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Abstract

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**Current Canadian Research on Students with
Learning Disabilities: Should We Be Bridging
Research on Cognition and Socially
Influenced Cognition?**

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It is a privilege to respond to these five papers that represent the ongoing work of early career scholars in the field of learning disabilities across the country. From east to west, Joan Versnel is at Dalhousie University (collaborating with researchers at Queen's) and Derek Berg is at Mount St. Vincent University, both in Nova Scotia, while John McNamara works at Brock University in Ontario. Robert Klassen is at the University of Alberta and Maureen Hoskyn is at Simon Fraser University. As Nancy Perry said, this group of five researchers shows considerable diversity, not only in their location, but also in the age of the students they study, the theoretical frameworks that inform their work, and the domains on which they focus — workplace learning, mathematics disabilities, emergent literacy, self-efficacy, and emergent writing, respectively. My challenge has been to pull together the common threads while honouring the unique qualities of these five papers, and to produce a response to a set of papers that is more likely to be described as diverse than as coherent.

**Research on Learning Disabilities:
Studying Cognition and Socially Influenced Cognition**

In the past few years, I have given considerable thought to what I see as two important currents within mainstream research in educational psychology and in research on learning disabilities (LD) that relies on frameworks from educational psychology. My thinking arose from the reframing of the doctoral

seminars in our Cognitive Studies graduate program: a few years ago, we split the introductory seminar into two seminars, one emphasizing research on cognition and one focusing on research on social cognition. I fully supported this change when it was made, but I have recently been asking myself if we need to do more to bring these two streams together or to use each to inform the other. I was most interested, then, when I saw the title of the January 2007 issue of *Educational Psychologist*: “Bridging the Cognitive and Sociocultural Approaches in Research on Conceptual Change.” Although the focus is slightly different, that special issue edited by Lucia Mason of the University of Padua in Italy inspired my response to this set of papers by Canadian researchers in learning disabilities.

By cognition, we usually refer to mental processes and mental products involved in knowing and comprehending, and use “words like think, believe, guess, conjecture, hypothesis, evidence, reasons, estimate, calculate, suspect, doubt, and theorize — to name just a few” (Tishman, Perkins, & Jay, 1995, p. 8). Cognitive research tends to focus on perception, attention, memory, knowledge representation, problem solving, and language comprehension (Anderson, 2004). A quick scan of any issue of the major journals in the field of LD yields a plethora of titles that refer to cognition. For example, the two “regular articles” in the September/October 2007 issue of *Journal of Learning Disabilities* are titled, “Innovative Programs for Improvement in Reading Through Cognitive Enhancement” (Hayward, Das, & Janzen, 2007) and “Cognitive Characteristics of Children with Mathematics Learning Disability (MLD) Vary as a Function of the Criteria Used to Define MLD” (Murphy, Mazzocco, Hanich, & Early, 2007). Cognitive psychology, and its application to LD, has traditionally focused on the individual, seeking to delineate the processes by which individual minds perceive, manipulate, and interpret information, and the focus has remained, for the most part, on the individual as an intellectual being. Mason (2007), in her introduction to the special issue of *Educational Psychologist*, refers to the “acquisition metaphor” (Sfard, 1998, p. 5) that captures the essence of the cognitive approach; we acquire knowledge and concepts that can become one’s own, and can be shared or transferred to another situation.

As early as 1993, the influential *Annual Review of Psychology* published a chapter on the “Social Foundations of Cognition” which argued for an altered perspective — socially influenced cognition — and made reference to both “social cognition” and “situated cognition” (Levine, Resnick, & Higgins, 1993). The argument, with respect to social cognition, was that too little attention had been paid to “intentions, motivations, social interpretations, or cognitive functioning in interaction with others” (p. 585). In the same year, Pintrich,

Marx, and Boyle (1993) called for researchers to move beyond cold conceptual change to consider affective, motivational, and situational factors that may affect knowledge restructuring. “The influence of this article was profound” (Mason, 2007, p. 2). Social cognition has been described as making sense of people (Kunda, 1999), especially their desires and beliefs, and trying to interpret, predict, and sometimes even control what people do (Bennett, 1993). It is concerned with what Pintrich and his colleagues referred to as affective and motivational. The sociocultural approach, inspired by Vygotsky’s (1978) work, is concerned with the situational to which Pintrich et al. referred. Knowledge, in the sociocultural approach, is not an entity in the head of an individual but an activity considered within its context, with the emphasis on participation and communication.

While recognizing that there are some differences between what is typically called “social cognition” and what is usually described as “the sociocultural approach,” I have chosen to include both in my discussion of socially influenced cognition with respect to the five papers in this special issue. It is more difficult to locate papers focused on these social perspectives in the major journals on LD compared to the ease with which one can locate cognitive papers. In *Learning Disabilities Research & Practice*, 22(1), Montague (2007) has a paper on self-regulation and mathematics instruction; and Field and her colleagues (2003) raise a thought-provoking question in their “Epilogue” to a special issue of *Remedial and Special Education* on adults with LD: “Should intervention and support for adults with learning disabilities stress adult-related needs such as psychosocial issues instead of academic achievement, as is currently done with children?” (p. 381). Englert and her co-authors (Englert, Mariage, & Dunsmore, 2006) review the limited research that uses sociocultural theory as an interpretive lens for writing instruction, with emphasis on sociocognitive apprenticeships in writing and participation in communities of practice. Research employing a social cognitive or sociocultural approach to LD is definitely in the minority, although many would readily agree that learning is a social phenomenon (Mason, 2007).

The differences between the exclusively cognitive approach and the more social emphasis were driven home for me when I was preparing a graduate course on the psychology of learning disabilities for the Fall 2007 term. My last offering of this course had been in July 2006. At that time, I used Bernice Wong’s edited book, *Learning About Learning Disabilities* (2004) as the course text. It includes many chapters on socially influenced cognition — with topics like self-regulation, peer relationships, social competence, communities of practice, and disability studies — in addition to chapters on memory, reading comprehension, mathematics, and language processes. However, by 2007

I felt that I needed a more current text, and I discovered *Learning Disabilities: From Identification to Intervention* (Fletcher, Lyon, Fuchs, & Barnes, 2007). It was certainly current with its inclusion of the latest research on response to intervention (RTI) and neurobiological factors. But it was entirely cognitive in its perspective with three chapters on reading and one on each of mathematics and written expression. In the introduction, the authors were clear, "In this book, we focus on the relation of academic skills and core cognitive processes, neurobiological factors, and intervention" (p. 3). Not a word about social cognitive or sociocultural research or topics such as peer relations or self-regulation, which sent me searching for journal articles on these topics which I consider essential to an understanding of LD.

Another reflection of differing perspectives on LD appears in the definitions researchers use. For example in this special issue, Klassen includes both cognitive and socially influenced cognitive factors in his definition and description of LD, but focuses more on the cognitive. He cites the recent definition of the Learning Disabilities Association of Canada (2007) which includes references to intrinsic disorders that interfere with the acquiring, organizing, retaining, or understanding of information, that are caused by impairments to psychological processes such as phonological processing, executive functions or memory. Klassen acknowledges that learning disabilities range in severity, and interfere with various academic skills with literacy areas most commonly affected. He immediately cites the consistent research finding that students with LD possess lower academic self-beliefs than non-learning disabled students (e.g., Chapman, 1988; Gans, Kenny, & Ghany, 2003; Lackaye, Margalit, Ziv, & Ziman, 2006), especially in areas of weak academic performance. Contrast this with Versnel (in this issue) who gives equal weight to the cognitive and social cognitive in describing LD: "Students with learning disabilities are characterized by a disorder in one or more psychological processes which results in weak academic achievement, and they frequently experience difficulties in self-regulation and social skills" (Hammett, Greene-Black, Salmon, & Mascarenhas, 2005; Stacey, 2001).

One could argue that researchers adopt one or the other of these stances because to do anything else would make the phenomenon under investigation too complex. That is, trying to tease out the cognitive processing weaknesses of children with math or reading disabilities would become unfocused if one had to wrestle with the roles of participation, communication, and shared understanding at the same time. I recognize there have been tensions between the more cognitive and the more social emphases in educational research generally (see extended conversations appearing in *Educational Researcher* between 1994 and 1998), while there have also been arguments in favour of

the complementarity of the approaches, extending the call of Pintrich et al. (1993) for research on “hot” and “cold” cognition. For example, Cobb (1994) argued for viewing learning as individual construction and as enculturation simultaneously. In writing about conceptual change, Hatano and Inagaki (2003) reasoned that learning may take place in the minds of individual students, but that learning occurs as a result of teachers’ arranging sociocultural factors to stimulate and support the restructuring of knowledge. And Sfard (1998) made the case that “An adequate combination of the *acquisition and participation metaphors* would bring to the fore advantages of each of them, while keeping their respective drawbacks at bay” (p. 11).

Considering the Five Papers in this Special Issue

While I do not believe that reconciling the cognitivist and socially influenced perspectives would be straightforward, I place the five papers in this issue within the context of the perspectives I have introduced. Then I consider what these researchers might learn from one another, and ask: are the two perspectives so incompatible that researchers should situate their work consistently in one or the other, or could these research programs benefit from more bridging of the divide between the cognitive and the social cognitive in the field of LD? Would such integration enhance our understanding of the complexities of learning disabilities?

I identify the papers by the first author, discuss the papers by beginning with the studies involving the youngest research participants, and move along the developmental continuum from preschoolers (McNamara and Hoskyn), through primary-junior students (Berg), to adolescents (Versnel), and to adolescents and university students (Klassen). Surprisingly, this order is also consistent with a primary focus on cognition (McNamara, Hoskyn, and Berg) and then a primary focus on socially influenced cognition (Versnel and Klassen).

John McNamara’s study of emergent literacy adopted a cognitive approach to the comparison of two interventions for preschool children with deficits in expressive and receptive language. Consistent with recent policy developments in Ontario, McNamara contrasted the traditional intervention for language development with an innovative intervention that included phonological awareness, print knowledge, vocabulary, and narrative understanding in addition to specific language goals. Although the emergent literacy intervention was delivered in a social manner by speech and language pathologists, working with individual children, and addressed what is essentially a social

deficit, the emphasis was clearly on the children showing “substantial gains in print and word awareness,” the implicit language of cognitive acquisition. Like many focused, research-informed cognitive interventions, McNamara’s novel instruction helped children to make greater gains on formal research tasks than the comparison group. The question I ask the researcher is this: Might the inclusion of a social perspective have added anything to an already effective intervention? Perhaps gradually moving the intervention to within the social contexts of the classroom, where the children’s newly acquired understanding and use of language are needed for school success, would enable the researcher to see these children comfortably participating and communicating with their peers. Ongoing studies could then shift the focus to the emergent literacy tasks found in Canadian primary classrooms — those social and community tasks engaged in by teachers and clusters of children vying for attention and acceptance from their teacher and their peers.

Maureen Hoskyn’s initial study in a longitudinal program of research is also located toward the cognitive end of the cognitive-social cognitive continuum. She set out to study the role of working memory in the emergent writing of young children from 3 to 5 years of age. One of her challenges was to develop measures of cognitive processing that are meaningful for such young children; innovative, age-appropriate measures included puppet story retelling and spatial organization of arrays of toys. Included in her measures of working memory (modified from Swanson’s *Cognitive Processing Test*, 1996), in addition to measures of acquisition and maintenance, were gain scores showing the highest score obtained by the child with prompts, a sociocultural approach to understanding children’s working in the “zone of proximal development” (ZPD; Vygotsky, 1978). Hoskyn chose to use the gain scores in her analyses. She found empirical support that scaffolding in the form of prompts improved children’s performance on working memory tasks, although most young children were not able to perform at that level on the maintenance tasks. Findings from the confirmatory factor and hierarchical regression analyses showed that age-related change was predicted by variance in working memory capacity, more likely to represent executive processing than processing in the phonological loop or visual spatial sketchpad. And individual differences in working memory accounted for a small but significant amount of unique variance in children’s early writing performance. This preliminary study suggests there may be value in considering at least the ZPD construct from the sociocultural approach when trying to understand the cognitive development of preschoolers and its relation to emergent literacy tasks.

Derek Berg’s research on children with severe arithmetic difficulties is clearly in the cognitive realm; it is the only paper in the set that uses the word

cognitive in the title. The measures are well known and well used to represent constructs of cognitive processing — like processing speed, verbal working memory, and visual spatial working memory — and to show impairment in these specific aspects of processing. This carefully designed study, which accounts for several limitations in previous research by using an age-matched, achievement-matched design, challenges the widely accepted notion that children with severe arithmetic difficulties (SAD) have deficits in cognitive functioning. Rather than interpreting the inconsistent pattern of differential cognitive processing, seen in this fine-grained analysis, as a cognitive deficit Berg argues for interpreting the findings as a cognitive lag. Such an interpretation suggests that it might be valuable in future studies to adopt an approach resembling dynamic assessment, from Vygotskian thinking, and examine the functioning of children with SAD in their “zone of proximal development.” Because their processing is like that of their younger peers without learning difficulties, I would argue that it is critical to investigate what contexts would best enable these children to continue to develop from their current level of processing and achievement. It appears that even a rigorously designed program of cognitive research in the field of learning disabilities may benefit from being informed by key constructs from a sociocultural perspective on learning.

Joan Versnel’s two case studies of adolescents with LD participating in work-based learning highlight the importance of understanding the context of learning and demonstrate how the individual’s actions are enabled and disabled by the affordances for learning within the context. Laurie, a young woman who had dropped out and returned to high school had been very successful in a previous workplace, a government-operated garage. However, in the current placement — a small independent garage that relied on every worker to contribute to profitability — she was not able to meet the expectations of her employer and coworker. And Jerry, who assumed that school behaviours, like “skipping,” would be acceptable in a workplace never received the structured approach to learning that he recognized he needed to learn at school. For both youth, individual cognitive strengths and weaknesses, including the ability to follow oral instructions and to advocate for oneself, interacted with the affordances of the workplace to contribute to lack of learning and unsuccessful placements. Versnel did not include clearly described cognitive profiles of the focal students, and this omission may reflect the sensitivities involved in collecting such data for older research participants in contexts outside school, where such information may not be seen as relevant or may be considered to contribute to discrimination against the individual. This serves as a reminder that schools may not be representative of other authentic contexts in which individuals with LD must function in society. The need for both cognitive and social cognitive perspectives seems apparent in this real-world context where

whatever curriculum may exist is more naturally occurring than student-centred, forcing students to recognize their cognitive strengths and weaknesses and to rely on themselves for social cognition, including self-regulation, initiative, and questioning, in order to learn.

Robert Klassen reports on three studies in a program of research that clearly includes the social cognition of young adolescents and university students with LD. If we need a research program to convince theorists, researchers, and practitioners of the importance of social cognition in understanding the learning behaviours and outcomes of students with learning disabilities, this may be that program. While we usually think of optimism and positive self-appraisals as contributing to learning, this understanding may gloss over important information about some students with LD who report overly optimistic self-efficacy beliefs and over-estimate their performance on academic tasks. Of great concern is that the adolescents with LD do not recognize their own over-optimistic perceptions, called *confidence* in Klassen's study, and report they are accurate or lacking in confidence. The university students, most likely a selective group of youth with LD, appeared to display appropriately calibrated self-beliefs while showing higher levels of procrastination and lower levels of self-regulation than their peers, perhaps indicating they did not have strategies to handle the demands of advanced academic work. Klassen's research pays attention to cognitive and social cognitive aspects of the complexities of older learners with LD, perhaps providing a model of how researchers might bridge the divide between these two research approaches. Klassen's studies leave the reader wondering how to support learners with LD so they can enhance the accuracy of their self-perceptions, without destroying their belief in themselves as learners. This is needed to enable them to engage in a realistic amount of effective studying and to meet their academic challenges.

Closing Comments

While it is easy to call for the reconciliation of cognitive and socially influenced cognitive accounts of learning and learning disabilities, it is more challenging to take these two perspectives into account consistently and simultaneously. However, these five studies indicate that most programs of research in LD could emphasize one type of account, but also provide openings for acknowledging the importance of social interaction as a culturally contextualized process while focusing on cognitive acquisition. Research in the field of LD generally, and these studies in particular, suggest that there may be more recognition of membership in a community of discourse and of contextual af-

fordances in learning when the learning takes place outside of the classroom, for example, in a workplace (Munby, Hutchinson, & Chin, 2007). Versnel's research seemed to accept fewer taken for granted assumptions about the dominance of the cognitive account, and reminded me of the question asked by Field and her colleagues (2003): "Should intervention and support for adults with learning disabilities stress adult-related needs such as psychosocial issues instead of academic achievement, as is currently done with children?" (p. 381).

Could it be, as Field and her co-authors imply, that we focus on the cognitive account in studying children with LD because our primary concern is for understanding and enhancing their academic achievement? If this is the case, perhaps we need to ask whether the issues raised as significant in research on adolescents and adults with LD, including self-confidence, self-advocacy, and taking advantage of the affordances available in learning contexts, have their roots in childhood. If so, would we be better at enabling the all-important social participation later in life if we thought rigorously and consistently about social accounts from our earliest studies of preschoolers while still attending to cognitive accounts. I give the last word to Mercer (2006) with three additions:

The challenge is to devise ways of researching the processes of developing understanding that are sensitive to both the cultural [and social] contexts in which learning takes place and to the psychological mechanisms involved when individuals [with learning disabilities] reinterpret [or are unable to reinterpret] the world in the light of new experience. (p. 77)

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