Coping Strategies and Successful Intelligence in Adults with Learning Disabilities

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Abstract

For many individuals with learning disabilities achieving success in adulthood is challenging. This lack of success has a detrimental effect on both the individual and society. This exploratory study into the positive coping strategies and life experiences of six successful individuals with learning disabilities reveals insight into educational practices that worked for them and those that did not. In addition, these highly successful individuals showed evidence of successful intelligence as described by Sternberg's theory. Through practical and creative solutions they were able to modify and adapt to their environment and persevere despite adversity. Time management and organizational skills were essential to managing their disabilities for long term success. Academic milieu management was central in obtaining both high school and post secondary education.

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CHAPTER I

Introduction

The fundamental goal of teachers and educators is to prepare students for success in life primarily through career and vocational options. An area of considerable challenge in meeting this fundamental goal is the field of learning disabilities (LD). The concept of learning disabilities is not a new one and is documented in the literature as early as 1896 (Kerr, 1896/1897; Morgan, 1896). Learning disabilities are characterized by failure to achieve normally expected educational outcomes based on age and intellect. A learning disability is suspected when bright children exhibit extreme difficulty in learning and are substantially behind their peers in one or more areas of academics (Lerner, 1993). Although it is not easily defined, most people recognize brightness in children long before they go to school. Nevertheless, academic assignments and tests do not necessarily capture the essence of a bright child. Learning disabilities affect individuals whose intellectual abilities do not differ from those of the general population, and some argue that LD may be associated with above average ability in other areas (Baum, 1985; Vail, 1989; Waldron, & Saphire, 1990).

Unfortunately, over a hundred years of research has not eliminated the impact that learning disabilities continue to have on individuals and society. LD often negatively affects the individual's academic performance, employability, feelings of self-worth and mental health. The cost to individuals and their communities is tremendous, particularly when you consider that individuals with LD have high rates of illiteracy, imprisonment,

substance abuse, unemployment and suicide (Brier, 1989, 1994; Keilitz, & Dunivant, 1986; Larson, 1988; Morison, & Cosden, 1997).

For the most part, LD research has focused on ways to accommodate individuals with learning disabilities or strengthen areas of weakness. The approach to remediating areas of difficulty often ignores the individual's strengths as a means of compensation (Hearne, & Stone, 1995). Hearne and Stone assert that conventional remediation methods have failed and that there is a need for a shift in approach to something more positive than the deficit model. In other words, instead of focusing on students' weaknesses, there is a need for teaching practices to embrace the abilities and talents of students. This focus on remediating areas of difficulty whereby LD children are taught the basics of reading and writing until they can master it unfortunately leaves them with little opportunity to use higher order processing such as their analytical abilities (Gersten, 1998). They end up with low self-esteem in their core abilities and aren't given a chance to develop analytical abilities because of this focus on building up core strengths.

However, one study suggests that individuals with LD are indeed analytical and tend to be better able to use higher order processing skills than expected when given the chance (Goldman, & Hasselbring, 1997). Furthermore, some very successful, highly intelligent and creative individuals have learning disabilities (Lerner, 1993; Thomson, 1971). What makes some LD individuals become successful adults while others are over represented on the social edges of society? Higher education and IQ are often thought to be what determines future success. Although there is some predictive validity for IQ scores, it is not as high as one might expect. In fact, the predictive ability of IQ scores on job performance is as low as 0.2 or 4 percent (Wigdor, & Garner, 1982). Recently, other

theories have emerged in an attempt to account for discrepancies in traditional intelligence theories including the multiple intelligence theory (Gardner, 1993), and Sternberg's theory of successful intelligence (Wagner, 2000).

According to Sternberg, there are three key components to success called triarchic abilities (Sternberg, & Torff, 1998). These include analytical, creative and practical abilities, which predict success better than traditional tests of intelligence (Wagner, 2000; Wagner, & Sternberg, 1985). Sternberg's test of triarchic abilities measures that which traditional intelligence tests do not. That is to say Sternberg's test measures what is required to succeed in life whereas traditional IQ tests measure what is required for success in school. Perhaps Sternberg's theory captures the essence of "bright" better than test of school related abilities.

If as Sternberg suggests analytical abilities are important for success it begs the question: Does the current practice of remediating deficits and stunting analytical development, ultimately have a negative outcome? In essence, does the help LD students receive have a detrimental long-term effect? What enables some individuals to be resilient, overcome the odds and their disability to become successful? What similarities are there between the successful intelligence theory and actual success for the adult with LD?

Purpose of the Study

The primary purpose of this study was to embrace the abilities and talents of LD individuals by examining what specific coping strategies successful adults have developed in order to compensate for their areas of weakness. In other words, did they

use their analytical abilities and their creative abilities to come up with a practical solution to their educational difficulties? In so doing, the study aims to de-emphasize the disability and place the focus instead on specific learning strengths and compensation strategies thus enabling educators and other professionals to develop more relevant and effective programs. An additional purpose of this study is to examine whether dimensions of Sternberg's successful intelligence theory are represented in the coping strategies of participants.

It is my belief that the sharing and application of positive coping strategies may have great implications to the fields of education, mental health, vocational services, the criminal justice system, and ultimately for the quality of life for individuals living with LD. Perhaps a focus on strengths and improving positive abilities should be nurtured in schools to help students become successful adults.

Significance of the Problem

Learning disabilities are not just the schools' problem: the struggles continue throughout the individual's lifespan and may even intensify in adulthood as job demands and circumstances change (Michaels, 1994a, 1995). Although attention deficit disorders are not considered learning disabilities in themselves, they often accompany learning disabilities and can seriously hinder school performance. As many as 25 percent of individuals diagnosed with ADHD also have a learning disability (DSM_IV, 1994). An estimated 35 to 40 percent of adolescents with LD do not complete high school (Wagner et al., 1991; DSM-IV).

The lack of education and the subsequent loss of job opportunities leave many LD and ADHD adults living in poverty (Brown, & Ganzglass, 1998). Learning disabilities and substance abuse are reported to be the most common barriers to the successful employment of welfare clients (Office of the Inspector General, 1992). In a report prepared for the Ministry of Education of the province of British Columbia, it is estimated that between 25 and 40 percent of parents on social assistance may be learning disabled (McElroy, & MacInnis, 2002). One can imagine the effect that years of failure would have on an individual's self-esteem. Not surprisingly, substance abuse among this population is reported to be double that of the general population (Biederman, 1995). The prevalence of LD among adolescents in treatment for addiction is as high as 60 percent (Cramer, & Ellis, 1996).

For many individuals with LD and ADHD, school failure also leads to involvement in the criminal justice system (Brier, 1989, 1994; Larson, 1988). The prevalence of learning disabilities among adolescent inmates is estimated at 50 percent (Morrison, & Cosden, 1997). Likewise, 40 percent of adults and 70 percent of juvenile offenders are believed to have ADHD (Wexler, 1996).

In addition, individuals with LD and ADHD are more socially isolated and have higher suicide rates than normal (Peck, 1985; Weiss, Hecktman, & Weiss, 1999). One report indicates that 50 percent of children under the age of fifteen who committed suicide had previously been diagnosed with LD (Peck, 1985).

Individuals with LD face many barriers to achieving success. Failure often leads to far-reaching social consequences for individuals and society, placing a heavy burden on both the provincial and federal governments. One possible way of attenuating the

high social costs of LD is to determine the role that coping strategies play and whether dimensions of Sternberg's successful intelligence theory are represented in the coping strategies of successful LD adults.

Researcher's Background

My motivation for this specific research stems from my personal history. I was diagnosed as having dyslexia at the age of eight. I was told many things by the experts, which I now know to be false. For example, I was told that I see numbers and letters backwards. It wasn't until university that I realized my difficulty was not in seeing but in remembering what it was that I saw. I had difficulty discriminating the visual stimuli of certain letters, especially anything with a line and a bump such as *p*, *g*, *q*, *d*, and *b* in much the same way as a young child may be unable to discern the different visual stimuli between a kitty and a bunny. To some children at this stage any small furry animal with four legs is a kitty simply because they attune to the similar visual stimuli and not to those that are different. When it came to reading, I never knew if the word was *dad* or *bad*, not because I was seeing it wrong but because I could not remember what a *b* or *d* looked like. Similarly, when it came to writing I could not remember if the bump for the *b* was on the right or the left. In order to succeed academically, I needed to develop specific coping strategies. Some of these strategies were of great interest to educators and counselors I came in contact with over the years. Indeed, the reason I am in this field is because I came to realize my perspective had real value, which could benefit the domain of LD research.

One such coping strategy I developed involved the use of the sign language alphabet. Like many young girls in Brownies and Guides we learned the sign language alphabet. Years later when I was in high school I was frustrated because although I knew the information, I would spell the word wrong on tests and thus get no score on that item. I knew what DNA stood for but could not spell deoxyribonucleic acid. I knew what spirogyra was but spelling it properly proved difficult. I could recite the periodic table of elements confidently but would get 50 percent on a written test. I was spending so much time and effort trying to learn how to spell the words that getting through all the information in a particular subject area was exhausting. I decided to try to use finger spelling. I found that I could use a rhythmic approach and singsong in my head to help me remember the correct spelling. Of course this meant having to put down my pen in order to manipulate my hands properly and thus took valued time away from the testing process. Nevertheless, I found that taking the time enabled me to obtain a much higher mark in the end. I knew I had no time to deliberate what the answers were. I needed to be very confident in the subject matter just to obtain a 70 percent mark. This is but one example of a practical (some even say creative) problem solving solution that I implemented to overcome my educational difficulties.

CHAPTER II

Literature Review

For the past century, the field of psychology has been preoccupied with defining intelligence. Scientists and researchers like to be able to explain things in an orderly fashion. One of the challenges faced by IQ theorists is brought about by the exception to the *order* of intelligence seen in children with learning disabilities. Children who are intelligent typically perform well at school whereas children of lower intellectual ability generally have lower achievement. However, LD children do not fit neatly into this continuum. These children are often highly intelligent, have been labeled as bright, and yet have significant difficulties once they enter school.

Several theories and definitions of learning disabilities have been developed over the years, and have led to a variety of treatment and educational practices. Despite the efforts being made in the field of LD research and remediation, statistics show that long-term successful outcomes for individuals remain poor. Nevertheless, there are some individuals who achieve success despite the odds. What factors allow some individuals to be resilient and succeed in the face of obstacles while others fail? Resilient individuals continue to persevere in less than ideal environments while successfully intelligent individuals adapt and shape their environment to achieve success (Luther, & Zigler, 1991; Wagner, 2000). Researchers studying Sternberg's successful intelligence theory have focused on what is required to succeed in life as opposed to success in school. The successful intelligence theory may shed light on the future direction of LD research.

Intelligence and Learning Difficulties

Defining intelligence and classifying individuals along a continuum has been debated and modified by psychologists over the past century. The first intelligence test was designed by Binet and Simon in 1905 in order to ascertain a child's level of functioning and identify those in need of special education interventions (Brody, in Sternberg, 2000). The intelligence of an individual may be an important factor in the determination of a student's future potential, but some might argue that there are a multitude of other factors equally important including learning styles (Dunn & Dunn, 1992, 1993), self regulation (Walsh, 1992), resiliency (Luther, & Zigler, 1991) and triarchic abilities (Sternberg, Wagner, Williams, & Horvath, 1995).

Classification problems developed early with the IQ index when intelligent students with neither sensory nor physical disabilities exhibited a delay in their language development (McCall, 1911) or were observed to have difficulties in learning to read (Hinshelwood, 1917). Labels such as dyslexia and dysphasia were adopted to account for the inconsistencies between intelligence and the learning difficulties observed in these children. Increasingly, discrepancies were observed between intelligence and performance levels on specific tasks (Kerr 1896/1897, Morgan 1896, Hinshelwood 1917). In the early phase of identifying and classifying learning disorders, researchers focused on the similarities between brain damage and learning problems in children (Bender, 1993).

Defining and Classifying Learning Disabilities

Since the term *learning disability* was first introduced, its definition has been continually modified and debated; however, no single definition has been widely accepted as each is seen to have certain weaknesses. Samuel Kirk was one of the first researchers to use the term *learning disability* and defined it as:

> A retardation, disorder, or delayed development in one or more of the processes of speech, language, writing, arithmetic, or other school subjects, resulting from a handicap caused by a possible cerebral dysfunction and/or emotional or behavioral disturbances. It is not the result of mental retardation, sensory deprivation, or cultural and instructional factors (Kirk, 1962, p. 263).

The World Health Organization grouped these disabilities under the heading Specific Developmental Disorders or SDD. ICD©10 (World Health Organization, 1992) and listed four categories:

SDD of speech and language (divided into six subcategories)

SDD of scholastic skills (with four subcategories)

SDD of motor function

SDD category for mixed developmental disorders (Rispens, & Yperen, 1997).

The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994) states: "Learning Disorders are diagnosed when the individual's achievement on individually administered, standardized tests in reading, mathematics, or written expression is substantially below that expected for age, schooling, and level of intelligence" (p. 46).

The operational definitions required for identification, assessment, teaching and research vary from profession to profession (Lerner, 1993). However, five common factors have been recognized in most definitions of learning disability: neurological dysfunction, uneven growth pattern, difficulty in academic and learning tasks, discrepancy between achievement and potential, and exclusion of other causes (Lerner, 1993). It is unlikely that the goal of finding an all-inclusive definition of learning disabilities will ever be attained. The range of difficulties experienced by students with learning disabilities varies greatly. Therefore, a working definition of learning disabilities must be flexible in order to describe and accommodate the multitude of conditions involved.

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

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

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

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

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

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

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

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

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

Learning disabilities are due to genetic and/or neurobiological factors or injury that alters brain functioning in a manner which affects one or more processes related to learning. These disorders are not due primarily to hearing and/or vision problems, socio-economic factors, cultural or linguistic differences, lack of motivation or ineffective teaching, although these factors may further complicate the challenges faced by individuals with learning disabilities. Learning disabilities may co-exist with various conditions including attentional, behavioral and emotional disorders, sensory impairments or other medical conditions. *(Adopted on January 30, 2002)*

It is not surprising that the prevalence of LD is difficult to determine due to the difficulties involved in defining and assessing the problem. The number of students classified as having LD depends on the method and criteria used in the identification process. The prevalence of LD within the school-aged population ranges from 2 percent

to over 20 percent (Silver, 1988). The widespread approach to defining learning disabilities based on IQ discrepancies is somewhat controversial (Beitchman, & Young, 1997). Intelligence tests do, however, summarize the students' strengths and weaknesses, providing insight into how the child learns and are helpful in developing remedial programs (Beitchman, & Young, 1997). Nevertheless, the problem may lie in the focus on remediation, as long-term successful outcomes continue to fall short of the desired results. Hundreds of studies have been conducted for the purpose of categorizing learning disabilities. The aim of classification studies is to determine more homogeneous diagnostic groups, thereby improving the means by which teaching decisions are made (Lyon, & Flynn, 1991; Hooper, & Willis, 1989).

Shortcomings of Educational Interventions

The benefit of relevant and effective education reaches far beyond the school system into society as a whole. Once children with LD reach adulthood, vocational and job demands create many new challenges. Meeting such vocational demands is especially problematic for the estimated 35 to 40 percent of adolescents with LD who do not complete high school (Wagner et al., 1991; DSM-IV p. 47). The implication of the system's failure to these students impacts society in many areas including unemployment programs, social assistance, mental health, addiction and the criminal justice system (McElroy, & MacInnis, 2002; Brier, 1989; Larson, 1988). It is clear that the traditional approach to helping individuals with LD is failing to achieve the desired results. Far too many students are falling through the cracks and living on the social edges of our society

as a result. Perhaps a shift in focus to developing individual strengths and triarchic abilities would help achieve future success.

The tragedy is that under the current system there is a real loss of human potential. Students with learning disabilities have average to above average intelligence (Gerber, 1998). We also know that many of these students are also gifted (Waldron, & Saphire, 1990; Vail, 1989). In fact, studies indicate that as many as 33 percent of students with LD may be gifted (Baum, 1985; Brody, & Mills, 1997; Jones, 1986). Some of these students may have succeeded because of their ability to compensate for their difficulties by finding practical and creative solutions that fit their learning style. Many famous people have had learning disabilities including Thomas Edison, Nelson Rockefeller and Albert Einstein, to name a few (Davis, & Braun, 1997).

Successful People with LD

Thomas Edison was considered abnormal and mentally defective by his teachers (Lerner, 1993). He continued to struggle throughout his life with basic skills in reading, writing and arithmetic but, nevertheless, has some 1300 patents, including the phonograph and the electric light bulb (Selikowitz, 1993). Ironically, a light bulb is now often used as a symbol of an intelligent thought.

Nelson Rockefeller, former vice president of the United States, and governor of the state of New York had severe dyslexia, which is characterized by an extreme difficulty in learning to read. As a result, he had poor grades in school and had to memorize speeches during his political career (Lerner, 1993).

Albert Einstein is an example of an individual with highly creative thought processes. Despite a suspected learning disability (Goertzel & Goertzel, 1962; Thomson, 1971), Einstein used his superb visual thinking abilities to conceptualize most of his scientific work. According to Witelson et al (1999), Einstein himself described his scientific thought process as not involving words but rather visual images. Furthermore, Witelson et al (1999) details one of Einstein's daydreams which involved traveling on a beam of light. Einstein credits this daydream with helping him develop his now most famous discovery, the theory of relativity.

According to West (1997) "many adults with learning disabilities may have achieved success or even greatness not in spite of, but because of, their apparent disabilities" (p.19). This assertion leads one to question whether Einstein used his learning disability to see the world in ways that he would not have been able to do had his ability to use language been more acute. West (1997) noted that:

> For a certain group of people the handicap itself may be fundamentally and essentially associated with a gift. For some the handicap and the gift may be two aspects of the same thing. How we perceive it depends entirely on the context (p.19).

All of these people overcame their disabilities and became successful individuals in adulthood. The development of coping strategies may have enabled them to become resilient and persevere despite their difficulties.

Resiliency and Self-Concept

Resilient individuals are those who experience successful outcomes in the face of unfavorable life experiences (Luther, & Zigler, 1991). An individual's ability to develop resiliency is affected by both risk factors and protective factors. These factors include internal characteristics such as temperament and determination as well as external characteristics such as family, school and environment (Morrison, & Cosden, 1997). Having a learning disability is considered a risk factor connected to negative consequences that affect some individuals throughout their lifespan (Spekman et al., 1993).

Protective factors, on the other hand, may alleviate some of the problems often connected with learning disabilities. Protective factors that are associated with resiliency include support from either the family, or at least one adult mentor (Masten, & Coatsworth, 1998; Rutter, 1985). In addition, effective academic supports for LD students help to lower the risks associated with the disability. Likewise, Henderson and Milstein (2002) assert the need for meaningful school participation as a key protective factor in academic resiliency. A positive sense of self-concept is also crucial not only for the development of the student's academic resilience but for long-term personal development as well (Harter, 1986, 1993).

Unfortunately, research suggests that for the majority of children with LD their self-concept is significantly below that of their non-LD peers (Gans, Kenny, & Ghany, 2003; González-Pienda et al., 2000; Stone, & May, 2002). School failure and a lack of supports and coping skills contribute to the negative self-image. On the other hand, a positive sense of self serves as a protective factor in part because it allows individuals to

come up with strategies to compensate for their disabilities (Parker, Cowen, Work, & Wyman, 1990). A positive self-concept enables the students to see themselves from the point of view of their strengths as well as their weaknesses.

Consistent with this notion, Davis and Braun (1997) suggest that nurturing the abilities and strengths of students with dyslexia "will result in two characteristics: higher than normal intelligence, and extraordinary creative abilities" (Davis, & Braun, 1997, p. 5). Creativity is one of the three abilities which make up the successful intelligence theory. The concepts of resiliency and successful intelligence clearly overlap. Resiliency is seen as the ability to persevere and overcome adversity whereas successful intelligence is the ability to adapt, shape and select appropriate environments (Wagner, 2000). Evidently the ability to persevere and overcome adversity would be greater in individuals who can modify their environments to achieve success.

Sternberg's Theory of Successful Intelligence

Sternberg's theory of successful intelligence proposes three key components: analytic intelligence, creative intelligence and practical intelligence (Wagner, 2000). Creative solutions and coping strategies developed by learning disabled students may be one manifestation of successful intelligence. Students whose approach to learning involves self-regulation may be able to develop coping strategies to achieve academic success, using their practical and creative abilities to create for themselves more effective educational environments.

One study of highly successful adults with LD inadvertently lent support to Sternberg's theory. The researchers in this study found "that school had very little value

and relatively little connection to their success [the success of the participants]" (Gerber, Ginsberg, & Reiff, 1992, p.48). Furthermore, they found that these highly successful LD adults had adopted a form of learned creativity to overcome obstacles related to their disability. Creativity of this kind is consistent with the notion of triarchic abilities reflected in the successful intelligence theory.

Another component of the theory is practical intelligence. To measure practical intelligence Sternberg relies on a concept called *tacit knowledge* which is defined as "procedural in nature rather than factual, usually acquired without explicit instruction and knowledge about things that are personally important" (Wagner, 2000, p. 392). He developed a program to teach sixth graders the tacit knowledge of the school. The program addressed issues such as how to study for various kinds of tests, organizational skills, time management, and social skills with peers and teachers (Sternberg, Okagaki, & Jackson, 1990). Other studies show that educational interventions based on the theory of successful intelligence can improve school achievement on criteria measuring analytical, creative, and practical intelligence (Sternberg, & Torff, 1998). In their conclusion, the researchers found that teaching for triarchic thinking strengthened factual recall, because students learn in multiple ways and therefore utilize their strengths to compensate for their weaknesses. In the case of LD students this would seem to be an important breakthrough. Years of research into remediating weaknesses have not yielded great results. A paradigm shift would seem to be in order.

Practical intelligence is different from academic intelligence, traditionally reported by IQ scores. In fact, Frederickson (1986) described practical intelligence as our cognitive response to almost everything outside the school setting. Problem solving of

school-related tasks are well defined by the teacher. In contrast, problems in real life are not well defined and are formulated by the individual attempting to solve the problem. In school, all the information required to solve the problem is available to the student. In everyday life, however, essential information needed to solve a problem is not always readily available. School tasks generally have few methods of finding the one correct solution whereas real life problems have many solutions and many different means of arriving at a solution. Clearly school related problem solving is unrelated to practical everyday situations. (Neisser, 1976; Wagner, & Sternberg, 1985).

Practical intelligence predicts success in the real world, but has an inverse relationship with academic intelligence. In fact, IQ scores' predictive ability of job performance is as low as 0.2 or 4 percent (Wigdor, & Garner, 1982). This would seem to be the case for people with LD. These individuals are characterized by average to above average IQ and yet many are not successful in life. Perhaps those individuals who are successful rely on their analytical, creative and practical intelligence while those who are not have the double burden of their learning disability and lowered triarchic abilities due in part to remediation practices.

West (1997) presented the philosophy that understanding the difficulties of adults with learning disabilities may be less important than understanding the role of a person's individual strengths, compensatory strategies, and gifts. This knowledge "might shed light on normal but poorly understood human capabilities--modes of thought that may be essential to finding truly effective creative solutions to the complex problems affecting our society"(p.43).

A review of the literature poses more questions than answers regarding the relationship between successful intelligence and coping strategies used by adults with learning disabilities. However, the literature review highlights a need for continued research on this topic. Sternberg also acknowledged that further theoretical work is required to answer such basic questions as how tacit knowledge is acquired, whether the ability that leads to its acquisition can be taught, or if practical intelligence is a general ability (Sternberg & Torff,, 1998; Wagner, & Sternberg, 1985).

CHAPTER III

Methodology

The purpose of this study was to explore through life stories six individuals with self-reported learning disabilities who have held work for a period of five years or more in adult life. Specifically, their coping strategies, processing skills and their use of analytic, creative and pragmatic abilities were identified and discussed from their perspective. A successful individual was defined as one who has been involved in a specific field or organization for a minimum of five consecutive years and who has maintained or improved their position in the organization/field.

It was hoped that this exploratory study would enrich the literature on positive coping strategies, and help gain insight into the life stories of six individuals with learning disabilities relative to supports and experiences that might have led to greater life success.

An additional purpose was to determine tentative links to Sternberg's successful intelligence theory, by investigating if elements of practical, creative and analytical intelligence were identified by participants as contributing to their success. These findings have implications for the fields of education, mental health, vocational services and ultimately for the quality of life for people with learning disabilities, and raised questions for further inquiry.

Research Design

This study used qualitative research methodology with emergent design. That is, themes emerged from the data analysis rather than through *a priori* determination. The use of a semi-structured qualitative interview process revealed insight into specific coping strategies, unattainable through quantitative measures. Responses were analyzed to explore whether dimensions of Sternberg's triarchic abilities were implied.

Participants

Candidates for the study were obtained through a self-nomination process in response to a request via the Learning Disabilities Association of Canada (LDAC) British Columbia Chapter and the Friends of Attention and Learning Disabled Adults Society (FALDAS). An information bulletin was sent to various organizations, support groups and practitioners in the field (see Appendix A). The study was conducted in British Columbia where the researcher now lives. Candidates who volunteered were interviewed to collect demographic information such as age, gender, education and current occupation. Further clarification on the purpose of the study was also provided. Information on the perceptions of participants was gathered through questions about their birth, early development and a brief review of their life story. These questions are provided in Appendix B Interview 1.

From those persons willing to commit to the interviews and who were determined be successful individuals with LD, six individuals were randomly selected to participate in the second interview. Each of the participants was diagnosed with LD at different times and the method and criterion used to define and diagnose the disorders reflect the

history of the classification problems in the field. For the purpose of this study, *success* was operationally defined as involvement in a specific field or organization for a minimum of five consecutive years, attaining a socially recognized level of success. The rationale for choosing this set of criteria is based in part on the reality that sometimes individuals have brief periods of success but cannot sustain long-term success. While it may have been interesting to select some type of balance among participants with a view to a particular descriptor variable such as age or gender, this was an exploratory study to investigate emerging areas of potential interest and no attempt was made to balance membership.

A total of six individuals were interviewed, two males and four females, ranging in age from 35 to 65. All names and identifying information have been changed to protect the confidentiality of participants.

Participant # 1 George

George, the first candidate, is a sixty-five year-old male. The research protocol was piloted with him and he made several valuable recommendations for clarification purposes. Unfortunately, he passed away before this research was completed and did not have the chance to undergo further questioning. His thoughts and experiences are nevertheless included in this document as it was his wish to contribute to this field of study. George struggled in school and dropped out at the age of fourteen. Given the time he went to school, LD were not recognized and therefore he received no supports in school whatsoever for his learning difficulties. He reports having been disruptive in class to cover up his difficulties. He was diagnosed in adulthood with dyslexia when he sought

out an assessment from a psychologist in the community. He did not go back to receive any formal education and claims to be self-taught. He reports having been interested in astrophysics and reading texts on the subject at fourteen after dropping out of school. He studied subjects that were of interest to him at his own pace. He worked in the construction field from the time he dropped out of school. He was successful and used his practical abilities to advance in his career. Despite having no formal education he worked as a mechanical engineer and was hired by a prominent University in BC as the practical instructor for their engineering department.

Participant # 2 Nancy

Nancy is a 42 year-old female social worker. She, too, was not formally diagnosed until adulthood when she began to recognize herself in some of the case studies she was learning about. She sought out a professional and was assessed with adult ADD and a visual perceptual learning disability. Nevertheless, she did have remedial pullout assistance while still in elementary school. So, although there was no formal diagnosis that she is aware of, she did have assistance for her learning difficulties.

Nancy dropped out of school for a while and was living independently at a very young age. Although she graduated high school she feels she was just pushed through the system. Between high school and college there was a significant break where she reports having gone through a rough patch. She describes herself as having real life challenges at the time in figuring out her path in life. She worked in the hospitality and culinary industry in order save enough money to go to back to school and upgrade her high school courses to university prep level. She also spent this time discovering what

her values and goals were by doing a lot of volunteer work. This enabled her to discover where her strengths were in terms of a professional career. She began her degree in college in a criminology department and worked as an assistant for one of her professors in the summer. Eventually she went on to complete her bachelor's in social work and subsequently a master's degree in counseling social work.

Participant # 3 Doug

Doug is a 43 year-old male who had a long military career and then went on to open his own business after his release from the military. It was the military psychiatrist who referred him for an assessment. The diagnosis of LD and ADD again was not made until adulthood. He reports having no formal supports in school and just struggling through it. He is an example of an extremely bright student who was struggling and yet the learning disability went unnoticed and undiagnosed because he was seen as intelligent and simply not applying himself. This took a huge toll on his self-esteem, especially in high school when he seriously considered suicide. He joined the military shortly after high school and was able to thrive on the structured environment.

Participant # 4 Kate

Kate is a 39 year-old female electronics technician who is also in the military. She was diagnosed while in elementary school with dyslexia and had some resource room support services. She struggled in school and finally dropped out in grade ten when she says she just couldn't handle the negative impact school was having on her self esteem anymore. She was discouraged from taking the more academically challenging

courses such as chemistry and biology due to her learning disability. Nevertheless, she went on to college to do academic upgrading and subsequently did a biochemistry degree. She recently finished another degree in electrical engineering paid for by the Canadian Armed Forces.

Participant # 5 Valerie

Valerie is a 38 year-old female and the owner and operator of a very successful and highly recommended licensed family childcare facility. She often has waiting list for families hoping to get their children into her program. She struggled through school and had some resource room assistance; however, there was no formal diagnosis until later in life. She dropped out of school after her fourth attempt at grade nine in an alternative school environment. She worked in odd jobs for several years before finding her niche in caring for and educating young children. She was diagnosed in adulthood when she applied to university as a mature student and enrolled in an Early Childhood Education and Development degree. She was diagnosed by the Student Support Services at Dalhousie University in Halifax with an expressive and receptive language disorder.

Participant # 6 Rachel

Finally, Rachel is a 53 year-old learning assistance teacher at a middle school. She was not formally diagnosed until she was working in the field and had a colleague assess her for LD. She works with children with LD and has great insights given the fact that she had similar experiences in school. She claims that learning disabilities were not formally recognized when she went to school in the fifties and sixties and therefore she

received no supports whatsoever. In fact, she indicated that the school felt she was a candidate for special education where they segregated intellectually challenged students in portables away from the main student body. Nevertheless, she finished high school and went on to university and obtained a degree in history. She subsequently went on to complete a teaching degree as well as a special education diploma despite claiming to hate school. She reports never having taken courses with exam components as her solution to getting through her programs. For the most part she did her courses through correspondence where she could focus on one or two subjects at a time and had an editor to help her with assignments. She started her career as a physical education teacher in Nova Scotia. She felt this was a good fit for her given the fact that there was very little writing involved. However, after starting a family the extra time that was required as the coach of several sports teams made her change career paths. She went back to get her special education certificate and now works as the learning assistance teacher in a large middle school in Victoria British Columbia.

Interviews

The questions developed for the research protocol were grouped under five main categories. The first set of questions was designed to help the participant re-identify with his or her experience as a child in the school system. Presumably, highly successful adults no longer see themselves as the children they once were, struggling in school. In order to find out what they did to overcome their struggles, one must recognize what it is they overcame in the first place.

The second set of questions was designed to determine what sorts of support services were available to the student and whether they were seen as effective. The possibility exists that the success of the participants was due to the services they received. Perhaps they were not just given remediation services but were encouraged to develop their strengths as well. Perhaps these successful individuals merely represent the minority who simply had adequate services which may or may not have contained elements of Sternberg's successful intelligence theory.

The third group of questions was intended to tap into the strengths of the participant to determine if they used their strengths to compensate for their weaknesses. The next set of questions addressed areas of individual success. Did the participant have experience with success early on and what effect did it have on their outlook for the future? Perhaps early experiences with success outside of school help determine future success.

The final category dealt with individual coping strategies in an event to determine if these can be transferred back into the school system and taught to struggling students. Furthermore, the responses were examined to determine if elements of creative, analytical or practical intelligence are observed within the coping strategies and experiences. A full copy of the interview questions is provided in appendix C. In addition to the questions developed by this researcher, the interview protocol incorporates some questions developed by Freeman, Stoch, Chan and Hutchinson (2004) for their study on educational resilience in LD. Third party permission has been obtained to use these questions (see Appendix D).

Procedure

The interview process consisted of three sessions per participant. The first session consisted of a screening process to determine if potential candidates would meet the inclusion criteria (maintained successful involvement/employment in a field for a minimum of five years and having a history of a what they refer to as a diagnosed or self identified learning disability...no verification of diagnostic information was gathered). This interview was conducted over the phone by calling the researcher (collect if long distance). Consent was assumed if the individual participated in the interview following the reading of the letter of consent to the participant.

Session two involved core data collection using semi-structured interview questions found in Appendix C. This session was conducted in a private meeting room at a local library at a mutually convenient time to the participant and researcher. The participant signed the consent form prior to starting this process.

Session three involved clarification and perception checking of information gleaned from session two to validate participants' perspectives on the accuracy of the recording and initial identification of themes arising from their data. Participants were provided with a summary of the major comments emerging from their interviews and asked to comment on the accuracy of the information gathered. Again, this session took place in a private meeting room at a local library at a mutually convenient time.

Each interview was audio recorded to enable independent review by thesis co-supervisors, consensual validation and to facilitate the process of transcribing and coding the data. This approach allowed for an in-depth portrayal of each individual's perspective as well as commonalities and differences across individual experiences. In so

doing, this approach meets Eisner's validity criterion of referential adequacy (Eisner, 1991).

Ethical Considerations

The participants for this study underwent in-depth interviews designed to tap into the strategies they used to overcome difficult situations. The minimal risk involved the reflection on potentially unfavorable periods of their lives in which they may have negative feelings and experiences. It was made clear to participants that if at any time they felt uncomfortable, they could discontinue the interview process.

An informed consent form was read out loud by the researcher before each interview session (see Appendix E). The rationale for this procedure was based on the understanding that some of the participants may have difficulty with reading due to their learning disabilities. After going over the form, participants were asked if they have any questions regarding the current interview session.

Each consent form had a corresponding reference number. Interview tapes were labeled with the individual's reference number and stored separately from the consent forms in a locked filing cabinet. Transcripts from interviews were also labeled with the participant's corresponding number and all names and identifying information were deleted. Transcripts were stored on computer in a secured file and password locked. The researcher had sole access to these files and audiotapes. After completion, the audiotapes were destroyed and written transcripts shredded. Likewise, any publications resulting from this research will contain no identifying information.

Data Analysis

I chose to use the *framework method* of qualitative analysis as described by Bryman and Burgess (1994). This method was described as being *grounded or generative* because it was driven by and reliant upon the original accounts of the participants. The qualitative interview process provided a rich and descriptive account of each individual's perspective, generating an in-depth understanding and thereby meeting Eisner's validity criterion of referential adequacy (1991).

A key element in the f*ramework method* is that it was dynamic in nature. That is to say the process allowed for "change, additions and amendments throughout the analytical process" (Bryman, & Burgess, 1994, p. 176). In so doing this allowed for themes from each participant to be examined for coherence with themes implied by others. Thus credibility could be examined through consistency and coherence across themes and individuals (Rubin, & Rubin, 1995).

Familiarization with the data was the first stage of qualitative research analysis. Researchers must have an overview of the data prior to the development of a thematic framework. Research notes were taken while examining the data in an attempt to identify the themes and concepts.

The framework itself was guided by the original research questions; however, emergent issues raised by the respondents as well as recurring themes determined the final indexing framework. The following research questions guided this inquiry. What were the areas of difficulty? What kinds of supports were available? What were the areas of strength? What outside experiences (outside of the classroom) led to the current level of success? What coping strategies were developed to compensate for the

difficulties? Do elements of Sternberg's theory of successful intelligence exist within the nature and behavior of participants?

References codes based on the index headings and subheadings were recorded in the margins of each transcript. The data was then charted according to their thematic references. These tables contained headings and sub-headings for each subject area. The data for each participant was transferred to the chart using the individual's reference number. The order of participants remained the same in each chart and for each subject. Once the data was organized a more in-depth comparison and analysis was made, bearing in mind the contextual background of each statement. This method allowed for between and within case analysis to be made with ease. Furthermore, "the analytical process, and the interpretations can be viewed and judged by others" (Bryman, & Burgess, 1994, p. 176) providing a means to fulfilling Eisner's criterion for consensual validation (1991) as well as Rubin and Rubin's transparency standards (1995).

CHAPTER IV

Results and Discussion

Several themes emerged from the data. The first and most obvious theme deals with both positive and negative school experiences. From that emerged some assumptions regarding the individual participant's level of intelligence, whether those perceptions were from teachers, parents, peers or the individual's own perception of how intelligent they were based on their experiences in school. There were similarities for each participant with regards to the specific areas of difficulty they experienced in school. Written expression emerged as the biggest difficulty and in particular, spelling and grammar. In the early grades reading and reading comprehension were also pervasive difficulties. Self esteem issues began to arise due to these struggles in school. Several individuals walked a fine line between being able to successfully overcome these difficulties and becoming part of the growing negative impact LD has become on society. Nevertheless, through various supports and coping strategies, each individual has become successful in many aspects of their lives.

When examining the positive school experiences, once again several themes emerged. Each participant reported being able to thrive in a "hands-on" environment. Furthermore, they all enjoyed and did well in both History courses and English literature despite having been labeled non readers earlier in their elementary school years. Coping with the disability involved various strategies and support systems that were in place or that they set up for themselves. When looking at the reasons for success, it became clear that there were indeed categories that seemed to fit Sternberg's theory of successful

intelligence. Participants described themselves as being "not necessarily smart but I knew that I was bright" Or "I have a practical PhD".

Recollections of School Experiences

Negative School Experiences

Despite the fact that all those who participated in this research are highly successful adults, they did not achieve this success by avoiding the pitfalls generally associated with learning disabilities (LD). In fact, they all strayed off track for a period of time and were headed towards a life on the periphery of society. A relationship is apparent between academic difficulties and future susceptibility to failure and social marginalization. Those who participated in this study reported having academic difficulties in three main areas; learning to read, written expression and mastering mathematical concepts. The individuals experienced a great deal of stress and anxiety because of their learning difficulty. Assumptions were made about their level of intelligence, based on their ability to perform. These negative impressions led to issues of low self-esteem. The effects of this low self-esteem, combined with academic failure, manifested itself in precarious situations. This downward spiral was set in motion as early as grade two with students as young as seven and eight years of age who were learning to read.

Academic difficulty. Difficulty in learning to read was reported by all six participants. This obstacle was experienced early in their school career and involved difficulty in the decoding of words in the text.

I was a late reader. I don't think I learned to read until maybe the end of grade two [when] I started decoding. I memorized most of what was in those basal readers. Run Spot run. See Spot run. See Dick run. You know… especially if you are reading in groups. In a round-robin, you can pick up the pattern of a basal reader pretty quick. So I was able to fake it until we got into more challenging material where the pattern wasn't there (Rachel, 97-103).

Many individuals said the reason for the decoding difficulty was due partly to the perception that the words or letters swam, jumped or moved around in some fashion.

Reading difficulties consisted of being overwhelmed by the quantity of text and the inability to focus on the text. The words just jump off the page and seemed to swim around. I just wouldn't bother reading it and would skip to the next page (Doug, 53-56).

The one thing I do have to this day is I have trouble reading. Not that I can't read or don't understand or comprehend what it is that I read. What happens is that sometimes I get very overwhelmed by the written word and sometimes the words even appear to be jumping off the page at me. It' s very bizarre (Doug, 9-13).

I couldn't read the words or some words would switch directions, like they would be floating and I would look at them again and they seemed to be in a different place (Kate, 6-8).

I just couldn't read out loud because I would miss words. Is, a, the and or. Yeah there are certain words…I just don't see them. The whole talking and reading out loud thing actually gets me upset because the teacher would make us stand up there and read out loud. I remember a lot of teachers doing this and they would make you do it over and

over again until you would get it right. I would end up crying sometimes and wanting to go to the bathroom (Kate, 54-61).

As the students advanced through the grades these difficulties in tracking posed an even greater problem in comprehending of the text. Some individuals reported having to read material three times in order to understand it. The first time was for decoding and sounding out any new words, the second reading was for fluency, and the third reading was to gain comprehension.

Like, I don't read the words. I see the words. I have to read it twice or three times, though, just in case I miss something and then I go back over the important parts [a fourth time] that I am studying, and take notes on it (Kate, 170-174).

I would read a passage three times because I knew the first time I couldn't comprehend it. So I would read the first time to align the letters and the words then the second time to try and get a flow to it. The third time to try and understand, to comprehend what I was reading (Val, 553-558).

This process was undoubtedly time-consuming, giving the students a significant handicap. Reading and tracking posed additional problems when it was time to write notes from the board. Furthermore, without exam accommodations and extra time to read and comprehend the questions, other subjects were compromised. Tests were not a true evaluation of their knowledge of the subject matter, but a test of timed reading comprehension and writing skills.

Difficulty with written expression was encountered by all the participants and involved spelling, grammar and structuring or organizing an essay. Spelling was by far the most pervasive problem experienced by the participants. Those who did receive

formal support in school all reported having remediation of spelling and phonics. The pull-out resource room or learning assistance lab frequently had a negative effect on self-esteem.

Grade two and three I had to take remedial classes especially in spelling, language and phonics (Nancy, 85-86).

It was a special learning program. It was mainly phonetics and how to read word problems. But it didn't really help. Oh yeah, also spelling, too. Because I still can't spell (Kate, 23-26).

Q: *What did you do in the resource room?*

A: *We concentrated on learning how to sound out syllables and phonics* (Val, 80-82).

Because, at the time, spelling was still important, my spelling list was made less than everybody else's and I had clues at the top of each page. Like a word was chosen and was written at the top of each page for that week and the teacher wrote it every day (Rachel, 39-42).

Despite the effort to teach and remediate this area of difficulty, the participants in the study consider themselves poor spellers to this day and report negative effects on their self-esteem because of the pull-out remediation practices and the focus on spelling tests. Weekly spelling tests reinforced their feeling of inadequacy in spelling and phonics.

I never ever passed a single spelling test in my entire life. Never! And not for lack of trying. You know your morale just goes down with each successive week (Kate, 607-610).

A: *School was terrifying, especially in high school.*

Q: *Why?*

A: *Because I had trouble keeping up. Given the time I went to high school – it would have been the early sixties - there was an incredible stress on spelling and grammar. And umm...I have no perceptual ability to see the differences between some letters. I don't retain that kind of information and I can't regurgitate it* (Rachel, 3-9).

Not only spelling but also rules for grammar were difficult for students to grasp and together this made producing a paper or essay time-consuming and difficult. In addition, writing essays proved problematic as the focus of remediation support was on the basics of writing including spelling and grammar. This allowed little time and energy to develop, analyze and creatively compose an essay. In fact, the structure of an essay itself and how to organize one's thoughts remained elusive.

I think I wasn't able to master the rules of what a good essay paper or the structure of a well-written synthesized coherent essay would be about (Nancy, 69-72).

I could not write. My writing was unsophisticated. It was poorly structured and my spelling was appalling so I got poor marks in English (Rachel, 28-30).

The structure of words and grammar was difficult for these students to grasp and therefore math concepts were also difficult in the early phase of the participants' academic careers. The inability to read effectively created difficulty in understanding word problems in math and in analyzing what was being asked.

Reading of the word problems and the movement of the numbers. Shifting columns and order. If the number is 185, I might see 815, 518, or whatever. Or maybe even the five upside down. I might call it a 2 or an S even. Sometimes they all look the same to me (Kate 31-35).

Research indicates that students with LD are better at higher-order processing and critical thinking (Goldman, & Hasselbring, 1997) but a lot of math involves lower-order processing such as the memorization of multiplication tables. This type of memorization may have taken longer for LD students to encode into long-term memory. The result was that the students lagged behind as new concepts were introduced. Rachel says she encounters this all the time in her profession as a learning assistance teacher with LD students in middle school who still have not mastered the multiplication tables.

Oh yes, definitely. I got kids who can't multiply in grade eight. I taught multiplication to kids in grade eight and the difference it made was phenomenal. Scary, isn't it? (Rachel, 829-831).

Anxiety and stress. Together, these combined areas of difficulty and the pressures to perform in the academic arena produced a great deal of anxiety and stress among participants.

Q: *Describe what school was like for you.*

A: *Well um...I think anxiety-filled is a good description. Always worried about my marks and how I was going to perform* (Nancy, 2-3).

I was determined to get through school even though it was a very difficult process for me. And stress test anxiety and performance anxiety around papers and projects was enormous (Nancy, 21-23).

Then there is what they called (I think they still call them that) the mad minutes with the pressure to perform under a time limit and not be able to move on until you got

to a certain point [e.g., multiplication tables] (115-117). I hated mad minutes. They were incredibly anxiety-ridden and demeaning (Rachel, 130-132).

I don't like going to school particularly; I don't find it fun. I find it's a grunt. It's still a grunt. I hate writing with a passion and I'd do almost anything to get out of it. And I procrastinate. I leave it to the last minute. I found it really stressful particularly in senior high school and university. I would bite at my skin until my hands bled because I was so tense about it (Rachel, 320-327).

Q: *Could you tell me how the stress of school affected you*?

A: *I used to pick at the sides of my fingers and chew the skin. It was a nervous reaction that well...I did it subconsciously; it wasn't until the sides of my fingers would bleed and hurt that I noticed* (Val, 825-828).

Effects on self-esteem. The inability to achieve the desired results despite putting in a great deal of effort invariably led to feelings of inadequacy and low self esteem. In fact, assumptions were made about the students' levels of intelligence not only by the students themselves but also by teachers and parents.

Well, I think a mother telling me that I wouldn't amount to anything was my driving force. And she had a predetermined fatalistic attitude. So despite her assumptions, my attitude was "I'll show you" (Nancy, 646-648).

Of course, you know what school was like back in the 70s - you were considered stupid, idiotic… (18-19). *In grade ten I was told I was too stupid for biology and chemistry and was not allowed to continue with them* (222-223). *It is embarrassing when you have your whole life been told that you are stupid or backward. The message was*

constantly that I was different because I was stupid. My stepfather would beat me because I couldn't get decent marks. So I don't go around advertising it (Kate, 425-429).

I spent my grade nine through grade 11 years at a weekly counseling session with a counselor who informed me that people with my lack of intelligence couldn't go to university (Rachel, 10-13). I would say this man was really vicious and I got told how stupid I was all the time by him and he relayed that information to staff members who set up an expectation that I was stupid (Rachel, 22-25).

Not surprisingly, self-esteem is a central issue for students with LD. Weekly spelling tests and mad math minutes are times when students are reminded of their shortcomings. The pull-out system of remediation is another constant reminder of the student's inadequacy.

The negative effect on the self-esteem is the worst thing. You feel so bad. Take it away from the school in a place where it's not so obvious to everybody. Like in a club after school. The hardest part was the embarrassment. It scarred me for 38 years. Look at me - I still cry when I think about it. How can they honestly expect students to be able to learn anything if their self-esteem has plummeted to the ground and they think they are stupid? Self-esteem is huge (Kate, 571-579).

It was horrible. It wasn't the teacher; she was fine it was the coming out… because we had to miss certain classes in elementary school. I was considered "stupid." I think that was the worst. Yeah, I felt stupid all the way up until I left high school. I didn't even graduate. I dropped out. I just couldn't take it any longer. It was enough (Kate, 122-129).

Evidently, school had such a negative impact on the students' self-esteem that dropping out was more of a means of self-preservation than merely quitting something they performed poorly. George actually credits his success to dropping out of school while his self-esteem was still intact.

Students at risk. Although Doug did not drop out, he states that he seriously considered suicide for a time. The suicide rate among LD adolescents is reported to be higher than that of the general population, quite possibly because of the added stress experienced in school.

My main reason for becoming successful was that I left school. This enabled me to move on with my self-esteem intact. I grew more and more confident in real-life success. The reinforcement was getting paid for a job well done. Nobody told me verbally I was intelligent or smart. The small success reinforced my assumption that I was intelligent (George, 1-6).

There was a time when suicide was considered. That's how bad it got. Not just with schoolwork but with the other kids as well (Doug, 69-70). Well, actually, my self-esteem was really low and I was picked on a lot, called really awful names and didn't have a lot of courage to defend myself. It was a really universally shitty time (Doug, 115-117).

In fact, several, if not all, the participants walked a fine line between success and failure. Four of the six individuals who participated in this study were living on their own at a very young age. Although, this may be just a coincidence, given the small sample size, the odds of this happening in the general population are quite remote. Failure

to succeed among the LD population has an enormous impact on society. This downward slip into marginalization starts with young people leaving home, living on their own and invariably dropping out of school in order to support themselves. One of these young independent individuals was on his (or her) own by the age of sixteen, one was fifteen and the other two were living on their own at the age of fourteen. All four who lived on their own as teenagers dropped out of school at some point.

Although Nancy re-enrolled the following year and subsequently graduated, the others did not graduate from high school. Nancy also lived on her own at a very young age, becoming independent at the age of fifteen. For the most part, she had to be self-sufficient but she reports having received some social assistance during her final year in grade 12. Despite the fact that she did graduate, she feels that she was simply pushed through the system without much preparation for her future. Nancy admits having mixed with a bad crowd for a time, experimenting with drugs and alcohol.

I was enrolled back into school the next year. And they enrolled me right into grade 11. And I still graduated when I was 17. It was good for me but...but actually, I think it was pretty pathetic because a person who didn't complete the work requirements for grade 10 could still be enrolled in grade 11 even with all the challenges that I had. Which doesn't speak much to me about the quality of the system that I was in. In other words, if the system was working to help students, I would have had some remedial work and have completed my grade 10 and been required to have at least made a good effort in order to prepare me for college. They just pushed me through (Nancy, 620-630)

Two young women lived for a short time in group homes. However, Kate felt she did not fit in with the other residents whom she describes as prostitutes and drug addicts. She got an apartment and lived on social assistance while she remained in school until finally dropping out in grade ten.

I had to figure out how to work and go to school. And I had to be in school - it was part of the conditions of getting social assistance. It wasn't much - only 400 dollars a month. If not for that I would have dropped out completely and just worked (Kate, 321-325).

The other student, Val, was closer to failure. She ran away from home at 14. She describes herself as being transient, staying with friends as well as living on the streets for a time. She also lived for a time in a group home. She repeated grade nine three times and finally dropped out of school during her fourth attempt at grade nine in an alternative school environment. Like Nancy, she reports hanging out around a group of kids who were experimenting with drugs and alcohol abuse.

A: *I was hanging around with a crowd who were experimenting with drugs.*

Q: *What kind of drugs are we talking about - just marijuana*?

A: *Oh no, hash, mushrooms and LSD. And alcohol too. It was all being abused. This lasted about a year and a half maximum. Not the alcohol; just the drugs were a one-year thing. With the alcohol, being out of control with it lasted about the same time as the drugs. But there was alcohol consumption until my twenties. It was just weekends after that out-of-control period* (Val, 783-792).

These accounts are consistent with research that suggests that individuals with LD have a greater chance of becoming marginalized in our society. Lower levels of education often results in fewer job options, a life of poverty, social assistance and low-income housing. Continuing low self-esteem can lead to depression, suicide, substance abuse and deteriorating mental health. Although none of the participants went as far as incarceration, drug abuse often leads to involvement in the criminal justice system. At the beginning of this research I believed I would be interviewing individuals who had managed to avoid falling through the cracks in the system. I assumed that some coping mechanisms or supports allowed them to avoid the pitfalls. In retrospect, I realize that was a preconceived notion on my part. The reality is that many who were interviewed for this research did not avoid the cracks. They simply managed to pull themselves back up through the cracks and be resilient despite the odds against them.

Positive School Experiences

Despite the students' generally negative experience in school, some aspects tended to be better than others. Notwithstanding their learning disabilities and the negative assumptions regarding intelligence, students were able to do moderately well and sometimes even excel in both academic and non-academic aspects of their school life. Academic abilities centered on two types of courses. Students enjoyed courses that had stories and a linear sequence such as English literature and history, and where class discussions were encouraged. In addition, students did well in courses that were experiential (hands-on) in nature. This included science lab courses, vocational courses, music and physical education. Finally, non-academic experiences that fostered a positive

connection to the school were deemed important. These extracurricular activities included things like sports, band or choir. Greater concentration on positive experiences (both academic and non-academic) and less focus on the students' disabilities might encourage students to stay in school longer. This policy would alleviate the problems or change the direction from marginalization to success for the majority of LD students.

Academic abilities. Interestingly, participants reported being able to remember, discuss and analyze stories and sequences of events. Several reported enjoying English literature once they had finished elementary school. The surprising element here is that all these students had difficulty learning to read, some continue to have difficulty with reading comprehension, yet all have become prolific readers in adulthood.

Oh, yes, I love reading; I just couldn't read out loud because I would miss words: is, a, the, and, or (Kate, 54-55). English in high school was OK because I got to read interesting things and had a great teacher, but elementary school was terrible (Kate, 67-69).

*I didn't have time for hobbies and interests. It was just school and work. I read when I could because I liked to read. I have always liked to read even if the words swam. Eventually they would stop swimming when I read for pleasur*e (Kate, 296-299).

Yes, I read for pleasure but they are books I choose and they are at my own level. Like I am reading a story about war brides. I chose that book because I remember my grandma telling me about her experiences as a war bride. So, yes, I read but there is no pressure from any outside source telling me I have to finish in a certain period of time.

And if I misinterpret things, oh well, I'm the only one…it's not like I'm going to be tested by anyone and feel stupid (Val, 600-666).

Q: *Do you read for leisure now?*

A: *Oh, constantly. My husband says I read trash. But I read for pleasure. Well, I read for pleasure and I read professional materials. And that's about it.*

Q: *Let me guess: you read those historical romances*?

A: *Yeah! I also read murder mysteries, spy thrillers and fantasy. As well as professional things like "Teaching Reading in the Middle School."*

Q: *And yet you were pegged as a non-reader in elementary?*

A: *Oh absolutely. `Cause I'm a poor decoder. I still am a terrible decoder. I still have trouble with words I don't know. And I usually have to get someone to pronounce them for me two or three times before they become part of my sight words* (Rachel, 192 - 208).

Although every participant revealed a love of reading it does not imply they got high marks in English literature. Nevertheless, they did enjoy the oral discussions on character development and plot analysis. These class discussions presumably alleviated some of the comprehension issues that continued to plague a few of the participants in this study.

I liked literature that I could read but not have to produce anything. I loved English classes where I could read and talk about plays and have a discussion. I liked those classes (Nancy, 125-128).

Producing papers and compositions on the readings in class was seen as very difficult despite the enjoyment experienced in class. Sadly, this struggle would lead

some students to avoid the classes they once enjoyed, due to the stress of producing a paper.

I never read any Shakespeare other than on my own. When I got to high school by the time I got to grade 10 and 11, I started to take only the things I liked. I didn't take harder English courses because you had to do compositions around what you studied. I took basic English with writing structure (Nancy, 125-128).

I loved, I loved English but I didn't perform particularly well in it (Rachel, 82-83) *because my output is poor. I have incredibly poor output. For me, writing was like giving blood* (Rachel, 87-89).

I was fascinated with reading. I was an avid reader even though I couldn't get my thoughts down on paper, especially in any organized fashion (Nancy, 7-9). *One of my hobbies was definitely reading. I was a prolific reader* (Nancy, 172).

Regardless of the love of reading, exams in English literature remained exceedingly difficult. Essay exams were even more difficult than writing a paper because of the time limit and the lack of a dictionary or grammar text. Essay exams required focusing on the ability to spell and compose coherent sentences because proofreading was impossible. Unable to remember how to spell specific words, students used valuable time searching their memories for easier words to replace the word they were stumbling over.

In my exam on Wuthering Heights in grade ten I got hung up on the word "not." How simple is that? Right in the middle of my train of thought, I couldn't spell the word. I knew if I put a "k" it would be the type of knot one ties and not the not I was looking for. It was so ridiculous in retrospect but rather than get too sidetracked from my train

of thought I used "naught" as in ought naught to do something. I realize it had something to do with the language used in the book itself but was absolutely stumped on how to spell a three letter word in grade ten (Kate, 901-911).

Furthermore, as noted earlier, many participants reported needing to read a passage two or three times in order to comprehend it. This, no doubt, posed a problem when reading and interpreting questions on their exams. Reading comprehension and written composition during exams combined to lower the final mark. Consequently, despite reportedly enjoying English class and the subject material, individuals did not obtain particularly high marks.

I loved, I loved English but I didn't perform particularly well in it (Rachel, 82-83) *because my output is poor. I have incredibly poor output. For me writing was like giving blood* (Rachel, 87-89).

*I was fascinated with reading. I was an avid reader even though I couldn't get my thoughts down on paper especially in any organized fashi*on (Nancy, 7-9). *One of my hobbies was definitely reading. I was a prolific reader* (Nancy, 172).

Similarly, history courses were enjoyed by all those who were interviewed. They were inclined to view history as true stories rather than fictional stories. Furthermore, some individuals reported being able to relate to some historical events by thinking of their ancestors' participation at that time. Thinking of them as part of the English Garrison or the French "coureur de bois" or voyageur made it easier to relate to the subject.

I liked history. I just liked the stories (Kate, 190).

There were some subjects I did really well at. Like I did well in history and English (Doug, 59-60).

Early successes…hmmm...I was the only person ever in history class to get 100 percent (Doug, 101-102).

Except that I performed really well, like many LD people, in certain areas. So, I could memorize history. I could make A's in history (Rachel, 26-29).

Nevertheless, history has a heavier reading component than other courses. As with English literature, this was easily overcome through class discussions. One individual reported writing out timelines in point form with the sequences of events and subsequent consequences. Using point form alleviated the difficulty of writing as well as reading.

For history I did out timelines to make sense of the material. It made the reading less of a requirement. I remembered what was discussed in class (Doug, 77-79).

I loved history. I was able to take the info in and I had a teacher who was phenomenal and used a note-taking system that worked for me. Where you divided the page like this but you put the question here and the answer over here but in point form. So you didn't have to write sentences. He wanted to know what you knew. It was content based. We did have to write but the class was easy to attend for me because it met my learning style. Point form and discussion were a big part of his teaching style (Rachel, 175-183).

Despite these strategies, marks for history courses tended to be varied depending on the exam format the teacher used. If, for example, the exams were essay format then

the students did not perform well, as in English literature. However, if the test was a short answer or fill-in-the-blank exam, then students were able to excel.

Q: *Were you successful at history?*

A: *My exams sucked because I had to write essays for them and my spelling is atrocious. I used to lose marks for my spelling. My grammar was good (Kate, 199-202). I loved history. I loved the stories. I did get better by the time I got to college. I eventually did get better marks.*

Q: *Why did you do better in college?*

A*: A lot of it is group work with other students and projects; some were ahead by a couple of years, helping out.*

Q: *Were there any essay questions?*

A: *For the most part, the answers were single statements, not a whole paragraph. They required a specific answer* (Kate, 204-211).

The ability to perform well in history cast doubt on the misconception of lowered intelligence. Unfortunately, in these instances, teachers assumed that the student was simply not applying himself or herself in the other subjects, and so teachers pushed the student harder to achieve expected outcomes. This response increased the level of stress, anxiety and feelings of failure experienced by the student.

Being told in high school you aren't working hard enough or being told there is something wrong with you. You can work harder you can do more. What kind of crap is that to hear? Especially if you feel like you are doing as much as you can (Doug, 123-127).

The second major theme that emerged from the data (in terms of positive academic abilities) involved courses that were experiential or hands-on in nature. This included courses that had a laboratory component like biology, chemistry and physics. Also included in this section are the typical hands-on trade-related courses like woodworking, drafting, metal shop, mechanics and home economics. Music was often seen as a course with positive outcomes because the playing of instruments is a hands-on experience. Finally, included in this experiential category is physical education class. Participants all reported that these types of hands-on learning experiences were significant as they enabled them to accomplish encouraging results.

A: *I learn through interactive.*

Q: *So by that do you mean group discussions?*

A: *Yes and experiential. I need to do it. When we see it, do it, hear and experience something, the learning and resonating multiplies exponentially; that is the kind of learner I am. That is my best environment for learning* (Nancy, 323-328).

Unfortunately, hands-on academic courses are rarely experienced until the student reaches high school. For those participants who made it through to that level of public school education, "lab courses" were one area where they achieved better results.

Biology I really enjoyed because I was very fortunate because when I hit high school our biology was more hands-on (Val, 67-69).

During lab experiments, discussion occurs among peers as well as with the teacher. The discussion and interaction combined with the actual experiment reinforced ideas and concepts that were being taught.

Yes, I don't absorb anything through reading or very little, very little. Biology was definitely class discussion and hands-on, where social studies was more reading (Val, 185-187).

Furthermore, difficulties with reading comprehension were not as predominant in lab courses because the text has many diagrams, graphs and pictures to supplement the reading.

Q: *Now did you not have a biology textbook you had to read?*

A: *Yes, but again it was a lot of graphs and photos. I didn't find it heavy reading like I did in, say, social studies* (Val, 179-181).

In addition, lab courses were not only hands-on with easier readings but the writing component was not as difficult as in other courses. A lab report has a predetermined structure. Following the process of the scientific method alleviated some of the difficulties seen in other courses where writing a cohesive paper was time consuming and difficult. In contrast, the scientific method is straightforward with sub-headings such as purpose, procedure, materials, etc. Sentences are brief and to the point, with no need to compose eloquent paragraphs. Spelling remained an issue but these types of assignments were easier to manage.

Q: *What was it that you liked about biology?*

A: *It was hands-on. There wasn't a demand for reading comprehension and the writing that we had to do was in very simple laymen ['s] terms.*

Q: *Did you have to do the whole scientific method, purpose, and procedure and lab report?*

A: *Yes, but it was very short and straightforward. And we weren't really graded on the structure of our paragraphs. We were graded more on if we understood the method or what the theory was behind the experiment. It was more content vs. structure* (Val, 168-178).

Roxy helped convince me to go into quantum physics. I was also very successful in biology class. We would do a lab and then have to get up in front of the class and do a presentation our work. No written stuff except notes and the lab report, which is short and concise, and to the point. It 's very logical - none of the fluff of fancy stuff (Kate, 345-350).

In addition, due to the hands-on nature of the labs, experiencing them enabled students to understand the information more easily. Even if the student did poorly on the written exam, the marks obtained on the lab reports were high enough to carry them through to a passing grade.

But the labs were able to carry me through. The level of understanding of my needs was so different at college. There was way more respect. Even recently with this engineering course I took, too. My labs I got all great marks but the tests were weaker (Kate, 266-270).

There is more class discussion and more hands-on stuff. You do lots of labs. Any hands-on stuff I do good at. I earned a lot of my marks from the lab component. I still wasn't great at exams because they were timed (Kate, 261-264).

Another area of hands-on learning not seen until middle school or high school was trade or vocational courses such as wood-working, drafting, metal shop, mechanics

and home economics. These courses had little or no reading comprehension or writing involved. Marks were generally obtained by producing a finished product.

I really enjoyed the hands-on stuff; making different things and the cooking courses (Kate, 191-192).

In high school I was very hands-on. I was the only girl in a carpentry class (Nancy, 129-130). *I had gone into trades or vocational education. I was looking more at [a] hands-on career* (Nancy, 142-143).

Well, the thing about education that I can say... like about the trades... is that a lot of the trades is [sic] just hands-on (Doug, 63-64).

Exams themselves involved labeling diagrams or filling in the answers to practical questions. Students were able to gain practical skills for the future. Even if s/he did not become a carpenter, a cook or a plumber as an adult, these skills would be useful in everyday life.

In woodworking class, I was required to do joint projects. Which I was part of a team of...So I was able to use the support of the team to get through. We ended up building a part of the house out in the community. As a group, we applied everything we had been learning in the school. When I picked my individual projects, I picked things to build that I was really keen to build and that I knew I could manage (Nancy, 156-163).

Unfortunately, those individuals who registered for this type of course were often seen as unintelligent or "less than" the other more academic students. This is unfortunate given the fact that society requires trades people just as much as professionals.

I don't know why I never took the trades in high school. Probably because of the social stigma that the trades people were stupid or were a lower form of intelligence. If

people were to respect the trades more, individuals who were better suited to them would be more apt to go into them instead of trying not to because of the stigma that is associated to it. Look what's happening to us now with the skilled labour shortage. There's a company - I hear their ad every morning on the radio - they are just dying for carpenters. They just can't keep up (Doug, 206-215).

Fortunately, other hands-on courses did not have social stigma of this kind. Both physical education and music had a component of fun and offered LD students an opportunity to excel in an otherwise negative atmosphere. This is especially true for elementary school where the other more hands-on courses were not available. Playing sports and music were not only enjoyable but were experiential. Reading music sometimes proved to be problematic but even this could be overcome with repetition and memorization of the sequence of notes. Students could understand the health component of some advanced levels of physical education courses. Learning about muscles and the skeletal system was concrete, identifiable and personally significant.

Q: *Looking at your strengths, what classes did you like?*

A: *Physical education, because it was all about health and I always got a B in that class* (Nancy, 123-125).

I was definitely physical. I loved to be physical. I was in swimming and track and field (Nancy, 167-168). We got an honourable mention as a synchronized swimming team when we competed against other schools (Nancy, 183-185). *In physical activities we had competitions at the end of the year and I would always come home with a bronze or silver... usually [in] running, sometimes some type of track and field event* (Nancy, 192-195).

I did really well in sports. I played with the boys. Hockey team, swimming. I swam competitively until I was 15 (Kate, 303-305). *At school, I only ever received sports awards* (Kate, 310-311).

Sports kept me sane. (Doug, 75) *I was very involved in sports - modern pentathlon. It kept me busy. It's one of the things that probably kept me sane. That was good to get rid of the energy and keep me out of trouble* (Doug, 92-94). *Sports were big and I was ranked provincially as well* (Doug, 103-104).

Positive connection to school. Sports and other extracurricular activities played an even more significant role in fostering a positive identity for the student in a school community. Sports seem to have played a key role for all the participants in this study by establishing not only a positive connection with the school but also by alleviating some of the stress and anxiety related to their learning disability.

For me, having some minor to significant acknowledgement around track and field and swimming, they soon became absolute stress relievers with other parts of my life that were not seen as successful. Even physical education - being able to get a higher grade in that class I didn't feel so stupid that I could...there were things I could master in my life; that was really important (Nancy, 200-206).

If the students were part of a sports team then even though they may have struggled academically, they could still contribute to the school community and play a positive role in the " esprit de corps." If the LD students felt they played an essential and positive role in the school, this fostered a desire and motivation to remain part of the system. Even if the students were only moderately good at the activities, the participation

boosted their self-esteem, which was taking huge blows on a daily basis in terms of their academic and intellectual abilities.

For me I was part of the track and field team. So there was a reason to be at school, there was good support and an area I could excel in and feel I was contributing to the school spirit. (Val, 862-864)

Sports were not the only area that helped develop this connection to the school. Being a part of other types of extracurricular activities was also a factor. Similarly, any special function or role such as a part in the musical or a special job within the school could help develop this much-needed connection.

One thing that really stood out for me was because of my strengths as a very friendly person and I was easy to approach. I was in trouble all the time as a kid but I had this other side to me. I was always in trouble because I'd be distracted and talking, doing things I wasn't supposed to. Anyway, these two girls had come from Lebanon, and one of them had had her leg blown off. And she had a prosthetic. They could not speak any English. I was getting in trouble for so many different things that they chose me to be their tutor for their basic reading. So in grade 7 or 8 I was actually the tutor for these two girls. One was not very bright and not reading at a high level. The other one was really bright. I was to work with them in the library and coach them and help them. Well, that made me feel that even though I was stupid at certain things, they felt very comfortable around me and I was just one of a little circle of people who helped coach them to do better in getting integrated in the English culture and learning the English language. This experience was really validating for me. That was the principal noticing: "Pick her out because she does these things well" (Nancy, 482-501).

Having positive social and peer relationships also encouraged students to remain in school. Often they identified with a specific group in the school community such as the jocks, the band, the preppies or popular crowd. As long as the group that the LD individual associated with was one of the positive groups in the upper echelons of the social hierarchy, then peers and a social life increased the desire to remain at school. Having a meaningful role in the school social strata helped to build ties to the school itself. Without this positive role, the only way to identify themselves was with their disability and struggles. These constant failures reduced the motivation to remain in school, which was especially unfortunate before high school, when there were more choices to take hands-on courses and be successful.

As a teen, my supports regarding sports slowly disintegrated, starting in about grade eight. I slowly started building relationships with kids who were themselves beginning to drift. In grade eight I did continue to ski but this was a family-focused activity that didn't involve my peers. I was no longer active in school-related sports teams (Val, 819-824).

Sports, extracurricular activities and peers all contributed to a positive connection with the school environment even if the student was struggling academically. Once LD students reached high school, the greater choice of courses (including English literature and history) seemed to be a source of strength and enjoyment. Hands-on courses were also a very positive experience as students were able to achieve better grades and build confidence in their intellectual abilities. Given the fact that four of the six individuals interviewed for this study dropped out of school in grades nine and ten, it is crucial that

these positive roles be fostered early on in order to encourage students to remain in the system.

Support Systems

In light of the disturbing social consequences of failure, it seems worthwhile to examine what causes success. The two main themes that emerged in the study were broken down into support systems and coping mechanisms. In terms of support, two sub-categories included social or informal support as well as traditional formal academic support. Social support took the form of peers, family and mentors. Where some may have had support from family members, others had the support of their friends or mentors. Formal educational support included remedial services, accommodation, technical aids and counselling services. Together these support systems (if implemented correctly) were beneficial. In contrast, if they were not implemented properly then they were insignificant at best and extremely detrimental to self-esteem at worst.

Informal Social Support

Human beings are social by nature. Social support comes in many forms and for many different reasons such as for illness or family breakdown. The same holds true for individuals with LD. We have already seen that playing a positive role in the school 's social structure counter-balances the effects of low academic achievement and self-esteem.

Peer support. The peer relationships that develop in school are an important factor to consider. In addition to fostering a positive role in the school environment, peers offered support in areas of academic difficulty. Several of the participants revealed that they sought out friends who were academically very bright. For the most part this was not done on a conscious level but, nevertheless, all had smart friends who helped in some fashion academically.

When we were in Jamaica it was a challenging time but it was a good one. I remember being part of a group of kids who were pretty smart. But when I got back to Canada things got really difficult. (Doug, 45-48)

I hung out with two crowds. I hung out with the fairly smart crowd and the jocks. (Rachel, 158-159)

Q: *You talk a lot about aligning yourself with individuals who can help carry you through the difficult times.*

Right; and I think that was probably a strategy that I didn't recognize, umm.....not feeling limited by that and in feeling comfortable going to the teacher maybe more than once saying, "I'm still struggling in this area." Or if the friend wasn't there, going to someone else like one of my other peers for help. (Val, 531-541)
In life in general. I was always choosy about who I spent my time with and so the friends that I had in my life were always very supportive.

Q: *So even though you didn't have the support in school, you had the social support.*

I definitely had social support (Val, 356-361). *Like I said, at a young age I was smart enough to be choosy about friends and I think those peer friendships are strong ties.* (Val, 393-395)

The peers were seen as a resource for the LD student and could be called upon in the evenings for clarification and assistance in homework assignments. In some cases, they would do homework together and study for a test together.

Being able to draw from resources that my friends could provide so utilizing that my friends were very intelligent and asking for help with reports and if we had a passage to read that I didn't understand, phoning them or saying, "Hey, can we get together and discuss this? I'm really struggling in this area." (Val, 398-402)

As seen earlier, courses that had an in-class discussion format made for an easier learning environment for the LD students interviewed for this research. Being able to recreate that discussion-based environment informally with friends facilitated learning.

I got into the social aspect and study groups with other students. I found them really effective. Even though I didn't understand everything that these brilliant people were talking about, I found by studying with other people and learning their techniques allowed me to develop my own. (Kate, 338-342)

I would do alternate work or discuss their paper and ideas. But I would really seek out people who would look at my spelling and grammar. So I would like … have a structure and outline. Like my introductory paragraph: What am I trying to say? What am I doing to try to conclude with? Then, what am I going to introduce and how am I going to talk about it? I would actually do a draft skeleton of what I was trying to do with the paper. (Nancy, 115-122)

This gravitation towards academically bright students also provided a resource when it came time to write papers and essays. Friends would help through discussion to produce outlines for the writing assignment. Further, the LD student was able to rely on friends to edit the final draft for spelling and grammar.

*My two best friends were the smartest girls in the class. In fact, one of them in grade two was offered a scholarship to attend an elite girls' private school in Victoria called St. Margaret's. So she left for a year and was actually skipped a grade but was not happy so returned the next year. I think the support from them was when I was having difficulties with book reports; I could look at them as a mentor. There was the ability to draw from someone in order to be able to articulate myself on paper; by saying "Could you read this paragraph for me?" It just seems to sit right. And it was an opportunity to discuss what I was really trying to express and have them help me put that on pape*r. (Val, 124-134)

Teachers and parents were not necessarily aware of the informal support system that the LD students had set up for themselves. Many individuals made friends with students who were "smart" and were able to draw from these friends the assistance they required to make it through difficult course work. The ability to be resourceful enough to recognize, either consciously or subconsciously, the need to have smart peers seems to be a key factor in making it through the higher grades for participants in this study.

Definitely without it [peer support] I probably would have failed. I remember in grade six or seven with their help...and it was my words but I just wasn't capable of putting it on paper. Most of my reports were normally at a C/D level; I got an A.

Q: *And that was through them?*

It was through the extra support of my girlfriends, yes. (Val, 136-141)

In college there was a girl who was very bright. She was brilliant. She checked all my papers. Having time to be a friend and colleague, we both worked at the college as summer interns as well. She was definitely a role model for me. I am almost 100 percent sure I would not have gotten through if it hadn't been for her in my first couple years of college - especially the written and academic part - without her. She was that much a support in "You can do this ...we can do this." (Nancy, 552-564)

Parental and family support. Peers can help with what is required at school, but a deeper level of support is necessary from parents. Some individuals reported having lots of moral support from parents who would advocate for them at the school level.

I spent my grade nine through grade 11 years at a weekly counselling session with a counsellor who informed me that people with my lack of intelligence couldn't go to university. And this went on in grade nine and ten and finally I said to my parents that I was tired of this. And they were not aware of this. They came in and supported me and had me removed from this man's caseload and took a fair whack off a few administrators at the same time. (Rachel, 10-21)

Others had the encouragement from a family member that they could do or be whatever they chose and, no matter what the choice, they could do it well. This gave support to the student to persevere in the face of adversity.

My dad had a saying when I was a little girl...that it didn't matter what I did for whatever I was going to do to be happy in life but that education made a huge difference and that education was really important. So even though there didn't seem to be money

for me to go to school or basic structures like a home to go to school from, I knew it was important. I needed an education and that really stuck with me. (Nancy, 271-277)

I think my grandfather…we have the same ideas. We have this connection and see right and wrong. It is so important - the fairness of everything.

Q: *Was your grandfather there in the background supporting you through high school?*

No, not high school but he was for college. But he did go to every single one of my graduations. My grandfather was really supportive. He gave me encouragement and said how proud he was of me, the fact that I could pick myself up and nothing could stop me. He says (nickname) you are just like me. (Kate, 396-405) *Probably incredible parental support that you can do what you want. Knowing that going to university is only 20 percent brains and the rest is just hard work.*

Q: *That was something your parents told you?*

Yes and the rest was just the grunt…Support to go and when I finally told my parents that I was being harassed, there was an incredible uproar and so, yes, I felt incredibly supported.

Q: *Through your parents?*

Yes, particularly my dad who never went to university. (Rachel, 304-314)

Parents often tutored their child in spelling, grammar and reading. In some cases this parental support was the only help the student received.

I had great family support. We had homework time; my mom would read what I wrote. She would highlight, well, not really highlight, but she would underline. With the

spelling she would help me look the words up in the dictionary. So I had lots of support with my homework. (Rachel, 151-155)

Some participants continue to use family members as editors and accountants in their work today. Being able to accept their limitations and strengths and knowing when to ask for help is paramount to success.

A: *Well, sometimes I even phone up my husband and say…My kids [students] have seen me, and I'll say, "We're doing this math problem and we got this far and I don't know what to do next." So I'm good at getting help and admit that I don't know how to do something. And as an adult there are lots of us who don't know how to do stuff.*

Q: *What does your husband do, if you don't mind me asking?*

He's a physicist. He's also a very good writer and he is my editor. He looks over a lot of things that are going to go out. He reads all my report cards and corrects them for spelling and grammar. (Rachel, 454-456)

Mentor support. Not everybody had family support. In some cases, parents did not appreciate the difficulties these students faced. Nevertheless, those who did have parental support suggest that this role is crucial. Without parental support, life became unbearable. Failing grades at school combined with the added pressure from parents to achieve better marks resulted in constant stress.

I don't remember my family helping in any way. I remember that I had to do my homework (Nancy, 111-112). *I lost my father when I was 14 and it was best for me to be on my own and self-sufficient. Let's just say I had more than a challenging childhood.*

I'm sure the learning difficulties contributed to these challenges at home. (Nancy, 634-637)

Four of the six individuals interviewed could not cope with the stress at school and at home and subsequently moved out on their own and later dropped out of school. For those participants whose families did not provide support, mentors were sought to fill the position as role models. Mentors took the form of coaches, teachers and other contacts in the community. These mentors acted more as role models than academic support and encouraged the students to persevere despite their difficulties.

One of the people who made a huge impact on me was my synchronized swimming coach, who allowed me to baby-sit her newborn. I was getting paid to baby-sit. She would say things like "How does a young girl smoke and do swimming?" Like that can't work...that's not good for your health and that's not good for you long-term. And she even brought us to the place that we weren't even a good school. We were a trades school but she managed to get us to the level where we were starting to compete with other schools that were known for academia. She made a big impact in the sense that she was a woman who was very bright and determined but also she just believed in my capacity as me, as a person, to do whatever I need to do. Even though we weren't superstars we could still perform as a group. That was really something in grade 9 or 10. She instilled that whole physical activity and self-care and stress-reduction piece. She made a big impact on me. (Nancy, 535-550)

Although there was less academic support from mentors than from peers or family, the mentors fostered self-esteem.

I also had strategically warm role models at different junctures in my life. I always had mentors of some kind. (Nancy, 649-650)

Military was a great thing because I could learn by doing or mentoring and seeing what others were doing around me. I am much better at that. (Doug, 138-141)

My roommate I was living with was 10 years older than me. Part of the agreement for getting such reasonable rent was to go to college. She told me that if I went and took adult learning classes that I might find it easier [than high school] because they treat you differently. And she was right. I didn't go full- time either, though. I took a grade ten math course then grade 11 math. (Kate, 135-140)

These informal social supports (peers, family or mentors) were important in helping the participants in this study to achieve success. The more social support available, the better off the individual tended to be. Family support seems paramount as those without it all dropped out of school. Nevertheless, it was often the other forms of social support that were important in getting students back on track after they had failed in the educational system.

Formal Educational Support

The benefits of formal educational supports set up through the school varied greatly. Although remedial services were generally implemented in elementary school, few, if any, benefits were seen by participants. The same holds true for academic advising and counselling services that were generally seen as detrimental. Nevertheless, some forms of support such as exam accommodations and technical aids did prove to be

a practical and effective form of assistance. Unfortunately, these were not generally implemented until the college or university level.

Remediation services. For the most part, formal academic services were reduced to remediation and learning assistance labs in elementary school. Although there may have been some minor benefits, for the most part, this type of service was seen by participants to be detrimental to their self-esteem. Some believe that phonics remediation may have contributed in helping to sound out words for reading. Some felt that perhaps they would be even worse at spelling had they not had this service.

I had to take remedial classes especially in spelling, language and phonics.

Q: *To what extent were those supports effective?*

I am going to make some assumptions here. They must have made me realize that I needed extra support in learning certain things. One of the things I came away from those remedial classes with was not only feeling stupid and dumb because I needed to go to those classes but there must have been a part of me that realized whatever they were teaching me to do in those classes was actually working to help me learn. (Nancy, 85-95)

I think the learning how to sound out…definitely helped somewhat with the spelling. But really I don't honestly feel they benefited me that much. (Val, 88-90)

Although some individuals believe it must have helped them learn in some way, they all still have great difficulty in spelling correctly. All six participants characterize themselves as poor spellers and poor writers to this day.

Q. *How would you describe your spelling now?*

Terrible. (Nancy, 96)

No, no, it was in the school. It was a teacher who specialized in special education who took it upon herself to help five or six of us from different grades. My sister was in there, too.

Q: *So was it effective? What was taught? Was it effective?*

My honest opinion is no. I couldn't spell and I still can't spell. I still had problems reading and ended up hating math problems even more. (Kate, 102-108)

Others reported never really receiving any support or strategies to assist them with their biggest difficulty, reading comprehension. Often, the repetitive nature of these services left them with feelings of frustration, boredom and a lack of motivation.

Q: *And what did you do in the resource room?*

We concentrated on learning how to sound out syllables and phonics. And I don't know if there was any support around reading comprehension or not. I'll be honest with you, it was so long ago. (Val, 80-85)

Because it was really repetitive. We had to keep doing the same thing over and over and over again. If you didn't get it right they kept making you do it. It was very frustrating when you kept making the same mistake over and over. (Kate, 110-116)

More importantly, the pull-out remedial support services that were typically implemented were seen as detrimental to the student's self-esteem and therefore held no real value. Being singled out for remedial service reinforced the students' feelings of being stupid or dumb and set up an expectation or a self-fulfilling prophecy of lowered intellectual ability.

Q: *Was there any kind of benefit? Were any strategies helpful?*

I don't think so. For me, personally, I just remember getting teased by the kids because I had to go to special learning.

Q: *So, then, overall, was it detrimental?*

Oh, yes, absolutely, in terms of my self-esteem as well as my sister's. It was horrible. It wasn't the teacher. She was fine. It was the coming out...because we had to miss certain classes in elementary school. It was OK that I was getting out of math but I was considered "stupid." I think [that] was the worst. Yeah, I felt stupid all the way up until I left high school. I didn't even graduate. I dropped out of it. I just couldn't take it any longer. (Kate, 117-129)

Q: *You mentioned feeling stupid or dumb going to the resource room. How do you feel now about your intelligence?*

I'm not sure that intellectual intelligence is the "be all and end all." Having said that, it doesn't mean that when I'm surrounded by intellectual people I don't have pangs of insecurities. I don't know how else to describe it except to say just that - pangs of insecurities. (Nancy, 680-685)

Counselling services and academic advising. Other help offered by the school was counselling services, but these seemed to reinforce the students' intellectual insecurity and were deemed detrimental. Well-meaning academic advisors sometimes had misguided assumptions when it came to dealing with the LD student. In an effort to alleviate the frustrations typically experienced by students struggling with their learning disabilities, advisors were encouraged to guide their students to less challenging courses. Unfortunately, research indicates that LD students are better at higher-order processing

and analytical abilities (Goldman, & Hasselbring, 1997). LD students in lower academic courses were not challenged intellectually and thus were unable to show their analytical strength. Often the very courses that are seen by this research to have been a good fit in terms of format and teaching style were discouraged by advisors as seemingly too complex for LD students.

In grade ten, I was told I was too stupid for biology and chemistry and was not allowed to continue with them. (Kate, 222-223)

Similarly, some counsellors advised students to go into areas that would really be extremely unsuitable as a profession, given their disabilities. Secretarial courses, for example, were encouraged. No doubt the reasoning behind this was to reinforce the spelling and writing skills through typing class.

I was [told] that I should be transferring to a secretarial course. Like that's going to be useful. [sarcasm]

Q: *Because you can't spell?*

Yeah! I know, I know, and how would I learn shorthand? (Rachel, 13-17)

Regardless, even well meaning advice tended to have negative long-term consequences. Many bright students were discouraged from even attempting university preparatory courses because university was seen as an unrealistic academic goal, given the difficulties these students faced.

I spent my grade nine through grade eleven years at a weekly counselling session with a counsellor who informed me that people with my lack of intelligence couldn't go to university. (Rachel, 10-13)

Exam accommodations. Another formal academic support took the form of exam accommodations. Implementing this modification provided the much-needed extra time for reading comprehension and written expression difficulties. Furthermore, a quiet place for exams provided fewer distractions from other students. LD students often felt pressured once others students began handing in their completed exams.

I would probably be able to finish the exam [with accommodations but] everybody is always finished before me. I am aware of everybody in the class and then there is this pressure to finish even faster. (Kate, 278-280)

Having a separate space and additional time eliminated the distractions and reduced the level of test stress anxiety for these students. Unfortunately, this kind of service was not implemented until the college or university level.

In second-year college, I did a statistics course that I failed. And you need to have a stats course in order to complete a degree. I also needed to have it in order to complete my diploma. So, I had to re-do my stats course. When I re-did it my instructor was more aware than I was of what my learning challenges are. And he set up an environment where I was tested separate from the class and I was given longer time and, um, he let me know that he was going to support me in whatever it was that I needed to do when I repeated that course to get through it. (Nancy, 52-60)

I did way better in college. I took this adult math course and my instruction was at my own pace. I could take as long as I wanted.

Q: *So this instructor provided you with exam accommodations?*

Yes, for the first time. He was awesome. He didn't mind that I needed to write things out really neat and if it wasn't then I ripped it out and started over again. It was grade ten math but for adults in the adult education department. (Kate, 224-231)

Technical aides. Similarly, technical aids were not introduced until post-secondary education was underway. Teachers believed that these technical aids would be used as a crutch and that students would never master the rules of writing, spelling and grammar. Computers and word processing programs are more accepted in today's society than they were even ten years ago.

But with the supports, I don't know. Maybe I would have been more successful as long as those supports weren't used as crutches or as excuses. But in elementary school, it really was terrible. (Kate, 433-436)

Computers weren't prolific like they are now. We are talking the 80s. But there was a whiff that you needed to have an education to get anywhere in life if I was to have choices in a career or profession. So I think there was that determination to prove to myself that I could finish something. (Nancy, 261-265)

Today students have more access to computers at earlier grade levels than ever before. Similarly, students today have access to the Kerswell reader to help get through the heavy reading components involved in some courses. Rachel explains that even though this strategy is available, her students do not always take advantage of it.

Why won't you use the Kerswell machine? What's wrong with using it? It reads the material to you. Does it matter how you get the material?

Q: *Do they like Kerswell? [LD students]*

They hate the Kerswell.

Q: *It's kind of very…well when I was in school it was….It still has a robot voice.*

Q: *Does it?* (Rachel, 429-437)

Yes, and I call a spade a spade. That's the way it is, guys; it's not going to change. It's a reality check. You have to learn to live with it and have fix-it strategies and coping strategies. There [are] some good coping strategies and some not so good strategies. Telling me to fuck off and throwing things at me is not one of the better strategies. (Rachel, 437-443)

Although the Kerswell is mentioned as a current technical aid available to today's students, it was not available to the individuals who took part in this study while they were students.

Formal academic support held little value for those individuals interviewed here. Given the fact that exam accommodations and technical aids were not an option until post-secondary school, the public school system provided little in terms of real strategies to deal with their disabilities. In effect, the public school system support services were seen as detrimental by participants in this study.

Coping Strategies

Coping strategies like support systems were also divided up into two main sub-themes. The first sub-theme of coping mechanisms involved information-processing skills. Information processing skills are essential for learning new material and involve the ability to encode as well as retrieve data from long term memory. Memorization is one manifestation of this ability that participants mentioned repeatedly. Some individuals

used modality specific encoding and retrieval process in order to memorize and learn new information. Modality-specific processing skills included visual, auditory, hands-on, and verbal learning strategies. Learning-style theories have encouraged the notion of dominant learning modes including visual, auditory, or kinaesthetic methods of encoding information. Nevertheless, coping strategies of this nature were not as predominant as was first expected. Although some of these strategies were indeed implemented by participants they were not nearly as prevalent as the other major coping strategies that emerged from the interviews.

This alternate category of coping skills involved the implementation of planning and organizational strategies. This approach to managing their education included structural and procedural activities, routines and time management. Together these strategies and coping mechanisms were viewed as more significant and beneficial for long term success.

Information Processing Coping Strategies

Memorization. Information processing involves the ability to encode as well as retrieve information from long term memory. Memorization skills involve both of these processes. Participants expressed an ability to memorize large quantities of information in some instances and yet had difficulty memorizing spelling words. History is one subject where factual recall did not seem to pose a problem. Several individuals mentioned that they relied on their ability to memorize in order to succeed in school.

Except that I performed really well, like many LD people, in certain areas. So, I could memorize history. I could make A's in history (Rachel, 26-28).

Math…I took math 12 three times, to pass it I memorized it. I took it, Math, in the morning with one teacher, math in the afternoon with another teacher. And I went to a prep class where we looked at the last 20 years of grade 12 math exams. I literally memorized enough to be able to regurgitate it. I have literally no idea what I wrote (Rachel, 71-76).

My ability to memorize huge amounts of material gets me through. I have an excellent memory. I still can't spell, though. I can't remember a whole paragraph but I can remember concepts and information. Like one line things (Kate, 656-659).

In fact, spelling was memorized as sight words and not necessarily through phonics. Nevertheless, learning to spell weekly list of words was impossible to master in that short time frame for all those who were interviewed. Learning how to spell new words requires repeated presentation before it is encoded into memory. Perhaps there are simply too many words in the English language to memorize them all. Spelling continues to elude all the participants who were interviewed despite years of remediation in phonics and language arts.

I am a sight word reader. I see the word in whole. In its completeness (Rachel, 358).

You're asking the wrong person. I can't spell. All my spelling has come from memorization. Not through pronunciation or phonics or anything else, it's simply through writing it out until I learn it. I don't know how else to spell. If you could tell me, I'd do it (Kate, 582-585).

And the computer changed that to some extent. It's much easier to write because today I was looking for the word convenient. And even the spell checker couldn't get it. I

was so out to lunch with it and I thought, "Oh well, forget it. What else can I use instead that's going to work?" And I'm just sending an e-mail. So I still face that daily (Rachel, 89-95).

Q: *How did computers help with your spelling?*

A: *They don't help with my spelling. Computers help me do my job because I can just spell check afterwards. My spelling is still very bad. Computers certainly will not teach me to spell but they do make life easier. Like, which witch is which? That's still a problem. The computer is just a tool to help me do my job more effectively - nothing more* (Kate, 597-603).

Spelling may pose a problem because the rules of the English language do not always apply and there are quite possibly too many exceptions to memorize in a logical manner. One method of encoding information for easier retrieval is to use the students' dominant learning style.

Learning styles. A student 's learning style was once considered the most important distinction in the classroom. This information processing approach is based on psycho-neurological functions that are essential for cognitive and academic performance. They include auditory, visual, tactile, motoric, vocal, and memory factors (Myers, & Hammill, 1990). Auditory and vocal modality preferences go hand in hand with discussion-based courses. Those who perform best in this environment would then choose to study in their preferred learning style.

To compensate for a visual memory deficit such as an inability to memorize the spelling of certain words, one participant prepared a notebook with her trigger words as a reference guide.

I also keep track of the words that I can't spell, the trigger words, in a notebook, words that I always have problems with. So, that way, if I had to fill out a job application or anything like that where you don't always have a dictionary, I knew some of my trouble words that I just keep getting hung up on then I could flip through my little notebook and say "That's the word I need." But most of those words I can spell now. It took a few years though. (Kate, 590-596)

In order to identify the student's preferred learning style, his or her specific strengths must be determined. For example, a person who has a weak visual modality may have strong auditory or verbal skills.

My mother was very articulate and had a good command of the English language and because I can't get thoughts down on paper in a logical methodical fashion, I felt I had to have an alternate way to express myself. I've been told I do express myself well verbally. (Nancy, 595-599)

Another strategy that was implemented by several participants involved reading aloud to themselves. They revealed that comprehension of the material was easier if they read the text orally. Similarly, reading their notes and definitions out loud had a positive learning effect.

[Studying involves] writing out definitions, especially something new; reading out loud and then writing up definitions and notes. Studying with a study group. Studying verbally out loud. We would ask each other questions and answer out loud. It's

one of my favorite things to do. I sometimes write up flash cards and I get someone to read them out to me and I answer them. If I can speak it, I will never forget it. (Kate, 561-567)

As discussed above, all the participants were skilled at tasks involving practical work with the physical environment (e.g., mechanics or labs). Where the strength may have been tactile, the weakness presented itself as visual perceptual difficulty. One strategy to help with reading involved the use of coloured transparencies.

I get very overwhelmed by the written word and sometimes the words even appear to be jumping off the page at me. It's a very bizarre thing and so what I did to fix that was I did some research and found out that if you put a piece of coloured film over the book it does something, changes the mechanics, and I was able to read fine. It's bizarre actually - orange worked for me. (Doug, 11-17)

Students also mentioned that reading textbooks in biology became more manageable because of the charts, pictures and diagrams that went along with the explanations. These visual aids alleviated the reading component and visual perceptual difficulties involved. Watching the movie version of a book or play was another method of alleviating the feelings of being overwhelmed by the text, in using auditory and visual modalities combined.

With my reading comprehension difficulties, there was no way I was able to read Shakespeare and get the meaning. I have enough difficulty with the current English language let alone old English. So in grade nine we had to read "Romeo and Juliet." I followed along as much as I could in class but reading it on my own - forget it. So, what

I did was rent the movie version of it instead. I really love the story but I just couldn't read it and get it. (Val, 855-862)

The individual's strengths should, in theory, identify the person's optimal learning style, at which point learning can be facilitated through strategies related to the specific modality preference. However, although a weaker modality may be evident, the dominant learning-style preference is not always as distinct.

I learn through interactive…

Q. *So by that do you mean group discussions?*

Yes and experiential. I need to do it. When we see it, do it, hear and experience something, the learning and resonating multiplies exponentially; that is the kind of learner I am. That is my best environment for learning. (Nancy, 323-328)

Nevertheless, optimum learning in the classroom does not necessarily translate to coping skills in life. The theoretical rationale of the processing explanation of LD is controversial and studies analyzing its effectiveness are inconclusive (Dean, & Burns, 2002). However, it is acknowledged today that concentrating on a single deficit, such as an auditory or visual process, does not account for the variety of learning problems present. It is clear that this view is overly simplistic because more than one psychological process is needed to perform most academic tasks (Lerner, 1993, p. 193). It is not surprising therefore, that participants in this study revealed that planning and organizational strategies had more significance than information-processing skills.

Planning and Organizational Skills

Planning and organizational skills have been developed by all participants to manage the difficulties caused by their learning disability. Procedures and sequences of steps helped break down difficult subject matter into more manageable tasks. Given the fact that reading comprehension and writing skills required extra time, it is not surprising that time management skills were an important factor in keeping on schedule. Daily routine and a structured environment created an efficient time management system. Managing their academic environment involved better choices of courses and the number of courses taken. Planning and organization remains an important aspect in the everyday lives of those interviewed here.

Procedural planning skills. Procedural coping methods eliminate the guesswork involved in problem solving. Less ambiguity occurs and problems are solved more easily. A straightforward, logical process involves taking specific steps to reach a conclusion. Procedural coping methods involve either a formula or a series of steps that can easily be followed. With repetition, the process becomes second nature. It is clear that some things need to be broken down into manageable steps.

Well, I actually had to write out the math rules, the principles and concepts. Then [put] an example problem by each rule. Before that, the teacher would explain the rule verbally and then do a problem. But, never in high school did they make you write it out and understand the rule first. They just told it to you and showed you what to do. But there was rarely any understanding of why we were doing what were doing. At least not for me. In college, this professor broke it down for me. I just didn't get it otherwise. The

biggest thing was that I was allowed the time to learn the rules, write them out, [and] do an example before having to do a page of 20 questions. (Kate, 240-250)

Like if there is a new program on the computer , I'm either going to find my way to the tutorial to figure out how to do it or I'm going to go ask somebody to come help me and walk through this and write down some directions so that I can refer back to it. Then I know that I can do that. (Nancy, 373-377)

*Why/how are these hooked up [VCR and TV] and why? And kids go ... and I said, "Look, this is not rocket science, write me the steps in clear point-form because I don't know what to do and it isn't going to happen, 'cause I don't remember the steps. I don't see the sequence; I have to have the sequence in front of me." So often, what I'll do with kids [LD students] is help them with sequencing. So, division particularly, we'll write [an] estimate, multiply, subtract, bring down and repeat, at the top of the page. Write out the steps. And it works for some kid*s. (Rachel, 562-572)

Although a formal procedural method was not always used, individuals developed their own process of learning information. Even just learning a new word and how to spell it gave rise to a series of steps to achieve optimum learning.

One of the things I think I must have learned, I don't know if it was learned at home or in school ... I have an insatiable thirst for knowledge and language. If I can't spell something, I will go look it up. I might write it out several times. I'll see how I can use it in different ways and then I'll look at what the meaning is beside the word. I am fascinated by language. Like what's its origin, what year, how is it used? So that' s been a challenge to me even though I did it ... it's part of the mastery piece I think. It's that something that stumps me or something that gets me frustrated. I want to learn strategies

around: How do I try and master this? How do I try to get better at this? (Nancy, 99-109)

Perhaps the procedural nature of lab reports combined with a hands-on learning component explain why participants consistently reported achieving better results in these classes.

Lab reports [are] short and concise and to the point. It's very logical; none of the fluff or fancy stuff. I like things that are orderly; things that I know if it goes in a certain order and is repetitious then I can always get it right. It's so much easier when it's in the same order all the time. (Kate, 348-353)

After repeated exposure to the process and steps involved, the procedure eventually becomes encoded. There seems to be a level of comfort in the sequential structure of things. LD individuals tend to thrive in highly structured environments.

Well, I did finish my electronics engineering degree. It allowed me to get into the new career within the military. I have a lot more happiness in my job because it is methodical. There are always steps to follow to get to the end result. There is no ambiguity; you know, that is what computers and electronics are like. You follow the rules of physics. (Kate, 371-376)

Time management. The fact that LD individuals thrive in a structured environment encourages them to recreate that kind of structure in their daily lives. Time management is an important aspect of creating a structured setting and is vital in managing schoolwork. Reading and writing still take more time for LD students, so getting work done in a timely fashion requires managing deadlines.

Yes, for instance doing a small essay, a one-page essay or four-page essay, would take me anywhere from three to four times [longer]. I would compare how long it took other people to do things. I would ask them and know how much more it took for me. (Nancy, 28-31)

In this most recent course I took observing and recording children. The course outline said it would require 15 hours per week. I am not kidding when I say it took me anywhere from 40 to 60 hours to do the readings then the observations and finally the assignment. I was putting in way more hours than what the course description had suggested. (Val, 847-853)

This coping strategy is not apparent in young students. In public school the timelines for finishing assignments are set by the teacher. Only with maturity and experience can students judge how long it actually takes them to finish assignments and budget time accordingly.

When I did my electronics engineering course, I had to make myself a schedule and stick to it. I wouldn't let myself get caught up in one subject for three hours and never let it go trying to figure out something. No, 15 minutes a problem [and] if I didn't get it...NEXT. And it really worked. I would actually go see the instructor for the problems I was stuck on. I didn't do that in my first degree. Although I liked biochemistry way better than I do the engineering I didn't have that technique. I didn't know that I should go ask. I was too busy trying not to look stupid in my professor's eyes. I would just keep trying to figure it out on my own and cry and get frustrated. I now have a timer and set it to 15 minutes and it really works for me. (Kate, 357-368)

Through high school, college, and university to manage working and going to school and meeting deadlines was incredibly hard for me. Through university and college, I had to get extensions on things. So, really, my life became a lot of work and school, and work and school. I didn't have any extra time. My leisure time was often spent doing things that were supporting either of those lives. (Nancy, 356-361)

One way to manage the time it took to do school assignments was to limit the number of courses taken. The ability to implement this time management coping mechanism was not available, however, until college and university. In high school or public school, the course load is set by the standard norms and there is pressure to finish all the credits in a three-year span. Being able to focus on fewer courses at college and university was one way of coping with the disability.

I was tackling English, which I knew was an area of weakness so I wanted to be able to solely devote my time to being able to concentrate and trying to absorb the information I was getting without having the confusion of trying to multi-task with another subject.

Q: *So basically, focusing your attention, all your attention?*

Right. And I wouldn't have been able to do two subjects. (Val, 592-598)

I didn't go full time either though. I took a grade ten math course [through the college] then grade 11 math. By the time I was 23 I had taken all my first year university courses. So I started really slow. I took two courses at a time and I worked (Kate, 139-143). *It was grade ten math but for adults in the adult education department. I then went on to take grade 11 math with him and did well. I got to go at night and work at my own*

pace. I only took one or two courses at a time so I could focus my attention on one subject. (Kate, 230-234)

Time management remains an important part of the daily lives of all those who were interviewed. The disability does not disappear once the student leaves school so it is important to be able to manage time and still complete work assignments.

Oh yeah! Writing reports, or giving feedback, anything written, requires extra time and limiting distractions and sometimes editing and feedback from a colleague. I am consistently putting in more hours to produce. That would be something I experienced my whole life. A paper that might take someone 10 hours to produce might take me 40 hours to produce. I need to be aware and get used to being OK with that or do something else. I have to plan more and revisit more often. If I have to give a five-page summary of this year's success and strategies for the next year where it might take someone a day or two to do that, I need to be planning weeks ahead. I need to have enough time to work on it and secondly enough time for the screening process, the grammar and the spelling and, three, that I feel that the product in the end is what they requested that's needed. I might need to check it two or three times to make sure I'm on the right track. It definitely affects my ability to be able to do my job within reasonable time frames. It either comes home with me or I put in more time at the office or I ask for extensions or extra time to work on things. (Nancy, 290-313)

*If someone says, "Oh can you take the notes for the Team Based Meetings?" I said like "Cheryl, no" and she's like "But you make such good notes." Do you forget what takes you two minutes to do, it takes me an hour to do? I mean real*ly (Rachel, 912-916)

I wanted the key to get into the school for the weekend. I really got the run around from that. As an LD person, you need to realize that I need extra time just like my students need so when I need to do prep I can't get it done in the time allotted. That's my problem not your problem but you still need to support me in giving me the tools to do my job well. Yes and the code to get in. So yes I had to be stubborn and I hate to use the word aggressive, there's another word but assertive. Yes, that's it, I'm incredibly assertive. (Rachel, 917-926)

Time management…which I fail at miserably but I still try and work at. Having aids like electronics, computers, written day-timer to back up the computer and staff that help with reminders and support in getting the clerical and administrative tasks done around doing my job. (Nancy, 330-335)

Daily routines are definitely a significant component of time management. Having a schedule helped keep them organized and alleviated some of the problems with forgetfulness.

I like everything done, things to be done in a sequence of events. Umm…just because part of my personality is I like everything lined up so I know what next sequence of events is to follow. Because I don't have the ability to sit down and write down everything. So I think that in exchange for that I just make sure that everything…How do I explain this? I like structure. I do well with structure. And again I think that is why daycare works so well because daycare is a semi-structured environment. The children need the structure so for someone who enjoys structure it's ideal. (Val, 437-451)

Which is why I like the military: it's predicable, it's always the same. Standard operating procedures. I don't have to guess, they have rules and regulations and you know exactly where you stand and at which point. (Kate, 353-356)

The interview transcripts revealed that the participants not only developed a structured daily routine but they implemented mini-routines for specific things. Studying or doing homework involved a series of steps to prepare themselves mentally to tackle the assignments.

I have I taught myself to focus. I used to not be very good at focusing and I learned how through meditation ironically enough. I find that if I do a repetitive thing like I sit at the same place all the time, relax, drink my tea, do my focusing, I work much better. Almost like a ritual to get myself prepared to study. Like when I problem-solve I have to follow a certain set of steps. A logical sequence of steps. I like following a process and steps (Kate, 464-471). *Studying with tea, sharpened pencils, quiet, my ritual with classical music, no words, not songs, just relaxing music.* (Kate, 557-558)

Mental preparation for serious studying includes needing spa music, a lightly lit room, vanilla candles, a cup of tea, my laptop and absolutely no distractions including the TV and the kids. The phone needs to be close by for peer support if I need to make an outgoing call for help. My laptop is also armed and ready with a direct link to Webster's' dictionary and a thesaurus link and other direct links of support. (Val, 839-845)

And that is one thing I get, too, I am so particular. And I have to clean my desk off and my colleague and we were doing something and I was writing and I had to have a white eraser to erase with. She thought that was very strange. (Rachel, 742-744)

Academic milieu management. The study routines helped in setting up a manageable environment in order to accomplish tasks such as assignments for courses. As the participants matured and became more self-aware they realized what sort of teaching and learning environment worked best for them. Consequently, they chose courses that were best suited for them to succeed. Managing their academic careers involved not only limiting the number of courses, as mentioned earlier, but also choosing the best courses based on instruction format, the type of assignments and the exams that allowed them to succeed. Despite the fact that limiting the number of courses was not possible until post-secondary school, the other academic management tools could be started in high school.

When I got to high school, by the time I got to grade 10 and 11, I started to take only the things I liked. I didn't take harder English courses because you had to do compositions around what you studied. I took basic English. (Nancy, 132-136)

When I picked my individual projects I picked things to build that I was really keen to build and that I knew I could manage.

Q: *Did you subsequently choose courses that were similar in format?*

Yes, I chose courses that didn't have a high writing component.

(Nancy, 161-165)

Q: *Did you subsequently choose courses that were similar in format in college or university?*

Yes, I took a history degree.

Q: *Did it have light reading or…?*

No, they had no exams. And they had very heavy reading and fairly heavy writing. My reading comprehension is fine. And so I can do the reading. What I needed help was with composition (Rachel, 184-191).

I didn't get an editor until basically I started university.

Q: *Was the editor really part and parcel of your being able to succeed at university?*

Oh yes, one hundred percent (Rachel, 328-332).

And I started doing more reading and I started acknowledging what my disability was and how it impacted me. I started doing more reading and I took the required courses by correspondence because that's easier for me. Because I can have my editor help me.

Q: *Right, and there is no exam.*

There were no exams... I don't take courses with exams. I took my three courses that gave me my special Ed background (Rachel, 385-392)

Being able to choose the instruction environment and the course format was seen throughout the data as being one method of coping with LD. In addition, some individuals took supplementary courses to build strategies to cope with their specific areas of difficulty.

One of the things I did do was that I had to take extra classes around those classes that I really struggled with to learn basic principles, concepts or strategies. (Nancy, 71-74)

Q: *Were these classes mandatory because you didn't have certain prerequisites from high school or was this a strategy you chose to take to help build and support your basic knowledge in other courses you were struggling in?*

Both. I took classes for additional support such as strategies for good studying or how to write a coherent paper. I took these additional non-credit courses while I was doing two or three credit courses for my degree. (Nancy, 663-670)

Structure and discipline are significant factors in achieving success. Without a structure in place, many students suggested they would falter. Both Kate and Doug joined the military and thrived in that environment. The military has a place for every object and a procedure for any operation. While on duty, military members are told what to wear, when to eat, even when to exercise. There are training manuals laying out the procedures for all aspects of the job. Being highly organized is one coping strategy that was seen repeatedly in this study. Where the military provided the structure for some, others had to develop their own.

I was used to more discipline. The British system is pretty strict. That was in 1976/77. It was amazing the difference. Lack of discipline and the lack of structure were incredible. From 1976 on, school was hell. (Doug, 48-51)

I'm meticulous.

Q: *Explain what you mean by that.*

I'm a perfectionist. I like everything in its own place. Umm…I would definitely say I am very organized. I don't do "chaotic" very well. (Val, 433-440)

So you can see the other thing I do is I am highly organized. People laugh at me 'cause later on there will be signs in this room and it will say…math games, language

arts games and so everything is highly organized [and] highly labelled, otherwise I would die. Every book is labelled so when I'm looking for one that says special events with readings inside that each one has a... so yeah I am. What is the word I am looking for...obsessive-compulsive about it...my colleagues give me a hard time about it...they tease me. (Rachel, 731-742)

Some individuals manage to cope with their learning disability and lead successful lives. Many individuals do not. The alarming social cost of students who do not suggests it is necessary to examine the support and coping mechanisms which could help these individuals achieve success. Formal educational supports (such as remedial services and counselling services) need to be reviewed to ensure that they are indeed improving the students' sense of self-worth. Further, technical aids and exam accommodations should be made available at earlier grade levels to ease the pressure and stress of schoolwork. Coping strategies that involve modality-specific information-processing skills were seen as moderately beneficial. However, the most pervasive coping skills to manage disabilities both in school and adulthood are planning and organizational skills.

Successful Intelligence Theory

Elements of Sternberg's successful intelligence theory are apparent in the actions and characteristics of participants in this study. The coping strategies that were emphasized as most important in achieving both academic and current success in adulthood involved planning and organizing their environment for optimum success. According to Sternberg, successful intelligence is the capacity to do well in life by

achieving goals in one's environment (Wagner, 2000). *Successful intelligence* is defined as the ability to adapt, shape and select appropriate environments. This may be accomplished by changing to fit the environment. At other times, it involves modifying the environment to fit the individual and other times it means selecting a more appropriate environment altogether. According to Sternberg, successful intelligence includes analytical, creative and practical abilities (Wagner, 2000). *Analytical intelligence* includes the skills of judging, evaluating and thinking critically. *Creative intelligence* involves skills such as inventing and exploring. *Practical intelligence* involves implementing knowledge one has learned.

Analytical abilities are often considered to be those abilities that are fostered in the school environment. This is not always the case because critical thinking skills may be underdeveloped if there is an overemphasis on learning the basics of reading and writing (Gersten, 1998, p. 163). Furthermore, critical thinking abilities in children do not develop until they approach middle school (Epstein, 1980; Fischer, 1980, 1987). By this time, LD students often feel intellectually inferior to their peers because of the difficulty they experience learning the basics (Sabornie, 1994). This does not imply they are *unable* to use critical thinking skills but that they do not have confidence in their abilities. If given the chance, it has been shown that LD students can excel at higher order processing (Goldman, & Hasselbring, 1997). As noted earlier, however, students with LD are often encouraged to take less challenging courses by academic advisors. Analytical abilities and critical thinking skills need to be encouraged and developed to boost the self-esteem of these students.

Creative Intelligence

Creative abilities are skills which involve inventive ways of learning new information, for example, mnemonics or the sign language-spelling method. In addition, this skill requires imagination, intuition and the ability to explore. The concept of *thinking outside the box* or redefining problems and tackling them from a different perspective is one example of creative problem-solving that is increasingly sought after in the workplace. Throughout the interviews participants revealed their ability to see things differently and to approach problems in a different way.

I can see the answer sometimes like when I did my programming. You know you have to follow steps to make a program but sometimes I could get to the answer without following the steps, like I just knew the answer. Which could really tick off my instructor because there were those steps we were supposed to follow and I could just get there without the steps sometimes. I would go through the steps to verify my answer but still I could arrive at it without having to take them. Does that make sense? Now I can explain why it works because I have more experience but in my younger life I was like "Isn't that the answer?" and they would be like "Well how did you get to it" and I'd be like "I don't know." I don't know if that makes sense. But I learned early on that people don't like that answer. They don't like it when you can see something and it pops into your head and just say it and you can' t explain it. Especially in math or science. (Kate, 510-524)

I think that I am creative, and I would say very creative in how I work with people to see their troubles, dilemmas and problems...their situations as being just that, life

situations. Somehow we can come up with a strategy and a plan and a pattern that's going to help them move towards where they need to go. (Nancy, 414-419)

But a lot of it [problem-solving] is also intuitive. I'll look at something and it just makes sense. I don't even have to think about it…it just comes to me. It's like this huge open area, a little light goes off, and it falls into place; it's just there; it just arrives out of the heavens. It's just there and I have the answer. All the time. (Doug, 150-154)

*I don't think I know how to problem-solve without being a creative problem-solver unless I am really familiar with a [type of] problem. But faced with a new problem I have to get the big picture and brainstorm. I usually need to have somebody with me to bounce ideas off. They don't necessarily have to talk, just somebody to listen to my thought processes. I approach the problem-solving from a different an*gle. (Kate, 644-649)

I am very quick at problem-solving. I'm incredibly flexible, I mean like OK this isn't working, let's move on. Let's not flog a dead horse. Let's see what else will work. (Rachel, 421-423)

Creative problem-solving solutions are an example of successful intelligence. Participants were able to develop coping strategies by using their practical and creative abilities to create for themselves more effective educational environments. Creative intelligence and practical intelligence often overlap. This ability to combine creative problem-solving and implementing those solutions in a practical manner is effective not only in school but in everyday occurrences. Nancy, for example, was living on her own at the age of sixteen. She moved to a new city and had to figure out how to work and go to school and be self-sufficient. In an effort to avoid foster care or group homes she was

able to use her creative problem-solving abilities and come up with a practical solution to create for herself the environment she desired.

[*I knew] that there was a structure in place, I had requirements, and I had to complete things in my life. I moved when I was part-way through grade ten and that was disruptive enough, but then to start another school and to finish on my own … so I was living on my own very young…I was sixteen when I was living on my own and I had to get myself through that year and get myself working and enrolled in another province in high school and work as I went to school to finish. That started that whole idea of determination and tenacity.* (Nancy, 241-249)

I was also very creative. I rented a two-bedroom house, then rented it out to three other people, and did housework and laundry for an extra fee. So, I organized it. This allowed me not to have to actually pay rent. (Nancy, 659-662)

Like if a person were to ask me, "How did I know that I needed to be that organized to have my bills paid ahead of time and to work?" I would say intuitively I knew that to be successful I had to motivate myself. Nobody else was going to do it. (Nancy, 381-385)

When I did that, I think I proved to myself that I can organize my life and I can set goals and be determined. (Nancy, 256-259)

Despite her learning challenges in school, Nancy describes being able to organize herself, manipulate her environment and set goals to be successful using both creative and practical abilities.

Practical Intelligence

Practical skills involve putting into practice what has been learned and implementing a plan or procedure in real-life situations. Sternberg called knowledge that is necessary for success in a particular environment *tacit knowledge*, which he defined as "procedural in nature rather than factual, usually acquired without explicit instruction and knowledge about things that are personally important" (Wagner, 2000, p. 392). The learning of new information sometimes requires individuals with LD to either set up their own procedure or have someone assist them in developing one. This also validates Sternberg's theory, given the assertion that practical intelligence is procedural in nature rather than factual and is of personal significance. Several differences between practical intelligence and academic intelligence are apparent, traditionally reported by IQ scores. To solve an academic problem all the essential information is made available to the student and there is generally one accepted process for determining the correct solution. In contrast, in everyday life, crucial information needed to solve a problem is not always readily available. Furthermore, there may be several solutions and numerous means of arriving at a resolution to the problem. Evidently, academic problem-solving is not linked to practical everyday situations (Neisser, 1976; Wagner, & Sternberg, 1985). A clear example of the dichotomy between academic and practical intelligence is revealed by one individual 's description of his practical engineering abilities, despite only having a grade nine education.

I could see things that others with more formal schooling could not. In the engineering field, I knew what pump or compressor was needed based on an evaluation of the job. Engineers would have to first do the math formulas and calculations to

determine what I had already pointed out was the correct component to use. This would reinforce my feelings of being intelligent and helped foster my self-esteem. (George, 8-14)

The individuals interviewed for this research did not view themselves as academically intelligent. However, common sense and practical intelligence were identified throughout the transcripts.

There's a saying I said to myself (and I'm not sure when I discovered it but I'm sure it was somewhere around the end of finishing high school) that I may not be smart or intelligent or brilliant but I was bright; I knew I was bright. I don't know if that makes sense to you. I would then describe myself like that to people. It didn't mean that I knew the answers to the Trivial Pursuit game or that I knew how to spell or that I would get all my grammar perfect but that nevertheless I was a bright girl. I could figure things out in life. (Nancy, 393-401)

Common sense [for me is] the ability to equally look at all the surfaces and sides and I try to do that with people as well. Taking myself out of the situation, it's easier if everyone has a chance to give their opinion or ideas before you go ahead and do anything. I like to see everything before I do anything. (Kate, 651-655)

My neighbour has got a PhD and the guy is brilliant; talk about a guy who is switched on! But give him a screwdriver and he is lost. I think it's more valuable and practical to be able to build a house. I am a person of action, not a person of thought. I really enjoy my neighbour; he is always asking my opinion on practical things. He is more theoretical. Common sense is my strongest skill set. I have a practical PhD where he has the theoretical PhD. But thank god for different skill sets. (Doug, 184-192)

I think that I have practical smarts. Practical life smarts like in the sense that practical ways of living my life that are going to help me make good choices. I am a very pragmatic and practical person. Underlying my outer exterior I would say that I am very ephemeral or intuitive and very mystical but underneath that there is a part of me that is very down-to–earth, very pragmatic and very practical. So I can spend time in both worlds. It has been the practical part that has allowed me to explore the less tangible parts of life. (Nancy, 403-411)

Common sense of this kind is generally acquired without direct instruction. Nevertheless, Sternberg designed a program to teach grade six students the *tacit knowledge* or common sense required for success in school. In this study for school success, time management, organizational skills, peer and social relations were indicative as *tacit knowledge* for the scholastic environment (Sternberg, Okagaki, & Jackson, 1990). These skills are identical to those coping strategies that the participants in this study developed on their own in order to achieve success. The participants in this study all stressed that time management was and remains a key to their success. They also stressed the importance of being highly organized in order to cope on a daily basis. Further, social supports were seen as being an important contributing factor in achieving success.

Social Intelligence

Since practical intelligence occurs in the context of everyday problem-solving, it contains features of social intelligence (Sternberg, & Wagner, 1986). Despite the fact that some research indicated that individuals with LD are socially awkward or delayed,

all who were interviewed here stressed that they had good "people skills" or social skills (Wallander, & Hubert, 1987; Sabornie, 1994). They even relied on their peers not only for moral support but also academic support.

I would say emotionally that I have very good intuition and very good sense of how to be with people and interact with people. (Nancy, 378-379)

I was also chosen out of my peers in college to give a speech about what it was like to be moving on and, umm, and our diplomas. I was seen as popular and somehow representing the group and also somehow seen as leading the group. I was easy to be around. (Nancy, 516-520)

What makes me succeed is my ability to get along with people and to understand them and get along with them. Those are my strengths (Kate, 334-336). People skills are always there. (Kate, 448)

There was a human component in just the last few years of my military career. As a supervisor, I was always cognizant of treating people well. I would always make it human. I got really good at social management and people skills. You realize that your actions impact people and [if] you treat them well, they will treat you well and it's a win-win situation. (Doug, 164-169)

Oh, no, I had tons of friends; in fact, I would say that socially I thrived and I am a big group person. I enjoy being with people and I have incredibly good problem- solving skills and they are quick. I see the big picture really fast (Rachel, 277-280). I am very blessed with a large group of friends. (Rachel, 339-340)

I think my intelligence is a natural ability and not book-smarts. I think that I am intuitive; I'm very good at reading body language, paying attention and reading people's

emotions. So I think they are more instinctive rather than something that is taught. (Val, 472-476)

Skills that are instinctual represent *tacit knowledge* and the practical element of the successful intelligence theory. If successful intelligence is indeed the ability to adapt to one's environment by implementing certain strategies, then this research validates Sternberg's theory. The educational milieu management strategy sets up the scholastic environment to fit the needs of the student. The student's ability to adapt to the school environment involves taking a limited number of courses and only those classes with a format that was deemed manageable. Being intuitive enough to seek out social support in that environment to overcome any limitations further supports the successful intelligence theory.

Resiliency

Successful intelligence is considered an ability to adapt to and successfully overcome in a given environment. Resiliency on the other hand is the determination to continually try to adapt despite adversity and failure. The ability to overcome adversity is considered "an adaptive stress resistant personal quality that allows the person to thrive despite unfortunate life experiences" (Markstrom, Marshall, & Tryon, 2002, p.693). All the participants indicated a certain level of perseverance and determination as being contributing factors in achieving not only academic success but also success in life.

Q: *To what do you credit your current success?*

A: *My work ethics and my integrity. My personal values made me succeed. Pride, the fact that I could pick myself up and nothing would stop me* (Kate, 388-391).

Because if you give up, you're nothing. That's just the way life is. Only quitters give up. Just because you don't succeed in something doesn't mean you can't succeed in something else (Kate, 407-409).

For high school and public school it was kind of grin and bear it. Just determination is the word that comes up for me. Like when I could not do something or learn something or complete something I would go back over and over again until I figured out how to do something. So tenacious and determined. It doesn't say that that wasn't exhausting for me. It was very exhausting. But it was getting a passing grade and I mean just a passing grade: D, C or B. God, B's were especially for public school or high school were [hard to come by] until I got into subjects that I could manage better and had a real interest in. So for me definitely just getting through things and passing things was really important. So those would be the adjective descriptors of determined and tenacious (Nancy, 38-50). *So I think there was that determination to prove to myself that I could finish something. But if I wanted access or choices to do other things, I needed my high school diploma. So out of the three degrees the most important would be my high school diploma. Just the sheer example that hard work pays off. And it has for me* (Nancy, 265-271).

I graduated in 1980 and it was a struggle. I actually don't know how I did it. But is seems like everything in my life just gets done, you know, like I don't know, I just do it. Like joining the military, I just did it (Doug, 22-25). *Somehow, I persevered and came out with a C to C+ average* (Doug, 73).

In spite of the fact that four participants dropped out of school, all but one eventually returned to upgrade their education as adults. Although not all of them have their grade twelve, they nevertheless took college or university courses in their particular field of interest. Several studies reveal that perseverance and resiliency are, in fact, characteristics repeatedly observed in successful adults with LD (Gerber, Ginsberg, & Reiff, 1992; Freeman, Stoch, Chan ,& Hutchinson, 2004).

Although resiliency is not considered a part of Sternberg's successful intelligence theory, it does play a critical role in determining success in LD adults. Further research is required to determine if there is a relationship between resiliency and successful intelligence. Does successfully managing the educational environment allow resiliency to occur or does resiliency allow successful intelligence to develop? Furthermore, can this characteristic be encouraged, developed or nurtured in students at risk for dropping out?

CHAPTER V

Conclusion

Individuals with LD confront many obstacles when it comes to achieving educational success. Failure in this environment results in a wide array of consequences not only for the individual but also for society in general. Consequently, this places a heavy burden on both the provincial and federal governments to provide funding for social programs. A closer look at what causes school failure in the first place and an acknowledgement that a shift in educational practices may be in order could, in effect, alleviate some of the social impacts. Rather than classifying and defining learning disabilities, a look at redefining what works and what does not work in the educational system would seem to be in order.

Classifying various learning disabilities has been a problem for decades. The history of learning disabilities has focused its theory and research around school-related abilities. Theories are the foundation from which educational practices are developed. Mainstream educational systems have to date not been very successful in terms of providing useful, adaptive and effective interventions to assist individuals with LD in achieving their academic and future goals. Moreover, many individuals with LD find the "deficit model" of remediation that is typically used to be stigmatizing and excessively focused on "repairing" the inherent weaknesses of the individual. In fact, remediation practices may inadvertently impede analytical development in students with LD. Furthermore, the system of pulling children out of class and segregating them to learning assistance rooms has a huge negative impact on self-esteem.

Consideration should be given to funding an after school tutorial service for designated LD students. This would alleviate the stigma attached to leaving the class room setting to attend remedial classes and prevents revealing the LD student's deficits to their peers. Furthermore, it would solve the scheduling problem faced by many resource room teachers trying to accommodate different students and teachers at the same time. Attempting to provide remedial math when the class is doing math, or phonics and reading remediation when the class is doing language arts , is virtually impossible to do on a consistent basis. This is especially problematic when students of similar abilities from different classes or even different grade levels are grouped together for remediation services. Often students miss portions of other subjects to get required services and must then catch up upon their return to class. Considering the fact that it generally takes them longer to read, write and comprehend information the pull out practice often places the LD student at an even further disadvantage.

Another recommendation that seems worthy of consideration is that of an exam accommodation room available to anyone in the school. Once again there would be fewer stigmas attached to those designated students who require the accommodation regularly if other students were also able to access the service. For example, if a child had to miss a test due to an illness, they would automatically know they had to go to the exam room and do the test there when they got back to school. This quiet room with limited distractions could be made available to the general school population as required for special circumstances. Moreover, this would enable LD students to have the services they require without any negative impact to their self-esteem. In addition, technical aids such as a computer could be available to LD students if required by them to complete

their exams. Likewise a student with a broken arm for instance could have a scribe or access to a computer to write their exam if necessary. This relatively simple solution could be implemented at the elementary level and carried through to high school and post secondary institutions as well.

In light of the fact that all those who succeeded in school implemented for themselves a form of *academic milieu management*, it would seem worthwhile to consider allowing designated students in the public school system to do the same. Several participants had to drop out of high school and attend adult education upgrading courses at college in order to manage their academic environment. Rather than modify the curriculum and force students to take a full course load in school, it would seem a viable solution to allow them the option of limiting the number of courses they take. Instead of a watered down modified curriculum, why not consider an academically rich, cognitively stimulating approach to fewer courses at a time? Free periods could then be used as valuable study time for producing assignments or for planning sessions and time management.

In order to compete in the workforce, students need to be able to perform and produce results at grade expected levels. If they are never encouraged to do so academically, how can they be expected to compete in the workplace and become successful? Academic advisors should encourage students to take intellectually stimulating courses and to produce at expected levels. Furthermore, time management and organizational strategies could be implemented to enhance the *academic milieu management* that each LD student requires. Some will undoubtedly need more than

others and no single plan will work for all students. Nevertheless, this could be made a part of the individualized education plan of LD students.

Perhaps it is time to look at the student as a whole person. Investigating why LD students do not succeed academically, using various schools of thought, has failed to result in better overall outcomes in society. Perhaps we are missing a key component that could be found through extensive research on those individuals who have achieved success. Perhaps what is important are not the difficulties these individuals have but where their strengths lie.

Furthermore, we need to take a closer look at what roles analytical, creative and practical intelligence play and whether these abilities can be developed in school. Studies show that interventions based on the theory of successful intelligence will improve school achievement measured by criteria of analytical, creative, and practical intelligence (Sternberg & Torff, 1998). Researchers found that instruction based on the concepts of successful intelligence reinforce learning, given that students can be taught in many ways and thereby use their strengths to offset their weaknesses (Sternberg & Torff, 1998). This is an important breakthrough, especially for LD students, because teaching practices often focus on their disabilities. One needs to ascertain the strengths of the individual to determine what is required for them to succeed not only academically but in the future as well. Participants in this study clearly showed evidence of successful intelligence and triarchic abilities. If failure can be prevented through researching the successful intelligence theory and its relationship to compensatory strategies, implementing these findings may result in more effective public and post-secondary educational systems.

Cracks clearly remain in the educational system that individuals with LD invariably fall through. The resiliency required to overcome their difficulties is surprising. Even more surprising is the effect that school has had on their self-esteem. The pain and suffering of these six individuals seems pointless. The goal of all those who were interviewed and their motivation for sharing their stories was to implement changes so that children with LD should not have to suffer through school as they had.

There remain several implications for future studies, as this is merely an investigation and window into the experiences of a few successful adults with learning disabilities. Research is required to determine if future success or failure can be predicted via Sternberg's Triarchic Abilities Test and, if so, can more reliable and effective interventions be developed to alleviate some of the current impact LD has on society. Perhaps successful individuals rely on their analytical, creative and practical intelligence while those who have not been successful in their careers have the double burden of their learning disability and lowered triarchic abilities. A comparative study of individuals who did not succeed and more extensive research into the resiliency of those that have would be required to fully understand the magnitude of the problem in order to improve the quality of life for individuals with LD and alleviate the impact on society.

Finally research into the viability of the *academic milieu management* theory is required. A look at self-concept and locus of control in LD students given the option of managing their own education should be compared to that of students under the standard modified curriculum practice. Theories, such as *academic milieu management* drive research, and research findings help mould educational practices. However, a delay generally occurs between the inception of a theory and its implementation into standard

practice. A continued delay in the recognition of more relevant educational practices will perpetuate the difficulties individuals with LD experience in attaining future success.

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Appendixes A

LEARNING DISABILITIES AND SUCCESS

LEARNING MORE ABOUT WHAT LEADS TO SUCCESS FOR PERSONS WITH LEARNING DISABILITIES

The purpose of this study is to learn more about what leads to success and what constitutes success for persons with learning disabilities. What coping strategies have been effective? How does a person with learning disabilities compensate for weaknesses? What role does problem solving play in determining success?

If you have struggled in school, been diagnosed with a learning disability, have maintained work for a period of five years since leaving school and are willing to participate in a series of up to three interviews with a student researcher completing her MA thesis, please contact:

Lila Boulet at (250) 391-0562 (please call collect if calling long distance) or email her at lilaboulet@shaw.ca

All information will be confidential and all interviews will be conducted in a private meeting room at a local library close to your home. The initial contact also will serve to answer questions, provide more details on the research and determine eligibility for participation in the follow up interviews. The first interview will take approximately 30 minutes and if selected for the two follow up interviews, these will take approximately two to three hours in total.

Appendix B

Interview 1.....

1. Please indicate your age _____

2. Please indicate your gender _____

3. Please indicate your educational background beginning with elementary school, junior high, secondary and all post - secondary experiences you have had

4. Please tell me your current occupation _____

5. Please tell me about the nature of your learning disability. When did you first become aware of it? How was it documented? Do you recall your reaction to the diagnosis? Do you recall the reaction of your parents/family to the diagnosis? Do you recall the plans that were made for dealing with your learning disability? How were these plans followed up? What types of experiences did you encounter in the various stages of your educational development after the diagnosis?

6. Please share with me a little of the story of your life? Here I'm interested in knowing of your early development, your overall health, others in your family who might have had a learning disability.....Let's start with your birth...

Based on your memory were you a full term baby and were there any complications that you know of?

During the first three years of life, do you recall or have others told you about any serious illnesses or injuries that might have happened? For example, any falls, broken bones, head injuries, high fevers, hospitalizations...

During the next three years of life, do you recall or have others told you about any serious illnesses or injuries that might have happened? Do you recall or have others told you about your talking, walking, readiness for school...

During your first five years of school, did you encounter difficulties, have to repeat a grade, receive special help, have any serious illnesses or injuries...how did you fit into school, did you have opportunities to fit into sports or other activities...

During your next seven years of school, did you encounter difficulties, have to repeat a grade, receive special help, have any serious illnesses or injuries.... how did you fit into school, did you have opportunities to participate in sports or other activities.... what type of graduation did you achieve....

After school, what are some of the significant events you encountered about further education, work, friends, partners...?

Appendix C

Research Protocol

Questions designed to tap into specific areas of difficulty
Describe what school was like for you.
What would you say was the biggest area of difficulty for you in school? (Reading, spelling, writing, math etc.)
Were there any classes that you didn't like? What were they?
What didn't you like about these classes?

Questions designed to identify available supports and their effectiveness.
Did you receive any support or accommodations in school for your learning disability?
To what extent were the supports effective? How did they benefit you?
Did you have any other types of support while in school such as friends, family or mentors?

Questions designed to identify areas of strength.
Were there any classes that you did like? What were they?
What was it about these classes that you liked?
Were you successful in these classes? If so why? What did you do differently? What did the teacher do differently?
Did you subsequently choose classes that were similar in format to help you through school? IE if the class you did well in was a lecture class and the ones you did poorly in had a heavy reading content did you choose courses you knew would have light reading assignments in the future based on your experience.

Questions designed to identify success
What did you do after school during the week?
What were your hobbies or interests?
Did you work after school or on weekends? (Chores on the farm. Paper route, paid part time job, volunteer work etc.)
Did you have early experiences with successes either in a school subject or outside such as sports, arts, clubs or organizations?
What allowed you to succeed in these areas?
Did early success in other areas influence your ability to adapt to difficult situations surrounding your learning disabilities?
Describe your current success.
To what degree does your experience in school contribute to your current success?
To what do you credit your current success?
To what extent does disclosing/revealing or hiding the disability impact on your success? Do you feel you have to hide it or let others know?

Questions designed to identify coping strategies.
What would you say are your strengths?
In what ways are you intelligent?
What kinds of coping strategies did you use to overcome your LD? Were any self taught?
If you were a teacher or school administrator trying to help a student with similar needs to yours how would you go about doing it?

Appendix D

Third Party Consent

Lila boulet

From: Lila boulet [lilaboulet@shaw.ca] Sent: Tuesday, March 01, 2005 2:40 PM To: 'hutchinn@educ.queensu.ca' Subject: LD research

Hello Dr. Hutchinson: I am currently doing my masters thesis on success and adults with learning disabilities. I read your article on Academic Resilience: A retrospective Study of Adults with Learning Disabilities. I plan to do a semi structured interview process and found some on my questions were similar to those in your interview protocol. There were other questions that I had not thought about but upon reading your article found would be beneficial to include. I would like your permission to use some of those questions in my research. Let me know if you require more information as to the nature of my thesis topic before granting permission.

Thank you Lila Boulet

lila boulet

From: Sent: To: Subject:

Nancy Hutchinson [hutchinn@educ.queensu.ca] Wednesday, March 02, 2005 8:00 AM
Lila boulet
Yes

Hi Lila,

I have conferred with my co-researcher, John Freeman. We are happy for you to use the interview questions. I would love to hear more about your research.

Best, Nancy

Nancy L. Hutchinson, Ph.D.
Professor of Education
Coordinator, Graduate Studies and Research

Appendix E

Informed Consent

Dear Participant:

I am a graduate student in the Master of Arts in Educational Psychology program at Mount Saint Vincent University in Halifax, Nova Scotia. As a resident of British Columbia and as a part of my MA degree, I am conducting a study in British Columbia of persons with learning disabilities who are experiencing success in adult life to determine their perceptions of factors that led to their success.

The main purpose of this study is to explore the perceptions of adults with learning disabilities relative to their insights into their coping strategies that enabled them to address their learning disability and achieve success. I am inviting you to participate in the study. Your responses will provide valuable information abut the unique challenges faced by persons with learning disabilities as well as critical insight into how individuals learn how to cope with their learning disability and move forward with success in adult life.

Participants will be asked to engage in three interviews. The first interview will serve to screen potential participants for inclusion in the study and will gather general information on their perception of their learning disability, school history and current life history. It can be conducted on the phone and should not exceed 30 minutes. Interview two will be more in depth dealing with more details on your school and life history. Included will be information on your current work/activity situation as well as a variety of information on your school experiences, work/activity experience and coping strategies, interests and problem solving. This should be completed in person and will take up to 2 hours. Interview three will be an opportunity to share a summary of your information with you to clarify any outstanding issues and perception check with you the accuracy of the information. It should take about 45 minutes.

To ensure your privacy all identifying information will be removed. As well, all the data will be stored and secured at the researchers home in secure locked files with only the researcher or her thesis co-supervisors having access to the data. Upon completion of the research an executive summary of the results will be available to you should you request same. No identifying information about you or your individual situation will be contained in the summary or in any publication that may follow the study. All data will be destroyed one year after completion of the research by disc erasure, audiotape erasure and shredding of paper transcripts.

You may refuse to answer any question that may cause you to feel uncomfortable and should you wish, you may discontinue participation in the study at any time. At the end of the process, there will be an opportunity to de-brief on the information and should you wish, a list of organizations and/or mental health workers will be provided for your support should you require further follow up.

The study, as a part of my graduate program, is being co-supervised by Dr. Fred French and Dr. Anne MacCleave at Mount Saint Vincent University. Should you have any questions or concerns regarding this study or your participation in it, please contact me at (250) 391-0562 (lilaboulet@shaw.ca) or Dr. Fred French at (902) 457-6186 (frederick.french@msvu.ca) . If you have any questions about how this study is being conducted and wish to speak to someone who is not involved in the study, you may contact the Chair of the University Research Ethics Board at the Mount Saint Vincent Research and International Office via email at research@msvu.ca, or by telephoning (902) 457-6350 and asking for the Chair of the University Ethics Board.

Thank you for your time and attention in this matter. If you agree to participate, please sign the consent form below and return it to the researcher at the time of the interview.

Yours sincerely,

Lila Boulet
Graduate Student in Educational Psychology

Fred French, Ph.D.
Thesis Supervisor
Associate Professor

I _____ have read the above consent/information letter and consent to participate in this study conducted by Lila Boulet(Graduate Student in Educational Psychology, Mount Saint Vincent University). I realize that my participation is entirely voluntary and that I may withdraw or discontinue the interview at any time.

Signature _____

Date _____

I _____ have been asked to participate in the follow up interviews and consent to participate in these as conducted by Lila Boulet (Graduate Student in Educational Psychology, Mount Saint Vincent University). I realize that my participation is entirely voluntary and that I may withdraw or discontinue the interview at any time.

Signature ----------

Date _____