

# Adult Literacy and Learning Disabilities: A Look at the Issues Facing the Field

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One of the prevailing topics for adult educators is the area of learning disabilities. With the renewed focus on inclusivity of adult learner populations coupled with the increased awareness of the training needs for disabled people, this domain now requires a fuller discussion. Often at literacy conferences, practitioners and researchers raise a common set of questions related to this issue. Questions such as the following: What is the current definition of learning disabilities in Canada? What is the historical development of Canadian adult literacy and its connection to learning disabilities? What does the current research have to say about adult literacy, disabilities, and instruction? And how does one approach an investigation with this marginalized group of adult learners?

The purpose of this chapter is to address these four commonly held concerns about adult literacy and learning disabilities with a Canadian focus. In the first section, the definition of learning disability is described to provide the context for the remaining sections of the chapter. To help situate the association between adult literacy and learning disabilities, the second part of the chapter traces the historical picture of Canadian adult literacy levels as well as an outline of employment levels and educational achievement of adults with disabilities. The next part of the chapter spotlights adult education literacy instruction and the themes of alphabetic, fluency, and reading comprehension. This is followed by a discussion on the emerging paradigm for disability studies. As a concluding segment, attention is given to the implications for adult educators who work in this field of practice.

## Definition of Learning Disabilities

The official definition of learning disabilities adopted by the Canadian Association for Learning Disabilities in 2002 and abstracted from their website ([www.ldac-acta.ca](http://www.ldac-acta.ca)) is:

Learning Disabilities refer to a number of disorders which may affect the acquisition, organization, retention, understanding or use of verbal and non verbal information. These disorders affect learning in individuals who otherwise demonstrate at least average abilities essential for thinking and reasoning. 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 such as planning and decision-making.

According to Burke (2008) learning disabilities range in severity and may interfere with the acquisition and use of one or more of the following: oral language

including listening, speaking and understanding; reading including word recognition and comprehension; written language and mathematics. They may also involve difficulties with organizational skills, social perception, social interaction, and perspective taking. The Movement for Canadian Literacy (2005) points out that learning disabilities are now recognized as a lifelong neurological disorder that is the result of a difference in brain structure and function which affect at least 10% of Canadians. Learning disabilities are suggested by unexpected academic underachievement or achievement which is maintained only by unusually high levels of effort and support.

Researchers such as Gilger and Kaplan (2001) maintain that they 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. Burke (2008) makes an important point when she describes the confusion among the public and policy makers about learning disabilities. One of the persistent myths is that people with learning disabilities are cognitively impaired and unable to learn or that they reverse letters when writing. These views are inaccurate and fail to reflect the scope and complexity of learning disabilities (p. 2).

The Movement for Canadian Literacy (2007) also reports that people with learning disabilities can learn with the right learning strategies, techniques, appropriate supports, and interventions. However, they estimate that 30–80% of students in literacy and basic education programs have some type of learning disability. Many adults are not aware that the problems they had in school, jobs, or relationships are due to “hidden” or undiagnosed learning disabilities and are often compounded by literacy problems.

### **Historical Development of Adult Literacy and its Association to Disabilities**

There has also been much debate about how literacy is defined, used, and valued in a similar way as to the term learning disability. According to Gee (2008), the traditional meaning of literacy was linked to tasks of reading and writing, and therefore, became situated in the individual learner rather than society or the socio-cultural setting. However, Street (1995) proposed a new way of thinking about literacy; one in which literacy is viewed as a social practice and is inherently embedded in socio-cultural contexts. Conceptually, literacy as a practice is social and it can exist within a cultural context, allowing it to take on countless forms, purposes, and meanings (Barton & Hamilton, 2000; Rogers, Mosley, & Kramer, 2009).

Cope and Kalantzis (2000) state that teaching of literacy is not solely about skills and competence, but rather, it is more about teaching an individual to construct and transfer meaning within different domains. As a result, the multiple meanings of literacy and the different contexts that it is located in has come to be known as “multiliteracies.” Masny (2009) points out that multiliteracies is not limited to reading and writing but can be expanded to include information literacy, media literacy, visual literacy, oral literacy, mathematical literacy, and performance literacy. As a result, socio-cultural researchers have challenged the idea of a singular definition of “literacy” because it can now be viewed as multi-faceted and can exist in different social and cultural domains (Evans, 2004; Moje & Luke, 2009). Understanding

literacy through this lens for adults with disabilities is useful as it creates a greater awareness of how it is valued within this marginalized adult population.

### ***Painting a Picture of Canadian Adult Literacy Levels***

The findings of the 2003 International Adult Literacy and Life Skills Survey (IALSS) demonstrated that literacy skills were clearly linked with education, employment earnings, and employment status (Statistics Canada, 2005). The survey looked at the literacy, numeracy and problem-solving proficiencies of 23,000 Canadians aged sixteen and over in all provinces and territories. Competence in four domains (prose literacy, document literacy, numeracy, and problem-solving) was each assessed on a five-point scale ranging from Level 1 to Level 5. Individuals that were at the lowest level (Level 1) had minimal literacy skills whereas individuals at Level 2 could comprehend basic material but may experience difficulty with more complex concepts. According to Statistics Canada (2005), Level 3 was considered to be “the minimum ‘desired level’ of competence for coping with the increasing skills demands of the emerging knowledge and information economy” (p. 9). Levels 4 and 5 pertained to adults who had the highest level of ability, which was beyond the high school level. The survey found that 48% of the adult population were deemed to be below Level 3 on the prose and document literacy scales. In other words, these adults did not have the literacy skills required to meet the demands of today’s society (Movement for Canadian Literacy, 2005). Furthermore, Statistics Canada (2005) reported that Francophones, Aboriginal people, immigrants, and adults over sixty-five years of age all tended to have lower scores than the general population. However, the 2003 IALSS results did not consider whether survey respondents had reported a disability. Quigley and Henry (2011) posed several questions to address the validity of the IALSS with respect to the aboriginal population in Canada: How was the survey conducted? Were the survey’s questions clear enough? Did the survey take into account the culture of the population being surveyed? These are all questions that apply equally well to the situation concerning the literacy needs of Canada’s disabled population. As argued by Longfield (2003), the IALSS findings provided a clear picture that the literacy needs of adults with disabilities had not been identified and that any efforts to alleviate low literacy levels within this specific population were minimal.

### ***Literacy, Employment Levels, and Educational Achievement for Adults with Disabilities***

Research suggests that there are varying gaps between the general adult population and the disabled adult population in Canada in relation to literacy levels, employability, and educational achievement (Elwan, 1999; HRSDC, 2009). With respect to the variable of employment, research seems to indicate that there have been some improvements in the employability of Canadian adults who are disabled. Between 2001 and 2006, the employment rate for Canadian adults with disabilities increased from 49–54% (HRSDC, 2009). In contrast, for the same time period, the employment rate for Canadian adults who did not have a disability increased from 74–75%. What this seems to suggest is that adults with disabilities, in compari-

son with the general adult population, face considerable barriers to equality and employability within the Canadian workforce.

Furthermore, the Participation and Activity Limitation Survey (PALS), conducted in 2006, found that approximately 631,000 Canadians aged fifteen years and older reported having a learning limitation (Statistics Canada, 2009). Learning disability was defined as “a difficulty learning because of a condition, such as attention problems, hyperactivity or dyslexia, whether or not the condition was diagnosed by a teacher, doctor or other health professional” (Statistics Canada, 2007, p. 30). As much as this is the only available data on adults with learning disabilities, the results are limited by the fact that the respondents may have self-identified themselves as having a learning disability. Consequently, the number of Canadians with learning disabilities may in fact be larger since respondents may not have identified themselves as learning disabled for reasons such as denial, embarrassment, or by choice.

As indicated by the PALS, the educational achievement levels for adults with disabilities do have a detrimental effect on literacy levels than non disabled Canadians. For example, 28% of adults with a disability did not complete the requirements for a high school diploma, compared to 19% of non-disabled Canadians (HRSDC, 2011). The findings of the survey showed that one-third of respondents with a learning limitation only had an education beyond a high school diploma. Results also indicated that the lower educational attainment of adults with learning limitations influenced their choices of careers and the time it took for them to complete their overall education and training. In response to the survey, the Canadian Council on Learning (2009) report entitled *Strategies for Overcoming Barriers to Training and Education for Canadians with Disabilities* called for the elimination of barriers to education and training for disabled Canadians. This report identified three main barriers to education and training experienced by learners with disabilities: physical accessibility of programs, difficulties with financial issues, and lack of accommodations to successfully complete the program or course.

Participation in the labour market by people with a learning limitation depended on the severity of their condition. PALS survey results indicated that only 35% of respondents aged fifteen to sixty-four that had a learning limitation were actively employed. The more severe the learning limitation, the less likely the person would be employed. Moreover, there are a number of issues pertaining to equality in the labour market for adults with learning limitations. For example, the survey found that 26% of respondents with a learning limitation did not disclose their condition to their employer, 84% of the respondents experienced career advancement difficulties and 18% experienced discrimination on the job. In addition, people with learning limitations encountered barriers when looking for work. The most common barrier cited was inadequate educational or vocational training required for the workplace sought after.

### **Current Research on Adult Literacy, Disabilities, and Instruction**

In the State of the Field Report on Adult Literacy, Quigley, Folinsbee, & Kraglund-Gauthier (2006) make an important point when they acknowledge that “the literature on literacy and disabilities is remarkably limited” (p. 23). What is most readily available is literature on the effect of learning disabilities and literacy skills

in general, how to screen for learning disabilities, and how learning disabilities can be addressed in literacy programs. However, this stream of research is dominated by “how-to-do publications” conducted by literacy field practitioners with little empirical evidence. This is in contrast to the multitude of studies conducted on school-based populations. Similarly, Di Giorgio (2008) reports that although adults with learning disabilities have been studied in university and college milieus in other industrialized countries, few studies have explored factors specific to Canadian populations with little or no attention to the specific subpopulation of adults with low literacy.

Given the paucity of Canadian information to draw from on the topic of adult literacy and learning disabilities, it may be useful to examine some of the efforts from the United States on adult reading research that was initiated by the National Institute for Literacy (NIFL) in collaboration with the National Centre for the Study of Adult Learning and Literacy (NCSALL). Kruidenier, MacArthur, and Wrigley (2010) point out that one of the themes of this research considers programs and adults with a learning disability or reading disability. Since the full range of foundational adult literacy skills such as reading, writing, numeracy, and oral communications were not all covered in this report, the following discussion will only spotlight the key components of reading instruction such as alphatectics, fluency, and reading comprehension.

According to Kruidenier et al. (2010) an important aspect of reading is the ability to associate a written word with the spoken word it represents and also with the concepts or meanings associated with the word. The process of using the letters in a written alphabet to represent meaningful spoken words is called alphabeticity. This includes both phonemic awareness and word analysis. Phonemic awareness is the knowledge of the basic sounds (phonemes) of spoken language while word analysis is the knowledge of the connection between written letters or letter combinations and the sounds they represent also known as phonics instruction or decoding (p. 42). Reading fluency is the ability to read with speed and ease with appropriate rhythm, intonation, and expression. It also requires fast and accurate decoding (p. 65). The third component discussed in the following review of literature is reading comprehension which “is the process of constructing meaning from a text, or understanding what we read” (p. 86).

*Alphabeticity.* Several studies seem to indicate that adults with learning disabilities who are often enrolled in adult basic education (ABE) and adult secondary education (ASE) are usually characterized by lower alphabeticity and fluency scores but higher vocabulary and comprehension scores. In one study MacArthur, Konold, Glutting, and Alamprese (2010) found that adults with a learning disability had lower average scores on all components of reading including word analysis and fluency as measured by word and passage reading rates than those adults with no learning disability. This same finding was also evident in the empirical investigation by Chiappe, Stringer, Siegel, and Stanovich (2002) that used a timing deficit hypothesis to investigate various reading components of both adults with learning disabilities and non learning disabled adults.

Other studies have also concluded that adults with a learning disability in reading have poor word analysis skills. In a review of fifty-two studies comparing adults

with and without learning disabilities, Swanson and Hsieh (2009) found that adults with learning disabilities had significantly lower scores on measures of both phonological processing and word attack and word recognition with moderate to high effect size measures (p.1379). However, a limitation to this meta-analysis did not distinguish between learning disabled adults participating or not participating in some type of adult education program.

Looking more specifically at phonemic awareness and word analysis in adult learners with a specific learning disability, Eden et al. (2004) investigated the neural changes following remediation of adult developmental dyslexia. This study demonstrated that intensive instruction in phonemic awareness and word analysis may lead to patterns of brain activity during reading that more closely resemble those of nondyslexic adult readers. Overall conclusions from these studies suggest that while readers will typically develop phonemic awareness as they learn to read, adults with a learning disability in reading such as dyslexia may not. As Rubensten and Henik (2006) imply dyslexia tends to persist into adulthood and may be related to various types of functional disruptions in the brain.

*Fluency.* Based on the findings of three non-experimental studies, results imply that alphabetic instruction which focuses on accuracy in reading connected text may lead to fluency. An earlier case study by Idol-Maetas (1981) which looked at increasing the reading performance of a learning disabled adult by teaching unknown letter-sound correspondences found that fluency of the student improved. In another study, Truch (1994) focused on stimulating basic reading processes using auditory discrimination. Teaching instruction in this investigation employed an intensive and highly structured multisensory approach called the Lindamood Bell program. This intense program uses grammar awareness exercises which involve segmenting words into phonemes, blending phonemes and adding, deleting, substituting, and shifting phonemes. It was found that this type of teaching approach led to increased fluency with the learning disabled participants. Similarly, in another case study, Hanlon and Cantrell (1999) used a multisensory approach to teaching word analysis to an adult with a learning disability in reading. In this investigation, spelling was taught with a focus on letter-sound correspondence. As with the other cited studies, researchers found increases on measures of fluency that included both accuracy and rate.

*Reading comprehension.* Overall, it would appear that adults with a learning disability are characterized by lower literacy comprehension achievement. In addition, these learners seem to be overrepresented within the target population of adult education when considering this literacy component (MacArthur et al., 2010). A case in point is the study by Mellard and Patterson (2008, pp.138–141) in which the researchers compared 311 adult learners with and without learning disabilities on measures of academic and functional reading comprehension. Almost a third (29%) of the students self-reported having a learning disability. Using variables of IQ and age, the researchers found that adults with a learning disability scored significantly lower than adults without a learning disability on academic reading comprehension (10 to 25% lower). The same was also found for the measure of functional reading comprehension (15 to 30% lower). In support of this finding, Swanson and Hsieh (2009) also reported that adults with a learning disability scored significantly lower

than adults without a learning disability on measures of reading comprehension. This meta-analysis of fifty-two studies involved more than one thousand adults with a learning disability.

Several large scales surveys of adults in the United States have found that adults with a learning disability are also overrepresented in the adult education target population (Kutner et al., 2006; Kirsch, Jungeblut, Jenkins, & Kolstad, 1993). Both of these surveys are literacy assessments of large representative samples of adults in the United States. Of the adults who reported that they had been diagnosed with a learning disability, 58% scored at Levels 1 and 2 (below Basic and Basic Literacy levels) whereas only 41% of adults without a learning disability scored at these levels (Kutner et al., 2006). On the National Adult Literacy Survey (NALS) more than 80% of all adults reporting or identified with a learning disability scored at Levels 1 and 2 (Kirsch et al., 1993).

### **An Emerging Paradigm for Disabilities Studies**

One of the philosophical underpinnings for this emerging paradigm referred to as disability studies is a new understanding of the complex process of disablement. In recent years, disablement has been transformed from an individual medical problem to a major social and political issue with implications for society as a whole. As Barnes (2011) puts it, people with impairments whether physical, sensory, or cognitive and labelled disabled encounter a full range of barriers that hinder active participation in the economic, cultural, and political aspects of their communities. Similarly, the UN Convention on the Rights of Persons with Disabilities (UN, 2009) acknowledges that this exclusion is visible in the design and construction of physical, cultural, and social infrastructures. In other words, the focus on the experiences of disabled people shifts from individual limitations to organizations and structures of the society which help create the notion of disability. However, Doyle (2008) maintains it is now widely recognized that national anti-discrimination legislation against disabled people calls for the inclusion of “universal design” into the production of the physical and cultural environment. For example, some improvements in Canadian social structures like the post-secondary systems and services have occurred but these changes have only surfaced recently.

The social model of disability has epistemological implications for conducting studies with marginalized adults with learning disabilities. In support of this argument, Priestley (1997) claims that disability studies research now centres most of its theorizing, analysis, and critique on this social model of disability. Consequently, this model has provided the ontological and epistemological foundation for scholarship production. On the other hand, critics of this approach such as Shakespeare and Watson (2001) have argued that the social model of disability fails to recognize the importance of representing the personal experience of disability. Because the concept of disability is so complex and so situated, they advocate for research approaches that seek to give voice to the individual experiences of those silenced minorities rather than seeking to subsume them into meta narratives. They also support the flexibility of methods of data collection and analysis that meet the needs of the disabled participants.

In an attempt to design an investigation that embedded these ontological and methodological elements, Roberts (2010) conducted a study that looked at deaf adult learners in a literacy program. Using a socio-cultural lens, the case study examined the learning processes for deaf adults through observation, semi-structured interviews, and document analysis. Within this program, learners engaged in literacy practices that emphasized real world concepts associated with their lives such as quilt making and employment readiness skills. Findings suggest that the context, content, individual learner characteristics, and instruction style contributed to a reformulated adult identity for the deaf learners. Participants were able to describe how these newly acquired literacy practices not only increased their self-esteem but awakened novel lifelong learning goals. In addition, results seem to indicate that social cognition theory holds some explanatory power for deepening our understanding of disabled adult literacy learners.

### **Implications for Adult Education Practice**

This discussion was undertaken to highlight some of the current definitions, research, and issues related to the complexities of adult literacy and disabilities. What is clear is that the number of Canadian adults with a learning limitation struggling with low literacy is staggering. What is also evident is that there is a need for program interventions specifically designed for this marginalized group accompanied by awareness building on the issue of learning disabilities within literacy programs. Quigley (2001) pointed out those adults who are “designated low-literate are not given a meaningful voice in the programs and policies designed to help them” (p. 83). Such is the case with disabled adult literacy learners. A social view of literacy may be part of the solution to these challenges. Developing programs from this perspective has a greater propensity for increasing participation rates because of the connection between literacy practices and the personal experiences of the disabled adult learners. Authentic classroom, tutorial and online resources that are closely tied to the real world of the disabled adult are essential for learners to achieve their short-term and long-term goals. Coupled with this is a need for professional development for literacy instructors who are teaching disabled adults. As can be seen from the above cited literature, the use of appropriate diagnostic tools, teaching styles, and assessment methods are required within this highly differentiated learning environment. Finally, emphasizing the well-being, personal development, and societal contributions of disabled literacy learners can offer the foundation for community awareness building. Promoting success stories and narratives of those disabled literacy learners who have gained confidence and changed their lives can have a far extending reach. And it is this type of advocacy that will open the doors for these adults to become further engaged in the policies that impact their lives.

### **References**

- Barnes, C. (2011). Understanding disability and the design for all. *Journal of Accessibility and Design*, 1(1), 55–80.
- Barton, D., & Hamilton, M. (2000). *Local literacies: Reading and writing in one community*. London: Routledge.

- Burke, K. (2008). A call to action: World summit on learning disabilities. Foothills Academy World Summit Organizing Committee on Learning Disabilities. Calgary, AB.
- Canadian Association for Learning Disabilities. (2002). Retrieved from <http://www.ldac-acta.ca>
- Canadian Council on Learning. (2009) *Lessons in learning: Strategies for overcoming barriers to training and education for Canadians with disabilities*. Ottawa: Author.
- Chiappe, P., Stringer, R., Siegel, L. S., & Stanovich, K. E. (2002). Why the timing deficit hypothesis does not explain reading disability in adults. *Reading and Writing: An Interdisciplinary Journal*, 15(1–2), 73–107.
- Cope, B., & Kalantzis, M. (Eds.). (2000). *Multiliteracies: Literacy learning and the design of social futures*. New York: Routledge.
- Di Giorgio, C. (2008). *Barriers and solutions for adult learners in post secondary and basic education settings*. Literacy Alliance of Prince Edward Island, Charlotown, PEI.
- Doyle, B. (2008). *Disability discrimination: Law and practice. (6th edition)*. Bristol, UK: Jordans.
- Eden, G. F., Jones, K. M., Cappell, K., Gareau, L., Wood, F. B., Zeffrio, T. A., Dietz, N. A. E., Agnew, J. A., & Flowers, D. L. (2004). Neural changes following remediation of adult developmental dyslexia. *Neuron*, 44, 411–422
- Elwan, A. (1999). *Poverty and disability: A survey of the literature*. Washington, DC: Social Protection Unit, The World Bank.
- Evans, C. J. (2004). Literacy development in deaf students: Case studies in bilingual teaching and learning. *American Annals of the Deaf*, 149(1), 17–27.
- Gee, J. P. (2008). *Social linguistics and literacies: Ideologies in discourses (3rd ed.)*. London: Routledge.
- Gilger, J., & Kaplan, B. (2001). Atypical brain development: A conceptual framework for understanding developmental learning disabilities. *Developmental Neuropsychology*, 20(2), 465–481.
- Hanlon, M. M., & Cantrell, J. R. (1999). Teaching a learning disabled adult to spell: Is it ever too late? *Journal of Adolescent and Adult Literacy*, 43(1), 4–11.
- Human Resources and Skills Development Canada. (2009). Advancing the inclusion of people with disabilities. Retrieved from [http://www.hrsdc.gc.ca/eng/disability\\_issues/reports/fdr/2009/page00.shtml](http://www.hrsdc.gc.ca/eng/disability_issues/reports/fdr/2009/page00.shtml)
- Human Resources and Skills Development Canada. (2011). Disability facts about education. Retrieved from [http://www.hrsdc.gc.ca/eng/disability\\_issues/reports/disability\\_profile/2011/fact\\_sheet/education.pdf](http://www.hrsdc.gc.ca/eng/disability_issues/reports/disability_profile/2011/fact_sheet/education.pdf)
- Idol-Maestas, L. (1981). Increasing the oral reading performance of a learning disabled adult. *Learning Disability Quarterly*, 4(Summer), 294–301.
- Kirsch, I. S., Jungeblut, A., Jenkins, L., & Kolstad, A. (1993). *Adult literacy in America: A first look at the results of the National Adult Literacy Survey*. Washington, DC: U.S. Government Printing Office.
- Kruidenier, J., MacArthur, C. & Wrigley, H. (2010). *Adult education literacy instruction: A review of the research*. Washington, DC: National Institute for Literacy.
- Kutner, M., Greenberg, E., Jin, Y., & Paulsen, C. (2006). *The health literacy of America's adults: Results from the 2003 National Assessment of Adult Literacy*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.
- Longfield, J. (2003). Raising adult literacy skills: The need for a Pan-Canadian response. Retrieved from <http://www.nald.ca/library/research/raisinge/raisinge.pdf>
- MacArthur, C. A., Konold, T. R., Glutting, J. J., & Alamprese, J. A. (2010). Reading component skills of learners in adult basic education. *Journal of Learning Disabilities*, 43(2), 108–121.
- Masny, D. (2009). Bridging access, equity and quality: The case for multiple literacies. Paper presented at the National Conference for Teachers of English and Literacy, Hobart, Tasmania.
- Mellard, D. F., & Patterson, M. B. (2008). Contrasting adult literacy learners with and without specific learning disabilities. *Remedial and Special Education*, 29(3), 133–144.

- Moje, E. B., & Luke, A. (2009). Literacy and identity: Examining the metaphors in history and contemporary research. *Reading Research Quarterly*, 44(4), 415–437.
- Movement for Canadian Literacy. (2005). *Factsheet # 7: Literacy and learning disabilities*. Ottawa: Author.
- Movement for Canadian Literacy. (2007). *A 10-year, results-based National Literacy Action Plan, 2006–2016*. Ottawa: Author.
- Priestley, M. (1997). Who's research? Retrieved from: <http://www.leeds.ac.uk/disability-studies/archiveuk/Barnes/chapter%206.pdf>
- Quigley, A. (2001). Defining reality: The struggle for voice in adult literacy education. In M. Taylor (Ed.). *Adult Literacy Now* (pp. 81–85). Toronto, ON: Irwin Publishing.
- Quigley, A., & Henry, R. (2011). *Will anything be different for literacy in the 21<sup>st</sup> century? Reflections on the IALS, the ALL, the IALSS and the AALAT*. Paper presented at the Fall Institute for the International Adult Literacy Survey (IALS): Its Meaning and Impact for Policy and Practice, Banff, AB.
- Quigley, A., Folinsbee, S. & Kraglund-Gauthier, W. (2006). *State of the field report on adult literacy*. St. Francis Xavier University, NS.
- Roberts, M. (2010). *A case study of adult deaf learners: Literacy practices through a socio-cultural lens*. Unpublished master's thesis, University of Ottawa, Ottawa, Ontario, Canada.
- Rogers, R., Mosley, M., & Kramer, M. A. (2009). Introduction. In R. Rogers, M. Mosley, M.A. Kramer (Eds.). *Designing socially just learning communities* (pp. 3–21). New York, NY: Routledge.
- Rubinsten, O., & Henik, A. (2006). Double dissociation of functions in developmental dyslexia and dyscalculia. *Journal of Educational Psychology*, 98(4), 854–867.
- Shakespeare, T. & Watson, N. (2001). The social model of disability: An outdated ideology? In S. Barnart & B. Altman (Eds.). *Exploring theories and expanding methodologies: Where we are going and where we need to go*. Oxford, UK: Elsevier
- Statistics Canada. (2005). *Building on our competencies: Canadian results of the International Adult Literacy Skills Survey* (Report No 89 617 XIE). Retrieved from <http://www.statcan.gc.ca/pub/89-617-x/89-617-x2005001-eng.pdf>
- Statistics Canada. (2007). *Participation and activity limitation survey 2006: Analytical Report* (Report No 89-628-XIE). Retrieved from <http://www.statcan.gc.ca/pub/89-628-x/89-628-x2007002-eng.pdf>
- Statistics Canada. (2009). *Participant and activity limitation survey 2006: Facts on learning limitations* (Report No 89 628 X). Retrieved from <http://www.statcan.gc.ca/pub/89-628-x/89-628-x2009014-eng.htm>
- Street, B.V. (1995). *Social literacies: Critical approaches to literacy in development, ethnography and education*. Harlow, UK: Longman.
- Swanson, H. L., & Hsieh, C.-J. (2009). Reading disabilities in adults: A selective meta-analysis of the literature. *Review of Educational Research*, 79(4), 1362–1390.
- Truch, S. (1994). Stimulating basic reading processes using auditory discrimination in depth. *Annals of Dyslexia*, 44, 60–80.
- United Nations Convention on the Rights of Persons with Disabilities. (2009). Retrieved from: [www.un.org/disabilities/convention/conventionfull.shtml](http://www.un.org/disabilities/convention/conventionfull.shtml)