplied by the Learning Disabilities Association of Canada (2002) merits citation in its entirety:

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 usually life-long, and their expression may shift and vary over the lifespan, 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 neuro-biological 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.

Of significance in this definition is that it includes acquired learning disabilities, taking into account the cognitive effects of accidents, drug abuse, sickness, exposure to toxins and so on. Importantly, learning disabilities do not only affect education and schooling, they manifest in every aspect of people's lives. According to Gayna (2004), the presence of a learning disability can influence the following literacy-related skills and practices:

- Learning and understanding oral language;
- Making the small muscle movements required in handwriting and drawing;

- Being aware of oneself in space, as in finding one's way around, reading maps, understanding directionality in reading and writing;
- Remembering how to spell words, people's names, instructions;
- Focusing, shifting and sustaining attention;
- Organizing and planning;
- Acquiring academic knowledge, such as reading and writing and mathematics; and,
- Interacting appropriately with others, including teachers, peers, work colleagues and family members (Gayna, 2004, p. 30).

It is widely believed that LD has its roots in a neurological disorder or difference, and there is evidence to suggest that many learning disabilities, particularly dyslexia, are inherited. Often adults do not find out they have a learning disability until their child is diagnosed (Gilger, Pennington & DeFries, 1991; Literacy Link Central, 2003, p. 9). Pre-mature and low-weight babies, and people who suffered chronic illness, infections of the central nervous system or chemotherapy treatment early in childhood are at higher risk for learning disabilities (LDAC, 2006). Brain injury and exposure to environmental toxins such as PCBs, mercury, cadmium and lead early in life can also be associated with learning disabilities, as can sustained poor nutrition. In this way, while learning disabilities are neurologically based, they may coincide with socio-economic disadvantage, associated with poor living conditions and nutrition. However, there is no evidence that directly links a particular event or action to a learning disability, nor to pinpoint a time when a learning disability "begins". Learning disabilities interact in complex ways with individuals' life histories, genetics, biology and broader environmental and socio-economic contexts (Weiss and Bellinger, 2006).

This complexity leads Erskine and Seymour (2005, p. 23) to suggest that learning disabilities are best understood within a "multi-component mosaic model". This model holds that the neurological origins, pathways and "cognitive architecture" of learning disabilities are multi-faceted and diverse, although LD does have common expression in language-based learning disabilities, particularly in phonology_ (the sound system of a language) and orthography (the writing system of a language).

Learning disabilities in adulthood are most commonly identified according to the "discrepancy" model (Hatt, 2003; Erskine and Seymour, 2005), by which academic underachievement is consistently below the level anticipated, in relation to general abilities, and in spite of the effort expended. In other words, a person who is a wonderful musician, community leader, successful gardener, but has consistent

difficulties with reading, writing, spelling, finding their way around, and so on, regardless of how hard they try and how much instruction they have received, may have a learning disability. As noted above, these difficulties are most evident in areas of written language fluency and accuracy (British Psychological Society, 1999). Of importance is that while learning disabilities may significantly interfere with reading and writing processes, they do not prevent learning. Even people with very severe learning disabilities can learn, but they need specific strategies and accommodations, both inside the classroom and in their everyday lives (Hatt, 2003; Pannucci and Walmsley, 2007). These strategies are discussed in Section Three of this review.

The remainder of this section offers descriptions of specific learning disabilities that are most common among adults. The aim is to inform adult literacy educators of the range of learning differences that may be present in any given learning setting, with the caveat that not all learning disabilities can be accurately “diagnosed” or defined. Perhaps the most pragmatic approach is to develop teaching and learning strategies that will be effective regardless of whether a learning disability is confirmed (Erskine and Seymour, 2005; Lipka and Siegel, 2006).

2.1. Dyslexia

Dyslexia represents 80% to 90% of all learning disabilities and is the most common cause of reading, writing and spelling difficulties. Dyslexia affects males and females and people from different ethnic and socio-economic backgrounds nearly equally (Learner, 2003). It is a specific learning disability that is neurological in origin, characterized by difficulties with accurate and / or fluent word recognition and by poor spelling and decoding abilities. The British Psychological Society’s Working Party Report on ‘Dyslexia, Literacy and Psychological Assessment’ provided the following definition:

Dyslexia is evident when accurate and fluent word reading and/or spelling develops very incompletely or with great difficulty. This focuses on literacy learning at the “word” level and implies that the problem is severe and persistent despite appropriate learning opportunities. (1999, p. 3)

Additionally, the British Psychological Association definition of dyslexia (1999) highlights difficulties with accuracy and fluency as indicative of Dyslexia: “Dyslexia is evident when accurate and fluent word reading and/or spelling develops very incompletely or with great difficulty”. Of importance is how the label “Dyslexia” (or a learning disability in general) operates within in education institutions and workplaces. In an observation that may be applied to all learning disabilities, the Canadian Dyslexia Association (2007) distinguishes between having a

learning disability and being learning disabled. They point out that Dyslexics learn differently but can become disabled if their difficulties are not recognized, and they do not receive appropriate remediation and accommodation. The consequences of this for lifelong learning experiences are described by Eide and Eide (2006) as “stealth dyslexia”:

... All too often, children with dyslexia struggle through elementary school, performing well below their potential ability, and are forced to expend incredible energy just to keep up with the average. When they meet the heavier writing demands and more complex written language patterns in middle and high school, they enter a cycle of despair that leads to eventual failure. There is considerable evidence that this group of students contains some of the very brightest and most creative minds in our society, and it is an absolute tragedy that their plight should go unnoticed. (p. 251)

In the United Kingdom and Western Europe, Dyslexia is a catch-all term referring to learning disabilities in general, whereas the term “learning disabilities” refers to intellectual disabilities. In North America, “Dyslexia” is a term used to refer to a specific learning disability related to language processing, and may overlap with, but is distinct from other learning disabilities (see below). These differences in terminology are important to keep in mind when reading European research, and are suggestive of the close association between Dyslexia and learning disabilities more generally. Because Dyslexia itself is difficult to distinguish from other learning disabilities, Pat Hatt (2003) suggests three broad types of learning disabilities for the purpose of screening and designing instruction for adult learners. These broad categories include visual processing difficulties, auditory processing difficulties and organizational or memory difficulties. These difficulties may overlap, or exist independently of one another, and may or not be indicative of Dyslexia.

2.2. Visual processing learning disabilities

An individual with Visual Processing Learning Disabilities will have difficulties distinguishing letters and words, and may lose their place in the text, or have difficulties recognizing “sight words” or words they know. They may reverse letters in writing, and may not enjoy oral reading because they are more likely to get stuck or lose their place. However, they can sound out words, substitute letters and work with word families/ rhyming words, and enjoy oral conversation (Hatt, 2004).

2.3. Auditory processing learning disabilities

A person with an auditory processing learning disability “has difficulties analyzing or making sense of information taken in through the ears. An auditory processing deficit can interfere with speech and language acquisition and can affect all areas of learning, particularly reading and spelling” (Marshall and Snowling, 2001). People with auditory processing disabilities often have difficulties “hearing” sounds and using oral language. In classroom settings, they may have problems pronouncing words orally, and unlike people with visual learning disabilities, they may have difficulties using rhyming clues, following oral language directions or engaging in classroom discussion. In reading, they may remember words they know by sight, but have trouble with multi-syllabic words with various sound combinations. A person with auditory processing learning disabilities may have difficulties reading fluently and drawing out key ideas from reading because they are so focussed on decoding each word, and with interpreting messages and instructions that the meaning gets lost (Hatt, 2003; Marshall, and Snowling, 2001; Walcot-Gayda, 2005).

2.4. Organizational learning disabilities

Organizational disabilities refer to difficulties that involve locating oneself in space and time. It may be more difficult for people with organizational disabilities to use directions to locate a venue, or to follow oral instructions. It may also be difficult to formulate answers to questions that require sequencing information; it therefore may take longer to reply to a question, though the response may be accurate. Similarly, it may be difficult for people with organizational disabilities to plan and organize their work, follow through on assignments or tasks, or focusing on a task for a length of time (Hatt, 2003; Walcot-Gayda, 2005).

2.5. Dyscalculia (numeracy-based learning disability)

Most recently, researchers have identified dyscalculia as a specific learning disability related to the acquisition of math concepts and procedures. Number-based learning disabilities are more rare than language-based disabilities, and the research on dyscalculia is still in its infancy (Wilson, 2007), although in 1974 a “math disability” was identified by Kosc, who defined it as a disability independent of intelligence or other academic and learning abilities (Wilson, 2007). People with dyscalculia have persistent difficulties recalling the sequence of a procedure in math, recalling rote facts such as timetables, and experience

problems with sequencing and the ability to see relationships between numbers and concepts and grasp 3-D relationships (Marshall and Snowling, 2001). As with all learning disabilities, these difficulties exist independent of instruction and the effort invested in learning. While people with language-based learning disabilities may have difficulties with math that involves reading and word problems, dyscalculia most often exists independently; people with dyscalculia may have above average reading, writing and oral language skills (Department of Education and Skills, United Kingdom, 2006).

As with all learning disabilities it is often difficult to distinguish dyscalculia from poor numeracy skills that are common among people who have not had sufficient practice or instruction in numeracy concepts. In adulthood, numeracy skills are increasingly driven by need, and knowledge of algebraic and geometry concepts can fade if they aren't used regularly. Thus, difficulties with these concepts may indicate lack of practice, rather than dyscalculia. However, because so much of adult life involves number concepts (adding, subtracting etc), calculating fractions, decimals and percentages (as in banking and budgeting) and dealing with measurements and weights (for example, shopping, cooking and household maintenance), dyscalculia can have significant impact on adults' quality of life. It should also be noted that in conjunction with the disabilities described above, people with learning disabilities may also have motor difficulties, characterized by poor hand-eye and fine and gross motor coordination.

The effects of learning disabilities go beyond education settings. The types of language-based learning disabilities described above can interfere with people's social and work lives, making it more difficult to "read" a social situation, organize work and home life and so on. It is here that the issue of learning disabilities must be addressed in adult literacy settings in ways that attend to the "whole life" of adults, promoting the integration of learning inside and outside the classroom setting.

2.6. Attention Deficit/Hyperactivity Disorder

AD/HD is not a learning disability, but it often co-occurs with learning disabilities. Research suggests that between 40% and 60% of people with learning disabilities also have AD/HD (Hatt, 2003, p. 18, Learner. 2003). According to Brassett-Harknett and Butler (2007), AD/HD is an impairment of the "executive functions" controlled by the frontal lobes of the brain, responsible for planning, organizing, self-regulation, concepts of time, and adaptations to new situations (p.). AD/HD thus has cognitive consequences in that it affects working memory and slows the processing speed of information, as well as behavioural consequences

in the form of hyperactivity, inattention and impulsivity. The symptoms of AD/HD seem to diminish in adulthood, but this may depend on the timing and quality of treatment in childhood, and indeed AD/HD symptoms in adulthood are often overlooked or mis-diagnosed. While many adults with AD/HD lead successful, fulfilling lives, many experience the consequences of shortened formal schooling, such as low literacy skills and lower incomes (Brassett and Harknett, 2007; Rasmussen and Gillen, 2000). Unfortunately, some people with undiagnosed learning disabilities are often diagnosed instead with the “behaviour disorder” of AD/HD.

Although ADD/ADHD is categorized as a “behaviour disorder”, it is perhaps inaccurate to regard people with AD/HD as having behaviour problems, because they cannot control their actions (Hatt, 2004). Although researchers in the medical field emphasize that ADD/ADHD is a neurological disorder (Barkley 1996, 2002), the fact that its identification involves the completion of a standardized behaviour checklist means that other possible causes of inattention may be inadvertently excluded, such as nutrition, the learning context (Honos-Webb, 2005) the presence of other learning disabilities (Hartman, 2005; Eide and Eide, 2006), vision or hearing problems and so on. The fact that diagnoses of AD/HD are on the increase in North America has spurred concern among some educators and researchers that it may operate as a “catch all” category for a range of teaching and learning challenges. According to Eide & Eide (2006),

People with dyslexia often behave in ways that suggest they are suffering from attention disorders or AD/HD. Published reports suggest that the rate of AD/HD is higher in dyslexic children than in the general population. . .it is less clear whether the more task-specific pattern of distractibility and inattention merits the diagnosis of ADHD. It is also necessary to determine that a learner is not simply showing aversion to new tasks because of a sense of hopelessness or anxiety (p. 341).

In spite of the debate surrounding the diagnosis of AD/HD, it is nevertheless a specific and prevalent disorder that seems to have a substantial genetic component (Brassett-Harknett and Butler, 2007) though this relationship is as yet poorly understood (Barkley, 2002). In fact, research on AD/HD is wrought with conflicting evidence, and methodological problems. Brassett-Harknett and Butler conclude that studies with larger sample sizes, among more representative populations are needed before any firm conclusions may be drawn about the causes of AD/HD and its outcomes and impacts on adults. Significantly, however, there is consensus in recent evidence that AD/HD is rarely a “pure” disorder that exists alone, but most commonly co-exists with other psychological and cognitive difficulties. This complexity can be difficult to negotiate for practitioners who want to meet the learning needs of their students who may have AD/HD. In an observation that may be applied to learning disabilities more generally,

Brasnett-Harknett and Butler, (2007) summarize the situation in this way:

It is argued we are all individuals with different potentialities exposed to different environments and life events, and as such we are bound to experience a multiplicity of problems at any one time. Just because conditions appear to be complex, this is no reason not to attempt to unravel and understand it (p. 195).

2.7. Fetal Alcohol Spectrum Disorder (FASD)

A number of adults who arrive in adult literacy programs suffer from Fetal Alcohol Spectrum Disorder. FASD is an acquired through exposure to alcohol in utero, which affects the neurological development of the foetus. People with FASD are likely to have learning disabilities as described above, although there is a spectrum of effects, related to the amount and timing of exposure to alcohol in utero and a range of other congenital and environmental factors. Some individuals are severely affected in terms of both physical appearance and mental capabilities, and others may experience only mild learning disabilities. Presently, identification is based mostly upon family history and a medical diagnosis at birth or in the early years. FASD is not passed on genetically, it is not a disease, and its effects are life-long although well designed learning accommodations can help people with FASD to build on their strengths. As with all learning disabilities, people with FASD may have abilities and gifts that can be expressed through multi-modal and multi-sensory learning including art, music, dance, poetry, athletics and friendship (Cowichan Valley FAS Society, 2005). Social and economic marginalization, such as poverty and racism, may compound the effects of FASD.

2.8. Gifted and LD

"Gifted LD" refers to people who display remarkable skills and talent in some areas, and debilitating difficulty in others (Marshack, 2007). For example, someone can possess a deep and extensive knowledge of ocean ecosystems, outer space, and the works of Shakespeare. They may be able to grasp concepts and information quickly, but may also face extreme difficulties in reading, writing or completing school work. There is extensive debate among researchers about the continuities and distinctions between "LD" and "Gifted" because the existence of these together can be confusing and difficult to disentangle. Because their giftedness can pose additional challenges beyond LD, these people are sometimes referred to as "twice exceptional students" (Marshack, 2007) whose learning needs are often not met in conventional classrooms (Brody and Mills, 1997, Eide & Eide 2006).

Marshack suggests, “[A] good third or more of gifted teens drop out of high school. Of those who do graduate, only 5% go on to college (2007). There is significant debate surrounding the designation “Gifted LD”, because, as Eide & Eide (2006) point out, educators and researchers can sometimes overlook the presence of giftedness because it is easier to notice what is not going right instead of what is.

2.9. Learning disabilities, learning differences and the issue of labels

A growing body of literature in the LD field urges a closer look at how the label “learning disabled” operates in institutional settings, and “what counts” as a learning disability. There is particular concern surrounding the over-use and/or simplification of the category of LD. The psychologist Mel Levine (2005) questions the effects of “one size fits all” approaches to learning, calling for deeper understandings of human diversity in learning and the creation of learning environments that respond to this diversity. He argues that attention should be directed not to the individual learning disability, but to institutional responsiveness to learning disabilities, and the presence of “all kinds of minds” in classroom settings (Levine, 2005). Researchers who study learning disabilities from this social perspective call for a more textured understanding of the relationship between the individual with a learning disability, and their learning environments, in the context of broader social policies and attitudes surrounding disability (Aspis, 2002).

Indeed, theorists argue that LD can sometimes be confused with the pernicious effects of economic disadvantage on learning; indeed this disadvantage can be masked by over-use or misuse of the term “learning disabled” (Vogel and Reder, 1998). Therefore, while learning disabilities in adults may be primarily attributed to a neurological disorder, in some cases these may be exacerbated by secondary correlates such as social and economic disadvantage. These complex interactions between neurological disorders, environmental factors, life history, experience and institutional practices render the accurate diagnosis of LD complex and often elusive in adulthood. Indeed, Elliot’s (2006) review of research on dyslexia in childhood and adulthood suggests that, “It appears that ‘dyslexia’ is not one thing but many, in so far as it serves as a conceptual clearing house for a number of reading skills deficits and difficulties, with a number of causes” (p. 15).

Moreover, the research reviewed above suggests that instruction in adult literacy settings should not only aim to provide skill development in literacy and success in other vocations, but also attend to the effects that the stigma surrounding LD can have on learners’ self esteem and confidence. There is a need to rebuild this confidence, while addressing the source of the stigma. What does this complexity suggest for adult literacy practice? As Brassett-Harnett and

Butler (2007) concluded, it seems important to continue to strive to unravel and understand learning disabilities in the context of everyday learning settings, and learners' everyday lives. A single strategy is unlikely to be effective. The findings of this review suggest a "whole life" approach that integrates literacy and learning with effective instructional strategies, attention to people's social and emotional well-being, and self and systemic advocacy. Such an approach aims to recognize the complexity of LD in adult literacy settings, while not getting bogged down by that complexity.

3. The “Whole Life Approach” to Learning Disabilities in Adult Literacy Settings: Rationale and Implementation

Six areas of practice comprise a “whole life” approach to LD in adult literacy settings. These are not discreet or sequential steps, but rather pieces of an interlocking puzzle, each dependent upon the other for its overall effectiveness. These areas of practice are grounded in current evidence on the needs and issues surrounding learning disabilities in adult literacy settings and include: a) Building awareness about LD in adult literacy settings, b) Building relationships of trust through intake, screening and the development of learning profiles c) Teaching many minds: LD friendly instructional strategies and approaches d) Taking care of the spirit: Addressing the issues that “walk beside” LD; e) Changing how the world thinks about LD through system advocacy, self advocacy and awareness raising and f) Professional development and reflective practice. The first area of quality practice concerns building awareness about LD in adult literacy settings. This was addressed in some detail in Section Two. Section Three therefore continues with a review of quality practices in intake, screening and learning profiles.

3.1. Building relationships of trust and dialogue through intake, screening and learning profiles

The intake process in adult literacy settings is the first place to begin to know learners and weave together their learning histories, needs and goals. It is at this point, we argue, that the process of screening for learning disabilities should begin, with the assumption that learning disabilities are common in adult literacy settings and the presence of a learning disability should be explored at the outset. Intake and screening should be seen not as an event, but rather a process of getting to know a learner over time (Lavalley, 2007). A “screen” is a tool, or a set of tools that helps educators and learners determine the likelihood of a learning disability. It normally involves a checklist of skills and abilities, as well as guidelines for analysing written output. A screen is distinct from an assessment in that

the latter normally involves a standardized psychological test that determines the presence and nature of a learning disability. Ideally, a screen would indicate a disability, which would be confirmed through a diagnosis by a learning specialist through a formal assessment. However, the cost and availability of formal assessments are increasingly prohibitive in adult literacy settings in British Columbia. Educators and learners are often dependent upon screening tools to indicate a learning disability.

Indeed, a number of screening tools relevant to adult literacy settings have been developed with this aim. These screening tools are extremely helpful and relatively easy to use, but they do have some limitations. For example, some screening tools cannot differentiate between a learning disability and an intellectual disability; some focus on identifying deficits (all the things learners have difficulty with) but not strengths, which are a key to determining the kind of disability that may be present, and promising learning strategies. Adults have developed a range of compensatory strategies that allow them to perform relatively well on reading and writing tasks, except when presented with non-words or unfamiliar tasks. These compensatory strategies can mask areas of difficulty, which are not picked up by screening or assessment tools. Finally, it is unlikely that a learning disability such as dyslexia will present in the same way for all learners, and a single screening or assessment tool will thus not provide an accurate diagnosis. As current research on literacy disabilities in adults suggest (Siegel and Smythe, 2006), the primary criteria for having a learning disability should be in accordance with the current most acceptable definition of a learning disability which is 'difficulty in the acquisition of reading and writing' (p. 73). Indeed, although adults may have difficulties reading and writing for a variety of reasons unrelated to a learning disability (McCormick, 1999), Siegel and Smythe (2006) maintain that what matters is not the cause of these difficulties, but how they are addressed.

The use of learning profiles can complement the use of screens and assessments. A learning profile is a life history, through the lens of learning, which is constructed with the learner during one or several sittings. It involves a directed conversation, and student writing if possible, covering topics such as schooling history, childhood experiences, feelings toward school and learning, any illnesses or diagnoses in the past, employment, family and community life roles. Importantly, learning profiles seek to uncover the kinds of learning that people find rewarding and enjoyable, the times when they feel confident and successful; these are areas to build upon and can indicate the kinds of learning strengths and difficulties that are at play. Indeed, learning profiles can address issues covered in screening tools, but can also reveal strengths, successes and learning styles/preferences. Learning profiles integrate various kinds of information, utilizing the students' own insights as well as the teachers and possibly other available professional staff. Importantly, the learning profile can inform the development of an individual

learning plan, against which learning progress can be measured. Not all learners will be in a position to account for their life experiences and learning preferences and difficulties in a single sitting. This is why a learning profile should be constructed over time, using diverse information gathering strategies including dialogue, analysis of students writing, observation and an invitation for learners to participate in decisions about their own learning.

3.2. Teaching many minds: “LD friendly” instructional strategies and supports inside and outside the classroom.

A learning profile may help teachers and learners to determine the likelihood of a learning disability, but it cannot provide an accurate diagnosis. However, while a diagnosis of dyslexia or any other learning disability can be extremely helpful to individuals in providing them access to remediation and accommodation, this diagnosis may not always be accurate; moreover, few adult literacy settings in BC have access to learning specialists able to carry out formal assessments, and most adult literacy learners have limited means to pay for an external assessment. Elliot (2006) notes that there is little consensus in the literature over whether dyslexia can be meaningfully distinguished from other possible causes of adults’ literacy difficulties. Echoing Siegel and Smythe’s (2006) argument that many signs of dyslexia are no less characteristic of non-dyslexic people with reading skills deficits, Elliot concludes that, “In our present state of knowledge, it does not seem as helpful for teachers to think of some literacy learners as ‘dyslexics’ and others as ordinary poor readers” (Elliot, 2006, p.15). Elliot (2006) suggests that it is perhaps more helpful to incorporate “Dyslexia Friendly” or, as defined in this review, “Learning Disability Friendly” approaches in everyday classroom teaching for dyslexic, other learning disabled, and poor readers alike. The principle underpinning the creation of an “LD friendly environment” is that making accommodations in classrooms for adults with learning disabilities can benefit all learners.

Accommodations may be thought of as modifications to instruction that remove barriers to learning. They may include using a mix of visual, auditory and kinaesthetic teaching strategies (ABET News, 2001) including movement, art and music to tap into different areas of the brain, diverse learning styles, preferences and existing strengths. Additionally, there are a number of structured learning programs currently used in adult literacy settings designed specifically for small-group or one-to-one tutoring with adults with LD. These programs typically feature “MTA” (Multi-sensory Teaching Approaches), also known as the Simultaneous Multi-sensory Teaching method (S.M.T). Associated most commonly with the Orton-Gillingham method, “MTAs” are designed to tap into

auditory, visual and kinaesthetic sensory pathways, in a systematic, sequential and structured format. The goal of these approaches is to provide students with a more thorough knowledge of the structure of written language, and a solid understanding of the association of sounds and symbols, with the rationale that “it is the ability to appreciate how spoken language is constructed that explains the difference between good readers and poor readers” (ABET News, 2001).

“LD friendly” approaches also incorporate individualized accommodations such as providing note takers for those with difficulties writing, using colour screens for those with visual difficulties, offering alternative testing arrangements, extending time allowed for assignments, minimizing distractions, and asking learners what accommodations they need. Importantly, “LD friendly” classrooms make adaptive technologies such as voice recognition software and text readers available to all learners (Centre for Literacy of Quebec, 2001). As Engstrom (2005) points out, these assistive technologies, when used alongside sound instructional strategies and accommodations can allow learners to reach levels of academic success that would otherwise be out of reach. She explains how these features come together in a process she calls “active reading”:

Active reading steps include pre-reading, reading, highlighting, margin note taking, chunking sections of text and summarizing the text. By strategically combining a text decoder with a visual organizer and a word processor, the student achieves active reading by eliminating the need for word-by-word decoding, freeing the active working memory for comprehension. Students have the benefit of a) seeing and hearing their texts b) visually organizing concepts within a concept map and 3) transferring those visual maps into an essay form (Engstrom, 2005, p. 32)

Rather than interpreting the use of assistive technologies as “shortcuts” or “cheating”, Engstrom (2005) argues that these technologies should be seen as an integral part of an inclusive learning program that scaffolds learners into a deeper understanding of the structures of written language. Indeed, the goal of effective instruction in any program is to support learners to understand and make meaning with texts. In addition, Hatt (2001) maintains that a key indicator of a successful LD strategy is whether learners are aware of, and able to apply the learning skills and accommodations they use in the classroom to their lives outside of school. According to Hatt,

‘Skills ‘integrity’ relates to the need to ensure that even if we provide a learner with accommodations, the learner is independently able to use that skill and or to use it to learn a more complex skill. A skill lacks integrity when it does not allow a learner to do either of these two things. An instructor may believe that they can ‘accommodate’ a learner who can’t spell, by giving the learner the correct spelling or by correcting the learner’s work. This is not an appropriate accommodation since when the instructor is

not present the learner is unable to produce a correctly spelled passage. However, if the instructor teaches the learner how to use a hand held spell checker, or a computer spell checker, and ensures that the learner has sufficient knowledge of grammar, spelling rules, spelling tricks and other strategies to work out how a word is spelled, the learner is then independent. While the learner still has significant spelling problems they can produce independently a correctly spelled piece of work. The integrity of the skill is then said to remain intact. (Hatt, 2001, p. 7)

Thus, along with MTAs, “LD friendly” approaches should incorporate engagement with “whole texts” from everyday life, with attention to who reads and writes these texts, when, where and for what purposes. In this vein, Campbell (2003) in a Balanced Approach to Reading, confirms the efficacy of direct and systematic instruction but also reminds educators that “balance” not only refers to a balance between structured language and “whole text” methods (also known as “whole language” methodologies), but also a balance between “reading the word” and “reading the world” (Freire, 1970). Indeed, methods associated with critical pedagogy may be particularly useful in “LD-friendly” classrooms. Critical pedagogy seeks to engage learners in discussions about how power and privilege operate in the world, and what actions can be taken to promote greater equality and social justice (Wallerstein and Auerbach, 2005). It is here that curriculum and instruction connect to the social context for learning. As described below, recent research suggests that for adults with learning disabilities, this context is often shaped by issues that walk closely beside LD, such as low self esteem, poverty, mental health challenges and experiences of violence and discrimination. Attending to issues that “walk beside” LD is addressed in the next component of the “whole life” approach.

3.3. Taking care of the spirit: Addressing the issues that “walk beside” LD

People who have struggled to learn all their lives have most likely faced ridicule, bullying, and attacks on their self-esteem and self worth. If people have left school early, found it difficult to find work, lived in poverty or on the streets, they have also most likely experienced physical and/or emotional violence. These emotional and socio-cognitive factors can profoundly shape people’s abilities and attitudes toward learning (Horsman, 2006). Many people with LD, particularly adults over 30, likely had negative learning experiences in school and thus may also have low self esteem and low self confidence with respect to their identities as learners. They may be more likely to experience addiction problems, be unemployed, or living on a low income, and may suffer depression. Lipka and Siegel (2006) point out that the challenges in identifying learning disabilities in adults stems from

the complexity of adult life. They note that it is important to establish whether a problem with achievement in reading, handwriting, math and academics in general constitutes a disability, or is an indication of another factor, such as motivation, developmental delay, emotional/behaviour and attention problems. However, because learning disabled students often report depression, low self-esteem, and other emotional difficulties Lipka and Siegel (2006) conclude that “It seems unethical not to identify and address the learning disabilities, and the emotional difficulties, because these are often concurrent (2006, p. 420). Teasing apart these primary and secondary learning difficulties, and attending to these life-wide living conditions are practices that underpin the “whole life” conceptual framework.

Learning about these “life-wide” issues begins during the intake process and carries through in everyday teaching and learning (Pax-Milic, 2001). The findings of practitioner research in adult literacy settings suggest several effective strategies for including the “whole person” in learning (Horsman, 1999). For example, in “Naming the Magic” (Battell, 2001) presents a rationale and framework for valuing non-academic outcomes. Battell argues that if the focus of assessment and evaluation is only upon academic progress, which may be slow for adults with learning disabilities, than other important areas of growth and change may be overlooked:

Students change their bearing, their walk; they hold their heads higher and smile more readily [...] They look forward to reading or doing math, they read to their kids [...] They feel more confident with family; at school, they speak to their classmates and strangers in the cafeteria line-up. They may begin to plan for a career. (Battell, 2001, p. xi)

Battell (2001) identifies strategies for valuing and documenting these non-academic outcomes, including include journaling, anecdotal reporting, end- of-year reports, learner goal-setting and developing and responding to guiding questions. Integrated into any adult literacy setting, these strategies help to foreground positive change in people’s lives that often don’t show up in more traditional assessments.

In a similar vein, practitioner-researchers have documented the effectiveness of creating safe learning environments that encourage risk-taking inside and outside the classroom, and increase learners’ sense of agency and control over their learning (Niks, Allen, Davies, McRae & Nonesuch, 2003; Horsman, 2007). Such strategies include providing options and choices in the learning setting, stimulating reflection on past and current learning experiences through discussion and personal writing (Morgan, 2001; Nonesuch, 2003) and attending to the emotional aspects of learning, particularly for those who have experienced violence.

Horsman (2007) argues that quality practice for bringing the “whole self” to learning

includes acknowledging that violence affects learning, creating “wrap-around” support networks for learners and for educators outside the classroom setting, creating learning environments that include music, art, times of silence, inspirational quotes, comfortable seating and choices about what and how people want to learn. A further component of practice that “rebuilds the spirit” through learning is to acknowledge learners’ everyday material needs. In the Lakeshore Adult Literacy project in Etobikoke, Ontario, Pax-Milic (2001) describes how learners and instructors created extra learning contact hours by incorporating lessons on eating nutritiously on a low-income while cooking a meal together. This integrated, hands-on activity was effective in helping learners to remember key math concepts, while attending to the vital need to eat well and make visible the experiences of living on a low income. As important as it is to bring learners’ lives into the classroom setting, the concept of “skills integrity” (Hatt, 2003), discussed in section 3.3, suggests the inverse is also true. Classroom instruction strategies should be made explicit so that learners’ can use them with confidence in their everyday lives. In this way, skills integrity is relevant not only to the development of academic skills, but to the development of social, interpersonal and self-advocacy skills that carry people through their everyday lives and make learning possible and pleasurable. It is here that “rebuilding the spirit” and “creating an LD-friendly environment” connect to advocacy. This is addressed in the following section.

3.4. Changing how the world thinks about LD: system advocacy, self-advocacy and raising awareness about LD

Recent literature on LD in adult literacy settings, including the work of LD advocacy groups, emphasizes the importance of self-advocacy skills for individual learners with LD. In her review of contemporary notions of “self-advocacy” Aspis (2002) noted that self-advocacy has come to mean:

Knowledge of moral rights; knowing who is the manager of the institution or system; having the knowledge and ability to choose what services are on offer; the ability to use the interpersonal skills which professionals use; being confident during meetings; and stating that service providers/non-disabled practitioners are equal to people with learning disabilities’ (p. 3).

As helpful as these skills are, Aspis notes that they tend to reflect the interests of service providers because they “ensure that boundaries are set that limit what people with learning disabilities can advocate for and where they can do this” (p. 4). This constrained view of self-advocacy can also contribute to the stigmatization of people with learning disabilities, by curtailing the power of self-advocates to effect systemic change, focussing instead on their need to personally adapt to

existing, and often discriminatory, institutional practices. Buchanan and Walmsley (2006), argue that stigmatization is a social process that requires advocacy on a social level. This attention to the social context shaping policy and practice on learning disabilities has produced a number of promising advocacy initiatives centred on storytelling linked to action, or “critical storytelling”.

For example, Shessel and Reiff, (1999) conducted in-depth interviews with adults about the impact of learning disabilities on their lives. Many of the adults shared that along with the suffering associated with having a learning disability they felt that they had become stronger and more able to help others. The positive influences of a learning disability on these adults lives included: “helping them to become better people, allowing them to think creatively, increasing their sensitivity toward others, making them better professionals and developing in them the desire to help others” (p. 311). It is through opportunities to share their stories and experiences with the broader public, including people with learning disabilities, that these qualities and skills are leveraged to promote both self advocacy and systemic advocacy. Indeed, self and systemic advocacy and “building the spirit” may be seen as inter-connected in a “whole life” approach to learning disabilities.

Citing Seligman’s (1991) research on “learned helplessness” and “learned optimism” Shessel and Reiff conclude that when a learning disability is regarded as “personal, permanent and pervasive”, depression can result. However, Shessel and Reiff (1999) conclude that when learning disabilities are reframed as common, public issues, “learners are often able to see and explore the possibilities for growth and development” (p. 311). Not only does this positive reframing act as a protective factor to individuals with learning disabilities, it also serves to educate the broader public, and policy makers in particular, of the inequalities embedded in institutional practices and policies with respect to learning disabilities. However, as Seale (2007) and Aspis (2002) caution, these self-advocacy strategies should not be configured in the interests of service providers, policy makers, therapists and other stake-holders, to deflect attention from the need for institutional and policy reform. They note that reflecting upon, and sharing personal experiences of living with learning disabilities needs to be combined with collective action if any institutional or societal change is to result. Seale (2007) found that the creation of web-based homepages as part of a broader managed web-site was an effective self-advocacy tool for framing and sharing learning experiences, while challenging systemic inequities. Published personal writing, public speaking, letter writing, protest and mutual support are other effective tools that connect learning, self-advocacy and system advocacy.

PACFOLD (Putting a Canadian Face on Learning Disabilities), a project of the Learning Disabilities Association of Canada (2007) is another example of the use

of storytelling to promote self advocacy and systemic advocacy. In the format of “day in the life” composite scenarios, PACFOLD incorporated data gathered from research on the impacts of LD on family life, social life, work, education and health from a range of studies on LD in diverse settings, to “tell the story” of LD in Canada. The outcome of the project was a set of advocacy tools, based on systematic research, which can be used to instil an understanding among public policy makers that learning disabilities are not a “school problem” but have life-wide implications which are often more pronounced in adulthood. Aside from making “personal issues public” (Mills, 1959) through story telling practices, the literature also suggests that adult literacy programs cultivate a range of supports and social networks for teachers and learners outside the classroom. In this way, self and systemic advocacy also involves removing barriers to learning and access to services through inter-agency collaboration, and “wrap around” learning supports. Thus, self-advocacy and systemic advocacy are best seen as interconnected, and part of a broader public policy context.

3.5. Continuing the conversation: Professional development and reflective practice

One of the key findings of this review is that learning disabilities are complex and multi-faceted. They are best understood in an ecological framework that takes into consideration the “whole life” of people with learning disabilities, including life experiences, living conditions, schooling histories, emotional issues, goals, learning preferences and the broader social context in which ‘labels’ surrounding learning disabilities operate and produce inequalities. It follows that this holistic approach to working with adults with learning disabilities in adult literacy settings should be mirrored in professional development strategies.

Horsman and Norton (1999) note that adult literacy educators come to their profession from a variety of disciplinary backgrounds. As with their colleagues in the K-12 system, training in instructional strategies for people with learning disabilities is not often part of their formal professional training. Adult literacy educators learn these skills “on the job” in the context of their everyday practice. This is beneficial in that often, the responses and accommodations for people with learning disabilities have been developed in the context of what seems to work best for adults in authentic and diverse learning settings. However, research among adult literacy educators (Smythe, 2007) suggests that there are also gaps in this practice-based teaching, and uneven access in adult literacy settings to professional development opportunities. While some adult literacy educators may have an opportunity to participate in specific short-term training to use screening tools, MLA approaches or adaptive software packages, there are limited

opportunities to discuss and implement a sustained, multi-faceted approach to LD in the context of everyday adult literacy settings.

A scan of training materials available to adult literacy educators in the area of LD (see Randall and Smythe, 2007) that there are several comprehensive packages in circulation that support the expressed need among adult literacy educators for training in identifying and addressing learning disabilities. However, research on the success of professional development in education settings suggests that for a training initiative to be sustained and effective, it should integrate features of practitioner research and reflective practice. These include bi-directional teaching and learning (between educators and learners) (Donnell, 2007) reflective dialogue among educators and learners on critical incidents (Griffin, 2003), collaborative inquiry (Norton and Malicky, 2002), access to ongoing mentorship (Bean and Stevens, 2002) support to undertake systematic inquiry based on teaching practice (Niks, 2005), access to appropriate instructional materials, and an overarching conceptual framework to guide these practices, based on research evidence understood and supported by educators (Horsman and Norton, 1999). Indeed, the literature on effective teacher professional development supports a multi-pronged approach to addressing the “multi-component mosaic” of learning disabilities.

4. Conclusion

Learning disabilities in adult literacy settings constitutes an emerging field of research and practice. As noted in the introduction, research on learning disabilities in adults is under-researched, particularly in adult literacy settings. This is the case in spite of statistics that suggest that between 30% and 70% of adults attending literacy classes are likely to have some kind of learning disability. The complexity of diagnosing a learning disability in adulthood means that many adults do not receive appropriate instruction or support. Moreover, many adults attending adult literacy programs do not have access to formal psycho-educational assessments, nor to supports and resources to accommodate their learning difficulties. While this situation should be addressed through system advocacy, the findings of this review suggest that a pragmatic, inclusive response to these issues is to integrate “LD-friendly” instructional strategies into everyday teaching and learning.

As detailed above, such strategies incorporate a broad range of approaches and techniques that are beneficial to adults whether or not they have a learning disability, with the caveat that the needs of individual learners and the goals within their educational plans should inform these strategies, to avoid returning to instructional strategies that we unsuccessful for learners in the first place. Key to an “LD-friendly” approach is attention to the integrity of skills and accommodations learned in the classroom with everyday literacy and learning outside the classroom. This relationship between classroom literacy and learning, and everyday life is at the centre of the “whole-life” approach to learning disabilities described in this review. Each component of this “whole-life” approach builds upon existing successful practices in adult literacy settings. These components are brought together in a conceptual framework that draws together the various strands of these practices into an integrated “multi-component mosaic” that mirrors the mosaic of issues related to learning disabilities in adulthood.

As suggested in this review, examples of quality practice in each of the components of the “whole-life” approach are already in place. These practices, supported by research evidence and theoretically sound training materials, can be brought together in a professional development training initiative that builds on existing evidence and resources, while exposing them to the rigor of further testing in diverse adult literacy

settings. Indeed, as Siegel and Smythe (2006) point out, “what is needed are good studies of effective practice with adult literacy students” (p. 76). A research-in-practice approach to professional development will not only provide a context for literacy educators and learners to critically engage with research, try new ideas and learn new skills. Such an approach will also contribute new research insights and evidence so necessary to meeting the needs of adults with learning disabilities in adult literacy settings.

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