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Understanding the Perceptions of Self-Efficacy of Students with Learning Disabilities: A Review and Critique of the Current Literature

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ABSTRACT

The present study reviews the most recent literature in order to understand the self-efficacy beliefs of students with learning disabilities (LD) in academic contexts. In the first section, Bandura’s self-efficacy theory and academic self-regulation is discussed followed by a brief review of the history of the field of learning disabilities. Based on the literature search from PsychINFO and Educational Resources Information Center (ERIC), 18 studies met the criteria for reviewing: (a) a measure of self-efficacy, (b) inclusion of a sample of students that are identified with a specific learning disability, and (c) published after the year 2000. In the second section, the research findings are summarized in the light of five research questions and their outcomes. The results from the studies suggest that students with LD report significantly lower scores on self-efficacy compared to their typically achieving peers. In contrast, in certain academic domains, students with LD were found to miscalibrate their self-efficacy beliefs, particularly in the domain of writing. The findings are, then, discussed, with special interest given to self-regulation, self-protective behavior of students with LD and intervention and its limitations. The review concludes with final remarks and implications for future research.
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CHAPTER I: INTRODUCTION

Approximately 5.7% of all school-aged children are identified as having a learning disability (LD), and the prevalence of LD identification has been increasing at a rapid rate (Torgesen, 2004). Students with academic difficulties generally differ from their typically achieving peers in their motivational and behavioral profiles. LD students struggle in a variety of academic domains including reading, writing, and mathematics coupled with problems in personal and social realms. On the contrary, a considerable amount of comparison studies of self-efficacy has reported inconsistent results with regard to LD students’ judgments of their capabilities in educational contexts (Klassen, 2002a).

According to Bandura (1977a), human behavior is regulated by the cognitive mechanisms that underlie one’s thoughts and behaviors. This self-system plays an important role in the academic experiences of students and impacts how well they master academic skills (Bouffard-Bouchard, Parent, & Larivée, 1991; Pajares & Miller, 1994; Pintrich & De Groot, 1990; Zimmerman, Bandura, and Martinez-Pons, 1992). Likewise, how students judge their capabilities and how, through perceptions of self-efficacy, they regulate their learning activities to master academic subjects have been great interest to educational researchers (Pajares, 1996).

Perceived self-efficacy has been defined as “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1997, p. 3). Self-efficacy beliefs influence students’ choice of activities, level of effort and the degree of perseverance—achievement behaviors that play a pivotal role in academic attainments (Schunk, 1995). It is therefore essential to possess optimistic self-efficacy beliefs as they promote higher levels of behavioral, motivational and cognitive engagement (Linnenbrink & Pintrich, 2003).
Successes raise self-efficacy beliefs whereas failures lower them (Bandura, 1977a). However, once a strong sense of efficacy is developed through sustained effort, negative impact of occasional failures is likely to be reduced (Bandura, 1986). For this reason, early performances exert great influence on the development of adaptive self-efficacy beliefs. Self-efficacy theory asserts that cognitive abilities alone do not guarantee scholastic achievement but depends largely on one’s self-beliefs to effectively use background knowledge and required strategies (Bandura, 1993, 1997). The theoretical framework also speaks to the development of metacognition and self-regulatory skills in that it influences the use of cognitive processes such as goal setting, strategy planning, self-monitoring, and self-evaluation (Zimmerman, 2000a). The interactions between motivation, metacognition and self-regulatory processes also effect the academic functioning of LD students (Meltzer, et al., 2004) as this special population has been typically associated with difficulties in analyzing task requirements as well as monitoring and adjusting their performance (Butler, 1998a).

Although optimistic self-efficacy beliefs foster learning and performance, overconfidence without the underlying skills may adversely affect task performance. Bandura (1997) warned against inaccurate estimates of self-efficacy beliefs as such expectations may be limited by faulty self-knowledge and inaccurate assessments of task demands. In this sense, Schunk (1994) noted that “Harboring some doubt whether one will succeed may mobilize effort and effective use of strategies better than feeling overly confident” (p. 82). A large number of studies have shown that students with LD overestimate their domain specific abilities despite their poor achievements. Klassen (2002a), after reviewing 22 studies on the self-efficacy beliefs of students with LD, demonstrated that students with LD mis-calibrate their task performance, particularly in the domain of writing. The overestimations of LD students have generally been attributed to low
metacognitive self-awareness, difficulties in analyzing task requirements, and poor self-regulation. Although, optimistic self-efficacy beliefs contribute positively to the academic functioning of normally achieving students, how this relationship functions among students with LD is less clear (Klassen & Welton, 2009). The present review, then, provides an overview of the most recent studies in an effort to address how self-efficacy beliefs shape the motivational and cognitive engagement of students with LD.

**Self-Efficacy Theory**

According to Bandura, “Effective intellectual functioning requires much more than simply understanding factual knowledge and reasoning operations for given activities” (1993, p.117). Based on this assertion, cognitive development and functioning depends on the interactions between student’s behaviors, beliefs, and the way they control their environment (Bandura, 1993). In this reciprocal relationship, individuals are viewed both as products and producers of their social environment rather than the sole determinants of change (Pajares, 1996). With the help of self-reflection students make sense of their past experiences, cognitive abilities, and self-beliefs that ultimately alter their thinking and behaviors (Schunk & Pajares, 2005).

Self-efficacy refers to one’s context-specific judgments of personal capabilities (Pintrich & Schunk, 2002). A considerable amount of research has demonstrated that self-efficacy predicts performance in areas as diverse as education, athletics, and business (Klassen, 2007). Path analytical studies (Pajares & Miller, 1994, Zimmerman & Bandura, 1994) have shown that self-efficacy impacts academic performance and directs students’ choices of activities, expenditure of effort, and level of persistence in the face of challenging circumstances (Schunk, 1995).
Compared to students with high self-efficacy, those that doubt their abilities are more likely to avoid challenging activities, quit easily, and avoid academic assistance in order to overcome task difficulties (Linnenbrink & Pintrich, 2003).

As discussed previously, self-efficacy plays a key role in the cognitive engagement of learning that involves the process of metacognition and self-regulation. As such, self-regulatory processes such as planning, goal setting, self-monitoring, self-evaluation, and strategy use are mediated through one’s self-beliefs of efficacy to use them well (Schunk, 1994). Motivation research that examines the relationship between self-regulation and self constructs demonstrate that self beliefs of efficacy to regulate one’s own actions toward the attainment of goals influence motivation and the ultimate level of achievement (Bandura, Barbaranelli, Caprara, and Pastorelli, 1996; Zimmerman, Bandura and Martinez-Pons 1992). Students who a firm belief in their abilities to master task demands are much more likely to become strategic learners in that they systematically use learning strategies with an aim to give a structure to their school work (Zimmerman, 1994).

Students form self-efficacy beliefs through four major processes. They include enactive experiences (individual performance), vicarious experiences (observation of others), verbal persuasion, and physiological states (Bandura, 1993). Of the four sources, mastery experiences are hypothesized to be the most effective source of self-efficacy because outcomes of one’s previous performances leads to the development of beliefs about one’s capabilities in a certain domain. Students learn not only from their personal experiences but also by observing the performances of others. For example, when standards for task attainments are ambiguous, students rely on social comparative information through which they assess their capabilities.
relative to the performance of others. Vicarious experience becomes particularly important when students observe similar peers succeed or fail (Schunk, 1991), as students may believe that the model’s performance is reflective of their own capabilities. Students also develop self-efficacy beliefs through socially evaluated feedback. Performance feedback that focuses on effortful behaviors enhances self-efficacy relative to evaluations that focuses on personal deficiencies. Thus, it is highly important for students to understand that success can be attainable through prolonged effort and perseverance (Linnenbrink & Pintrich, 2003). Finally, somatic and physical states such as anxiety, stress and mood states also inform about one’s beliefs about efficacy. For example, students can gauge their domain-specific competencies from how much stress and anxiety they experience in taxing situations. Those negative bodily reactions might lower self-efficacy; however, with increased perceived self-efficacy adverse effects of affective processes may be diminished.

Self-efficacy beliefs differ from other motivational constructs in a number of distinct ways. For example, self-concept—one’s collective self-perceptions formed through experiences with and interpretations of the environment and significant others (Shavelson et al., 1976)—has also seen much attention from motivational researchers. Self-concept has been traditionally defined as a global construct (Bong & Skaalvik, 2003), and is established through comparisons with others (Klassen, 2006). In contrast, self-efficacy reflects a highly context-specific, cognitive, goal-referenced, and future-oriented judgment of one’s perceived competence and comparatively malleable as they depend on task orientation. Whereas self-concept is rather stable and comprises a normative; affective; hierarchical; and a past-oriented appraisal of the self. This is the reason why self-efficacy beliefs do not rely on global measurements of psychological functioning but are derived from situational circumstances (Bandura, 2006). Despite their
theoretical underpinnings, self-efficacy contributes to the development self-concept as “an active precursor” (Bong & Skaalvik, 2003); for example, students who are highly efficacious feel better about their academic functioning and as a result hold positive feelings about themselves and value being engaged in academic activities.

Self-efficacy beliefs are also separate from outcome expectations. Outcome expectations refer to the judgments as to whether a given behavior will lead to certain consequence (Pajares, 1996). Outcome expectations are important as individuals do not put much effort in activities that are expected to bring about negative outcomes. Bandura (1997), on the other hand, argued that “…outcomes people anticipate depend largely on their judgments of how well they will be able to perform in given situations” (p. 21). As such, individuals who doubt their capabilities do not act on behaviors that they think will produce poor outcomes. The knowledge that a certain behaviors will lead to positive outcomes does not guarantee motivation (Schunk, 1991) and depend to some degree on the strength of one’s perceived self-efficacy to effectively use those actions.

Self-efficacy beliefs also play a key role in the expectancy-value model of achievement. This theory asserts that one’s anticipations about performance encountered and how much they value those outcomes influence persistence, choice of activities and the ultimate level of attainments (Wigfield & Eccles, 1992). Much like self-efficacy theory, expectancy-value theories consider perceived sense of competence as the antecedent of self-motivation (Wigfield & Eccles 2002); while on the other hand they place greater emphasis on the impact of outcome expectancies (Pajares, 1996). However, there are many activities that are perceived to guarantee positive outcomes; however, whether one will pursue those actions is affected by one’s beliefs of
personal efficacy as individuals do not adapt behaviors that are perceived to exceed personal capabilities (Bandura, 1997). Therefore, the motivating power of expectancy-value theories may diminish after self-efficacy perceptions are controlled (Schunk & Pajares, 2005). Self-efficacy beliefs, then, mediates and sometimes directly influence the relationship between academic behaviors and outcomes.

In school, optimistic self-efficacy beliefs are instrumental to successful academic functioning; however, high self-efficacy without the requisite skills can be maladaptive to achievement. A high degree of discordance between efficacy judgments and actual performance may develop from faulty task analysis or from lack of knowledge (Bandura & Schunk, 1981). Inaccurate estimation of efficacy beliefs may lead to faulty task choices, poor preparation, and consequently, poor performance. For instance, accurate self-assessments are required for effective self-regulation. Optimistic efficacy beliefs coupled with a lack self-awareness of one’s strengths and weaknesses may produce adverse effects such as inadequate preparation (Winne, 2004). A common finding in the literature is that students with LD sometimes report inaccurate estimations of their performance and capabilities. This mismatch between actual performance and perceived capabilities have been attributed to deficient self-knowledge, faulty task analysis as well as to self-protection (Alvarez & Adelman, 1986). One of the aims of the present review, then, is to examine whether students with LD accurately calibrate their self-efficacy beliefs in academic settings.


developmental changes in self-efficacy

Students undergo changes in their ability to cultivate their academic capabilities across developmental periods. Most students with or without learning disabilities have been shown to
hold optimistic views about their academic abilities during the first years of elementary school (Licht, 1992; Miller, 1987; Stipek, 1981); however, self-perception of competence begin to decline during early adolescence (Pintrich & Schunk, 2002; Stipek, 1981), beginning in Grade 7 (Urdan & Midgley, 2003; Pajares & Valiante, 1999). Thus, at about 7-8 years old children become more realistic in their self-perceptions of ability.

The accuracy of self-appraisals may be associated with evaluative and social changes that occur in higher grade levels. Such changes occur, for example, in peer group affiliations (Schunk & Meece, 2006) and evaluative standards of performance as teachers begin to rely more on extrinsic contingencies of assessment (Lepper, Henderlong, & Iyengar, 2005). External evaluations of performance such as performance feedback and social comparative information provide children with more normative information about their personal capabilities. In addition, children advance in their reasoning skills whereby they use evaluative information to make inferences about ability (Dweck, 2002). Bandura highlights the importance of self-efficacy beliefs in how children construe ability in educational settings. Children who believe that ability is an acquirable rather than a fixed trait tend to have higher self-efficacy beliefs (Bandura, 1997). Thus, learning environments that portray ability as a acquirable skill build a stronger sense of self-efficacy, which, in turn promotes academic achievement and higher academic attainments (Bandura, 1993).

**Academic Self-Regulation**

The construct of self-regulation refers to the degree that individuals proactively manage their academic activities and that they are metacognitively, motivationally and behaviorally involved in their own learning process (Zimmerman, 1994). Self-regulation has been proposed to
Perceptions of Self-Efficacy

encompass three classes of subprocesses: self-observation, self-judgment, and self-reactions. These performance related processes function in a reciprocal manner, whereby students set academic goals and engage in effortful behaviors to achieve them. These skills are mainly acquired through observation, reading, or hearing about the performance of skilled models, such as teachers, parents, and peers (Zimmerman, 2000b).

The first self-regulatory process is described as the forethought phase of self-regulation and involves task analysis components such goal setting and strategic planning, as well as underlying motives such as self-efficacy, task interest and outcome expectancies. In the goal setting phase of self-regulation students make certain commitments and motivate themselves to achieve them (Zimmerman, 2000b). The goal mechanism of highly self-regulated learners involves the use of process goals, which helps them regulate self-evaluative behavior in the attainment of more distal goals (Zimmerman, 2000b). For example, Bandura & Schunk (1981) demonstrated that in mathematics student’s that used proximal goals developed greater self-efficacy and intrinsic interest toward the achievement of more distal goals. Similarly, individuals who are confident in their abilities target higher goals (Zimmerman, Bandura, & Martinez-Pons, 1992) and exert more effort to achieve them (Bandura & Cervone, 1986). This bidirectional relationship, in return, contributes positively to the academic profiles of students as it gives them a sense of accomplishment and confidence in their capabilities (Schunk & Miller, 2002).

Task analysis of self-regulation also concerns the strategic planning piece of forethought processes. The successful completion of tasks requires the use methods that are designed to help students to control their cognitive activities. According to Zimmerman, “strategies are crucial to academic achievement because they represent the tools with which students learn and improve
their performance and level of skill” (2000, p. 17). For example, distributed practice has been found to be beneficial for specific cognitive tasks, such as assignments that require verbatim recall (Cepeda, Pashler, Vul, Wixted, & Rohrer, 2006). Motivated students with high self-efficacy are more likely to use learning strategies (Schunk, 1994) and become more proficient in selecting and implementing those strategies selected (Cleary & Zimmerman, 2001).

The next step of self-regulation is the performance control phase, which includes self-observation (i.e., self-monitoring) and self-control subprocesses. Self-observational systems are highly important as they help students discriminate between their effective and ineffective performances and whether they need to alter their selected strategies in order to avoid negative outcomes (Zimmerman & Cleary, 2006). Thus, frequent observations of learning progress promote better error detection, which, in turn leads to corrective action and enhanced performance. Self-instruction is another technique that helps students to direct their learning experiences. In this process students develop overt and invert self-statements to define the nature of problems, focus their attention, engage in strategy use and evaluate their performance and assist one to stay on task (Harris, Reid, & Graham, 2004).

The third phase of the self-regulation is the self-reflection phase through which students self-evaluate and monitor their performance progress as to whether or not a target behavior has occurred (Harris, Reid, & Graham, 2004). For example, students may compare their current performance with previous levels of outcomes. Students who are confident in their abilities set higher performance standards (Zimmerman & Bandura, 1994) and recover better from setbacks as they possess the mindset that they can improve their learning by adjusting effective strategies. The self-evaluative stage also impacts student’s attributional styles. According to the attribution
theory of motivation, students generally attribute their successes and failures to factors such as ability, effort, luck and task difficulty (Weiner, 1979). In this sense, Bandura (1997) argues that perceived self-efficacy raises the effectiveness of causal attributions. For example, student’s beliefs about how ability is construed (e.g., ability vs. effort) affect their cognitive functioning and what they anticipate from future performances. As such, individuals who regard themselves as highly efficacious view performance as personally controllable (Bandura, 1997); whereby they perceive failures as a natural part of their learning process and work harder to develop adequate mastery of skills. Students who attribute their failures to internal traits such as ability may hold lower self-efficacy beliefs as such factors are resilient to change.

Learning Disabilities

Learning disabilities (LD) is the largest field of special education and is continuing to grow at a rapid rate (Torgesen, 2004). Hallahan & Mock (2003) described the development of the field of LD in a chronological order that constitutes five different time periods. These periods reveal significant advancement of research and progress in the area of LD and will be discussed in the subsequent order.

The European Foundation Period (c.1800 to 1920) signaled the emergence of research related to brain injuries and mental impairment. It was during this time period that the notion of localization of brain functioning have been emphasized, especially for speech and language functions. During the U.S Foundation Period (c. 1920-1960) researchers focused on remediation research and areas related to perception and attention in the domains of reading and writing. Samuel Torrey Orton, in particular, helped students with reading difficulties, and later demonstrated that difficulties in reading could be independent of intellectual capacity—an
hypothesis that has been adapted by contemporary researchers (Siegel, 1989). His special
education techniques were highly influential; although, much of his arguments concerning the
neurological basis of reading disabilities were insufficient to explain individual differences in
reading abilities (Torgesen, 2004). Also at this time, Werner and Strauss studied and laid the
foundation for a particular group of children who had problems with processing higher order
cognitive skills and other environmental stimuli that would later be described as problems related
to distractibility, hyperactivity, and others in visual perception and perceptual/motor. Their
influence on the field of learning disabilities was highly significant—they not only established
diagnostic criteria for a cognitive disorder but developed intervention programs that aid students
with special deficiencies in information processing (Torgesen, 2004).

During the Emergent Period (c.1960 to 1975), the term for learning disabilities was
introduced for the first time by Samuel Kirk in 1962. The definition of LD developed by
Bateman, who was a former student of Kirk, developed the concept of achievement-aptitude
discrepancy that later became a prominent component of the field of LD. Educational programs
focusing on the development of psychological processing and visual perception has also emerged
within this time period in addition to an advent of increase in government and parental
organizations.

The Solidification Period (c.1975 to 1985) reflects a “period of calm” in the history of
LD (Hallahan & Mock, 2003). However, a fundamental legislation, Education for All
Handicapped Children Act, was passed in these years and the U.S Office of Education defined
the federal regulations and the definition for identifying students with LD. This definition reads:
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The term “specific learning disability” means a disorder in one or more of the psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have LD which are primarily the result of visual, hearing, or motor handicaps, or mental retardation, or emotional disturbance, or of environmental, cultural, or economic disadvantage. (U.S Office of Education, 1977, p. 65083).

The same definition has been adopted by the Individuals with Disabilities Education Act (IDEA, 1997), which stated a team may identify a child with a specific learning disability if: (1) the child does not achieve commensurately with his or her age and ability levels in one or more of the areas listed...if provided with learning experiences appropriate for the child’s age and ability levels, and (2) the team finds that a child has a severe discrepancy between achievement and intellectual ability in one or more of the areas: (i) Oral expression; (ii) Listening comprehension; (iii) Written expression; (iv) Basic reading skill; (v) Reading comprehension; (vi) Mathematics calculation; or (vii) Mathematics reasoning.

The definition and federal regulations had a significant impact on LD research whereby large amount of funding from the government enabled researchers to develop cognitive and social intervention programs for students identified with LD (Hallahan & Mercer, 2002).

The last decade has witnessed a significant increase in the number of students identified as having a specific learning disability (Torgesen, 2004). Hallahan & Mock (2003) described this
phase as the Turbulent Period (1985-2000) because of the extraordinary growth LD population and unsettled issues related to its definition and identification. The main focus of research to date has been on deficits related to cognition, metacognition, attributional styles, social skills and intervention. For example, research in phonological processing—the ability to identify and manipulate the units of sound in spoken language—became the central area of investigation. A considerable body of research has shown that poor readers have difficulties in phonological processing (Snowling, 2000). Moreover, genetic studies demonstrated that deficits related to phonological processing in reading may be attributed to genetic factors. There is, however, much debate over the heavy reliance on the phonological and biological core of the problem (Torgesen, 2004). Thus, a multifaceted approach that focuses on additional cognitive processes, such as the executive function and metacognition, in understanding learning processes of students with LD has been warranted (Swanson, 2000). For example, self-regulation may be lower in students with LD who often display deficiencies in analyzing task requirements, monitoring appropriate learning strategies and adjusting performance (Butler, 1998a). These students typically focus on surface components of task demands such as spelling and handwriting while ignoring deep processing strategies, such as planning, generating ideas and decoding (Graham, Harris, & Mason, 2005). Wong (1991) indicated that students with LD have a “less sophisticated” understanding of their cognitive processes and that they do not develop self-regulatory skills naturally. For this reason, most academic interventions designed for students with LD involve explicit modeling of self-regulatory skills where the ultimate goal is to transfer those strategic behaviors within the LD population so that they can utilize them independently.
Diagnosis of Learning Disabilities

Although, the field of learning disabilities has witnessed tremendous progress throughout history, problems surrounding the definition of LD have remained as an ongoing debate among its scholars. Due to the rapid increase in students being identified with LD, researchers generated the question as to whether children are being misdiagnosed as a result of vague definitions implemented in practice (Kavale & Forness, 2000).

A traditional diagnostic method to define and identify children with learning disabilities is the discrepancy model—a widely adopted approach grounded in measurements of children’s intellectual quotient (IQ). This process typically includes an analysis of the difference between a child’s intellectual potential for his or her age (generally measured by a standardized IQ measure) and performance on an achievement test (generally measured by a standardized assessment) such as in reading, writing or mathematics (Hynd, Clinton, & Hiemenz, 1999). A difference of 15 to 20 points between the child’s IQ and performance on a standardized test is typically the criterion used for identifying a child as learning disabled (Hynd, Clinton, & Hiemenz, 1999). Furthermore, this diagnostic model asserts that children with LD qualitatively differ from other learners without LD that have difficulty in certain academic domains.

A considerable amount of debate, however, revolve around the validity of the discrepancy model as it uses discrepancy on the basis of IQ measurements as the sole determinant for the identification of LD (Kavale & Forness, 2003; Siegel, 1989). For example, after a comprehensive review of the discrepancy model, Aaron (1997) found no qualitative differences between LD and non-LD poor readers based on the discrepancy model. In addition, the notion that these two groups of poor readers require separate remedial treatments was found to be problematic. For example, regardless of their general intelligence level, discrepant and non-
discrepant groups, respond equally well to phonological awareness and phonemic decoding skill instruction (Torgesen, et al., 1999). It is therefore possible that a large number of students, such as non-LD poor readers, lack academic assistance when in fact they also require help in order to overcome their academic impairments. Currently, it is encouraged to use alternative approaches besides IQ-discrepancy models in the identification of LD including curriculum-based measurements, dynamic assessments as well as neuropsychological techniques such as Magnetic Resonance Imaging (MRI) and Functional Magnetic Resonance Imaging (fMRI), (Hynd, Clinton, & Hiemenz, 1999).

Methods

This is a qualitative review that examines the self-efficacy beliefs of students with LD. The criterion for inclusion was students that studies should have included students with LD and a measure of self-efficacy. It is important to note that a similar qualitative review on the self-efficacy beliefs of students with LD was conducted by Klassen (2002a). To avoid overlap, the present review includes empirical studies that were published after 2000, which was the cutoff year in Klassen’s seminal analysis.

In most studies, a discrepancy model was used in the identification of a specific learning disability. Few of the studies, on the other hand, did not adapt the IQ-achievement discrepancy approach based on their educational regulations and thus considered both LD and low achieving students as analogous. Self-efficacy judgments were typically measured by using self-report questionnaires that relate to different levels of task demands. Although, other competence beliefs such as self-concept is related to self-efficacy beliefs (Bong & Skaalvik, 2003); the two contracts differ theoretically in their operational definitions and assessment. For this reason, the present
review was restricted to the inclusion of studies that utilized a domain specific measure of self-efficacy in educational settings.

**Search Procedure**

The following procedure was followed to locate relevant literature. First, the time period searched (2000-2009) was restricted to the period following Klassen’s 2002 publication of *A Question of Calibration: A Review of The Self-Efficacy Beliefs of Students with Learning Disabilities*, which was the first critical review of the role of self-efficacy beliefs in the academic functioning of students with LD. Next, PsychINFO and Educational Resources Information Center (ERIC) were searched using the following key words found in the abstracts: *self-efficacy* and *learning disabilities*. A total of 18 correlational and experimental studies met the criteria for selection—-inclusion of students with learning disabilities and a measure of self-efficacy. Finally, age or grade-level was not restricted in the search procedure as to allow for a comprehensive review.

**Research Questions**

The following review of the 18 studies approaches the literature with the following research questions: Do self-efficacy beliefs of students differ from their normally achieving peers? Are gender differences in self-efficacy beliefs discussed? What are the outcomes of academic intervention studies? Does self-efficacy change with intervention? Are self-efficacy beliefs of students with LD accurately calibrated? Finally, suggestions for future research are presented based on the findings in this review.
CHAPTER II: RESULTS
In this chapter, the literature examining the self-efficacy beliefs of students with LD has been reviewed and summarized in order to explore the academic motivation of this special population. 1 of the 18 studies examined the self-efficacy beliefs of students with LD. 9 of the 18 studies investigated the differences in self-efficacy beliefs between LD students and their normally achieving peers, and only two of these studies included low-achieving students as a comparison group. The results portrayed a complex motivational profile for students with LD and raised important theoretical questions with regard to how these students express their academic self-efficacy.

Self-Efficacy Beliefs of Students with LD
Klassen (2007) found that the efficacy beliefs of early adolescents (grades 8 to 9) with LD students were lower than non-LD students in spelling and writing. However, compared to typically achieving students, students with LD overestimated their performance in both domains. To illustrate, the LD group overestimated their spelling and writing performance by 52% and 19%, respectively, whereas the non-LD group was accurate in both of their predictions. The LD group also showed variation in the accuracy of their posttest predictions. These LD students maintained their optimistic self-efficacy beliefs (by 37%) in the posttest evaluations spelling performance but made accurate self-appraisals about their writing performance. Although, the non-LD group scored significantly higher on two of the global self-efficacy scales (i.e., self-efficacy for self-regulated learning and general self-efficacy); scores from both groups fell into the moderate range of the spectrum. That is, LD students appeared nearly confident about their academic functioning despite their relatively poor performance. The author postulated that LD students perceive themselves to be adequately planning and organizing their academic activities.
and concluded that “the students who need to work the hardest end up doing the least work because they fail to recognize their academic short-comings” (p.185)

Lackaye and Margalit (2006) found that academic efficacy beliefs of 7th grade students with LD were lower than those of high, high-average, and low-average achievement groups; however, no significant differences were found between the low achievement and LD group. Based on grade reports, it was found that students with LD attained higher grades than the low achievement group but the two groups scored similarly on the scale of academic self-efficacy. Although their actual school achievement was similar, and in some cases better than those in the low achievement and average groups, LD students were still less confident about their academic functioning. Similarly, Lackaye et al. (2006) compared LD and typically achieving adolescents on three dimensions of self-efficacy (i.e., academic, emotional, social). The results showed that students with LD hold lower levels of academic and social self-efficacy. In contrast, the two groups did not differ on emotional self-efficacy. The authors commented that “the lower self-efficacy reported by students with LD are likely to reflect decreased belief in their academic abilities and their ability to succeed in school…their lower social self-efficacy reflected less confidence in their ability to develop satisfying social relations” (p. 117).

Hampton and Mason (2003) examined the impact of gender, learning disability status, and sources of efficacy on self-efficacy beliefs and subsequent performance of 9 to 12th grade students with LD. They found that students with LD as a group had lower self-efficacy than the Non-LD group. In addition, these students reported higher levels of anxiety, lower self-efficacy for exercising self-regulatory skills and lower confidence in English and Math. These results were not surprising, given that compared to students without LD, school-identified students with
LD was found to have less sources of self-efficacy. For example, these students had fewer mastery experiences, fewer role models and received less positive reinforcement regarding their performance. Finally, gender did not have a significant impact on the development of self-efficacy beliefs. Tabassam and Grainger (2002) compared elementary school students with LD and students with comorbid ADHD (LD/ADHD) and their normally achieving peers on a number of motivational variables. On the academic self-efficacy scales used, both LD and LD/ADHD group reported lower levels of reading and mathematics self-efficacy coupled with maladaptive attributional styles and lower self-concept than the typically achieving group. Furthermore, the correlational analysis demonstrated a close relationship between the constructs of self-efficacy, self-attributions and self-concept—an achievement-related self-system that suggests that these students need improved attributional styles and self-efficacy beliefs given that these factors play a pivotal role in academic attainments.

Hall and Webster (2008) examined how college students with LD differ from their typically achieving peers in metacognitive strategy use and attitudinal factors. Although no significant differences were found between the two groups on the intellectual ability, level of metacognitive strategy use, achievement motivation, and academic achievement, course and social self-efficacy were lower for the students with LD. That is, even though the measures of GPA and metacognitive strategy use were not significantly different across the two groups, the LD group expressed lower confidence in their academic capabilities.

A mixed methods study (Klassen et al., 2008) included college LD and non-LD students in their study of the relationship between academic procrastination and motivation. The quantitative analysis has shown that individuals with LD had higher levels of academic procrastination as
well as lower metacognitive self-regulation and self-efficacy for self-regulation. However, there were no significant differences between the two groups on the measure of academic self-efficacy. This shows that individuals with LD were rather optimistic about their academic functioning. Individual interviews with 12 students with LD showed that for some undergraduates with LD high academic self-efficacy was predictive of higher procrastination whereas self-efficacy was inversely correlated with procrastination for the non-LD students. This finding was consistent with the bivariate correlations found in the quantitative results. Sideridis et al. (2006) investigated how strongly motivation, metacognition, and psychopathology act as a strong predictor of LD among elementary school children. In most cases, students with a specific learning disability such as in reading and mathematics demonstrated lower levels of self-efficacy coupled with lower metacognition. For example, whereas typical students used decoding and elaboration strategies, students with LD mostly relied on low-level strategies. Thus, both self-efficacy and metacognition were strong predictors of learning disabilities.

Garcia and Fidalgo (2008a) studied the differences between primary grade students with LD and typically achieving students in their coordination of writing processes and their subsequent influence on the text’s quality. The authors, furthermore, examined the variations between two groups with regard to writing self-efficacy, metacognition, and self-regulation, given that both cognitive and behavioral processes play a key role in writing processes. There were significant main differences between the two groups. For example, during their composition performance, students with LD was found to be more off task and paid less attention to the writing task at hand and consequently spent less time on the writing process compared to their typically achieving peers. Moreover, typically achieving students spent significantly more time in self-evaluation by revising and correcting their written products and yet generated better
compositions than the LD group. Contrary to the findings, LD students demonstrated more optimism about their writing capabilities than the typically achieving students coupled with lower metacognitive knowledge and self-regulation in writing.

Klassen and Lynch (2007) conducted a series of interviews with 28 8th and 9th adolescents with LD and their specialist LD teachers in an effort to understand the self-efficacy beliefs of early adolescents with LD. LD students expressed themselves as having lower academic self-efficacy whereas their teachers found their students to be overly optimistic about their academic functioning. For example, one teacher commented that “If they’re an extremely damaged student, they will tell you they are going to do wonderfully…They are constantly surprised at what [marks] they get” (p. 499). Thus, some students with LD maintained their optimism regardless of their academic failures. LD students also commented that they can perform as well as their typically achieving peers when they exert effort and thus attributed their failures to effort rather than ability. Their teachers, on the other hand, believed that academic difficulties among students with LD stem from uncontrollable factors. Furthermore, some of the students commented on the self-protection hypothesis as a means of overestimation. For example, when the interviewers asked why some students might report overly elevated levels of self-efficacy, one student reasoned that “It’s because they don’t want their ego to be hurt” (p. 501). With regard to gender differences, there was a general consensus within the student body that male students had higher levels of self-efficacy compared to female students while on the other hand some students reflected on boys being more confident in non-academic areas, such as athletics.
**Intervention and Outcomes**

The majority of the studies reviewed, tested the effectiveness of intervention programs designed to improve the academic performance of struggling students, which focused particularly on students’ writing and reading skills. Most of these intervention techniques emphasize the acquisition of self-regulation and self-motivation to engage in effortful behavior. There is ample evidence showing that academic intervention improves the degree of performance, background knowledge, strategic behavior as well as motivation (Santangelo, Harris, & Graham, 2008). However, there are less obvious findings as to indicate how these methods impact beliefs of self-efficacy.

Graham, Harris, and Mason (2005) studied the effectiveness of an instructional model, Self-Regulated Strategy Development (SRSD), among struggling third-grade writers. In a five-month period, participants were taught two genre-specific strategies for generating ideas for a story and a persuasive essay. To reach their goal, participants in the experimental group were trained to use self-regulatory strategies including goal setting, strategic planning, self-instruction, self-monitoring and self-evaluation while working on their activities. Instructors demonstrated cognitive aspects of writing through modeling before students engaged in group and solitary work. Additionally, the authors added a social support (i.e., peer assistance) component to one of the SRSD groups whereby participants worked collaboratively to develop effective self-regulatory strategies. As a result, three groups emerged for analysis: (1) SRSD only condition, (2) SRSD with peer support condition, (3) Comparison condition. The intervention was highly effective in generating background knowledge and enhancing the writing performance of struggling writers that were in the SRSD conditions. The authors postulated that the writing skills of struggling writers could be improved through the instruction of strategies for self-
regulatory procedures and knowledge. Conversely, a different finding emerged with regard to the writing self-efficacy beliefs of struggling writers. These students were found to be overly confident in their writing capabilities both before and after instruction, suggesting that effective self-regulation was not effectual enough to bring about more accurate self assessments.

Garcia and Fidalgo (2006) investigated the differential effects of the social cognitive model of sequential skill acquisition (SCM intervention) and SRSD for writing among 5th-and 6th grade LD students. One difference between the two intervention strategies was that the SCM involved extensive use of cognitive models in that it involved a coping model—one that makes one or more key errors in the process of writing, but with prompt correction of these errors—and mastery model (i.e., instructor), whereas the SRSD incorporated only expert modeling. As a part of their statistical analysis, the authors examined whether the two intervention models had differentiated effects on students’ self-efficacy for writing. After the completion of 25 training sessions, both self-regulatory intervention programs revealed a significant improvement in the structure, coherence, and quality on student’s writing products. Additionally, they demonstrated an increase in student’s self-efficacy; although, only students that were instructed under the SCM condition showed a statistically significant improvement. Given that the perceived similarity between a model and an observer is an important source of self-efficacy; the authors concluded that “…a coping model …can improve the writing competence beliefs of students with LD and/or LA, as they may believe that if others can overcome their mistakes or errors so can they” (p. 208).

Garcia and de Caso (2004) tested the effectiveness of an instructional program among 5th and 6th grade students who had either low achievement or learning difficulties in writing. This
25 session program was designed to improve both the motivational (e.g., self-efficacy) and cognitive processes that facilitate learning. For example, throughout the program instructors continuously encouraged their students to engage in effortful behavior as a strategy to reinforce effort as an adaptive attributional style. The cognitive intervention, on the other hand, focused on the development of students’ appropriate strategy use, strategic planning, background knowledge and process planning such as translation, realization, execution and revision. The authors did not find significant differences in the self-efficacy beliefs of students that were trained in the special intervention program versus those received regular instruction as despite the fact that there were significant improvements in students’ quality of writing and attitudes towards the domain of writing.

In a similar approach, Garcia and de Caso (2005) compared the effectiveness of three different writing training interventions on writing as well as self-efficacy beliefs of 5th and 6th graders with LD. The first training program implemented strategies for the planning phase of writing such as gathering information, determining purpose, organizing the material, editing, revising as well as proofreading; the second focused on specific writing strategies and reflexive processes that implemented self-regulatory strategies such as attention focusing, self-evaluation and self-reinforcement or correction; the final program targeted the improvement of writing skills through the use of motivational strategies such as discussing and highlighting what students have accomplished and how they reached their attainments. This approach was specifically designed to help students with their attributional statements towards their negative and positive performance outcomes. The participants received training for only two months regardless of the training program. The authors found only few improvements in self-motivation and self-efficacy for writing after intervention as there was only one item (i.e., “It is difficult for
me to organize what I want to write’”) from the self-efficacy questionnaire that was found to be significant in the posttest analysis.

Garcia and Fidalgo (2008b) investigated the meditational role of gender in the modification of writing self-efficacy calibration—the degree of congruence between efficacy beliefs and writing performance—among 5th and 6th graders with LD with the help of two intervention programs based on the SRSD and SCM models. Similar to the previously reviewed SRSD intervention studies, the instructors used strategies to build prior knowledge and self-regulation for writing (i.e., strategy planning, self-instruction, goal setting, and self-assessment) through expert modeling, feedback, collaborative and independent practice. The SCM model focused on developing background knowledge and expert plus peer modeling. In addition, students engaged in group work in which they were required to emulate a model’s performance by verbalizing a previously taught technique. As a final step, students worked individually to practice material covered in the previous learning sessions. The authors found that both boys and girls with LD mis-calibrated their writing capabilities in the pre-test assessments. However, the overestimated self-efficacy beliefs of female students diminished after strategy instruction whilst boys maintained their unrealistic self-perceptions of self-efficacy. The authors commented that “… gender can influence the effects of cognitive strategy writing instruction in achieving a more accurate calibration of writing self-efficacy in students with LD” (p. 430).

Nelson and Manset-Williamson (2006) investigated the impact of two reading interventions, explicit comprehension intervention and guided reading intervention, on the reading self-efficacy, attributional style, and affect of upper-elementary and middle school students with reading disabilities (RD) in a six week time period. Students in the explicit
intervention group received direct instructions on self-regulatory strategies in every teaching session whereby a transfer of control of the strategies was explicitly moved from the instructors to participants; for example, the authors developed a mnemonic, identified as the “SUPER-G” to represent the strategies demonstrated during training sessions, which represented: set goals, using prior knowledge, predicting what they think will be in the text, explaining the main idea in their own words, retell the most important parts of the text, and give yourselves feedback. The guided reading procedure followed a more flexible teaching procedure as such that participants were expected to develop self-regulatory skills without intensive expertise modeling. Students in both groups were found to overestimate their reading capabilities in the pretest analysis before intervention despite their poor comprehension skills. Students in the Guided Reading intervention, on the other hand, reported higher but yet modest levels of reading self-efficacy in the posttest assessment of performance that gave rise to the possibility that these students maintained their overestimation after strategy instruction.

García and de Caso (2006) have developed a specific writing program based on the four sources of self-efficacy that were defined according to Bandura (1997) with the aim of improving the writing productivity and quality as well as the writing self-efficacy beliefs of 5th and 6th grade students with LD. Accordingly, participants in the experimental condition received 10 training sessions of writing self-efficacy training through instruction strategies that fostered a good psychological and affective climate, verbal persuasion, enactive as well as mastery experiences. To illustrate, the instructors established a positive learning environment among all training participants (e.g., using positive gestures; scheduling training sessions after a non-stressful class or after recess; allowing students to sit wherever they wanted; creating collaborative art work). Second students received verbal feedback with regard to their
performance. The instructors highlighted successful performances and corrected errors with an adaptive attributional style that emphasized students’ effort in the completion of tasks. The third source of self-efficacy was enactive mastery; which was implemented to ensure that students’ are given an opportunity accomplish a writing task. This step was established through easy writing tasks in that students self-corrected errors with the help of their instructors. Finally, the authors provided students’ with vicarious experiences using modeling between peers. The writing performance (i.e., time spent among students on planning, writing, and revising compositions) of LD and or/LD students was improved by fostering the four sources of self-efficacy; however, only a modest improvement in self-efficacy beliefs about writing after instruction was demonstrated. The training was not very effective in improving LD students’ beliefs about their writing capabilities as the students maintained their initial levels of perceived efficacy in the post analysis.

Antoniou and Souvignier (2007) provided eighth grade students with LD with an explicit cognitive and metacognitive reading strategy instruction during a one year academic period. They tested whether the instructional program would improve students’ strategy knowledge and self-regulation in addition to self-efficacy for reading over time. The program incorporated focal metacognitive self-regulatory techniques including such as using background knowledge, planning strategies and self-monitoring. Although, the explicit reading instruction was found to be an effective way to enhance LD students’ reading comprehension, strategy knowledge and reading self-efficacy; several trends emerged with regard to the immediate and delayed effects of the program. For example, based on the followup analysis, an immediate impact of intervention was found only for the strategy knowledge component of reading. A significant increase in self-efficacy for reading and reading comprehension was found after a one year instructional period.
Based on their findings, the authors concluded that “…students with LD may need more time to realize their abilities” (p.52).

Firth, Frydenberg and Greaves (2008) examined the effects of two interventions, the coping program and teacher feedback program, on perceived control and coping styles of adolescents with LD in a 10-week intervention period. The coping skills program utilizes a broad range of coping mechanisms that aims to develop productive coping skills such as positive cognitive framing, assertive body language, goal setting, and problem solving as diminish maladaptive coping styles such as self-blame or excessive worrying. The teacher feedback program focused on positive attributions, such as attributing successes and failures to a lack of effort rather than ability. There were no significant differences between the control and intervention groups with regard to coping self-efficacy; although, a significant amount of increase was found in the use of coping styles such as positive thinking, relaxing and hard working. The teachers asserted that the intervention models were “insufficient in duration” or intensity to promote change in designated areas.

Gender
A small number of studies (3 of 18) assessed gender differences with regards to the self-efficacy beliefs of students with LD. For example, Hampton and Mason (2003) found no significant interaction among gender, sources of self-efficacy and self-efficacy beliefs. With regard to gender differences, girls were found to have less past performance accomplishments (i.e., mastery experiences) and lower math scores; however, neither sources of self-efficacy nor self-efficacy belief were significantly related to gender. In contrast, Klassen and Lynch (2007) asked LD students to reflect on gender differences, where most of the students expressed boys as
more confident; while on the other hand several students viewed girls to have higher perceived self-efficacy in school-related subjects and boys in athletics.

Garcia and Fidalgo (2008b) analyzed the differences in the calibration of self-efficacy beliefs between female and male students with LD. In the pre-test assessment, both boys and girls were found to mis-calibrate their writing performance whereas girls became more accurate in their estimations after the strategy instruction. The authors noted that differences in gender could be due to the different response bias between boys and girls as boys being more “self-congratulatory” in their response styles (Wigfield, Eccles, & Pintrich, 1996 as cited by Garcia and Fidalgo, 2008b). Given that most of the instructors trained for intervention was female, the authors hypothesized that their findings could be the result of the increased similarity between the models and observers. These results suggest that gender might affect the development of self-efficacy beliefs in educational contexts. Additional studies are needed to further explore the relationship between self-efficacy beliefs and gender as the results from the studies depict differentiated characteristics in terms of how these two groups express their self-perceptions and how they respond to strategy instruction.
CHAPTER III: DISCUSSION OF THE FINDINGS

As shown the preceding sections, the role of the self-efficacy beliefs on LD students’ scholastic functioning are distinct from that of typically achieving students. Findings from the present review raise a number of important questions about the motivational beliefs of individuals with LD and the effectiveness of the intervention programs on enhancing self-efficacy. In the following section, the findings from the selected studies are discussed in the light of theory and research questions purported for this review.

Self-Efficacy Beliefs and LD

A number of the studies specifically investigated the perceived self-efficacy of students with LD; others assessed self-efficacy alongside with other motivation variables such as self-concept and attributions for success and failures. LD students were found to have lower levels of perceived competence in the following areas: self-efficacy for managing learning behavior, mastering academic subjects as well as fulfilling academic expectations (Hall & Webster, 2008; Lackaye & Margarit, 2006; Tabassam & Grainger, 2002); self-efficacy for dealing with social challenges and peer relationships (Lackaye et al., 2006); self-efficacy for performing tasks, organizing school-related activities and using learning strategies (Hampton & Mason, 2003; Klassen et al., 2008); and general self-efficacy (Sideridis et al., 2006). These findings were consistent with the previous research that showed that, students with LD view their academic abilities as lower than those of their normally achieving peers. Given that the influence of efficacy beliefs within academic contexts is critical, and given that successful mastery experiences raise self-efficacy beliefs and failures lowers them, it is not surprising, then, that LD students view themselves as less capable as they often face with difficulties in educational
contexts. In addition, these findings were consistent regardless of age level ranging from primary grades to college years.

On the contrary, another set of findings have suggested that motivational beliefs of LD students might not be so obvious. According to the four studies that directly examined self-efficacy beliefs of LD students found that, these students portray themselves in a positive manner despite their poor performance (Graham, Harris, & Mason, 2005; Garcia & Fidalgo, 2008a; Klassen & Lynch, 2007; Klassen, 2007; Klassen et al., 2008). In other words, LD students appear rather optimistic albeit their relatively lower academic achievements. Even though Bandura (1997) proposed that modest overconfidence promotes achievement, the gross miscalculation of one’s capabilities without the requisite skills hinders effective task performance—a potential problem for students with LD. Nevertheless, despite their optimistic beliefs about their capabilities, LD students were found to demonstrate inferior performance, particularly in the domains of writing and reading. Although research on reading self-efficacy in students with RD has been limited, these findings replicated those previous investigations that found LD students to overestimate their writing skills (Graham & Harris, 1989; Graham, MacArthur, Schwartz, & Page-Voth, 1992). Couple of explanations with regard to the unrealistic optimism of LD students has been provided in the literature and these will be discussed in the following sections.

**Self-Regulation**

In the past, overly optimistic academic self-perceptions of students with LD have been associated with a number of possible factors including poor metacognitive awareness and faulty self-knowledge (Barkowski, 1992). For example, Kruger and Dunning (1999) argued that those
with limited metacognitive knowledge in a particular domain often inflate their domain specific skills because being skilled is a prerequisite to constructing accurate self-assessments. They further suggest that problems related to the cognitive functioning of unskilled individuals are twofold—not only they perform poorly but they also fail to recognize their performance as inadequate. In the same way, Bandura and Schunk (1981) proposed that discrepancies between self-efficacy and actual performance may result from incorrect task analyses and deficiencies in self-evaluation. To illustrate, a recent study (Garrett, Mazzocco, & Baker, 2006) investigating the metacognitive skills of elementary school children with math learning disabilities (MLD), found MLD students as relatively less accurate in their ability to predict correct and incorrect answers when compared to their typically achieving peers; for example, children with MLD had more instances of being “sure” of their responses when actually their answers were incorrect. In this review, the study by Garcia and Fidalgo (2008a) found that LD students had poor metacognitive knowledge than students without LD. In school, problems with metacognition—“knowledge concerning one’s own cognitive processes and products or anything related to them” (Flavell, 1976, p. 232)—may reflect difficulties with academic self-regulation such as selecting, monitoring and implementing appropriate learning strategies (Butler, 1998a); and because of their overconfidence, students with LD may invest less effort in organizing and monitoring their task progress. In line with this discussion, Klassen cautioned that “students’ confidence may not always signal adequate preparation and well-developed skills; instead, for students with a history of low achievement, apparent confidence may be masking skills deficits or inadequate preparation” (2007, p. 185).
Self-Protection

Another explanation for the significant skill overestimation was related to the self-protection hypothesis that was initially addressed by Alvarez and Adelman (1986). The researchers found that 30% of judgments of students with LD to complete mathematical problems were overestimations whereas only 2% were underestimates of performance. However, the remaining 68% of judgments were comparatively accurate. Alvarez and Adelman argued that students with LD use overestimations of self-evaluations as an ego-defensive coping strategy. Although, some of the authors’ in the present review referred to the concept of self-protection as to explain why students with LD might overestimate their academic capabilities, none of them included a measure of self-protection to their research design. In only one study (Klassen & Lynch, 2007), students were explicitly asked to reflect on the apparent overconfidence among students with LD. Consistent with the self-protection discussion, two students expressed overconfidence in terms of self-protection (i.e., “It’s because they don’t want to get hurt”; “It happens because they’re protecting themselves).

In another study, Heath and Glen (2005) examined whether overestimations of performance were self-protective and whether positive feedback would decrease the level of miscalibration among children with LD (ages 10.6 to 13.5 years). The authors asked their participants to predict their performance on a spelling test prior to its completion and assigned children to either a positive feedback (i.e., “You did pretty well”; “He enjoyed working with you”) or no-feedback condition. Finally, participants predicted their performance based on an additional spelling test. The researchers found that the predictions of children with LD was not reflective of their actual abilities but were actually overestimations of their spelling abilities. For example, children with LD predicted that they would correctly spell 82% of the words whereas
only 66% of their predictions were accurate. However, children with LD in the feedback condition became more accurate in their predictions compared to their peers in the no-feedback condition who continued to overestimate their capabilities. Overestimations of performance were found to be more prevalent among boys; although, it was also detected in girls with LD. These findings suggest that overestimations of abilities are common within this student population regardless of gender. A positive classroom environment might help students with LD to be less protective of their academic profiles and dissipate their helpless response style when faced with challenging tasks.

To sum up, the self-protection hypothesis has not been yet fully examined within the literature despite the tentative evidence that shows that students with LD mis-calibrate their abilities in particular academic domains (Stone & May, 2002; Meltzer et al., 2004). Additional data to support whether these students overestimate their abilities as a self-protective shelter, then, is highly warranted.

**Intervention and Self-Efficacy**

Although there is no general consensus among researchers regarding the self-efficacy beliefs of students with LD, a number of studies included in the present review, developed specific intervention programs, particularly in writing, that focused on the cognitive and motivational processes of writing and in one case reading (Nelson & Manset-Williamson, 2006). The primary focus of these programs was to give students the necessary background knowledge and self-regulatory skills for them to successfully complete an academic task as well as enhancing their motivation.
The results have shown that the combined models of academic and motivational interventions were not greatly effective in modifying LD students’ domain-specific self-efficacy beliefs. For example, Graham and colleagues (2005) found that the SRSD intervention was not effective in improving the self-efficacy beliefs of struggling students. LD students continued to overestimate their academic abilities even after strategy instruction. In a few of the studies (e.g., Antoniou & Souvignier, 2007; Garcia & de Caso, 2005; Garcia & Fidalgo, 2006; Garcia & de Caso, 2006; Nelson & Manset-Williamson, 2006) modest levels of improvement with regard to self-efficacy was reported whereas one study (Garcia & Fidalgo, 2008b) found improvements only for girls.

In general, efforts to promote higher, and in alternative instances more accurate, self-efficacy beliefs of students with LD were slightly modest and sometimes ineffectual. On the other hand, most of the self-regulatory strategy instructions programs have shown that the performance and background knowledge of struggling students can be greatly improved through strategy instruction. However, significant improvements in performance and self-regulation did not substantially yield to higher or more accurate self-efficacy beliefs. In other words, developing positive and accurate self-efficacy beliefs through self-regulatory skill instruction was found to be difficult.

Antoniou and Souvignier (2007) cautioned that students with LD might require more time to develop positive self-perceptions about their academic capabilities. For example, program durations in the present review ranged from one to twelve months demonstrating greater gains in longer periods. Given their long history of low achievement, students with LD might encounter difficulties in restoring their negative beliefs about what they can attain in the domain
of academics and thus a brief period of success might not provide enough support to develop affirmative academic self-efficacy beliefs. However, whether longer periods of strategy instruction would decrease the discrepancy between self-efficacy beliefs and actual achievement among students with LD remains to be explored.
CHAPTER IV: CONCLUDING REMARKS AND FUTURE DIRECTIONS

As a whole, the findings from the present review provide additional evidence that students with LD in general show either lower self-efficacy or less accuracy towards their perceived academic capabilities than the typically achieving students on measurements. These findings are in concert with previous research (Klassen, 2002a), which clearly demonstrated that in certain domains, students with LD overestimate their actual abilities. Although, a modest level of self-efficacy is suggested to increase performance (Bandura, 1997), the grossly inflated self-efficacy beliefs of LD students might signal a downward trend in performance as they might rely on deficient self-knowledge and self-awareness.

Pajares (1996) suggested that teachers should focus on enhancing students’ self-efficacy beliefs through classroom activities that target improved task understanding as opposed to learning strategies that lower students’ self-efficacy. A major challenge of future investigations is to narrow the incongruence between efficacy beliefs and actual performance without attenuating students’ perceived self-efficacy in addition to bringing about greater levels of self-efficacy for those students that foster negative self-perceptions. In the present review, a majority of the intervention studies focused on self-regulatory strategy instruction as a way to address LD students’ difficulties with planning, organizing and monitoring their school work. Given the modest enhancement in self-efficacy beliefs of students with LD, it is essential to implement alternative research methods to understand the complex motivational profiles of this special population.

First of all, it was demonstrated that students with LD benefit from intensive strategy instruction that focuses on the explicit teaching of the use of self-regulatory strategies. In contrast, these strategies were less effective on motivational outcomes, such as self-efficacy, and
thus suggesting that these students might need longer periods of intervention to rebuild their sense of confidence about their academic abilities. From this point of view, providing strategy instruction in longer intervals might be required to actually assess the effectiveness of the intervention programs on self-efficacy.

In addition, the primary focus of assistance given to students with LD in these intervention studies was on academic skill development. However, beside their academic difficulties, these students have been documented to present severe emotional difficulties, such as depression, anxiety and loneliness as well as social problems such as peer rejection. Therapeutic interventions supported with academic assistance have been found to increase LD students’ sense of confidence in self-regulation (Shechtman & Pastor, 2005). To this end, a future line of research, might focus on how affect and environment influences LD students’ cognitive and motivational functioning. Investigations of emotional factors might also help researchers understand why some students with LD overestimate their capabilities. For example, Robins & Bear (2001) found that individuals who convinced themselves as they performed well, felt better after the completion of a task despite their poor performance. In a similar fashion, there might be some psychological benefits to overestimate their capabilities in certain domains for students with LD who often face emotional as well as academic difficulties.

In addition, only 2 of the 18 studies examined self-efficacy beliefs outside the domain of writing. This was a surprising finding given that a substantial amount of LD students are identified as having difficulties in reading and mathematics. Most of the information provided in the present review focused on writing self-efficacy and intervention models related to writing processes. It is therefore unknown whether the low or inflated self-efficacy beliefs of LD
students are domain specific would generalize across other domains of functioning (Klassen, 2007). Experimental and correlational studies investigating self-efficacy beliefs in other academic domains would help researchers and educators further understand the motivational mindset of this student population.

Gender differences were discussed in only three out of 18 studies and most researchers did not include gender as an independent variable in assessing the level or strength of self-efficacy beliefs in students with LD. Further research investigating the associations between gender and self-efficacy beliefs might be helpful in understanding how perceived academic self-efficacy develop differently in male and female LD students. In addition, none of the studies studied the developmental trends in changes in LD students’ self-perceptions. Longitudinal studies or cross-sectional studies in attempting to explain age-related changes in self-appraisals, thus, appeared as an additional asset for future research.
References


Perceptions of Self-Efficacy


