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**UNDERSTANDING
THE LEARNING EXPERIENCES
OF UNIVERSITY STUDENTS
WITH LEARNING DISABILITIES**

By

Tim Farmer

**Thesis submitted to the School of Graduate Studies and Research of the
University of Ottawa in partial fulfillment of the requirements for the degree of
Doctor of Philosophy in Education**

Ottawa, Canada, 2001



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Dedication

This thesis is dedicated to my parents, Roy and Evelyn Farmer of Sarasota, Florida, whose support and faith in me has made this work possible. My father taught me the meaning of hard work, determination, generosity and kindness, and my mother inculcated in me the love for learning and a respect for the opinions and beliefs of others. The work is also dedicated to my children, Melanie and Corinne, for putting up with my work habits and their support and concern for my welfare.

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Abstract

The increased interest in identifying effective interventions to facilitate learning disabled students in their academic pursuits necessitates a better understanding of the personal struggles of these students.

This study is a preliminary attempt to focus on adult university students who have only recently been identified as having a learning disability. It used a social constructivist approach in an attempt to identify cognitive and metacognitive strategies employed by these students in the past and present, and those they might employ in future.

Cognitive dissonance emerged as a major factor as regards the self-concept and self-esteem of these adult students. The dissonance surrounding their self-concept emanated from educational experiences and conflicting judgements about their intelligence. Their narratives identified anxiety as another major factor related to their learning experiences and this was consistent with several empirical studies that have found higher levels of anxiety among students with learning disabilities than the average student population. The narratives within this study have linked the students' cognitive dissonance with their anxiety and their attempts to establish consonance in their self-concept and what they perceived as acceptable levels of self-esteem.

This study has resulted in significant insights into the use of myths by these four individuals as a means of coping with their dissonance and anxiety. It explores to what degree this myth-making was effective in assisting these four participants in mediating and self-regulating their learning.

The methodology for this study included three 90-minute interviews over one- to three-week periods (Seidman 1998). The interviewer made use of the results of empirical tests that had previously been administered to these students to identify their learning disability. The test results

helped to augment the students' exploration of their cognitive struggles and strategies.

It is hoped that this study will lead to a richer understanding of the struggles of students with undiagnosed learning disabilities. Further, it is hoped that this study will enhance the use of narratives and a social constructivist approach to further research more effective mediations and self-regulation by this population.

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CHAPTER 1

INTRODUCTION

The provision of effective educational assessments for students with learning disabilities has come under increased scrutiny in recent years. In particular, there has been a growing need for research into meaningful and individualized interventions for students with learning disabilities at the university level (Butler, 1998). Over the last nine years as a learning specialist at the University of Ottawa, I have developed a particular interest in the individual psychological realities of adults with learning disabilities studying at a university level. This interest has developed as I noted that many of these students with learning disabilities who often have not been assessed as having a learning disability until their adulthood experience a resistance to any information which is not consistent with their self-schemas.

A self-schema is an unconscious organizer of many features into a holistic pattern.

The term self-schema can apply to enduring unconscious codifications and structures of meaning about self. If a self-schema is activated (instantiated), its meaning structure can influence thought and behavior and be itself unconscious. A self-schema will influence formation of self-concept and vice-versa. (Horowitz et al., 1996, p.6)

As much as they wish to have their struggles confirmed in an explicit manner by someone they identify as a professional, they are at the same time often frightened to accept this reality for fear of what this may imply for them. This is not surprising. They have spent most of their

childhood and adolescence struggling with learning while often attempting to employ and imitate study techniques or learning strategies they have observed or have been expected to learn by fellow students and teachers. Many individuals with learning disabilities feel a sense of conflict about which reality they should attend. This conflict between their vague sense of their internal resources and the external expectations leads to a sense of cognitive dissonance. This can be seen in a study by Chapman and Boersma (1979), in which the academic success of a child with a learning disability is attributed by this child to luck or external forces and not seen by the child as a result of his or her efforts and abilities. Further, among students with learning disabilities, this cognitive dissonance makes the effective use of self-schemas all too often incompatible with new learning. Not only does this struggle promote poor self-esteem and exacerbate negative feelings, but this clash also interferes with the use of an individual's feelings as part of a meaningful component in the act of learning and the development of their self-schemas. This study is an attempt to arrive at a preliminary understanding of such struggles and conflicts among adult students with learning disabilities.

My experiences in working with students with learning disabilities have shown that it can be a relatively straightforward and mechanical process to measure their abilities and skills with various psychometric tests. However, it becomes a far more demanding and complex task to transform these raw numbers into an individualized learning profile that has personal meaning to the student. For this profile to be interpreted and imparted in a way that has meaning to the student, the professional's responsibility is to connect the interpretation to some realities the student already understands. I therefore envision that to improve the help given to students with learning disabilities, it is most useful for myself, as a professional, to have an understanding of what it is like to be a

student with a learning disability.

As a professional, it would be important to have the knowledge and expertise of how to make a connection between the psychometric test results and the self-schemas of adult students with learning disabilities in a way that is recognizable, affirming, and of assistance to them in their ongoing learning. This may require that the student and I explore and create an understanding of her preferred learning style and also of those strategies that she may have learned to use, but which are not particularly effective.¹ Thus, feedback from the assessment can become an active element of the learning process for her.

As part of my responsibilities as a professional assessor, I have had to develop a broad and deep understanding of the tools used to measure students' varying cognitive abilities and academic knowledge. However, these results often become meaningless if students are unable to understand and make use of the feedback they receive from the screening and diagnostic tools that I have administered to them. Consequently, meaningful feedback about test results must be provided to them in a manner that makes contact with their own personal reality. As Levin (1994) reminds us, new information, when it is first being introduced, is best learned by associating it with a concept that is already well understood by the learner. This allows the learner to mentally explore the ways in which this new information is similar and dissimilar to his present understanding.

In contrast, a learner's energy is dissipated when receiving new information without a personally meaningful context. She then must occupy herself with looking for a schema to which she may associate this new information. This occupies much of the student's mental energy,

¹ For the purposes of this paper, when referring to a singular student, the author will use the pronoun her or she.

frequently resulting in the loss of relevant parts of the new information. As much of the student's mental effort is already being spent in dealing with the inherent stress related to her learning problems, the student will benefit from being given contextually relevant information.

In addition to facilitating students' building more effective learning strategies, my personal stake in this research is to feel more competent and experience my work as more meaningful. I wish to become better equipped to make interventions that assist my students to learn more effectively. I anticipate that this study will describe how students experienced and still experience confusion, anger, frustration, and a lack of clarity about themselves as learners and even possibly as human beings.

Society also has a stake in clarifying and facilitating an understanding of the learning process for students with learning disabilities. This study will enhance their opportunity to finish their formal academic education and to be better prepared to cope with demands of the work environment. In the past several decades, there has been much work invested in developing better and more effective tests for measuring cognitive differences and identifying strategies to help make adults with learning disabilities better learners. However, these strategies need to be chosen or developed in a manner that is relevant to the resources and realities of the adult learner.

The quantitative techniques for identifying and measuring learning disabilities have improved in recent years. This study will naturally complement such empirical measurements of learning disabilities and lead to a better understanding of the qualitative aspects of the struggles of students with such disabilities. Hofer, Yu & Pintrich (1998) make the following recommendation in this regard:

There is a clear need for more process-oriented studies, which will probably involve more qualitative and ethnographic observations and interviews of students as they are enrolled in a learning to learn course as well as when they leave it. This type of research would involve in-depth analysis of students as they attempt to use the strategies (or not use them) in different courses (p. 81).

In order to understand the conceptual framework contained in this proposal, the author first undertakes a review of the literature to see how the term learning disabilities is understood in academic circles, and to examine other concepts that appear to be centrally related to contemporary work on learning disabilities. For example, the review shows how self-concept is a central aspect to the educational experiences of students identified as having learning disabilities. The review also focuses on such as cognitive dissonance, locus of control and anxiety, which are also extremely relevant to research on learning disabilities.

In the next section of the review, the social constructivist model is presented and explained. By framing the results of the research within this model, our understanding of various students' learning disabilities can be seen as a significant part of a broader theoretical construct. The constructivist model also permits a better understanding of the students' learning strengths.

In the final section of the review chapter, the author introduces a conceptual framework based the review of literature. The theoretical and methodological elements of the study are identified.

Following the review of the literature, the author states the qualitative methodology adopted for the research, identifies the participants, discusses the researcher's role and describes the

procedures adopted for the study. The formal structure of interviews and the maintenance of a researcher's journal are described. The parameters of data analysis and the limitations and implications of the study are then discussed.

Having described the formal structure and procedures of this study, the author proceeds to describe the findings of the study. Profiles of each of the subjects interviewed are presented. These profiles are supplemented with journal notes that were compiled in the process of conducting the interviews (Appendix K). The author then discusses the major implications of each profile, and attempts to place the discussion in the context of current research on learning disabilities.

The author concludes the study with a discussion of the implications of this study and points to a direction for future research.

CHAPTER 2

FOCUSED REVIEW OF THE LITERATURE

In this chapter, the author reviews the literature to focus on how the concept of learning disabilities has evolved. Research on concepts that are central to understanding learning disabilities is also reviewed. First, the review examines how self-concept is seen as central to the educational experiences of students identified as having learning disabilities. As students with learning disabilities have been shown to have a poor self-concept and low levels of self-esteem, an exploration of current research on self-schemas is included to provide a better understanding of how self-concepts and self-esteem are established.

The review also examines studies showing how students with learning disabilities have an external locus of control and exhibit symptoms of anxiety and depression. Closely related to the concept of internal/external locus of control is the concept of intrinsic/extrinsic motivation. Another concept to be reviewed is cognitive dissonance, which can provide insight into the experiences of students with learning disabilities.

Later sections of this chapter provide justification for the theoretical approach and methodology adopted for this study. To this end, developments in the theory of constructivism, and specifically social constructivism, are explored. Methodological practices such as hermeneutic phenomenology and the adoption of narratives as an interactive tool in psychology and therapy are examined. This literature supports the author's belief that narratives can elicit metaphors, myths and symbols that might provide clues to understanding the struggles of university students who have only recently been diagnosed as having learning disabilities.

Learning Disabilities.

Learning disability is a general term that refers to disorders in listening, speaking, reading, writing, reasoning, or mathematical abilities. A comprehensive definition that was adopted for this study was provided by the Learning Disabilities Association of Canada:

Learning disabilities is a generic term that refers to a heterogeneous group of disorders due to identifiable or inferred central nervous system dysfunction. Such disorders may be manifested by delays in early development and/or difficulties in any of the following areas: attention, memory, reasoning, coordination, communicating, reading, writing, spelling, calculation, social competence and emotional maturation.

Learning disabilities are intrinsic to the individual, and may affect learning and behaviour in any individual, including those with potentially average, average, or above average intelligence.

Learning disabilities are not due primarily to visual, hearing, or motor handicaps; to mental retardation, emotional disturbance, or environmental disadvantage; although they may occur concurrently with any of these.

Learning disabilities may arise from genetic variations, biochemical factors, events in the pre-to perinatal period, or any other subsequent events resulting in neurological impairment.²

² Learning Disabilities Association of Canada Web site: <http://www.ldac-taac.ca/lddefined/>

Gall's early nineteenth-century work on brain injury and subsequent spoken language disorders has been cited as the first research having significant implications for the modern conceptualizations of learning disabilities (Lyon, 1996). In the latter half of the nineteenth century, Paul Broca and Carl Wernicke proposed that specific areas in the left hemisphere of the brain control expressive and receptive speech in adults with aphasia, i.e. speech and language learning disabilities (Hallahan, Kauffman, & Lloyd, 1996).

In the early twentieth century, Kurt Goldstein and Samuel Orton, respectively, worked on World War I veteran's injuries and children with reading disabilities. During the 1940s, Alfred Strauss and Heinz Werner studied children with mental retardation that did not result from genetic causes. Present-day researchers consider the identification and conceptualization of learning disabilities to have evolved from this earlier work (Kavale, 1988).

The term "learning disability" was coined by Samuel Kirk in 1962. It initially implied a disorder or delayed development in speech, language, reading, writing, arithmetic, or other school subjects, resulting from a psychological handicap that could be the result of a 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)

Soon after Kirk introduced the term, considerable research was initiated at both the academic and institutional levels to refine the definition of learning disabilities, as well as to launch special education programs for those who exhibited such disabilities. To date, at least 11 major definitions have been proposed by leading authorities and key government committees. Researchers and writers have provided numerous others. Most definitions have originated in the United States

(Hammill, 1990).

For some time, the most commonly used definition was the one formulated in 1968 by the (US) National Advisory Committee on Handicapped Children and endorsed by the United States Federal Government in 1975 (Vogel, 1993). In 1981, the United States of America National Joint Committee for Learning Disabilities (NJCLD) proposed a definition that was adopted by various government agencies around the world. Due to general support by professional organizations, the NJCLD definition was for a time the most widely used.

Another major method of defining and characterizing learning disabilities came through the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994). The DSM-IV outlines three major types of learning disorders and stipulates that there must be a *discrepancy* between achievement in the area in question and intelligence. However, this requirement – one or more achievement deficits relative to measured intelligence – has been a major point of debate in determining criteria for learning disabilities classification.

Discrepancy criteria are used to indicate a difference between intelligence and achievement in a number of academic subject areas (Bender 1995). Methods of determining such a discrepancy vary. Current research is focussed on four primary means, which will not be dealt with in the context of this proposal. Suffice it to note that no single method for determining ability-achievement discrepancy for the purpose of diagnosing learning disabilities has garnered widespread scientific support.

Several researchers have questioned the overall validity and usefulness of the ability-achievement discrepancy concept. In his phonological-core variable-difference model, Stanovich (1991, 1993) proposed that, instead of IQ, a more educationally applicable ability measure, such as

listening comprehension or phonological skills, should be compared with overall reading achievement in determining the presence of a reading disability.

Stanovich and Siegel (1994) subsequently tested Stanovich's phonological-core variable-difference model of reading disability, again finding that poor readers did not differ from reading-disabled readers on measures of phonological, word recognition, and language skills. They concluded:

If there is a special group of children with reading disabilities who are behaviorally, cognitively, genetically, or neurologically different, it is becoming increasingly unlikely that they can be easily identified by using IQ discrepancy as a proxy for the genetic and neurological differences themselves. Thus, the basic assumption that underlies decades of classification in research and educational practice regarding reading disabilities is becoming increasingly untenable (Stanovich and Siegel, 1994, p. 48)

Similarly, Siegel (1992) found that both reading disabled (dyslexic) and poor readers deserve the label "reading disabled," since both exhibit similar problems in reading and spelling and significant problems in phonological processing, memory and language.

Fletcher, Francis, Rourke, Shaywitz, and Shaywitz (1992) challenged the validity of discrepancy-based definitions of reading disabilities. They employed a battery of neuropsychological tests to compare the performances of four groups of children classified as reading disabled according to four different methods with one group of non-disabled children. As they found no significant differences among the "disabled" children, they called into question the "validity of segregating children with reading deficiencies according to discrepancies with IQ scores" (p. 555).

The preceding review of the literature clearly indicates that there is no universally accepted definition of learning disabilities. It is extremely difficult to arrive at a consensus among experts regarding the etiological classification or treatment of learning disabilities. Defining learning disabilities is an ongoing issue for practice and science, with scientific as well as political ramifications (Kavale 1993, 1998). Indeed, it has been argued that learning disabilities remain among the most poorly understood and poorly defined categories of special education. As a consequence, they are open to widely varying interpretations (Kavale & Forness 1995). To partially remedy this situation, Gerber (1993) has proposed a comprehensive treatment of the history of the research on learning disabilities.

As a result of the uncertainty over its definition, the term "learning disabilities" is often confused or used interchangeably with "learning difficulties". However, learning difficulties is a much broader term which refers to problems in developmental and academic skills which may arise from one or more of the following factors: intellectual disability, physical disability, inappropriate learning environment or emotional difficulties.

The key difference between learning difficulties and learning disabilities is that the latter is presumed to arise from neurological rather than intellectual, physical or sensory impairment. Therefore, contemporary definitions of learning disabilities often tend to stress specific disorders and are defined within a neurocognitive or a neurobehavioral framework as a type of neurological dysfunction (Obrzut & Hynd, 1983)

Increasingly, research in this area is moving away from a traditional descriptive medical model and is exploring complex brain-behavior relationships. Researchers are exploring neurophysiology, brain imaging, event-related cortical potentials, regional cerebral blood flow, and

brain electrical activity mapping (Obrzut & Hynd, 1991). Employing technologies such as magnetic resonance imaging (MRI) and positron emission tomography (PET), researchers have found that the brains of people with severe reading disorders are structurally and functionally different from the brains of people without disabilities. (Hallahan, Kauffman & Lloyd, 1996) Genetic and environmental factors, as well as alcohol, cigarettes and illegal drugs, among others, have been identified as possible causes for neurological problems that may lead to learning disabilities. (Bender, 1995; Hallahan, Kauffman, & Lloyd, 1996).

Learning disabilities are treated primarily through the provision of special education and other educational services. In many countries there is legislation stipulating that students with learning disabilities be provided with appropriate public education. The importance of early intervention has been a major focus in recent years (Kirk, Gallagher, & Anastasiow, 1997).

Numerous instructional strategies have been used for the treatment of learning disabilities, with varying degrees of success. Among these strategies are applied behavior analysis and behavioral intervention, self-monitoring, metacognitive strategy instruction, attribution training, cooperative learning, peer tutoring, and mnemonic devices (Bender, 1995; Kirk, Gallagher & Anastasiow, 1997). Coaching active reasoning skills appears to be another promising instructional method for students with learning disabilities (Sullivan, Mastropieri, & Scruggs, 1995). Aggressive tutoring in reading may be beneficial for children with reading problems (Vellutino et al., 1996).

Other interventions have yielded mixed results; these include biofeedback, relaxation training, multisensory instruction, Doman and Delacato's patterning method, the Feingold diet, megavitamins and minerals, and chiropractic care (Bender, 1995).

Despite controversies about the definition of learning disabilities and the effectiveness of

various interventions, experts in the field of educational psychology tend to agree that an understanding of the nature of learning disabilities and the students' learning and assessment requirements is the *key* to academic staff's being able to work effectively with learning disabled students in post-secondary institutions (Vogel, 1993; Gajar, 1986; Aksamit, D., Morris, M., & Leuenberger, J., 1987; Mangrum & Strichart, 1988a, 1988b; Norlander, Shaw & McGuire, 1990; Brinkerhoff, Shaw & McGuire, 1992).

Institutionalization of these insights have crystallized in the following recommendations:

- A clearly specified admission and enrolment policy together with relevant program services should be outlined for students with learning disabilities (Vogel, 1993; Gajar, 1986; Vogel & Adelman, 1990).
- Students with learning disabilities require support strategies and learning and assessment accommodations rather than direct remedial intervention (Gearheart & Gearheart, 1989; Patton & Polloway, 1992).
- Recommended accommodations will not lessen academic standards (Brinkerhoff et al., 1992).
- Academic staff require on-going opportunities for professional development to assist them in responding appropriately to the needs of students with learning disabilities (Vogel, 1993; Gajar, 1986); Mangrum & Strichart, 1988a., 1988b.; Vogel & Adelman, 1992).

Learning Disabilities and the Self

An important issue for educators in the sphere of learning disabilities is the way in which a client construes the self and how the learning and social environments influence this construction. Constructs associated with self-concept are self-esteem, self-efficacy and self-regulation. Literature on these subjects has been reviewed because there is overwhelming evidence that learning

disabilities significantly affect personality development (Wren & Einhorn, 2000) and innate deficits clearly influence self-states (Orenstein, 2000). Further, it has been argued that there can be significant damage to self-structure and development in the learning disabled (Rosenthal, 1992), underscoring the importance of understanding the construction of the self in devising effective interventions for this population

Self-concept can be described as what we believe about ourselves. It is our sense of identity over time. There is substantial research on the processes by which we come to know ourselves, how information about the self is processed differently from other information, and the way information about the self is structured (Horowitz, Eells, Singer, & Salovey, 1995; Westen, 1992; Horowitz 1987; Markus & Wurf, 1987).

A review of the literature further shows that self-concept is especially central to the educational experiences of students identified as having learning disabilities. Kifer (1975) reported that self-concept is linked to academic achievement in the general student population; success in school promotes a positive self-concept while failure brings about correspondingly “lower levels of regard for self and abilities” (p.205). This is salient to the experiences of students with learning disabilities, as they generally differ from control groups in their academic self-concept (Cooley and Ayres, 1988). They also consistently show a lower rating for self-concept and self-image than students without learning disabilities (Vaughn, Elbaum & Schumm, 1996; Raviv & Stone, 1991; Chapman 1988; Winne, Woodlands & Wong, 1982).

Self-schemas

Self-concepts are associated with cognitive structures called schemas (Markus, 1977). The concept of a schema was developed in the field of cognitive psychology. Schemas are the categories

by which we organize the world, a type of cognitive map.

Schemas are beliefs about the world and ourselves that are learned early in life, and they exert a profound influence on our lives. Indeed, they are seen as central to our sense of self:

To give up our belief in a schema would be to surrender the security of knowing who we are and what the world is like, therefore we cling to it, even when it hurts us.

These early beliefs provide us with a sense of predictability and certainty, they are comfortable and familiar. In an odd sense, they make us feel at home. This is why cognitive psychologists believe schemas, or lifetraps, are so difficult to change.

(Young & Klosko, 1993, p.6)

Schemas about the self figure prominently in cognitive accounts of depression, and Canadian researchers have done extensive methodological and theoretical work on schematic operations as defined within cognitive psychology (Rector, Segal, & Gemar, 1998). The concept of schema has also played a prominent role in therapy. One of the forerunners of schema-based therapy was A. T. Beck (1979). Influenced by him as well as by the constructivist movement, J. E. Young (1994) designed an integrative model called Schema-Focused Therapy (SFT), which expanded upon Beck's (1979) original model. (See also Young & Behary, 1998; Greenwald & Young, 1998; Young & Klosko, 1993.)

In the past decade, attempts have been made to develop schema-based direct instruction strategies for students with learning disabilities (Jitendra et al., 1999; Jitendra & Hoff 1996; Carr & Thompson 1996; Williams & Ellsworth, 1990).

Self-esteem

Closely connected to self-concept and self-schemas is the concept of self-esteem – the way we evaluate ourselves. Contemporary research has uncovered so many different mechanisms that appear to affect self-esteem that they have been collectively referred to as the "self zoo" (Tesser, Martin, & Cornell, 1996).

Self-esteem is often affected by how well or poorly a person performs, particularly in comparison to others. The impact of relative performance on self-evaluation is determined by the psychological closeness of self and the other and the relevance of the performance to one's self-definition (Tesser, 1988). Several empirical studies have found that students with learning disabilities exhibit low self-esteem and self-worth (Prout et al, 1992; Vogel & Forness, 1992; Stanley et al., 1997; Cosden & McNamara, 1997; Cosden et al., 1999; Harter et al., 1998).

Several kinds of mechanisms affect self-esteem, each often quite unlike the other. Merely affirming who one is, self-other performance differentials, and belief discrepancies all affect self-esteem. Research suggests that self-esteem is a confluence of such seemingly independent processes (Steele, 1988; Tesser, Martin, & Cornell, 1996).

Researchers have also tried to show that there is a structural relationship between self-esteem and self-concept. The more clearly defined one's self-concept, the higher one's self-esteem (Campbell, 1990).

Work on implicit memory and automaticity in stereotypes and attitudes suggests that there may be important implicit, non-conscious elements of self-esteem. While the notion of implicit or unconscious self-esteem has a well-developed history in psychoanalysis (Westen, 1992), Greenwald and Banaji (1995) define implicit self-esteem as the inaccurately identified effect of the self-attitude

on evaluation of self-associated and self-dissociated objects.

Social factors have also been shown to play a large role in determining self-esteem. In comparing Western (e.g., the USA) and Eastern cultures (e.g., Japan) Markus and Kitayama (1991) found a notable difference in how these cultures construe the self, with concomitant conceptions of self-esteem.

Because self-esteem is so important to psychological functioning, it is correlated with a variety of other variables, such as desire for control, hope, achievement motivation, loneliness, self-determination, anxiety, positive affect, need for approval, depression, and aggression (Wylie, 1974).

There is overwhelming evidence that individuals with learning disabilities experience emotional problems, particularly anxiety (Lindsay, 1999). Profiles of persons with learning disabilities have demonstrated individuals under extreme short- and long-term stress (Gregg, Hoy, King, Moreland et al., 1992). Studies indicate that the emotional development of many adolescents with learning disabilities is not notably positive, and that these students appear to be at increased risk for severe depression and even suicide (Huntington and Bender, 1993).

Researchers have sought to establish a hypothesis of comorbidity of learning disabilities with psychiatric disorders such as attention deficit hyperactivity disorder and depressive disorder. (Forness, Kavale and San Miguel, 1998; Biederman, Newcorn and Sprich, 1991). It has been argued, for example, that social skills deficits among children with learning disabilities are associated with high rates of undetected psychiatric diagnoses, including depression (San Miguel, Forness and Kavale, 1996)

Researchers have also focussed on specific kinds of anxiety among persons with learning disabilities, for example, performance anxiety (Kovach & Wilgosh, 1999), test anxiety (Kovach et

al., 1998; Fisher, Allen and Kose, 1996.), and workplace anxiety (Rose, Jones and Fletcher 1998). Increased anxiety-related symptoms have been found among college students with learning disabilities (Hoy, Gregg et al., 1997).

Self-efficacy

The construct that concerns individuals' perceptions of their competence to perform a task (Pintrich & Schunk, 1996) goes under various names, including self-efficacy, self-competence, self-perceptions of ability, and expectancy beliefs or judgments. While the research linking self-efficacy beliefs to cognition and learning is fairly extensive, the main generalization from this research is that self-efficacy beliefs are related to memory performance, the use of processing strategies, the use of metacognitive and self-regulatory strategies for learning and text comprehension, writing, and mathematics performance (Bandura, 1997; Pintrich & Schrauben, 1992; Pintrich & Schunk, 1996). In the specific context of learning disabilities, Butler (1998) suggests that if students hold negative or inaccurate beliefs about learning, these beliefs actually interfere with learning. She suggests that students may be

convinced, for example, that for everyone but them learning is quick and easy. As a result, when they find themselves expending time and effort trying to learn course material, they judge their abilities to be poor and their progress to be unreasonably slow (p.166).

Furthermore, students with learning disabilities are often unable to understand or identify the nature or demands of the tasks that confront them. Butler (1998) states:

Unfortunately, students with learning disabilities often have difficulty deciphering task demands. This problem arises because students with learning disabilities often hold inaccurate understandings about tasks (e.g., thinking of reading as decoding words rather than pulling out main ideas).... Students with learning disabilities also often fail to recognize that interpreting task demands is a key learning activity. (Pp. 163-4)

It is by understanding the nature of the task demand that the individual who is experiencing confusion is best able to design appropriate learning strategies and to become motivated. Schunk and Zimmerman (1998) add the following point:

Strategy learning also raises motivation, because students who believe they can apply an effective strategy are apt to feel more efficacious about succeeding, which raises self-efficacy. (p. 227)

Self-efficacy is related to self-concept, but it focuses on students' beliefs in their capacity to succeed in specific domains. For example, some students have learned to read by focusing on each individual word and putting tremendous energy into the act of reading materials over and over again. They may not be aware that they could have used, for the task of reading, the same cognitive strategies that were so successful while listening to a class lecture. That beliefs in one's own self-efficacy could inhibit an optimum use of strategies has been shown in recent research by Hofer, Yu and Pintrich (1998), who suggest that: "...certain types of beliefs about knowledge seem to constrain the use of deeper processing strategies"(p.81).

These findings suggest that the simple act of asking students to spend a few hours with a

learning specialist reflecting upon their assumptions, personal struggles, and individual strengths may have a profound effect on their understanding and may establish the first step in the act of self-regulated learning.

Self-efficacy and Failure

Attribution, a related motivational construct, but one that is distinct from efficacy, concerns the attributions individuals make as they perform a task and receive feedback. Attributions involve the individuals' perceptions of the *reasons* or *causes* for their success or failure on a task..

Attributional theory proposes that the motivational "push" for attributions derives from their classification into three basic dimensions, based on the causal structure of the attributions – locus, controllability, and stability (Weiner, 1986). Outcomes that are ascribed to a stable cause (e.g., success due to ability; failure due to lack of ability) will be expected to occur again, while those outcomes due to unstable causes (e.g., failure due to lack of effort) will be expected to be less likely to occur. Stability and controllability can also relate to the individual's feelings of helplessness or hopefulness as well as efficacy for future tasks (Pintrich & Schunk, 1996; Weiner, 1986).

Bandura (1986) has argued that beliefs concerning outcomes determine the perception of self-efficacy:

It is widely assumed that beliefs in personal determination of outcomes create a sense of efficacy and power, whereas beliefs that outcomes occur regardless of what one does result in apathy (p. 413).

In turn, perceived self-efficacy influences what causes we attribute to success or failure:

Perceived self-efficacy also shapes causal thinking. In seeking solutions to difficult problems, those who perceived themselves as highly efficacious are inclined to

attribute their failures to insufficient effort, whereas those of comparable skills but lower perceived self-efficacy ascribe their failures to deficient ability (p.394-395)

The research on learned helplessness (Peterson, Maier, & Seligman, 1993) as well as self-determination theory (Deci & Ryan, 1985) suggests that individuals who perceive that they have some control over events in their lives, or are self-determining, have more adaptive cognition on learning tasks, as well as more positive affect, effort, and persistence.

Research on attributional retraining suggests that changing the patterns of attributions for performance can have a positive influence on future performance. When combined with cognitive strategy instruction, this attributional retraining can have even more powerful effects on learning (Pintrich & Schunk, 1996; Schneider & Pressley, 1997).

In terms of the links between attributional patterns and cognition, research shows poor memory performance or poor reading comprehension that is attributed to lack of effort or to the use of poor strategies results in more adaptive cognition on future performance (Pintrich & Schrauben, 1992).

Self-regulation

The term self-regulation is ascribed to the processes whereby we attempt to approach or avoid some outcome through our actions, states, or attributes by doing or not doing something, or by being or not being something.

In the history of thought, from the ancient Greeks to twentieth-century psychologists, the dominant answer to this question of why self-regulation occurs has been that people self-regulate in order to approach pleasure and avoid pain. Higgins (1997) has given a comprehensive review of the hedonic principle to show its development in philosophy and psychology.

Apart from the hedonic principle, psychologists have studied intrinsic and extrinsic reasons for self-regulation to provide another answer to why self-regulation occurs. It highlights the fact that the *reason* a person engages in an activity also matters. People engage in an activity as an end in itself (intrinsic motivation). People can also engage in the same activity as simply a means to an end (extrinsic motivation), or to please someone else who has asked him or her to do it (Kruglanski, 1975).

Intrinsic and extrinsic types of motivation have been widely studied, and the distinction between them has shed important light on both developmental and educational practices. Ryan and Deci (2000a.) and Deci and Ryan (1985) review the classic definitions of intrinsic and extrinsic motivation in light of contemporary research and theory. They also examine the development of the self-determination theory, which maintains that an understanding of human motivation requires a consideration of innate psychological needs for competence, autonomy, and relatedness. (Ryan and Deci, 2000b.) When satisfied, these psychological needs “enhance optimal functioning, of the natural propensities for growth and integration, as well as for constructive social development and personal well-being” (p. 68). Self-determination evolves on a continuum between extrinsic and intrinsic types of motivation. Since this study uses the concepts of intrinsic and extrinsic motivation in conjunction with the concepts of internal and external loci of control, a more detailed rendition of Ryan and Deci’s (2000b) model is presented later in this chapter.

A central question for psychologists is how self-regulation occurs. The hedonic principle is itself insufficient to account for the complexities of self-regulation. The principles of regulatory anticipation (Freud, 1920; Mowrer, 1960; Atkinson, 1964), reference (Carver & Scheier, 1981) and focus (Higgins, 1997) provide general answers to the question of how self-regulation occurs.

There are also more specific answers. There are specific self-regulatory strategies and tactics to tackle obstacles to self-regulation (Mischel, Cantor, & Feldman, 1996). There are also specific strategies for controlling what enters conscious thought. Psychologists have described both unconscious and preconscious mechanisms for defending against unwanted thoughts or urges and conscious effortful strategies of mental control (Wegner & Wenzlaff, 1996).

Perceptions of self-control also influence how self-regulation occurs, such as people's self-evaluations of how they are doing and their self-efficacy beliefs (Bandura, 1986). How self-regulation functions also varies across different phases of goal attainment, such as the "deliberative" mindset, when a person must decide which goal to pursue, and the "implemental" mindset, when a person must commit to a plan of action (Gollwitzer, 1990).

A central issue in self-regulation, or how a person works to approach or avoid some outcome, is how people deal with the pain of self-regulatory failure. Some responses to failure can produce clinical symptoms. However, even in the case of non-pathological responses, there are different ways that individuals respond to self-regulatory failure. The response depends on how the implications of the failure are interpreted. For example, failure on a test could be interpreted as reflecting an abiding low intelligence, or as just a temporary stage that can be transcended through learning (Dweck & Leggett, 1988).

Individuals vary in adopting strategies to deal with failure. They could attempt to change whatever made it occur (problem-focused coping), or attempt to reduce the pain itself (emotion-focused coping) (Lazarus, 1966).

Locus of Control

Closely related to the concepts of self-control, self-regulation and extrinsic and intrinsic

motivation is the concept of locus of control. Julian Rotter, an influential behaviourist, held that individuals differ from one another on the basis of where they put the responsibility for what happens to them. An individual places responsibility on either an internal locus of control or an external locus of control. When people believe that the consequences of their actions are controlled by luck, fate, or powerful others, this indicates a belief in an external locus of control. On the other hand, if people believe that they are responsible for the consequences of their actions, they have a belief in an internal locus of control. Rotter held that a person's tendency to view events from an internal versus an external locus of control can be explained from a social learning theory perspective. (Hock, 1999)

Several studies show that students with learning disabilities exhibit a greater tendency towards an external locus of control than an internal locus of control (Basse & Slauter, 1997; Connor, 1995; Tur-Kaspa & Bryan, 1993; Rosenthal, 1992; Hajzler & Bernard, 1991). However, whether or not students with learning disabilities have a predominantly external locus of control is a controversial issue. On the basis of empirical studies using locus-of-control measures, it has been argued that it is a misrepresentation to say that students with learning disabilities have an external locus of control. (Mamlin, Harris. & Case, 2001).

Cognitive Dissonance

Cognitive dissonance theory (Festinger, 1957) has been an important area of study in social psychology for about 40 years. In that time, more than 1,000 studies on cognitive dissonance have appeared in the literature (Cooper & Stone, 2000). Wicklund and Brehm (1976) define cognitive dissonance in the following manner:

Whenever a person has two or more cognitions that are dissonant with regard to each other, he experiences cognitive dissonance, a motivational tension. When a person holds more than one cognition in a dissonant relationship, some of the dissonance he experiences is a direct function of how important those cognitions are to him (p.2-3).

At the very minimum, the theory of cognitive dissonance states that "dissonance is a psychological state of tension that people are motivated to reduce. Any two cognitions are dissonant when, considered by themselves, one of them follows from the obverse of the other" (Shultz & Lepper, 1996, p. 220) According to the theory, doing something that is inconsistent with an important belief or value may be threatening to the self and motivates the individual to restore consistency (Aronson, 1969).

A number of studies have led to the proposal of different theories of cognitive dissonance. These include Self-consistency (Aronson, 1992), Self-affirmation (Steele, 1988), and the New Look perspective (Cooper & Fazio, 1984). Various developments of the theory of cognitive dissonance and the subsequent debates have been comprehensively reviewed in literature (Stone 2001, 1999; Stone & Cooper, 2001; Harmon-Jones, 2000; Harmon-Jones & Mills, 1999)

Constructivism

Constructivism is an epistemological perspective based on the assertion that humans actively create the realities to which they respond (Mahoney, 1991; Neimeyer, 1993). Although the notion that individuals construct their own knowledge is a widely accepted philosophical perspective in education today, contemporary constructivist thought has its roots in a several hundred year old philosophical and psychological tradition that draws attention to the active role of the human mind

in creating and organizing reality. The philosophical origins of constructivism include Vico's (1725, 1948) New Science and concept of "imaginative universals"; Kant's (1791, 1969) analysis of the limits of derived knowledge; and Vaihinger's (1911, 1924) neo-Kantian philosophy of "as if" (see Mahoney, 1988, for a detailed review). Other formative contributions to constructivist thinking in psychology include Piaget's (1926) genetic epistemology, Bartlett's (1932) constructivist analysis of human memory, Hayek's (1952) treatise on the constructive nature of the human nervous system, Kelly's (1955) psychology of personal constructs, and Weimer's (1977) motor metatheory of mind.

Constructivist approaches to teaching and learning have emerged from the work of psychologists and educators such as Jean Piaget, Lev Vygotsky and Jerome Bruner.

Piaget (1896-1980) was mainly interested in the biological influences on "how we come to know." He believed that what distinguishes human beings from other animals is our ability to do "abstract symbolic reasoning". Piaget's views are often compared with those of Lev Vygotsky (1896-1934), who looked more to social interaction as the primary source of cognition and behavior. The writings of Piaget (e.g., 1972, 1990) and Vygotsky (e.g. 1986), along with the work of John Dewey (e.g., Dewey, 1997a, 1997b), Jerome Bruner (e.g., 1966, 1974) and Ulrick Neisser (1967) form the basis of the constructivist theory of learning and instruction.

There are two major strands of the constructivist perspective: social constructivism and cognitive constructivism. These two strands, while different in emphasis, also share many common perspectives on teaching and learning. Jonassen (1994) has given a comprehensive summary of the general characteristics of these constructivist learning environments.

The main forerunner of cognitive constructionism was Piaget. His theory has two major parts: an "ages and stages" component that predicts what children can and cannot understand at

different ages, and a theory of development that describes how children develop cognitive abilities. A social constructivist approach can be seen in the work of Vygotsky. Although he shared many of Piaget's assumptions about how children learn, he placed more emphasis on the social context of learning. Piaget's cognitive theories have been used as the foundation for discovery learning models in which the teacher plays a limited role. In Vygotsky's theories, both teachers and children play very important roles in learning. We call Vygotsky's brand of constructivism social constructivism because he emphasized the critical importance of culture and the importance of the social context for cognitive development. Vygotsky's Zone of Proximal Development is probably his best-known concept. It argues that students can, with help from adults or children who are more advanced, master concepts and ideas that they cannot understand on their own.

Building on these early philosophical and psychological foundations, constructivist theories have come to play an increasingly significant role in the following areas of contemporary psychology:

- Cognitive psychology (Arbib & Hesse, 1986; Bruner, 1990; Bugaj & Rychlak, 1989; Coulter, 1983)
- Developmental psychology (Berzonsky, 1990; Bronfenbrenner, Kessel, Kessen, & White, 1986; Feffer, 1988; Scarr, 1985)
- Developmental psychopathology (Keating & Rosen, 1991)
- Educational psychology (Black & Ammon, 1992; Cooper, 1993; Lerner, 1993)
- Environmental psychology (Wicker, 1991)
- The psychology of emotion (Averill, 1985; Harré, 1986; Mandler, 1984, 1992)

- Family therapy (Deil, 1985; Keeney, 1987; Mince, 1992; Reiss, 1981)
- Feminist psychology and gender studies (Belenky, Clinchy, Goldberger, & Tarule, 1986; Hare-Mustin & Marecek, 1988; Unger, 1983, 1989; Wittig, 1985)
- Narrative and discursive psychology (Bruner, 1990; Edwards & Potter, 1992; Howard, 1989, 1991; Mair, 1989; Polkinghome, 1988; Sarbin, 1986)
- Perception and memory (Collins & Hagen, 1979; Middleton & Edwards, 1990; Shaw & Bransford, 1977)
- Personality (Hampson, 1988; Royce & Powell, 1985)
- Psychotherapy and counseling (Guidano, 1991; Mahoney & Lyddon, 1988; Masterpasqua, 1989; McNamee & Gergen, 1992; Neimeyer, 1993a, 1993b)
- Self-psychology (Cushman, 1990; Hermans, Kempen, & van Loon, 1992; Shotter & Gergen, 1989)
- Social psychology (Gergen, 1982, 1985).

Constructivists reject the correspondence theory of truth (Rorty, 1979), which postulates that our mental representations mirror an objective reality. All constructivist models have the common epistemological belief that a totally objective reality, one that stands apart from the knowing subject, can never be fully known. Knowledge is simply a construction of the human mind (Bruner, 1986; Guidano, 1987). This position has far-reaching epistemological and ontological implications and contemporary constructivists are divided into several schools of thought on the basis of what perspective they adopt on reality and knowledge. A brief review is given below:

Formal constructivist theories assume that reality, rather than being static and categorically knowable, is instead active, ongoing, and both personally and socially constituted. Fundamental to

this type of constructivism is the idea that meaning emerges from the organizational patterning (or form) of phenomena over time and within context. As Rosnow and Georgoudi (1986) stated:

Human activity does not develop in a social vacuum, but rather it is rigorously situated within a sociohistorical and cultural context of meanings and relationships. Like a message that makes sense only in terms of the total context in which it occurs, human actions are embedded in a context of time, space, culture, and local tacit rules of conduct. (p. 4)

The contributions of William James (1890), Andras Angyal (1958), and others are historically significant because of their formal constructivist underpinnings. However, contemporary examples of formal constructivism include social constructionist theory (Anderson, 1990; Gergen, 1982, 1985, 1991; Lyddon, 1991) and narrative approaches to psychology (Bruner, 1986; Howard, 1989, 1991; Mair, 1989, 1990; McAdams, 1993; Sarbin, 1986; Tappan, 1989; Vitz, 1990).

Developmental constructivism emphasizes that an individual creates alternative and more adaptive ways of constructing reality when that individual's self-organization is thrown into a state of disequilibrium. While this may entail a threat to the current self-organization, disequilibrium also presents an opportunity for the self to evolve to a more differentiated and complex stage of giving meaning to experience (Kegan, 1982). A strong developmental emphasis in constructivist psychotherapy can be found in the work of Carlsen (1988), Guidano (1987), Guidano and Liotti (1983), Lyddon (1992, 1993), Mahoney (1991), Rosen (1985, 1991, 1993) and Selman (1980).

Radical constructivism suggests that reality is exclusively a function of the structure of the human cognitive system. Radical constructivists tend to fall into the ontological camp of idealism (Mahoney, 1991). While a few radical constructivist's writings imply a metaphysical reality

(Watzlawick, 1984), most hold there is no reality that extends beyond the individual's own experience. They take an extreme position on the absolute unknowability of a world beyond our own mental system of knowing. All that we know is determined by the psychological structure of our minds, rooted in a complex neuropsychological network. Major figures in radical constructivism are Humberto R. Maturana (Efran, Lukens, & Lukens, 1990; Maturana, 1988; Maturana & Varela, 1987), Ernst von Glasersfeld (1981, 1984), von Foerster (1984) and Paul Watzlawick (1984).

Critical constructivists hold that a physical world exists independent of human minds, but they question whether we can know it "as it is". In addition to himself, Mahoney (1991) cites V. F. Guidano, George A. Kelly, and Piaget, among others, as critical constructivists.

It is worth noting that the personal construct system devised by Kelly posits the existence of a real world within which we navigate our way through life. As idiographic as personal constructs are, Neimeyer and Feixas (1990) point out overlapping commonalities among them, derived from shared social interaction. The social implications of Kelly's earlier formulations continue to be expanded upon by contemporary advocates of his work (Alexander & Neimeyer, 1989; Loos & Epstein, 1989; Neimeyer, 1993a; Neimeyer & Neimeyer, 1987).

Vittorio F. Guidano offers a constructivist approach to psychopathology and psychotherapy through his systems/process-oriented paradigm. The construction of identity, as well as the evolution and ontogeny of emotion, play a central part in his model. Rationality is subjective, and provides coherence and reliability within the framework of the individual's cognitive organization. The epistemological emphasis is not on the correspondence of an individual's beliefs to objective truth, but upon the adaptability of the individual's beliefs to living in the world. Guidano (1991) maintains that personal meaning defines an individual. However, the continuous quest for personal meaning

takes place within a social matrix, entailing reciprocal and co-constructive activities.

Final constructivism, associated with the organismic world hypothesis and organic process metaphor, is an epistemic position viewing knowledge as a constructed synthesis of the inevitable contradictions arising from person-environment interactions. Relying on the concept of final causation, this approach to constructivism views knowledge as dynamic and directional; that is, over time, knowledge structures are believed to undergo qualitative shifts or transformations in organization in the direction of increased complexity and abstraction. Forms of psychological constructivism based on organic processes include cognitive-developmental (Kegan, 1982; Piaget, 1970, 1981), dialectical (Basseches, 1984; Pascual Leone, 1987; Riegel, 1979), and living systems approaches (D. H. Ford, 1987; Guidano, 1987; Jantsch, 1980; Olds, 1992; Prigogine & Stengers, 1984), as well as transpersonal approaches (Walsh & Vaughan, 1980; Weinhold & Hendricks, 1993; Wilber, Engler, & Brown, 1986).

Social Constructivism

Social constructivism thinkers hold that knowledge does not reside exclusively in the minds of individuals (endogenic) or in the environment (exogenic) but, rather, in the social processes of symbolic interaction and exchange. According to Kenneth J. Gergen (1982, 1985), endogenic refers to those theories of knowledge associated with the philosophies of Spinoza, Kant, Nietzsche, and various phenomenologists, which view the constructive and organizational processes of the mind as preeminent. In contrast, exogenic refers to the epistemic writings of empiricists such as Locke, Hume, Mills, and various logical empiricists that impart priority to external reality. Rejecting both endogenic and exogenic views, Gergen (Gergen & Gergen, 1991) advocates a social constructionist epistemology that draws attention to the way in which linguistic conventions and other social factors

influence the accounts rendered of the "objective" world. The emphasis is thus not on the individual mind, but on the meanings of people as they collectively generate descriptions and explanations in language (p. 78)

The notion that personal constructions of understanding are constrained by the social is the essence of social constructionist thinking. This notion also forms the metatheoretical basis for critical revisions of a growing number of conceptual domains, including cognition (Arbib & Hesse, 1986; Coulter, 1983), emotion (Averill, 1985; Harré, 1986), gender (Hare-Mustin & Marecek, 1990), memory (Middleton & Edwards, 1990), personhood (Cushman, 1990; Gergen & Davis, 1985; Sampson, 1985), research and scholarly discourse (Edwards & Potter, 1992; Steier, 1991), and psychotherapy (McNamee & Gergen, 1992; Owen, 1992).

Many social constructivists prefer to be known as social constructionists (Hoffman, 1990; Gergen, 1994a). Gergen, (1994a), after acknowledging some similarities between constructivism and social constructionism, distinguishes between the two. Writing as a proponent of social constructionism, he dissociates himself from the "Western individualism" of constructivism and rejects all conceptualizations of separate minds and an independent world. Neither mind nor world has "ontological status." Social constructivists, such as Mead and Vygotsky, emphasize social processes in the acquisition of knowledge. However, Gergen dissociates himself from them because they try to explain mental processes. He prefers to maintain the purity of social constructionism. For Gergen, "social constructionism traces the sources of human action to relationships and the very understanding of 'individual functioning' to communal interchange" (1994a., p. 68).

Gergen (1985, 1991., 1994b) emphasizes that the generation of knowledge and our concepts of reality are the result of a social process, the use of language being critical to the process. In the

social constructionist view, therefore, the interactive relationships among people are central to the way in which knowledge is constructed. For Gergen (1990, 1994a), meaning does not reside in the minds of individuals but is located in and is the product of interaction within the context of continuing relationships.

The social constructionist movement (Berger & Luckman, 1966; Gergen, 1985, 1991, 1994a; Harré, 1986; Searle, 1995; Shotter, 1993a, 1993b; Watzlawick, Weakland, & Fisch, 1974) gained much momentum in the 1990s. Social constructivism has influenced research in diverse fields in the social sciences, and it has been adopted as a theoretical perspective for psychotherapy, education, classroom mathematics and learning disabilities. In 1992, McNamee and Gergen co-edited a book to highlight its implications for psychotherapy.

Recent descriptions of social cognitive theory assign a significant role to self-generated influences (Bandura, 1989). However, most contemporary information-processing and social learning models tend to regard the environment as the primary source of information. They also evaluate the validity of people's schemas in terms of their degree of correspondence to social and other environmental sources of information. Information-processing and social learning models in psychotherapy are based on the assumption that inaccurate and distorted information processing is at the root of many emotional and behavioral problems (Beck, 1993; Ingram & Holle, 1992).

In this context, the role of social and other environmental factors in understanding emotion is of particular interest to social constructivists. Wood (1986) says: "In learning that we ought to experience a particular emotion, we also learn what to do and think. Emotion involves the internalization of social representations of broad scope, including a range of attitudes and desires" (p. 196). Averill (1986) emphasizes that "emotional schemas are the internal representation of social

norms or rules" (p. 100). As social constructions, they are subject to change throughout each person's development. Implied in Averill's social constructionist view of emotions is the social regulation of emotional experience and expression.

In the field of education, Paul Cobb, Erna Yackel and Terry Wood were struck by the apparent dualism between mathematics in students' heads and mathematics in their environment. This led them to propose an "alternative view...to transcend this dualism" by treating mathematics "as both an individual, constructive activity and as a communal, social practice" (Cobb, Yackel & Wood, 1992). Noting that the major controversy within constructivism was whether the acquisition and processing of knowledge is basically social or cognitive, they sidestepped the issue by combining cognitive constructivism and social interactionism. Thus they were able to carry out coordinated psychological and sociological analyses of mathematics classrooms (Cobb, Yackel & Wood, 1993).

As Cobb and Bauersfeld (1995) point out, this combined approach permits direct focus on the relevance of social interaction processes for the individual learning process. By implication, the way in which a student participates and interacts in a classroom lesson has a bearing on an individual's learning processes. Thus Cobb and Bauersfeld's term "constructivism" refers to a widely accepted view that individual learners construct their learning in the light of past experiences and knowledge. The learner is viewed as an active participant in learning rather than a passive recipient of knowledge. Teaching mathematics within a constructivist perspective in a primary classroom, for example, involves engaging children in activities in which ongoing instructions and experiences are interpreted on the basis of *their own* past knowledge and experience. Simon (1995) summarizes the constructivist perspectives as deriving from

a philosophical position that we as human beings have no access to an objective reality, that is, a reality independent of our way of knowing. Rather, we construct our knowledge of our world from our perceptions and experiences, which are themselves mediated through our previous knowledge. Learning is the process by which human beings adapt to the experiential world (p.115).

Bandura (1978) has propounded a social learning theory that attempts to explain not only a person's interpretation of information, but also how that person translates information into action and under what situations he or she will respond. Social learning theory is cognitive (rule governed), constructivist (interpretive), and deterministic in the sense that cognition and behavior are thought to be causally linked in a reciprocal fashion to the environment (Zimmerman, 1981).

Social constructivism can thus be seen to have major implications for the way we understand learning, the way teachers think about their roles, and the way they teach. For instance, social constructivist theorists acknowledge multiple constructions of the world. Each human being makes sense of the world in a unique way. Thus for teachers to facilitate students' learning, it is essential that they seek to understand students' unique constructions and to see learning through their students' eyes (Oldfather et. al., 1999).

A constructivist approach to learning disabilities (Reid 1996) has also been attempted in educational psychology. Learning disabilities have been defined from a holistic/constructivist perspective, as opposed to a reductionistic behavioral approach (Grobeck 1997; Poplin 1988). Several studies suggest a constructivist or social constructivist approach to curricula (Englert & Mariage 1996; Roehler & Cantlon 1997), especially in the context of students with learning

disabilities (Singer et al., 2000; Williams, 1998; Pressley et al. 1996; Harris & Graham, 1996; Stone & Reid, 1994; Reid, 1993; Englert, 1992).

A social constructivist approach has also been adopted to study the social origins of strategy deficits among students with learning disabilities (Stone & Conca, 1993; Reid, 1993). Constructivist epistemology and principles have influenced models of assessment that are relevant for special education, as well as to general education (Meltzer & Reid, 1994).

With respect to therapeutic applications, Mahoney (1988) suggests that constructivism, as well as some of the cognitively oriented therapies, may provide "a metatheoretical home for diverse approaches to psychotherapy" (p. 307). Similarly, Neimeyer and Feixas (1990) argue that constructivist trends have been emerging across the board in therapy. They hold that these trends could lead to the integration of several psychotherapies under a constructivist metatheory. Neimeyer (1993b) has expounded a range of therapeutic practices to show how to put constructivism into practice. Waters (1994) has suggested that constructivism can be put into action in "dialogic" therapies. Rather than seek historical roots for problems in the client's present life, dialogic therapies emphasize the current meanings attached to past events (Friedman, 1993; Gilligan & Price, 1993).

Studies that analyze the implications of constructivism for psychotherapy include Duncan, Solovey, and Rusk, 1992; Mahoney, 1995; and Neimeyer and Mahoney, 1995. Neimeyer and Neimeyer (1993) identified specific family therapy techniques that are situated within a constructivist framework. These techniques suggest an emphasis on the primacy of personal experience, a focus on the meaning-making process through language, and a dedication to behavioral enactment as a means of problem reconstruction.

Methodological Tools

There was a renewed interest in qualitative methodology in the 1960s, arising out of a dissatisfaction with the “positivistic self-understanding” (Habermas, 1971) of quantitative social science. The new epistemological stance attacked “the package of practices and assumptions that are part-and-parcel of quantitative research, which derive from the application of a natural science approach to the study of society” (Bryman, 1988; p.13). The roots of the new epistemology lay in phenomenology, and encouraged researchers to demand the use of an interpretive and qualitative methodology to understand the causes of social action and to overcome the inadequacies of scientific approaches in disciplines dealing with human behaviour.

Qualitative methods represented “an approach to the study of the social world which [sought] to describe and analyse the culture and behaviour of humans and their groups *from the point of view of those being studied*” (p.46). With this emphasis on understanding and a “commitment to seeing through the eyes of the people being studied” which characterises phenomenology, researchers had found an epistemological basis for an alternative to positivism (Bryman, 1988, p.70).

Constructivism has made significant contributions to the resurgence of interest in qualitative research. It seeks to replace the conventional positivist framework with assumptions grounded in phenomenology, hermeneutics, and value pluralism. Reality is a social, and therefore multiple, construction and the knower and known are interactive, inseparable (Lincoln and Guba, 1985).

Narratives

Narrative theory can be seen as an aspect of constructivism that holds considerable promise as both theory and a therapeutic tool. Bruner (1986) posits two thought modes through which reality

is constructed and organized: the paradigmatic mode and the narrative mode. The paradigmatic mode is defined in terms of logic and science; it seeks truth in the form of empirical verification. The narrative mode is less abstract; it emphasizes the construction of good stories played out temporally in particular contexts.

In the early eighties, psychologists became increasingly alive to the possibility of narrative as a form not only of representing, but of constituting reality (Bruner, 1992; Bruner & Feldman, 1990). Narratives came to be seen as an essential tool for the study of consciousness (Hambleton et al., 1996; Feldman et al., 1990) and self-construction (Bruner, 1997). It is even possible that, since narratives are constructed through meta-memorial processes, there could be multiplicity of selves, whose narratives will differ depending upon the purpose at hand (Bruner, 1997). Furthermore, it has been argued that self-narratives cannot be examined in isolation from the social context, which is the source of meaning in self-experiences (Bruner & Kalmar, 1998; Gergen & Gergen, 1997; Palombo, 1991a., 1991b.). This belief is fundamental to using a social constructivist approach to narratives as a tool to understand consciousness and the self (Bruner, 1999, 1996).

Concomitant to the development of an interest in narratives as a theoretical concept in psychology, its use as a therapeutic tool has also been examined. In cognitive therapy, for example, if a patient has a defective theory of his or her relation to the world, new self-understanding is best achieved through construction of a novel personal narrative (Russel, 1991). Increasingly, psychotherapeutic literature has been reflecting the usefulness of the narrative metaphor in thinking about individual and family therapy (Forster, 1994; Gonçalves, 1994; Neimeyer & Mahoney, 1995; Russell, 1991, 1995; Schafer, 1992; Spence, 1982; White & Epston, 1990). In the past decade, narratives have also been used for the diagnosis and remediation of children with learning

disabilities (Palombo, 1994), as well as clients with other disorders (Russell & Wandrei, 1996; Palombo, 1992, 1991, 1991b).

Myths

Psychologists' interest in narratives is partly fuelled by the fact that narratives elicit a series of metaphors, symbolic forms and myths, which are essentially guideposts to deeper meanings and psychological realities (Hambleton et al., 1996; Bruner, 1994).

Extensive work on personal myths has been done by David Feinstein (1998, 1990a.). He traces historical evidence indicating that mythology, consciousness, and culture have evolved in concert. Just as cultural myths influence social behavior, personal myths are instrumental in shaping individual behavior. A personal mythology is an internalized model of reality that is composed of postulates about oneself, one's world, and the relationship between the two. Mythic fields complement the physiological bases of consciousness in storing symbolic content and maintaining psychological habits.

Each individual seeks narcissistic reparation through the elaboration of a personal narrative or myth, a story, which gives one's life a feeling of personal significance, meaning, and purpose. (Shaw, 2000). Personal mythologies are complexes of symbolic and affectively laden themes consisting of three basic components: the self, the self in relation to significant others, and internalized cognitive ideals of significant others (Bagarozzi & Anderson, 1988). Rollo May (1975), defining "symbol" as that which draws together and unites experience and "myth" as a cluster of symbols set in dramatic form, argues that contemporary society lacks adequate symbols and myths, and this has led to a disintegration of commonly held values. Attempts have been made

to both show how personal myths reflect universal human emotions and needs (Croydon 1991; Atkinson 1990), as well as to challenge the popular notion that the ancient Greek storehouse of myths provides a set of universal lessons for us to live by (McAdams 1993).

In addition to the various theoretical, clinical, developmental, cultural, and philosophical implications of both myths in general and personal myths (Hartocollis & Graham, 1991), several studies in the past two decades have examined the use of myths in therapy. Cultural and personal myths can be adaptive or maladaptive and can construct reality to facilitate or retard growth (Krippner, 1990). Personal myths have been seen to direct dysfunctional performance and relationships, though these myths can be changed to permit a fuller actualization of an individual's potential (Krippner, 2001). Personal myths have also been used to resolve intrapsychic conflicts (Croydon, 1991).

Over the years Feinstein, as well as Feinstein et al. (1997, 1994, 1991, 1990a., 1990b., 1988) have proposed therapeutic models of three to five stages, plus psychosocial tasks that must be accomplished to successfully navigate each stage. Such tasks include identifying the mythic conflict underlying psychological difficulties, understanding both sides of the conflict, refining the new mythic vision and making a conscious commitment to it, and translating a new mythology into daily life.

Limited work has been done to explore the use of personal myths as interventions among persons with learning disabilities. In one of the few studies in this area, Kugelmas (2000) describes how a social constructivist approach was taken to developing a graduate course for elementary and special education teachers by using autobiographical storytelling, personal myths and visual imagery as strategies to prepare them for effective teaching.

A concept related to that of myth is the metaphor, inasmuch as both are symbolic representations of reality. The power of metaphor has also been gaining substantial recognition in the field of psychotherapy. Metaphors have been used as a therapeutic theme in self-narratives. For example, in one case of a six-year-old boy, it appears that once he found a metaphor through which to express his distress, his anxiety dissipated and his self-narrative became more cohesive (Palombo, 1994).

In fact, the narrative has itself been singled out as a root metaphor for psychology to adopt because it is "a fruitful metaphor for examining and interpreting human action" (Sarbin, 1986, p. 19). It provides an equally fruitful means for understanding and for imparting meaning and coherence to human feelings, intentions, and aspirations.

Hermeneutics

The field of hermeneutics and interpretation has also been developed in theory as well as in psychotherapy. The work of Hirsch (1967), Fowles (1965), and Gadamer (1975) has been seminal in this regard. In its broadest sense, an understanding of art, science, and the social sciences must take into account the historical and social context of both the knower and the known. Drawing upon the philosophy of Heidegger, Gadamer (1975), for example, sees the whole world as a text to be interpreted. The importance of hermeneutics is brought to the fore by those to give primacy to the construction of our experiences in language. "To be a human being is to be constantly structuring [one's] world in terms of meaning" (Strenger, 1991, p. 31). Thus, hermeneutics, defined as the science and methodology of interpretation, comprises the act of "interpreting meanings in texts of all kinds, including spoken communication" (Rubovitz-Seitz, 1998, p.103).

Constructivism and hermeneutic phenomenology share several common assumptions

(Arciero & Guidano, 2000). Contemporary therapists influenced by a social constructivist viewpoint see reality as emerging through a socially negotiated process in which linguistic practices constitute the "rules" by which we come to understand the world (Lax, 1996). Therefore, narrative and hermeneutics are central to understanding the unique beliefs and ideas that are socially constructed.

With conceptual roots in humanism, phenomenology and constructivism, experiential psychotherapies, for example, highlight the role of emotional processes in personal integration and change (Daldrup, Beutler, Engle, & Greenberg, 1988; Greenberg, Rice & Elliott, 1993; Greenberg & Safran, 1987). While therapists in the modern tradition attempt to focus on the application of specific treatment strategies to specific client symptoms believed to reflect common and universal diagnostic disorders, experiential therapists focus on the "uniqueness of each person's inner experience and meaning construction" (Greenberg, Rice, & Elliot, 1993, p. 35) and point out that the same symptom may have different meanings for different clients.

Interactive Assessment & Feedback

Interactive assessment, which could employ the narrative as a tool, is considered an important therapeutic element in the case of students with learning disabilities. Hanson, Claiborn and Kerr (1997) state: "[When] recipients process messages thoughtfully, the resulting attitude change has been found to be more durable, more resistant to counterinfluence, and more likely to be reflected in the recipient's behavior (p.401)".

Investigation of interactive versus delivered interpretations of test results suggests that interactive interpretations may be measurably more effective and useful than delivered interpretations (Hanson, Claiborn & Kerr, 1997). This study also notes that "Rogers (1954) and Finn and Tonsager (1992) obtained relatively positive changes for clients who participated actively in the

interpretation of their test data” (p. 401). This interactive approach to interpretation of test results can be the first step into a socially constructed reality and the beginning of a feedback process that is personally meaningful to the student.

While the most successful instructional interventions are characterized by the presence of feedback, it is surprising that the incidence of feedback in the typical classroom is very low (Black & William 1997). Indeed, “feedback may be the most neglected aspect of assessment” (Pope, 1992, p. 268). In their attempt to comprehend a client’s problems, many clinicians may overly rely on the test results themselves, thus potentially dehumanizing their client as well as forgetting that the individual must remain “in the loop” in order for any of this information to be of use to them. Pope (1992) reminds us that clinicians may be inclined to

forget that feedback is a dynamic, interactive process that is an aspect of the larger process of assessment, and that the assessment often continues during what is called the feedback session or phase. ... No rote, by-the-numbers approach to feedback can legitimately replace a thoughtful discussion with the client of what the results are, what they mean, and what they do not mean. (Pope, 1992, p. 268)

As noted above in the discussion of the interpretation of test results, the feedback given to an adult student with learning disabilities and the questions posed by the clinician need to be connected to, and inherently part of, her present realities. The studies described by Butler (1998) used an approach to strategy development that included a) supporting students in self-monitoring their own approaches and strategies, and b) changing or continuing to use these strategies depending on their own internal feedback, because:

First, when students' current strategies were shown to be effective, instruction could be efficiently targeted elsewhere. Second, if students recognized the efficacy of current approaches, their competence was highlighted, thereby supporting development of task-specific self-efficacy. Third, revisions to strategies built from what students already knew, thereby supporting construction of new understandings tied to an established knowledge base.... Finally, the strategies developed were personalized. They were founded on students' processing preferences, capitalized on their strengths, circumvented their weaknesses, and responded to their unique difficulties with tasks. (Butler, 1998, p. 167)

Feedback unrelated to an individual's reality may not only be difficult for that individual to process, but may in fact create a state of cognitive dissonance. As Wicklund and Brehm (1976) observe:

When a person holds more than one cognition in a dissonant relationship, some of the dissonance he experiences is a direct function of how important those cognitions are to him. Given the definition of a dissonant relationship, all that could be said about dissonance reduction is that there will be some attempt to eliminate the dissonant relationship by changing one of the elements in order to render the two either consonant or irrelevant. (p.2-3).

If feedback is presented in an interactive manner, it not only allows a student to gain a better understanding of the nature of her strengths and weaknesses but also gives the student the experience of being enabled. Finn and Tonsager's (1992) study provides support for the professional

using the process of feedback itself as a therapeutic tool in giving support to clients. The information that therapists explore with their clients needs to be experienced in a new light or to include new components, with which the therapist expands the clients' reality.

Finn and Tonsager's (1992) observations suggest that while clients need to have their self-schema verified, they further benefit from having their understandings expanded upon or being given a change in focus. To maximize the benefit of this learning opportunity, the new information should not be in conflict with, but rather an extension of, the client's reality.

Critical Summary and Conceptual Framework

The conceptual framework adopted for this study views the researcher and participant as co-constructors of meaning as the inquiry progresses. The framework is modeled in the tradition of social constructivism, which is defined as constructing meaning from social interaction.

Learning from this perspective is viewed as a self-regulatory process of struggling with the conflict between existing personal models of the world and discrepant new insights, constructing new representations and models of reality as a human meaning-making venture with culturally developed tools and symbols, and further negotiating such meaning through cooperative social activity, discourse, and debate.

(Fosnot, 1996, p. ix)

The literature on the social constructivist framework reviewed earlier strongly suggests that each individual continually constructs reality; it is an ongoing process. By making use of the fact that our interaction with others influences the construction process, an education assessor can help students develop and enhance their personal cognitive resources.

A pragmatic application of theoretical postulates entails exploring the meaning of others'

experiences. As Garrison (1998) says:

We all play roles (various versions of “me”) on the stage of life that are pre-scripted for us by our culture...The task of democratic education is to disrupt these habitual scripts so that each individual is free to become the author of her own life. The most direct way to acquire new scripts is through dialogue with those who tell different stories in a different vocabulary from ourselves (p. 60).

Social constructivism allows for this dialogue while maintaining a flexible structure for an interpretative inquiry.

Based on the existing literature, there appears to be adequate justification for the adoption of interaction, self-narratives, interpretation and feedback as tools for a preliminary study of the educational struggles of university students with learning disabilities. As observed earlier, in the social constructionist view, interactive relationships are central to the way in which knowledge is constructed. Gergen (1990, 1994a), for example, holds that meaning does not reside in the minds of individuals but is located in and is the product of interaction within the context of relationships.

The validity of adopting a social constructivist perspective has been discussed by, for example, Watzlawick, Weakland, and Fisch (1974), who suggest that when a sufficient number of people reach a consensual definition of something, that thing is then viewed as an objective reality. Both the construction process and the accompanying social agreement recede into the background, while the new construction emerges perceptually into the “foreground” of the real world.

Since the beginning of the last century, therapy, especially psychoanalysis, has provided additional evidence for the validity of narrative as a source of truth . As Donald Spence (1982) put it:

Narrative truth is what we have in mind when we say that such and such is a good story, that a given explanation carries conviction, that *one* solution to a mystery must be true. Once a given construction has acquired narrative truth, it becomes just as real as any other kind of truth; this new reality becomes a significant part of the psychoanalytic cure (p. 31)

In a more positivist tenor, the mutual storytelling technique has also been examined to determine whether the framework and the indices derived from it are helpful in describing differences between clients' narratives and the therapists' subsequent narrative retelling. Data suggest that the measures can be reliably applied to psychotherapeutic texts and are sensitive enough to provide insight into psychotherapeutic processes considered crucial to treatment (Russell, Van den Broek, Adams & Rosenberger 1993).

The strategy of in-depth interviewing as described by Seidman (1998) was adopted for eliciting narratives for this study. In accordance with this strategy, each participant was engaged in three in-depth interviews.

Current research in the domain of constructing and reconstructing the experiences of students with learning disabilities is limited. It is all too often directed by an empirical-realist paradigm that "claims to encode reality in terms of substances and phenomena which are independent of the observers involved" (Laroche, Bednarz & Garrison, 1998). As a result, educators and practitioners

tend to accept an insular perception of students with learning disabilities. This perception does not include the student's observations and therefore presents a limited understanding. I wish to enrich the current knowledge by describing the experiences of students with learning disabilities through a framework that appreciates the manifold realities of these students and facilitates a reconstruction of those realities.

Students with learning disabilities are often confused about the nature of their struggles. They may only be aware of how their disabilities affect them academically, but unclear of what cognitive processes are going on within them to cause not only academic problems, but problems in their relationships with others. Social constructivism provides the justification for the use of tools by both the assessor and the student in the act of identifying both these types of these problems.

This study intends to encourage students with learning disabilities to reflect upon and tell their narratives in their own words and, in the process, access and identify aspects of themselves which they may have considered off limits until now. By establishing a relatively judgement-free environment, the researcher can assist the students in relating certain aspects of their narratives. As well, through interaction, the researcher can ask questions that may encourage a student to expand upon many aspects of the narrative.

Personalized meaning is both established and accessed not only through narratives, but also through symbolic association utilizing a variety of sensory-based cognitive processes. By comparing and contrasting a variety of empirical tests which require an individual to make meaningful associations from different sensory channels, it is possible to derive an understanding of an individual's cognitive processing strengths through exploring specific elements of each test.

As observed earlier, current learning assessments are most often based in psychological test

results. However, as Anastasi (1992) reminds us, a counselor must go beyond test scores:

The counselor needs current knowledge about the behavior domain that the test is designed to assess. ...A significant point for all test users to bear in mind is that test scores tell us how well individuals perform at the time of testing, not why they perform as they do. To find out why, we have to consider the test score within the person's antecedent context. We need to delve into the individual's reactive biography or learning history (p. 612).

Through both these kinds of explorations, test scores and self-narratives, this researcher intends to help university students with learning disabilities develop the self-schema and metacognitive awareness that would assist them in previewing new self-schemas and cognitive and metacognitive strategies. Applied in this manner, a social constructivist and self-narrative approach to the experiences of students with learning disabilities can enrich an interpretation of testing results, affording educational psychologists and others a better understanding of the strengths and limitations of testing.

The interpretation of test results, self-narratives and past experiences takes us into the realm of hermeneutics. This researcher believes that a hermeneutic approach to raw number results and self-narratives could also in itself lead to a change in the internal cognitive processes involved in arriving at those results or in building a self-narrative. The interpretations can be shared with the student in order to facilitate her (the student's) own interpretation of personal experiences. As a result, the two interpretations are brought together in a co-construction of a new meaning. Indeed, the act of interpreting is a co-construction of reality. This act enhances the student's sense of self-awareness and deepens their understanding of personal experiences. At the same time, it conveys

to an educational specialist an appreciation of the struggles university students with learning disabilities encounter and experience.

In addition, it is hoped that the theoretical and methodological tools adopted for this study will enlighten both this researcher and the student about the learning strategies that are meaningful and appropriate to the student's struggles. This would be one step towards the goal of effective self-regulated learning for the student. Self-regulated learning occurs when the student becomes empowered to "actively regulate their cognition, motivation, or behavior and, through these various regulatory processes, achieve their goals and perform better" (Zimmerman, 1995).

In order to reinforce self-regulation among the participants in the study, the researcher first builds an understanding of their current and past self-regulatory strategies, specifically in the context of their classroom learning. The conceptual framework for such an understanding has been provided by Ryan and Deci (2000b). They maintain that self-determination evolves on a continuum between extrinsic and intrinsic types of motivation. Nonself-determined and amotivated behavior characterize one end of the continuum and self-determined and intrinsically motivated behavior the other. Between the two lie gradations of extrinsic motivation. Each stage in the continuum is marked by its own specific ways of perceiving the locus of causality and by the relevant regulatory processes that are typical for that stage. A tabulated rendition of the continuum is presented on the following page (Table 1). The model proposed by Ryan and Deci (2000b.) helps us to establish whether the locus of control in an individual is internal or external.

Table 1 Ryan and Deci's Self-determination Continuum³

BEHAVIOUR	Nonself-Determined ← → Self-Determined					
	Motivation	Extrinsic				Intrinsic
REGULATORY STYLE		External	Introjected	Identified	Integrated	
PERCEIVED LOCUS OF CAUSALITY	Impersonal	External	Somewhat External	Somewhat Internal	Internal	Internal
RELEVANT REGULATORY PROCESSES	• Nonintentional • Nonvaluing • Incompetence • Lack of Control	• Compliance • External rewards and punishment	• Self-control • Ego-involvement • Internal rewards and punishment	• Personal importance • Conscious valuing	• Congruence • Awareness • Synthesis with self	• Interest • Enjoyment • Inherent satisfaction

³ Adapted from Ryan & Deci (2000b, p. 72)

Thus, to briefly summarize the significance of the review of the literature for this study, this researcher has been guided by the following:

- a. A theoretical perspective whose roots lie in the constructivist movement and, specifically, the assumptions of social constructivism. The perspective justifies the creation of a social, interactive setting within which the research takes place.
- b. A qualitative rather than a quantitative and positivist research methodology. The tools employed for the study include self-narratives, myths, metaphors and hermeneutics to understand the phenomena (experiences) of the learning struggles of university students who have only recently been diagnosed with learning disabilities.
- c. The belief that the very act of co-constructing meaning by an educational specialist and a student with learning disabilities can initiate changes in self-schemas and initiate a transformation in the self-regulating strategies of students with learning disabilities.

Purpose of the Inquiry

The purpose of this research was to explore the education experiences of university students with learning disabilities. By eliciting narratives from them, this study has attempted to provide a rich construction of their experiences of learning situations in school and university. I was interested in exploring the learner as a person. The study was directed by the following principal research question: How do adult students with learning disabilities studying at the university level perceive themselves as learners? This query was further specified by four related sub-questions:

- i. What are the histories and learning experiences of each of these students with learning disabilities? What strategies have they used to self-regulate their learning?
- ii. How did they cope with the various challenges presented by the tests that were utilized in the process of identifying their learning disability?
- iii. What personal meanings have these individuals given to their past and present learning experiences?

I have embraced a social constructivist and hermeneutic perspective to guide this inquiry. Accordingly, the experiences of adult students with learning disabilities, as given and understood by the students themselves, can be fully appreciated through construction and a hermeneutic analysis of their spoken narratives. Prior to this analysis, however, it was essential that I tried to divest myself of my preconceived ideas or theories.

Hermeneutics “focuses particularly on the interdependent relations of part and whole meanings; that is, the whole is derived from and constituted by the parts, the latter being delineated and integrated by the whole” (Rubovitz-Seitz, p.104, 1998).

The hermeneutic concept of part-whole relations may be seen applicable to the interpretation of experiences of adult students with learning disabilities. The narration of their experiences is scanned for co-constructing possible relations and interactions between the themes expressed and their overall impressions.

Since human studies frequently depend upon interpretive methods, there are epistemological justifications for using interpretations (Dilthey, 1976). As compared to positivist-empirical epistemological approaches, hermeneutics tends to be non-reductive and looks at experiences in a

holistic pattern rather than by reducing them to empirical quanta.

Further, the hermeneutic tradition acknowledges the intricacies, unavoidable exigencies, and restrictions of the interpretive process rather than attempt to dismiss these challenges (Rubovitz-Seitz, 1998).

CHAPTER 3

METHODOLOGY

Qualitative Strategy

The qualitative strategy of in-depth interviewing has been chosen for this study with further descriptive richness being added through a social constructivist approach and phenomenological analysis. The experiences of adult students identified as having learning disabilities will be co-constructed as each student narrates how she has experiences and gives meaning to them. As such, an attempt has been made in this study to reconstruct students' present experiences and from this point, reflect on and reconstruct past experiences.

A constructivist and hermeneutic inquiry also afforded me the opportunity to describe the experiences of adult students with learning disabilities utilizing their own narratives. This approach is in keeping with a hermeneutic perspective, which views part meanings as "implications" of the overall meaning of a text. At the same time, however, hermeneutics allows for the whole meaning to imply certain part meanings but not others (Rubovitz-Seitz, 1998). Therefore, the meanings of the participants' experiences may be drawn from words in the texts of the interviews, even when they seemingly express contradictions or altogether different themes. In this manner, the students will be supported in identifying, exploring and reconstructing their experiences and how they derive meaning from them. Frequently, individuals express internal realities that contradict one another. In other cases, their internal reality may be in conflict with external social demands. It is by allowing and exploring these realities and their contradictions that we can often best understand the struggles of one another.

Participants

This inquiry included as participants four adult students whose primary diagnosis is a learning disability. In addition, Dr. J Robert Groves (Ph.D. (C) Psychology) confirmed, through a clinical assessment of them, that they had no accompanying psychological issues that may present a high risk of harm to the students as a result of their participation in this inquiry.

For this inquiry, the term “learning disabilities” denoted:

1. A lifelong condition;
2. Trouble processing information;
3. Average or better abilities; and
4. Unexpected problems in reading, math or other areas (Learning Disabilities Association of Ontario, 1998).

The selection of participants was based on purposeful sampling with the following two criteria:

1. The participants had been identified as having a learning disability within the previous two years and not within the last month before the interviews. This criterion was intended to afford the participant a period of adjustment to the confirmation of her challenges.
2. They were currently receiving accommodative services at the university level.

The nature of their learning disabilities followed the principles of maximum variation sampling (Patton, 1989). An effort was made to select participants from a variety of backgrounds.

Two female and two male participants were selected. The nature of their learning disabilities was identified by a significant deficit from the established norm, as measured by the results of the

Woodcock-Johnson Tests of Cognitive Ability - Revised. One or more of the following seven areas was determined:

- 1. Long-term Retrieval**
- 2. Short-term Memory**
- 3. Processing Speed (visual motor)**
- 4. Auditory Processing**
- 5. Visual Processing**
- 6. Comprehension-Knowledge (language processing)**
- 7. Fluid Reasoning**

The following is a complete list of the tests administered:

- Tests one to 14 of the Woodcock-Johnson Tests of Cognitive Ability – Revised. (WJR).**
- Tests one through seven plus nine of the Scholastic Abilities Test For Adults, Timed And Untimed Versions (SATA)**
- The Connors Continuous Performance Test (CCPT), a computer-generated test for attention**
- The Rey Complex Figure (RCF), both Copy and Memory components**
- Canadian Adult Achievement Tests (CAAT), Sub-tests 2, 3 and 7.**

Take-home assessment tools:

- Hemispheric Mode Indicator (HMI)**
- Learning Styles Inventory (LSI)**
- Brown ADD Scales (BADDs)**
- Wender-Utah Rating Scale (WURS)**
- Answer System (AS), a questionnaire related to learning difficulties in a variety of areas**
- Psychological Screening Inventory (PSI)**

None of the participants was from either very rich or impoverished families. All four students were born in Canada with English as their first language and had had their schooling in the Canadian education system (one of the students had studied in a primary school in England for a brief period of six months). This type of purposeful sampling helps to obtain data which is both unique and similar in the pattern of meanings which evolve (Seidman, 1998).

Potential participants contacted the researcher by telephone in response to a notice placed at the office of Dr. Groves. The initial telephonic contact included a presentation of myself as the researcher and briefly of the study itself. The main purpose of an initial telephone contact is to arrange a time to meet in order to discuss the study in person and in more detail (Seidman, 1998). The following face-to-face discussion served several purposes. Fundamentally, it furnished an occasion to initiate mutual respect, which was central to the interview process itself. In addition, by introducing myself as the researcher as well the essentials of the inquiry to the participants, I wished to convey my respect for them and the importance of their potential participation in the study. This discussion also provided me with the chance to assess the potential participants' educational backgrounds prior to the interview.

Finally, in this discussion, I also initiated the process of informed consent. Likely participants were furnished with information about the inquiry, their potential function within it, as well as the aims of a three-interview design (Seidman, 1998).

Once the participants assented to their involvement with the inquiry, they were asked to complete a brief participant information form (Appendix A) as well as a Release of Information form (Form 14; Appendix H). I also utilized this opportunity to arrange the dates, times and locations for the series of three interviews. I attempted to accommodate the study and class

timetables of the participants into my schedule.

After this contact visit, I sent a brief letter to the potential participants to thank them for the discussion and for agreeing to become involved with the inquiry. I also sent a written confirmation of the interviewing schedule.

Prior to initiating the first interview, each participant was once again fully apprised, both verbally and in writing through an official consent form (Appendix B), of the aims of the inquiry, the means of data collection and the expected usage of the information. These participants were then requested to read the consent form in its entirety, ask questions and clarify any doubts they might have, and then sign the form if they were in agreement with its terms and conditions.

The participants were assured of their anonymity through the use of pseudonyms in any and all reports and publications resulting from this research. The dignity and privacy of the participants has been honored with careful storage of all materials resulting from the inquiry. Participants were given the right to abandon their role in the research process at any time and without prejudice. To further promote an atmosphere of safety, participants were informed that all transcripts would be sent to them for verification and comments (Appendix J), as recommended by Seidman (1998).

To maintain their anonymity, all the four participants will be identified by pseudonyms. For the sake of simplicity, this researcher chose the names of his father and grandfather for the two male participants and the names of his mother and grandmother for the two female participants.

Researcher's Role

It is crucial that at this point I identify my proficiency in the compilation and interpretation of information for this inquiry.

As both a learning specialist and an educational counselor, I have worked with adult students

identified as having learning disabilities in a large number of interviews and counseling situations.

These experiences, coupled with my educational development, have allowed me to cultivate an expertise essential for effective interviewing. This expertise comprises the attributes of developing strong rapport between myself and others, encouraging self-disclosure through trust, suspending my judgment of others, and listening carefully while focussing on emotion and meaning.

Further, as an adult student who has “lived” the experience of having a disability (visual impairment), I believe that I am able to appreciate the experiences of the participants and can afford them a knowledgeable and compassionate audience.

Procedures

The strategy of in-depth interviewing as described by Seidman (1998) was adopted for eliciting narratives for this study. In accordance with this strategy, each participant was engaged in three in-depth interviews. The function of the first interview was to ascertain the participants’ past educational experiences within the framework of their lives. The second interview enabled the participants to construct their experiences within the context of being adult students having recently been identified as having a learning disability. The final interview, following Seidman (1998), facilitated a reflection on the meaning that they attributed to their experiences of a learning disability, and to the process that was undertaken to identify that learning disability.

Interviews

Seidman (1998) suggests that “recounting narratives of experience has been the major way throughout recorded history that humans have made sense of their experience” (p.2). He therefore believes that “if the researcher’s goal is to understand the meaning people involved in education make of their experience” (p.4), then in-depth interviewing can become an important approach to

the collection of these experiences and their meaning for the participants.

In order to permit the participants to navigate their experiences and position them in the context of their lives, each of three progressive interviews were allotted a time of approximately 90-minutes. The interviews were semi-structured. While a broad structure was provided by a questionnaire, this researcher sometimes felt the necessity to move away from this structure in order to facilitate a freer expression of the participants' experiences.

An interview guide was employed to assist in the interview process (Appendix C). This guide consisted of the central question of that interview, along with auxiliary questions that could be useful in exploring particular topics that might arise during a given session.

The first interview focused on the educational life history of the participant and thus answered the first research question, namely: "What are the histories and learning experiences of each of these students with a learning disability?" The aim of this interview was to orient the participants' experiences of learning disabilities in the context of their lives by enabling them to share their experiences as learners up to the time they became aware of their learning disabilities. By inquiring about these past experiences, I wished to have the participants reconstruct significant events in their past family and school lives that positioned their learning disabilities in the context of those experiences (Seidman, 1998).

The first interview also served as the primary source for information about the second research question: "What strategies have they used to self-regulate their learning?"

The theme of the second interview highlighted the details of the participants' experiences during the testing process in which Dr. Groves discovered that they had a learning disability. Thus this interview attempted to satisfy the third research question: "How do they cope with the various

challenges presented by the test(s) that were utilized in the process of identifying their learning disability?”

The identification of a learning disability involved approximately eight to nine hours of testing over three to four sessions. All tests were administered in Dr. Groves’ offices by Dr. Groves himself or a member of his assessment team.

This session asked the participants to reflect on the experiences they had had while being identified as learners with a learning disability through the testing and feedback processes. I invited the participants to add information from any personal chronicles (such as journals, scrapbooks, yearbooks, and photographs) that might assist them in the reconstruction of their experiences.

This researcher and the participants reviewed the experiences of the tests as the participants recalled them. The objective was to focus on how the participants remembered certain aspects of the testing as significant to them.

Significantly, though the focus of the second interview was the experiences during the testing phase, it was noticed that the students often moved away from this focus to recreate the subtleties of their past and present experiences of school life and their coping and/or learning strategies. As such, this interview also elicited answers to the second question that had been focussed on in the first interview, namely: “What strategies have they used to self-regulate their learning?”

Thus several aspects of their internal processes and their environmental interactions were elicited in this way. The nature of this exploration was, to a certain degree, affected both by realities they had shared in their first interview and by realities that I had explored with other students in this study in prior sessions.

In the third interview, the participants reflected on the meaning of the experiences and what they had learned from them, thus answering the fourth research question: "What personal meanings have these individuals given to their past and present learning experiences?"

The goal of such an interview, according to Seidman (1998), is to enable participants to "look at how the factors in their lives interacted to bring them to their present situation" (p.12). The participants were invited to illuminate the meaning of their experiences throughout this session and to examine aspects of their lives that engendered their current viewpoint. They were also called upon to view the specifics of their educational experiences in the contexts in which they occurred. Specific questions addressed in this interview emerged from the previous two interview sessions with each of the students, as well as through insights gained during interview sessions with the other participants.

The 90-minute time period for each interview afforded ample opportunity to participants to express themselves in sufficient detail, and contributed a certain level of coherence to the interviews. Further, this time frame is respectful of the participants' other commitments by delineating in advance the time limits of their participation (Seidman, 1998).

The interviews were interspersed with gaps of three to seven days between them in order to allow the participants sufficient time to contemplate the issues explored in the previous interview. However, the limit of seven days ensured that the participants did not lose the associations uncovered in the previous interview.

Seidman (1998) describes how the three-interview process acknowledges the concerns of validity and trustworthiness of the inquiry by providing a constant context for the participants' narratives. It facilitates the emergence of individuality and encourages consistency for the

participants. In addition, by acquiring the stories of a number of participants, these experiences are integrated and the narrative of one participant can be compared to others. Ultimately, “[since] the goal of the process is to understand how participants understand and make meaning of their experience, the interview structure allows them to make sense to themselves as well as to the interviewer and has gone a long way towards validity” (Seidman, 1998, p.17).

Researcher’s Journal

I kept a detailed journal (Appendix K) during the data collection phase of this inquiry. This type of document allowed me the opportunity to keep track of the areas discussed in each interview. It also provided a medium to record “emerging themes, interpretations, hunches, and striking gestures as well as non-verbal expressions essential to understanding the meaning of a person’s world” (Taylor and Bogdan, 1998, p. 115). Nelson and Poulin (1997) contend that these kinds of observations during an interview can denote such aspects as excitement, resistance, and possible roadblocks that will ultimately contribute to a broader understanding of the phenomenon. Also, it provides a venue to document conversations with participants outside of the research situation that can lend valuable information to the meaning of the experiences for that participant.

Finally, the researcher’s journal provides an opportunity for reflexivity in terms of social location and emotional responses to the participants (Mauthner & Doucet, 1998). That is, the experiences described by the participants may, at times, trigger memories or mirror experiences for the researcher. The researcher then has a means with which to record these reactions and bracket them for subsequent interviews and reflect upon their potential influences with respect to analyzing the data.

Data Analysis

Several researchers recommend that the processes of data collection and analysis should inform each other, providing a recursive process from which new questions for future interviews can be framed (Lincoln & Guba, 1985; Maxwell, 1996; Miles & Huberman, 1994). This inquiry attempted to describe individual experiences as well as patterns of similarity between experiences or the themes they express. Thus, the questionnaire in Appendix C can be seen as a starting point for an evolutionary process. These questions were transformed from participant to participant, as analysis of each preceding subject assisted in identifying increasingly insightful questions.

As anticipated, the procedure for data collection and analysis within this study first encouraged the students to look at their learning history. This procedure was intended to allow the students new insights into their learning struggles. As well, it was intended to allow the interviewees in the second interview to relate the results of testing to their past and present experiences in order to facilitate a deeper and richer understanding of their learning strategies as these had developed to the present. What the students had attempted to address, and what mechanisms they had put in place were considered. Likewise, the realities, which were co-constructed through the interaction of the investigator and the student, were used in the second interview to better understand the student's present realities.

Finally, the understanding gained through these first two interviews were used in the third interview to help the students make meaning out of their recent discovery of a learning disability in the context of their past and present learning experiences. An analysis was carried out on an individual student-by-student basis, as well as cumulatively among all students in the study, to identify commonalities and differing strategies that were observed among the students.

The data collected during the interviews was recorded in audio-video media, that is, both on a tape recorder as well a video recorder. In order to make the participants comfortable, each of them was previously informed that the interviews would be recorded. Additionally, in order to put them at ease, they were assured that the video recordings would not be seen by anyone other than this researcher, and that only the researcher and a typist would listen to the tape recordings. Further, the video and tape recorders were placed in unobtrusive locations, such that the participants were not distracted by their presence. In fact, once their attention was focussed on the researcher and the questionnaire, they were apparently oblivious of the equipment. While the tape recordings provided the data for the research, the video recordings were used to pick up visual cues for the participants' responses to the questions, as well as to provide back-up in case the audio equipment malfunctioned.

After the interviews, the tape recordings were transcribed. The next step was to use the transcribed data to set up profiles of each student. Distilling those aspects of the student's narrative that had a significant bearing on that student's learning experiences structured the profiles. One way to find out what "significant" meant was to find those passages in the narrative that, if left out, would make the narrative incomprehensible.

All three interviews took place with the first student before proceeding to the second student. This allowed the interviewer the opportunity to gather an in-depth understanding of the first student's cognitive processes and realities, which then guided him in the interview process with the second and subsequent students. As anticipated, this procedure allowed the researcher to develop his interviewing strategies as he went along, thus further allowing a more in-depth analysis of each student's cognitive processes as the study developed.

The audio tapes were transcribed verbatim. The transcribed document has included

information regarding nonverbal cues such as pauses, laughs and sighs that might inform the interview process. At the end of the three interviews of all four participants, each was given a copy of the individual transcripts and any analysis done up to that point in time. They were asked to read the document and to make any additions or deletions to the interview that they felt would help clarify or better represent the description (Appendix J).

Analysis of the transcript occurred at three progressive levels. First, for each participant I developed a profile or “vignette” of the participant’s experiences, based on the four research questions identified earlier in the section “Purpose of Inquiry.” Seidman (1998) views such a presentation of the material to be most consistent with the interview process. “It allows us to present the participant in context, to clarify his or her intentions, and to convey a sense of process and time” (Seidman, 1998, p. 102).

The second level of analysis entailed a breakdown of the profile into meaningful units to explore the general structure of the student’s experiences. Thus, after being read and reread several times, each profile was divided into meaningful units. These units became categories, which, when linked together, revealed an essential theme emerging from the data.

In the initial stages of the profile analysis, the descriptive categories were kept tentative so as not to delineate the themes too early. Once the meaning units were filed, they were read file-by-file with significant units being highlighted and less significant ones being set aside. The descriptive categories were then rearranged and integrated into a theme to summarize the experiences of the students. The thematic integration of the categories was guided by the four basic research questions that the study began with.

In the following chapters, the profile analysis of each student leads to a discussion that

summarizes the experiences of that student in the context of contemporary research. These four individual discussions are then followed by another discussion to identify certain commonalities in the profile analyses, concluding with the overall implications of the study.

Limitations and Implications of the Study

The main limitation of this study relates to the data-collection methods. Several steps were taken to enhance the trustworthiness of the research. (Please see Appendix F). However, the success of the data-collection process relied profoundly on the participants' ability and willingness to reconstruct and articulate their experiences in detail.

At the same time, the researcher's skills in exploring with the participants the reconstruction of their thoughts, feelings and actions related to their learning experiences played a significant role. Care was taken to address this potential limitation through triangulation. Multiple vantage points were used to check the validity of the inferences. These perspectives can be elicited from the methodology delineated above, and can be briefly recapitulated as follows:

1. The three-interview process acknowledges the concerns of validity and trustworthiness (Seidman, 1998). For this study, the three interviews were so structured in terms of the questionnaire, content and timing that they ensured sufficient detail and reliable levels of coherence and consistency for the data. The participants had sufficient time to contemplate the issues and build on them. At the same time they did not lose sight of already-made associations.

Further, the interview process allowed the researcher the opportunity to develop his interviewing strategies as he went along, thus allowing a more in-depth analysis of each student's cognitive processes as the study developed.

2. The participants were encouraged to reconstruct their actual experiences by reinforcing them with recorded evidence such as journals, scrapbooks, yearbooks, and photographs.
3. The stories of multiple participants enabled comparisons to elicit common themes that could be seen as typical.
4. Member checks were used to enhance the trustworthiness of the profiles and interpretations. Each of the participants was given a copy of the individual transcripts, profiles and analyses. They were asked to make comments and suggest any additions or deletions to the interview that they felt would help clarify or better represent the description (Appendix J).
5. A journal kept during the data collection facilitated a broader understanding of the phenomenon (Appendix K).
6. An analytical method was adopted to facilitate the interpretations, proceeding logically from a profile to meaningful units to categories and links between the categories to elicit themes.
7. The psychological assessment of each student by Dr. Groves, based on an empirical, positivist methodology, was used as a touchstone to verify the nature of learning difficulties. The assessments played a crucial role in understanding the participants' learning experiences and the implications of these.
8. Finally, the methodology, narratives and analyses were carefully checked against the existing literature. This helped to both verify this study's findings as well as identify those areas in which current research is inadequate or altogether lacking.

There are four major implications of this study. First, rich descriptions of experiences of

adult students with learning disabilities regarding their learning history, and their present realities and future possibilities would emerge in their own voices and within the context of their lives.

Second, a social constructivist approach which makes use of a hermeneutic perspective offers a necessary elaboration of the positivist framework as expressed through test results, which can serve to broaden the current knowledge.

Third, clinical psychologists, educational psychologists and learning specialists can be better informed of how to use a positivist approach as a learning tool to facilitate a reflective hermeneutic exploration of the experiences of an adult student with a learning disability.

Finally, by providing a more comprehensive exploration that includes both psycho-educational testing and a self-narrative of the learning process, more meaningful interventions can be developed by psychologists, educators and learning specialists in concert with learners themselves, which serves to optimize the assessment process. These interventions can act to facilitate a positive experience and, quite possibly, optimal performances for all concerned. For example, the very act of co-constructing meaning can initiate changes in self-schemas, as well as open the door to more effective self-regulating strategies for individuals with learning disabilities.

CHAPTER 4

FINDINGS

Having delineated the conceptual framework and methodology in order to reconstruct the experiences of adult students with learning disabilities through a social, interactive assessment, using the narrative metaphor, three interviews were conducted with each of the four participants selected for this study. The transcripts of the interviews were used to build profiles of the four participants. The profiles, and an analytical review of these, are contained in the following chapters.

It should be noted that the tests administered by Dr. Robert Groves showed that all four participants had intelligence in at least the average if not high-average range.

At several points in the profiles the term "slow learner" has been used by both the participants as well as this researcher. The term has been used to refer to certain effects of learning disabilities on the participants' cognitive processing speed, and is in no way a reflection on their intelligence.

Further, it will be seen that although in Canada the first level in school is called elementary school, this researcher and the participants call this level "primary school." This is because the researcher did his early schooling in the USA and he unconsciously adopted the term "primary school." It was later observed that all four participants followed the researcher' lead and easily slipped into referring to their early education as "primary school."

Anna's Profile

Anna (pseudonym) was the first student participant to be interviewed. At the time of the interview she was in her late 30's and had recently returned to university for a second Bachelor's degree.

Anna is married with two children, who have also been identified as having learning problems. She works part-time and has career aspirations of attaining a position at the management level. With hopes of attaining a full-time permanent position and the accompanying financial rewards, Anna had applied for several management positions, but was repeatedly passed over.

After she inquired about the possibility of a better position in the future, she was informed that without a degree in a relevant field there was little likelihood of a promotion. She therefore returned to university, although with great trepidation due to her past educational struggles experienced from primary school right through her first university degree.

Within this background of her past educational struggles, her children's recent diagnosis and her employer's requirements for promotion, Anna sought a full psycho-educational assessment from Dr. J. Robert Groves, Ph.D. (C) Psyc. The assessment, which was performed in the latter half of the year 2000, diagnosed her with a specific learning disability. The test results also showed Anna to have particular cognitive strengths in the areas of performance and non-verbal intelligence.

Anna presented herself as pleasant, enthusiastic, punctual and co-operative for all the three interviews required for completing this study. It is apparent from the interview transcripts that she often expressed what she wanted to say in rambling, disjointed sentences, which at times made it difficult to interpret her comments. She spoke rapidly and frequently interrupted questions from this researcher. This manner of making comments is consistent with Dr. Groves' assessment results.

Anna reported finding the interview process somewhat uncomfortable as she found herself recollecting several life-long stresses. At the same time, she clearly affirmed the interview process as a healthy and supportive experience that had contributed to her personal insights and her understanding of meaningful learning strategies.

While creating Anna's Profile, the author was guided by the four research questions identified in "Purpose of Inquiry." These questions and the responses to them are discussed below.

Section 1

Research Question #1: What are Anna's histories and learning experiences?

In reviewing the transcripts of Anna's interviews we can discern a history of slow learning marred by a general feeling of confusion. Confusion was an early and fundamental characteristic of her educational experiences. This lack of clarity in her learnings eventually led to a mystification and lack of trust in the educational system itself.

About her difficulties in being able to grasp quickly she said:

Well it seems to me it took me the whole summer to figure out actually what they were teaching me. And just finally as I begin to understand it, they give me a whole bunch of new stuff. (I/2) ⁴

This confused slow learner was mystified by the school experience. Nevertheless, the confusion was somewhat dissipated after the school term was over. The summers were "magical" because this was the time that the pieces seemed to belatedly fall into place.

⁴ The Roman numerals (I, II, III) refer to the interview number and the Arabic numerals refer to the page number of the interview transcript.

I always had the feeling that if school only ended in August I would do better in school. I always felt I would do better because it was always by August, I all of a sudden went, 'Oh, I understand'... There was something magical about the summer.
(I/1,2)⁵

Her problems in being able to grasp quickly was compounded by a difficulty in articulation. This difficulty was interpreted by others as a stutter. "You know you're not a good reader. Umm...so when I think about stuttering I've heard children nowadays who actually stutter, that is a very different thing." (I/9)

The reading difficulty perceived as stuttering was reflected in her class performance. "In Grade 1, I was pushed off the reading bench because I was stuttering." (I/9) However, Anna's assessment by Dr. Groves led to her realization that the so-called stuttering was actually related to her difficulty in processing information quickly.

The stuttering I was doing... from Dr Groves and the testing... kind of makes sense. The time I could actually read the word, get it in the brain, get it back out the mouth, that's what kind of produced the stutter. (I/9)

The difficulty in processing quickly appears to be the most pronounced when the teacher asked her a question, verbal or written: "And it comes down to the questions – how the questions are written, what form they're in – and you just never know (II/20)." The difficulty in comprehending questions was a major source of confusion for Anna:

⁵ Please note that ellipses in quotations could indicate *either* a break in the interviewee's flow of thought *or* that this author has intentionally deleted certain words due to editorial considerations.

The way they asked the question mixed me up. So I didn't understand the question, and then if I was asking them, saying I didn't understand, what did you mean, and then coming back saying, 'Well I told you what it was, you should know what I mean.' That doesn't help me. (I/6)

The perception that the teachers did not help her to understand the questions presented to the class persisted until her university years. "I have in my past, gotten very, frustrated, angry, disillusioned, because the professor didn't help me understand what he wanted." (III/25,26) Sometimes, Anna gave the wrong answer simply because she did not understand the question correctly:

Well, the professor gives out [an essay]: 'This is your essay...write an essay,' and there's a statement given of what you're suppose to write. So I hand in my essay and I haven't answered the question the professor asked. I answered a different question, and I get all tied up in a knot...why did I have to answer a question he didn't ask. (III/31)

Because it took her a long time to process a question, she got caught in multi-layered questions because all her concentration went into focussing on the first layer, and she lost track of the remaining layers:

I hear it [the question], but again the minute one word gets caught, I'm off and running, and so you may have a three-level question...you have to go through almost three steps to answer the question. You say the first step [and] my brain is gone, and

it's answering that first step, and then I'll just keep answering that first step because I didn't never hear the other portions (III/25)

The questions that posed the most difficulty were those that called for comparing and contrasting.

If in an exam the question was talk about the life cycle of an amphibian, talk about the life cycle of a mammal, talk about the like cycle of an insect, I had no problem. But those weren't the type of questions that were asked — what's the difference between them, what are similarities, contrasts, compare them – and so I would come out with C's because I could show I knew more or less the proper things but there was no comparison or contrasting. (I/14)

Multiple-choice questions too were confusing, because they called for quick automatized processing: "I don't like multiple choice bank answers for an exam." (II/21)

It is important to note here that Anna perceived questions as threatening: "I didn't actually pay attention to what the question was, because I was threatened." (III/31) This perceived threat intensified and consequently she attempted to build protective, coping and learning strategies around her, as we shall see later.

While narrating her learning experiences, Anna observed that she also had difficulty making connections between pieces of information. She would read without elaborating a holistic picture: "As a child there was no pattern, there was no webbing. I'm not sure whether that was something I caused by phasing out." (I/12)

This difficulty in "webbing," that is, structuring and organizing of information, can further be seen in Anna's description of her reading:

In a weird way I would read, but I wasn't reading... so I'd skim my notes...just quickly read through them. There was no content. There was no way I could verify the content that was in my brain. I was just rereading the notes over again. But I wasn't really reading them over again; I was just skimming them, going: 'Oh yeah... Oh yeah... yeah... yeah... yeah... yeah... yeah... yeah...' If we put it in terms of the webbing, we still weren't webbing. (I/13)

This difficulty in making connections between pieces of information often led to an aversion for detail. Sometimes, it was easier to *visualize* "the big picture" rather than focus on the parts that made up the whole. However, it is important to note that the visualization of the big picture did not come from a progressive *abstraction* from particular details but from easy-to-grasp concepts, games, narratives, novels, movies and her own concrete experiences. Details confused her and she felt repelled by them. A comment from a science teacher was revealing:

Yeah, it's sort of like a comment my science teacher made to me which is 'Why don't you just worry about learning the periodic table, not worry about being a nuclear physicist?' I'd much rather having learned being a nuclear physicist, than the periodic table. (II/20)

Anna found it easy to learn something if it was grounded in personal experience. Indeed, as we shall see in more detail in the next section, grounding learning in experience became the centrepiece of her learning strategies. This was borne out by the following observation she made:

But I knew the life cycle of a frog; frogs are born the way they're born, you only have to go to a beach to know this, so having you teach me this stupid stuff, because any dummy would know this. (I/11)

However, the bits of information based on experience were themselves sufficient and she felt no need to collate several details into one big picture. In fact, she often thought that one bit of information was the big picture:

From just learning about a frog, you're learning about a whole cycle...and then you can build on those things with other animals. The webbing of information didn't happen as a child. So, they're talking about the life cycle of the frog...I know that, and I'd just sort of look out the windows, or daydream because I perceived I knew it. (I/11)

The difficulty in making connections between pieces of information was reflected in her grades. It was not that effort was lacking; rather, the efforts seemed of no avail.

Normally if you study this much, you get this grade. This does not work with me. You can study this much and you will get a grade somewhere in here. [Hand gestures indicate a gap between studying and grades.] It's a crapshoot. And it comes down to the questions – how the questions are written, what form they're in – and you just never know. (II/20)

From Anna's narrative of her experiences, it appears that from secondary school onwards she put her maximum effort into learning something.

However, her efforts seem to have left her so exhausted that she had little energy left to

review it. She boxed information and found it consumed too much energy to reopen it. This is borne out by her remark:

I believe about the first time I ever do something, I actually do it really, really good. The second time actually will always be worse than if I had never done it. It's a new thing. So I will devote all of my energy to it, and that will be all that exists, and so, of course it comes out really good, because I am putting 200, 300 percent in, you know nothing else exists. (II/17)

This is reiterated at another point in the interviews: "Once you know something, why go back over it, you already know it." (II/19)

Her difficulty in reinvesting effort into the same learning cannot be divorced from her desire for change and variety:

If it's something I've done...it's...not as interesting. I change from painting ceramic, to knitting, to applique, you know I never stay in the same spot. That's like my crafts, I enjoy them. And some people are very shocked that I allowed myself three to five years to finish a craft. (II/17)

Anna said she also had problems with numbers. She had an aversion for subjects like history that involved dates:

I would never take a history course because dates, the numbers jumped around.... When you're, when you're, when, in, because I've had this dream they have those little, check the, the ah...multiple choice questions, 1948, 1984, well even if I did know the right date, I could often pick the 1984 instead of the 48. (II/20)

Her difficulties with numbers made math difficult. An incident stands out in her memory. She solved a mathematical problem that no other student was able to.

But here we are Grade 7 working on a Math problem, up until this time, I have not got any of the Math problems right, or even figured out half way right, here we're coming to this last one and it's easy, I'm doing it. Everyone in the class didn't get it, so I had to go up to the blackboard and write the solution on the blackboard. Why [I got the question] I don't know... To me there was no relationship between this question and all the other questions I had done before. Something was different. (I/7)

However, such incidents were rare and the learning gap between her and the rest of her class progressively increased: "I'm a good four years behind what I should have been." (I/2)

While daydreaming, inattentiveness and enclosing information into rigid boxes could be seen as her personal ineffective coping strategies, Anna also looked for an external cause for her confusion. She began to feel that her teachers were to blame for her confusion. Consequently, she developed a deep distrust of teachers: "There is no level of trust of teachers... trying to drive me insane. I'm not [wrong], you are." (I/4)

This distrust grew as her attempts to grasp things in her own way were met with rejection:

I have a clear memory of a teacher and she'd go out in front of the class and say, 'What's 1 and 1?' The one time I do volunteer, I actually say 11, and she says, 'Wrong, it's 2'. Well no and yes. So again it just reinforced: 'Don't trust them'. (I/5)

For Anna, to say that "1 and 1 are 11" was just as logical as "1 plus 1 is 2". This stance of the teacher

increased her confusion and she became increasingly convinced ("reinforced") that her methods of reasoning were superior to that of, for example, teachers. She was aware that teachers were confused about how to help her at times: "I have my Grade 6 teacher, a couple of years later saying I know you're smart, we just couldn't figure out how to get it out of you." (I/6) However, Anna believed that her teachers *knew* she was confused and they should have identified the problem and pulled her out of it: "A teacher would say 'This child is having trouble understanding' – I guess in my case colours – and they pulled them out." (I/2)

We can see Anna's attempts as a young child to add some type of structure to the world around her. She said: "A child can logigisize [sic] anything any way they want." (I/5) She was searching for a structure that could create some meaningful explanation regarding her learning difficulties. Putting the blame on teachers was one way that she adopted to understand her difficulties. Another was to attribute class distinctions to understand why other children fared better than she did.

I reasoned through it and again I guess there's something that there's this big thing of rich and poor and it's the rich kids that have all the good projects. The rich kids have smart daddies, obviously their daddy did the project for them. I just do not recognize their work as being work that they as children had done. (I/5)

In this way, Anna was able to construct the understanding that she was the victim of discrimination. The teachers favoured other children because of their class background and the fear of being reprimanded by rich parents.

Never quite realistically, they were picking kids that were rich. It was just pure favouritism, they're picking all the rich kids. Almost buying off the kids so the kids wouldn't talk to the parents.(I/3,4)

Anna believed that her family belonged to the "wrong side of the tracks" (which was her way of saying it was not wealthy), but that that did not make her "stupid," just as other children were not intelligent just because they were rich. It was merely that the teachers victimized her and did not possess the right skills:

Although I came from the wrong sides of the tracks, I wasn't stupid. The way they asked the question mixed me up. So I didn't understand the question, and then if I was asking them, saying I didn't understand, what did you mean, and then coming back saying: 'Well I told you what it was; you should know what I mean.' That doesn't help me. (I/6)

Unfortunately, the struggles in learning found no support at home. "Looking back I don't think that there was a lot of interference, guidance, from my parents." (I/8) Her parents were "too busy surviving." (I/12) Lack of proper parental guidance only fostered the sense of confusion. "According to mom I'm stupid." (I/12)

Forced reading at home, which should be seen in the background of her stuttering, led to an aversion for reading during that period in her school life:

I would say it's more of a history type book. And I would have to read out loud. I couldn't go out and play until I had read so many pages. I hated reading. I wasn't

allowed out until I read the number of pages that were required, and what would piss me off sometimes is my mom would fall asleep. (I/8)

Thus we see how Anna developed a feeling of inadequacy as the image of her being deficient in intelligence was reinforced from several sources. "Learning disability, they actually have, not the exact same feeling, but similar feelings, almost a feeling of inadequacy." (II/17)

It is not that Anna lacked motivation. Throughout her childhood, right into university, she says, she had a deep sincerity about wanting to learn. The system, however, was far too stressful to make the learning process enjoyable. "We know how super my ego is, I'm not inadequate, the school system is just not made for me." (II/17) This desire to learn and achieve in academics germinated early in school and continued through university, but was always dogged by the stress of the system: "I loved going to University, I just absolutely hated assignments and tests." (II/16)

Thus the lack of clarity, confusion and distrust of teachers lasted through her entire educational experience. She believed she was not stupid, but was keenly aware that she had academic shortcomings. In the final analysis, she passed, got her university degree, but was left with a lingering doubt about whether she really deserved them.

You idiots, you are such idiots, you've given me this degree, you guys are idiots, I don't deserve this, you idiots, and I've got it and I'm going to run, because I don't want you to take it back from me (II/16)

Her confused state of mind forced her to spend a fair amount of her mental effort just coping with the inevitably tensions between the dissonant concepts of herself as intelligent and herself as "stupid." A related struggle we observe is between her intelligence and her ability to demonstrate

it. Through such tensions we begin to see hints of the type of thinking processes which helped Anna mediate and eventually regulate her knowledge and learnings.

Section II

Research Question #2: What strategies did Anna use to self-regulate her learning?

At the primary school level, Anna had little interest in study outside the classroom. In response to the question: "How would you go about studying in primary school?" she said: "I didn't. I never would bring home books. If there was a project, it would come home Friday and go back Monday." (I/14)

In secondary school, efforts to learn increased, but "not effectively" (I/14). Anna became more aware of her reading problems and her difficulty in grasping, structuring and organizing pieces of information into a holistic picture.

At the primary school level, Anna often took refuge in daydreaming as a means to cope with her confusion:

I was always, not quite scolded, almost...I don't know quite what the word is, because of daydreaming. I spent a lot of time daydreaming in class. So I was quite happy to just let me daydream in class. And yet, I actually did care about the work I was doing, but I would often daydream.(I/4)

We can see in this the first signs of Anna attempting to withdraw from the world around her. In fact, withdrawal became a coping strategy: "How did I cope? I really think part of it was just being very placating, invisible, not attracting attention." (I/12)

Seen in the context of her difficulty in grasping quickly and her difficulties in articulation, it seems her objective was to stay out of the limelight in order to avoid the anxiety of being "pushed

forward" and having to answer questions from the teacher.

Another way to cope with unwanted attention was through placating behaviour like smiling: "A coping strategy was just smiling, doing my best." (I/13) She believed that by being cooperative, smiling and giving the *impression* that she was doing her best she would not attract attention:

My strategy as a child of being cooperative, smiling and trying my hardest made it so that not enough attention was drawn to me so I didn't get pushed forward, which is kind of what it would have been like if I knew how to read. (I/12)

The motive of this kind of behavior strategy was that *academic* benefits would accrue from it. "I got to be passed because I could smile and they couldn't break their hearts and fail me, and...ah! because of my smile...they couldn't fail someone who smiled." (I/3)

Thus, placating behavior became a *substitute* for classroom participation and learning. This withdrawal and masking behavior continued right till high school, where it took a radical turn. Anna then developed a more aggressive stance toward learning.

Critical change in my life at one point in time, which happened when I was 16, which was in high school, but it affects how, as a child, I was so wall-flowerish, becoming a very, almost obnoxious, person. (II/19)

At a swimming instructor's course, she heard the person conducting the course say:

You have to be able to be the child within you. In order to teach children, you have to access that child, and you don't get the kid's attention by saying: 'Oh, can you do this for me?' You have to be larger than life. (II/19)

So, Anna attempted to assume a larger-than-life role in the classroom:

So from the age of 16 on until university, I became very... up to that point in time I would never raise my hand in class. After that, I sat in the front and my hand was up every single solitary time when the teacher asked a question. (II/19)

In fact, it was not until university that she realized that many of the teachers' questions were purely rhetorical and did not require raising your hand.

The aggressive stance was accentuated at the university by the fact that she was paying for her studies and she felt justified in demanding the right to know:

The difference in between university and high school is I paid for university. I am going to learn if it kills me because I put out good money. If the professor is in my view not helping me learn, I badger them. You could say attack them. (II/21)

So, we see a shift away from the withdrawing personality of early school to a more aggressive Anna in later years. However, the earlier strategy of using her personality to get on the right side of teachers continued from school to university. She confided: "I find the best way, the strategy I use is to...always have the teacher know me as an individual." (II/21) Persistent interacting with teachers might get marks if academic achievement could not:

The professors could know that I'm intelligent because you could have a conversation about what we've talked about in class... I'm able to verbalize and talk to them about it, but on the test, fail, because I just couldn't put it into words. I always felt the professors would go easy on me in regards to marking answers because they knew I knew, but I just wasn't able to put it out. (II/21,22)

The earlier tendency to daydream and display inattentiveness persisted, in varying degrees, till university. Over the years, Anna tried a variety of strategies to cope with her inattentiveness. She remarked: "So I figured I was daydreaming.... So one of the strategies I did in university is I ate my tongue, which is... not a particularly pleasant thing to do." (II/20)

While such strategies were directed outward, towards teachers and class lessons, another strategy was adopted early in school to build a positive self-concept and self-esteem. This strategy involved several layers.

We saw earlier how Anna's conviction in her own logic led to a distrust of teachers. This has significance in the context of learning strategies as well. She developed the belief that *she* was indeed intelligent, despite what others said. In the interviews, she was not clear in her own mind whether she genuinely believed this, or that she adopted the belief merely as a reaction to the anxiety of being identified as stupid. "Whether I was just being totally defiant, and just because my Mom said I was stupid, I decided that I was smart." (I/13) At another point in the interview, she affirmed: "And then there's always the glimmerings of geniusness." (I/7)

Throughout the interviews, we find that she used this positive belief in her capacities to override the doubts that she had about herself, especially those that were generated from her grades and other learning experiences. Therefore, her energies were directed toward creating the impression, both for others as well as for herself, that she was not stupid but smart: "For my whole life, it has been important that I perceive myself to be smart, so I created a way of seeing that I was smart." (III/27)

Thus, despite the difficulties in articulation, she did not see her reading experience negatively: "I don't think I experienced myself as a bad reader." (I/10) In school, she learned to make

a distinction between other children's apparent achievements and their actual capabilities. "The projects that I thought the parents helped them with didn't correspond to my measurement of their intelligence." (I/9)

Her confidence in her own capabilities was accompanied by the feeling that she had to protect her intelligence from being in any way degraded by others: "I guess another way I had of compensating, coping... how did I protect myself, knowing I was intelligent." (I/12)

One of the strategies adopted to protect herself was to avoid contact with those whom she perceived as more intelligent than she was: "I have a huge coping strategy of being able to ignore anyone who is smarter than me." (I/7)

This strategy was apparently built on the same level of distrust that she had of teachers: "I created, protected myself, you know, they had to be insane; *I* couldn't be, you know, *they* had to be crazy." (III/29) At another point, the self and the other are described in terms perfect and imperfect: "Let's face it, my little view, image, of myself is that I'm perfect and everyone else is not perfect. (II/20)

Such descriptions of her self-esteem lead one to suspect that perhaps Anna built an exaggerated self-concept. It is possible to argue that this larger-than-life self-concept became a necessity as a result of the anxiety that accompanied her learning struggles. The optimistic self-concept compensated for her awareness of her difficulties. Indeed, the exaggerated self-concept became a comforting habit:

I didn't like who I was, who I came across as. To me that really isn't me, that is how

I have to act, to show I'm smart, the question is why? It's a habit. (III/29)

Another strategy that Anna adopted to compensate for the way others perceived her was to

resort to, as she put it, "verbal diarrhea" or a kind of stream-of-consciousness verbalization in the hope that by talking incessantly she would say at least one thing that was "not stupid." In high school and later, verbal diarrhea was an important coping strategy to compensate for the low-esteem that resulted from the "stupid" self-image.

For me for my whole life, it has been important that I perceive myself to be smart, so I created a way of seeing that I was smart, the strategies I used which one of them being this verbal diarrhea, I thought was effective. In reality, the interpretations from the other side of the table is that it may be effective in the sense that, yes, they know that I'm smart. [But] if I was connected to the information, I wouldn't have to throw it all out. I could put out what I perceived as important, as opposed to giving the whole nine yards. (III/27)

The verbal diarrhea was compulsive behaviour. She had seen others indulge in it and "looked down" on them, but she could not resist it herself:

I had observed other people verbal diarrheating, and I looked down upon them, thinking that they're not intelligent, and then I do the exact same thing myself, but ... it created a uncomfortableness in me. (III/26)

Most important, the verbal diarrhea was a "desperate" means to obtain affirmation from others:

I'm so desperate for the person to recognize I'm intelligent, smart... I think it's a personality style of myself, that I'm always trying to please someone, that is a strong trait with me. I also think that I craved affirmation from someone, that 'Oh yes you are smart,' because I don't feel I was affirming myself with my intelligence. As much

[as I] would say I was smart, I didn't feel smart, and so I think that creates a desperateness all together. (III/27)

It also helped her to cope with her difficulty in processing questions, to the extent that classroom questions were "threatening":

That I'm desperate to get them to know I'm smart. The problem is how do I do it, and from being identified, and looking at how I was, I didn't listen to the question. So of course I have to throw out the whole nine yards, because I didn't know if they were asking about the beginning of the game or the end of the game. (III/27)

However, despite the confidence-building measures that included coping strategies and masks, we must remember that Anna also had a genuine motivation to learn. Therefore, the question arises, what specific strategies did she employ to overcome learning difficulties?

The most important strategy that Anna adopted was to base her learning in concrete experience. We saw above how one of the means to avoid the classroom situation was to look out of the window. The world out there held much more promise than the classroom because it usually offered a visual contact with reality: "What was outside the classroom was more interesting than how they were presenting it in the classroom." (I/11) Concepts were hard to grasp unless they could be related to concrete, visual experience and practice. Play was a learning experience: "It wasn't taught to us, it was just through play, you sort of having something happen." (I/7)

Even before she joined school, there was an awareness that play could be a learning experience. For example, it created the opportunity to experiment with shapes, coordination, distance and so on:

Well, build it twice, are you a moron putting small brick with a big brick on top, you know the big brick goes on the bottom. Most children learn through experiment, and then that helps teach them. Because my mom used to let us trash her kitchen...it was not unusual for us to have pots stacked all over, and use bowls to throw at them, they were like our pins, and try to knock the pots over. Looking back as an adult, a great deal of physics is actually involved...And so...things like that in my childhood, before I hit the school system, enabled me to realize...these sort of things. (I/6)

Similarly, geometric patterns like circles and triangles had to be related to games she played as a child, before Grade 6. (I/7)

Evidence that Anna needed to ground her learning in personal experiences was clearly indicated when Anna's teachers took the time to teach her colours. Most children learned their colours long before Anna. She was now in Grade 7 or 8 and still not sure of all her colours.

I remember this lady came and was talking to me about colours, and she tried to teach me about auburn, and I couldn't remember that auburn meant nothing to me, until she actually said, 'My hair is auburn'. (I/1)

Ostensive definitions were easy to grasp, because pointing to something visual could convey the meaning of a word. It became operative in her learning strategies to always relate to concrete experience. Despite her reading difficulties in earlier grades, after Grade 4 she could be enthralled by books that she could relate to at a personal level. She recounted how she once came across a book that had her name in the title. Here was somebody, the heroine in the book, with whom she could identify. Reading became a pleasure because it was connected to her reality.

I remember... going with my sister to a friend's house and finding their attic with books and actually finding a book that, of course being a very egotistical person [Name/Title] attracted my attention. There was a whole series, and I just gobbled those up. That summer and, since then, I love reading, there's been no holding back for reading. But in the beginning it was... I did not like it at all. (I/8)

Around the same time, at age 8, she constructed the understanding that intelligence was "not based on reading, writing, math" (I/11).

It was based ... [on] taking the bus at 8 all by yourself and not having a parent with you... being able to go to the store and buying groceries and bring them home; so, to me, some practical day-to-day living things. I was way ahead of them... It actually gave me a slight superiority complex... If you're going to give directions, don't give me street names... Give me a graphical description of where we are going and I won't get lost. Now a lot of children are not very observant, upon their external surroundings; whereas to me that was very interesting and I paid a lot of attention to what was going on. (II/11)

The need to relate learning to concrete experience was reinforced by her Godfather, an elderly person, who "believed in my intelligence." (II/13) With him, she learnt that she was good at accomplishing practical tasks.

... concrete items would be put together. Most of my time with my Godfather was spent in the garden, or out fixing things, whether they be mechanical or a wooden fence. But it always seemed to me that I was being praised, like 'You're a genius'... I

never even thought of that'... 'How'd you figure that out?'... 'I couldn't have figured that out.' (I/13)

Similarly, because novels were closer to concrete experiences, they were an easier way to learning than textbooks. She "linked" textbook concepts to novels to envision them in a context:

So a lot of words... got in the back door... when we come to a concept in a textbook, I link it to a novel and say... that's what they're trying to do on the red moon. Like, it's totally off-base and you can't live on the red moon, but that's sort of how it gets linked in that sort of visual movie I have (II/22,23)

The need to relate learning to a narrative grounded in actual experience persisted into university. Theoretical anthropological concepts might have presented a difficulty, but when put in a narrative of an experience, they suddenly became meaningful because they were easier to visualize and put into context. She recounted how she read an anthropologist's account of living with a matriarchal tribe. For Anna, the concept of the head of a matriarchal society became concrete because it was easier to visualize and put into context: "All of a sudden there was a person behind the matriarchal person at the top of the hierarchy. All of a sudden that is Sheena, and all of a sudden it falls into place." (II/23)

Another learning strategy that Anna adopted at an early age, and crystallized in secondary school, was learning by rote:

I was pretty good in Latin because it was pure memorization, and to study that as I was delivering my paper route. It's 6 o'clock in the morning, I would have my list of 25 words I would have to know. I would, by the first house, have the first five

words down, and then by the next house have the next ten, and so it would just sort of keep... chunking. It really made sense, Greek and Latin. I chunked. (I/14)

Memorizing chunks of information was easy, but because there was little or no conceptual understanding, her so-called "chunking" method could collapse if she missed a link. "The bad thing was if I missed one of the words in the five...I missed the first word I wouldn't get the next four..."(I/14,15)

Anna clarified that this learning strategy of memorization had limited usefulness and was restricted to Greek and Latin. Because other subjects required reading and grasping concepts and larger patterns, she found that this strategy failed her there: "that made sense for Greek and Latin, but I applied that to nothing else because that was pure memorization for me." (I/15)

Thus even in her confusion and struggles Anna became aware of some personal realities that affected her thinking, learning and ability to demonstrate her knowledge.

Section III

Research Question #3: How did Anna cope with the various challenges presented by the tests that were utilized in the process of identifying her learning disability?

Anna's initial reaction to the assessment tests conducted by Dr. Groves was one of discomfort and distress. However, the post-assessment period turned out to be an enlightening experience that seems to have brought about some significant changes in her self-concept and her learning strategies.

The testing itself was a difficult process because it carried her back to the kind of learning difficulties she had known since childhood. The recollection was depressing: "It was just like being in school... It was kind of depressing, if you want to know." (II/18)

The tests required reading, comprehending and assimilating complex bits of information, which made her "mad":

There were these sentences and words, long lists of words, and sentences that got longer and longer, and I had to remember them and gee, wouldn't you know, I just couldn't remember them. I remember what they were about... but I was supposed to remember them. I knew I was supposed to listen, but I just couldn't do it. (II/18)

The difficulties with numbers and seeing patterns resurfaced: "Well another one I found upsetting was when I had to identify numbers and pick out the ones in a line that were the same. It's as if they kept moving..." (II/18)

Similarly, the tests brought back memories of the problems she had remembering dates:

I would never take a history course because dates, the numbers jumped around ...don't ask me anything about dates or when it happened. It just doesn't matter. I know you're supposed to know that in school, but it makes me crazy when you try to learn it. (II/20)

In the tests that required working on shapes, Anna did better because visualization, through concrete experience, was easier. Referring to her childhood ability to associate shapes with games she played, she said of the tests:

Actually I did pretty good at that, like ten times better or something. But you see that was a pattern, a shape, something I understand...I just had to look for other ones that looked just like it and that was kind of easy. (II/18)

However, the tests also brought back the old dislike for detail. That was "boring." She recounted:

He [Dr. Groves] said I didn't do too good at identifying details and lists of things, but that's boring. It's like I said before, once you know something, why go back over it... it's hard to concentrate on something you already know. (II/19)

This difficulty in focusing on details was accompanied by the difficulty in establishing links between pieces of information and to abstract the big picture. This aspect of the tests left Anna feeling that she had "mud on my face":

It's actually really, to me, a huge concept to try and understand ...that every paragraph has a major thought in it, and then ... to link the paragraphs together to make the whole. And I'm just sort of sitting there...Rightttt...So I guess part of the impact of the assessment is a way of saying, it is mud on my face... (II/23)

Significantly, the entire testing process, as before, left her feeling extremely vulnerable. Her self-esteem that she had built up by saying she was intelligent seemed threatened and she did not like the feeling. She had been "too self-centered to ask anyone for help" (II/20), but the testing only forced home the point that she *did* need assistance:

...there's always this struggle...when you're going through the testing, I have this ah...independent streak, it's called anal independent streak, that...the only person

I rely on is myself. So as I'm testing, all of a sudden it begins to come [to me] that I might need specialized assistance, and that grates on me because, let's face it, my little view, image, of myself is that I'm perfect and everyone else is not perfect. So I don't need assistance. (II/20)

She was filled with "fear" at the suggestion that the assessment should be followed up with medication to ease her learning disorders. The thought of becoming a "Charlie" haunted her.⁶ She was troubled that this whole process might have only a temporary therapeutic impact.

I feel like I'm a Charlie. So there is this aspect of a level of fear that I am just making a small change that will never stay and then it's going to disappear. And then where am I now. I'm afraid, afraid unless I understand my thinking better. I can't do this good quality work without the pills. (II/24)

However, the tests also brought home the reality of Anna's struggles. Her attempts at mediating her thinking became increasingly clarified through the testing process. The coping strategies and learning strategies that she was barely conscious of were now given a meaning, and whole new vistas of cognitive strategies seemed possible. She was "enlightened":

Enlightening would be the best word that comes to light...Of course I did not start in an enlightenment frame of mind, but by the end of the testing.... There were a lot of things that all of a sudden in my own life, my own memories, were actually validated...Rather than just say: 'Oh this is crap' and just throw it out the window, [I]

⁶ The main character of the book *No Flowers For Algernon* by Daniel Keys. The movie *Charlie* was based on the book.

sort of got on board saying 'Yeah, this is me' and from there we could go on to strategies. (II/15)

There were several positive outcomes from the assessment. A few can be enumerated as follows:

One, she realized that her "stutter" was actually related to her difficulties with auditory processing:

The stuttering I was doing...from Dr Groves and the testing...kind of makes sense. The time I could actually read the word, get it in the brain, get it back out the mouth, that's what kind of produced the stutter. (I/9)

Two, her confidence was built in the knowledge that her reading speed depended on *what* she was reading, for example a novel or a textbook:

The tests show my reading has a semantic component, of fluid reality to it, not just the written word... my assessment is that I actually read fast, depending on the type of material I am reading. (II/22)

Three, her doubts about her vocabulary were cleared when it was revealed to her that it was "not impaired":

The test results would also suggest that my vocabulary actually is not impaired, but that I have a strong vocabulary. I may not get to spell the words well but I understand the words well. (II/22)

Four, Anna's strong reliance on emotions and experiential and practical thinking was

especially addressed:

He [Dr. Groves] said that I rely a lot on my own experiences and feelings. I know that's true cause I didn't know that there could be any other way to think... you know abstract things doesn't have any feelings. (II/19)

This reliance on concrete experience was explained through her dependency on the right hemisphere of the brain for learning:

[The score of +29, HMI]...my test results say I start with kind of an extreme dependency on the right side...using pictures in your head to think with... That's why I like movies and things. I like stories. (II/18)

Five, a "big" outcome of the testing, was that she was able to get "the mud" off her face. She learned the importance of "webbing" (inter-relating bits of knowledge with other knowledge and with herself and her experiences). She organized her learning and for the first time in her life she deliberately and consciously began to self-regulate knowledge. The take-off point was Dr. Groves' comments about making links between paragraphs:

I'm reading a text book and all of a sudden I get this glimmering of the paragraph thing that Dr. Groves had [said], sort of like, they link. And I was sort of sitting there going 'Ooookaay! I've got mud on my face... These three paragraphs link. How did I not see this before? (II/23,24)

The awareness of linking developed further into realizing how as a child she only focussed on isolated events, without making connections between them to build a more comprehensive

picture. Her ability to focus her mental energy was now strengthened as she actively tried to make connections between familiar bits of information until a larger pattern was discerned:

Again that's come out of the testing...When we learn things, we link things together...I would almost say that the webbing is kind of like the...a big thing that separates pre and post from the testing...[As] a child, all knowledge is sort of spots and glimmers in me whereas as an adult...I now can say okay, we'll look at the life cycle of the frog, now we're looking at amphibians and marine animals and they can be linked, and you can make linkages to other things...And all of a sudden almost, a pattern emerges and that's what I'm calling the webbing, it was actually a pattern. It's not an individual event. (I/11,12)

As Anna reflected upon her past and present learning experiences she encountered her own defensiveness regarding learning. She began to realize that her need to maintain some sense of self-esteem while struggling with an undiagnosed learning disability probably explained why she refused to make use of help that was offered for her learning difficulties: "In our first degree, they had a study center. I walked in there once, and walked back out, too threatening." (III/33). This, as will be seen later, can be interpreted as a counter-dependent stance.

Section IV

Research Question #4: What personal meanings has Anna given to her past and present learning experiences?

An answer to the fourth research question has to be a rather comprehensive one. The very act of narrating an experience is putting meaning to it. Indeed, the very act of putting an experience

into language implies giving a meaning to that experience. As such, all the answers to the first three questions themselves answer the fourth question.

In view of the comprehensiveness of the question, however, an attempt will be made to derive the most generalized meanings that Anna attributed to her learning experiences before and after Dr. Groves' assessment. Such generalizations, this author believes, will distill the essence of the personal meanings that Anna gave to her past and present learning experiences.

In the course of the interviews, Anna began to show an ability to reflect and re-evaluate her past realities. This became apparent in the previous section where the effects of Dr. Groves' assessment on her thinking process were discussed. A post-assessment reflection, revaluation and change in perspective began to take shape. For instance, there was the awareness of the tension between how she perceived herself and how others perceived her. She saw that her need in this conflict was to protect herself from the image that others had of her:

I have a world view and through the identification process and reflecting through our past, that worldview of me, and how others see me, came into conflict. I was protecting that worldview. As a child who is right, I have to be right. (III/29)

She realized that a self-image itself was not the issue. The underlying reality of her struggles was not a personality problem but a learning disorder, of which she had not so far been aware:

I've done that whole degree without knowing I actually have a disability. And always felt that I just wasn't being taught right...But now since the assessment it's more of... almost validates my disability. (II/21)

Anna began to open up the "rigid" boxes that she put herself and her world into and which

she found so necessary to get along. Indeed, the masks that she had created in order to face others, including the image of the quiet, shy child who kept in the background as well the later aggressive learner who wanted to make an impression on the teachers to get good results, were dispelled. Before, it was "what you see is what you get"; now she wanted to say "Hey! There's more to me than what you see."

I have had very rigid constructs mentally to keep me moving forward. Those rigid constructs are at odds with the results and with the whole process of the testing, meaning [before] what you see with me is what you get. Since the testing, ... I am more than you see. (II/21)

In her own words, there had been "boundary shift." It is possible to argue that earlier, there was an amorphous distinction between the internal and the external in Anna's consciousness. Now she was able to *recognize* the boundary and, equally important, realize that she has been expending too much energy on understanding the external world at the cost of her internal: "I have gone to creating boundaries from the inside out...The difference is in the worldview." (III/35). This questioning led to a shift in the focus of attention from the external to the internal. She became aware how literally the self is the locus of self-awareness, self-concept and self-regulation

I have slowly but surely decreased the exterior energies and put it more to the interior. That there is a sense of self that is aware and works out of forming itself.
(III/30)

There is also a sense of how Anna could begin to control her life. She hesitated to use the word "control" because it might suggest that she was *reverting* to the earlier mechanisms that could

be called control rationalizations:

Rather than being at the mercy of the exterior, I get to control from the inside, how much air space I'm going to take up...and what type of character or flavor is it going to have.... I hesitate to use the word control. I am acting... responsibly unto myself. I would prefer that to the word control. (III/34)

Indeed, Anna made a very subtle shift from control to self-determination. It is a newfound freedom to *choose* in accordance with the demands of the situation. The radical shift is from control through specious rationalization of the outside to autonomy and rational choice from the inside: "I'm not controlling myself, but I am choosing and picking what I want to do according to the situation, rather than the situation telling me what to do." (III/34)

We must not underestimate Anna's emphasis on the notion of control. Earlier in her life, she had resorted to a compulsive verbal diarrhea in the hope that by talking incessantly she would say at least one thing that was "not stupid." In high school and later, verbal diarrhea was a "desperate" coping strategy for the low-esteem that resulted from the "stupid" self-image.

...for me for my whole life, it has been important that I perceive myself to be smart, so I created a way of seeing that I was smart, the strategies I used which one of them being this verbal diarrhea (III/27)... I had observed other people verbal diarrheing, and I looked down upon them, thinking that they're not intelligent, and then I do the exact same thing myself (III/26)... I'm so desperate for the person to recognize I'm intelligent, smart... (III/27)

Now Anna says the "biggest" revelation, her epiphany, has been that she can control this

excessive verbalization

... the biggest learning has been, I would like to have control over what I'm saying, and how it's actually interpreted, rather than me relying on someone else to try to couple together what I'm trying to say. (III/25)

The excessive verbalization might have been a mere coping strategy, but it was disturbing and left her feeling ashamed. Ashamed, yet proud that she could walk "to the beat of a different drummer." This ambivalence, however, also opens possibilities for the future. At the very minimum, she might make an effort to drop the protective shield of excessive verbalization by stopping and pulling herself together:

The ability to pull together. I'm learning to listen better, which helps me understand the meaning of things. I have always felt that I have a verbal diarrhea. I do walk to the beat of a different drummer. At times I think I'm proud of that at other times I think I'm also ashamed, because I don't fit in. Created a discord in me, uncomfortableness in me, that I wanted to change. (III/26)

There was now a crucial "slowing down" and deliberation in the learning process:

I'm learning slowly to speak, but not with a stream of consciousness, but linking it to the content that it is appropriate to, I'm learning to think through thoughts...
(III/26)

Indeed, it might seem ironical, even paradoxical, that a slow learner needs to slow down in order to learn better. That, however, is typically intrinsic to Anna's condition. Her quick, compulsive

reactions only directed her away from the lesson in front of her. As she puts it, she never allowed herself the luxury of stopping to reflect:

It's like I'm chasing socks, and every time I chase a sock, the previous sock gets left behind. And so it takes me, a lot of energy and a lot of time to actually get out what I'm saying, and think about what I wanted to say, and actually put so that it means what I want it to mean. But that takes time, and I've never allowed myself that time.

(III/25)

The slowing down was not only in speech but was reflected in several areas of learning like paying more attention to lectures on topics she is already familiar with and preparing second drafts of papers:

There have been drastic changes... drafts. I used to write a paper, and that would be the one I would hand in. Now have a couple of drafts. Another thing that I do is I will read aloud [the] essay. Often I find that I'll end up, I've written the essay, but I remove myself from the essay. So if I've written it and I've lost myself, there's no hope that anyone else who is reading it is going to be able to understand it. (III/31)

Making connections, or getting the "flow" of the content was another area in which slowing down proved effective: "I had to think through what I'm doing. I would say... I've gone from written diarrhea to a form that is... flowing without ongoing." (III/32) An ability to compare and contrast developed:

There was no comparison or contrasting.... And that's linked directly to how I studied.... I didn't make those linkages to begin with. I didn't.... that came forward from the testing as a strategy...(I/14)

The slowing down process created the conditions for reflection and awareness: "I am nurturing my sense of self-awareness. There is... time and energy given to it. Allowing myself to stay there." (III/34)

Anna experienced the assessment and interview process as essentially empowering. This sense of empowerment calmed Anna and allowed her to be less hostile in her pursuit of knowledge.

It's a lot more easier still to blame someone else sometimes. In that first degree I think I could have been viewed as a very aggressive student, uhmm because I insisted on things. Now, I sort of see it as uplifting the mass of professors, out of disknowledge [*sic*] to knowledge. (II/20,21)

The distrust of teachers and aggressiveness in the learning environment gave way to self-regulation. The sense of empowerment allowed her to direct her efforts away from confrontation and towards dialogue: "I've gone from a... I would almost say a passively aggressive learner, to a... I can't even think of the word, self-directed learner." (III/33)

We saw earlier how much of Anna's confusion resulted from her difficulty in grasping questions, to the extent that the question was seen as a threat. One way to fight off the threat was to change the question itself, so that the onus of the question was put on the teacher rather than on her. Now she moves away from protecting herself from the threat of the question to actually answering the question:

... we go back to I didn't actually pay attention to what the question was, because I was threatened... I'm able to stay on the topic now, because I'm not changing the topic on the professor. (III/30)

Thus empowerment reduced the stress of protecting herself from the perceived threat of the question:

It [the experience of empowerment] is a stress reduction. I [am] able to harness more energy to answer the right question. It's not that there is more energy around. It's that I'm not using up so much energy creating what I'm suppose to be working on. (III/31)

Significantly, the sense of empowerment also enabled her to assume a sense of responsibility for her learning. The focus shifted from the teacher, who was earlier responsible for her learning, to herself as a self-regulating, self-actuating agent of learning: "Part of the responsibility in this [current] degree is I've taken responsibility for my own learning." (II/20)

An interesting parallel Anna drew in the context of the responsibility emerged with metaphors of a sponge and a shop vac:

Rather than being a sponge that the professor will pour knowledge into, I am now a shop vac, going around and vacuuming up the knowledge I want, and keeping it rather than going straight through it. So there is an empowerment to my learning. (III/33)

The stopping and reflecting was not easy and, perhaps, is still not fully accomplished. It was not easy, but it was a start. The dialogue with learning, the teacher and indeed the learner had begun:

I guess what it is a personal responsibility of learning. I am asking them to in essence be in a partnership with me. I'm verifying, clarifying my knowledge. I think the by-product that has happened is a building a respect and leave the driving force for verbal diarrhea has decreased. (III/28)

Anna was indeed enlightened in the post-assessment period. There is a poignant moment in the final interview when Anna used the metaphor of the fishing net to describe what was essentially her mind. Earlier the lines of the net were not interwoven, not tied together, and the "fish," that is, knowledge, could push the lines away and escape: "So if you have this fishing net, but there are no knots because it doesn't connect, the fish are going to swim through. You can't hold knowledge..." (III/32)

However, reflection led to Anna's most important epiphany. She can learn how to weave the net, tie knots, and harvest knowledge:

Reflection...It is like the needle and thread that sews it all together...it ties it all together, it becomes the knot in the net, the fisherman's net. It becomes your affirming-reaffirming portion of yourself. That just hit me now...I'll be famous! (III/36)

Thus Anna would seemingly have experienced the testing, feedback and interview process as a journey towards becoming a more reflective and deliberative participant in her learning.

Elements of self-doubt remain, but the important achievement of the process was the increasing awareness that if she reworked her approach to learning, she could meet academic requirements with much less effort than was required in the past. Much of the effort would involve

taking her attention away from maintaining an image (of being “smart”) and re-focussing it on learning strategies that are effective for her.

William's Profile

William (pseudonym) was the second student participant to be interviewed. At the time of writing he was a single man, without children, in his early 30's and has recently experienced several crises in his life.

One year earlier, William had faced the termination of an eight-year relationship that had brought support and stability to his life. Less than two months after the decision of William's girlfriend to separate, he lost his job and house. Economic considerations forced him to move back to his parents' home.

These crises positioned William to seriously consider post-secondary education. He has a long history of learning problems, particularly with receptive and expressive language, which date back to his earliest grades in primary school.

William's interest in sports led him into becoming a well-recognized athlete in several sports as an adult. His knowledge and skills in one sport in particular have brought him recognition at the national level.

William's decision to return to school compelled him to seek a full psycho-educational assessment with Dr. J. Robert Groves, Ph.D.(C) Psyc. in the latter half of the year 2000. The tests also showed that William had particular strengths in areas of performance and non-verbal intelligence.

Due to his limited education (he obtained a Graduate Equivalency Diploma in his early 20's), William went through four jobs without ever having established a career. William states that he has always been quiet and shy and, although he was friendly and cooperative during all our meetings, his lack of comfort with verbal expression appeared to have made the interview process

somewhat difficult for him.

He does assert that the assessment process has been very helpful and that he has begun to develop new learning strategies as a direct result of the assessment and feedback process. He is at present near the top of his class in information technology and finds the experience of other students identifying him as knowledgeable and an individual from whom they could seek assistance in their studies as a new but exciting reality.

Section I

Research Question #1: What are William's history and learning experiences?

As William recalled his learning history, he talked about the discomfort he felt from a very early age. "I felt generally uncomfortable in the classes [in Primary School]." (I/5) He identified this discomfort as being generated from his lack of ability to perform in school. He did have some awareness of his troubles; for example, he was aware of the difficulties he faced in reading: "I had a lot of problems reading I think in high school and primary school, I just didn't feel comfortable with it." (I/16)

He is even able to see that his reading problems probably affected his other studies:

I was never a real strong... in reading... which I think would hurt me during school, because my reading techniques weren't very good... I was having a lot of difficulty... my vocabulary and all that... wouldn't be very strong. (I/18)

Thus a major factor that helped to produce William's discomfort was his self-doubt regarding his academic capacities: "I didn't feel like in the class I was one of the brighter kids." (I/1). William accepted this self-doubt as something that was "normal": "I thought at the time that the other kids were just smarter than I was. I just sort of accepted it... I'm not as smart as the other kids." (I/3)

This "acceptance" of his perceived low intelligence, however, is not itself without doubt. Significantly, in high school he *questions* whether or not he was intelligent: "I was questioning my intelligence a lot when I was younger and so it sort of helped with confidence." (II/28)

There is clearly a dissonance in his self-concept and emotion. The *doubts* about his intelligence created *anxiety*. The *belief* in his intelligence created *self-confidence*. This was further exemplified in the following comments:

I'd have a lot of anxiety within myself because I knew that I was having a hard time understanding the work and I think a part of me thought...I'm not smart enough to understand anything. Another part of me knew I had other aspects of intelligence.

So I kind of thought part of me was intelligent ...so I had a little confidence in myself. (III/31)

This low level of confidence in himself, however, was not enough. The predominant experience was one of being uncomfortable in the presence of others, and this continued beyond primary school: "I think I felt more uncomfortable around people and becoming even more so than I did in primary school." (I/8)

This discomfort was an anxiety filled, emotional pain, attached to his struggles. "I had a lot of anxiety and fear and uncomfortableness in myself." (I/15)

Williams repeated this awareness several times in the interview process. He categorically stated that it was the school environment that produced anxiety over his learning and fear of being ridiculed: "I had a lot of anxiety in my life. Having worries all the time... Mainly from school... Fear of school... fear of looking stupid and ridiculous." (III/35)

The anxiety played two major influences in his life. One, he became aware that he had

problems learning and that he found it difficult to come to terms with this awareness. Therefore, his answer was to draw away from the school environment:

I've learned coming to terms with why I had so many problems when I was younger... in high school and primary school. I had problems learning, accepting that I had problems learning. That is why I tuned out. (III/30)

Two, the focus of his energies shifted from learning to maintaining a self-image. In other words, a self-image was more important than learning:

...worrying how I fit in...the fear of looking stupid in class. Like it takes my energy to concentrate on the work as opposed to being worried about how stupid I look or how I look to other people. (III/33)

The anxiety, and the consequent low self-esteem, drained him of any motivation to learn. "I wasn't totally motivated for school all the time." (I/1)

The lack of motivation also came up several times in the interviews. William apparently made a close connection between intelligence and motivation. If you were intelligent, you would have motivation to learn. On the other hand, if you were not intelligent, the possibility of having motivation was somehow limited. This perceived relationship between intelligence and motivation was borne out by the following remark:

I wasn't sure how smart I was but part of me was just saying I'm just not a motivated person...I thought that [intelligence] thrives on just motivation. And um...then I just never got myself together...I just was not motivated as a kid...I did have problems learning. (III/31)

Thus anxiety seemed to have affected several aspects of his learning and personal development. His doubts about his intelligence, his low self-esteem and lack of motivation made him a withdrawn person, as he hoped to avoid situations that would evoke the anxiety:

... in high school and primary school... [I was] very closed emotionally. I was very shy... very quiet. I tried to separate myself from my feelings. Avoiding feeling I guess... all the negative forces in my life. (III/36)

This also made him a ready target for, one can assume, bullying, barbs, jokes and so on, which often happens in any school environment: "I think I was one of the guys who got picked on a lot. I was shy, I was quiet. I didn't have a lot of confidence in myself when I was a young kid." (I/3)

Apparently, he does not do a very good job of hiding his low self-esteem. His discomfort seemed to have been observed by both teachers and fellow students: "They probably picked up on the fact that my self-esteem, self-confidence wasn't there." (I/3)

William's anxiety might have been moderated had he experienced a good relationship with his teachers. However, he reported that: "As I was saying before, in primary school I didn't really have a good rapport [with the teachers]. I think it was the same thing in high school." (I/10)

An example William gave of his high school experiences helps us understand why he chose to blur the issues around his intelligence rather than confront them:

I remember one incident... he [the teacher] knew that I wasn't paying attention in his class... he asked me a question I didn't know the answer to and... in front of the whole class... he called me stupid and he goes 'I'll spell it out for you... s-t- u-p-i-d'.

All of my friends were saying I should make a complaint to the principal. I just sat there... I didn't know what to do... didn't know...couldn't defend myself... maybe was accepting the fact that I'm not as smart as the other kids. (I/10,11)

It was difficult to be motivated to study when the learning environment was so discouraging. It is not that the effort was lacking: "I think at times I did put an effort in. I think at times it was because I wasn't able to... put the effort into it because... I wasn't properly organized within myself." (I/5)

He further said that although he put in some effort to learn, he needed personal attention and support to find ways, develop strategies, to study:

I don't think I was lazy... I think... I was putting some effort in... I don't know if I couldn't have done more. Maybe the fact that it was big classes... and you were shown the work, and maybe at times I needed some help. Help on organizing myself, on how to do it... how to effectively, efficiently do the work. (I/6)

William's parents did try and help him:

I think my parents were very good parents. They were very concerned about me. I got sent to the other school at an early age... because I was having trouble in this one school... I think that they were concerned... to help me. (I/7)

His parents' attempts to assist William would seem to confirm his own observations that he would benefit from having more attention paid to him while he was attempting to learn. However, this help needed to be continued beyond just one year

I was thinking about when I went to that small class. I remember that being a good year. I think that helped me a little bit the year after, but I went back to the way it was before, because I was sent to the regular classes. (I/6)

As William got older he was better able to reflect upon the conflict between his own sense of intelligence and his performance in school. With time, comments made to him as a teenager, began to take on new importance:

I guess in school people just figured that I wasn't one of the bright guys... but I remember talking to a lot of people one-on-one and stuff in different situations... a lot of people saying, 'You're not so dumb after all'. That was more in high school. (I/12)

These comments became more relevant not only as he gained distance from his primary and secondary academic downfalls but also as he experienced successes in other parts of his life, particularly in sports. On the field, he displayed exceptional abilities to strategize, reason and foresee the flow of the game. These abilities stood in stark contrast to his classroom experiences:

I met people that were watching... high-level games and... their comments gave me a sense that my... shortcomings in school... there is more to it than the fact of just sitting back and thinking I was not very smart. (III/33)

William began to pull upon such experiences as he reassessed his abilities and regained a measure of self-confidence:

There was always a sense in me that I was able to do better...I played sports a lot of the years and I was able to do well in sports... It gave me a sense of...gave me a lot of self-confidence in that area. (III/33)

William learned to recognize particular patterns in the flow of sports competition and with a little mental effort foresaw the flow of the play, thus positioning himself to intervene in the competition. This almost automatized understanding may be related to his implicit memory. The cognitive skills that helped him in sports also helped him to learn in high school science labs.

This review of William's history reveals the self-doubt that is generated through embarrassing and humiliating conditions. By accepting himself as "not bright" he hoped to control and lower expectations on his performance. The stress of the school situation, however, led him to behave in a manner that resulted in his being thrown out of school. Perhaps this was just one more way to cope and avoid a painful situation.

What was a significant factor in all his learning struggles is that, despite dropping out of school, he has received much-needed support and affirmation from his parents. Over the years this support was reinforced by his peers and sports fans, as well as, in later years, in the work environment. This support went a long way towards helping him reconsider his many negative educational experiences.

Section II

Research Question #2: What strategies did William used to self-regulate his learning?

As we investigate William's attempts to learn, it is important to remind ourselves of some of the issues he was coping with, such as the nebulous dissonance he experienced throughout school

I think that... looking back and reflecting on it... there was a conflict. But I don't remember having a feeling about that conflict. I just remembered that there was something that I didn't feel right... (I/7)

William developed a series of coping strategies to deal with his discomfort, lack of confidence and self-doubt. In primary school, one of the ways was to mentally tune out: "At times...in school, my mind wouldn't be totally focused. It would just sort of wander off at times." (I/3,4)

We get the first hint of William's attempts to withdraw from his lessons. In primary school, William also saw the significance of projecting an image of himself as unintelligent as a way to cope with his learning situations: "I wasn't known to be one of the smarter guys. I would just project that image [of being]... one of the dumber guys... I'd just sort of accepted that. I'd just act a little." (I/5)

Acting out a role gave him a sense of control and helped to blur the line between actually not understanding and pretending not to understand.

I think sometimes I'd get attention just saying stupid stuff in front of the other kids. Sometimes it was just goofing around, making jokes, but there are other times that I was just accepting myself not being as smart. You had to put an adjective in a word, the boy and girl in something, and I used the word like the boy and girl stripped each other. Everybody laughs and I was sent to the principal's office. That wasn't one where I was being stupid... that was one that I was being goofy. But I mean there's other times that I've sort of deliberately said the wrong answer or something that

might be funny but... but it's more... it's just a stupid answer that people would laugh at me so I would get the attention. (I/5)

However, clowning around, with the underlying intention of drawing attention away from his learning difficulties, was apparently limited. The overriding impression we get is of a shy and withdrawn child, of whom we got a glimpse in the previous section. The fear of looking stupid was the prime motivator for withdrawal. Thus the question about how he coped with the fear of looking stupid was answered as follows:

Well, by tuning out I would not be answering any questions. I tried to sit at the back of the class and hope no one would see me. Uhmm...the questions did come my way; I would try and answer them as best as possible. I guess I had... I was always sort of nervous around class... and around large groups of people. (III/30)

In primary and secondary school, William's struggles clearly affected his interest and commitment to learning. He withdrew. By high school the coping strategy he adopted was to turn away from it altogether through drugs and truancy. He "started doing a lot of drugs... to cope and get by." (I/8)

It was the easy answer to his learning struggles: "By tuning out... I didn't have to deal with the problems of myself and problems I was having in school." (III/30) Eventually, this tuning out developed to a point of simply not attending school.

In grade 9... I was just starting to do that [drugs] once in a while...in grade 10 and 11 we started to be really regular. So I ended up missing a lot of classes and we'd

**find ways to beat the system at the time... we'd show up to be listed as there all day,
but we wouldn't show up to any of the classes... (I/8)**

**William's need to escape became more pronounced as the years went by. He conveyed the
sense of a complete disinterestedness in the world around him:**

**I was the type of person that I'd be very quiet... but it just kind of helped me escape
because I would smoke [dope] and I wouldn't think of anything...just ignore all of
what's going on. (I/11)**

**So far, William's coping strategies have been identified. His early attempts to consciously
develop specific learning strategies were apparently not successful. A course in learning techniques
was of little use. Instead of developing learning strategies, he developed coping strategies. However,
strategies not connected to an individual's realities often led to frustration and a sense of
disempowerment:**

**I took a course but I did not understand...the little techniques in helping me in
school....I felt helpless, I wasn't able to help myself in any way...very
confused...scared. (III/31)**

**There was a turnaround in William's life a few years after high school. The saving grace
came from sports. We observed earlier that he developed the skills to strategize, reason and foresee
the flow of the game. His success in sports redeemed his self-confidence and, more important, he
began to apply field strategies to learning. Just as in sports, in studies too he learned to focus on
mastering his immediate moves rather than placing his energy on the outcome.**

I always associate things, compare some of my learning strategies in school to playing sports... getting ready for an exam and concentrating on all the areas and spending mental energy on things that are important instead of worrying about the outcome of the exam. (III/34)

His coping strategies in terms of mediating and regulating the content of school subjects included reading "help books" as opposed to textbooks. He focussed his efforts on the outcome of his performance with little regard for the act of learning itself. He narrated how getting the general picture from Cole's notes was sufficient for passing an exam. The details of a textbook were too strenuous because that would mean getting involved in complex language:

In high school... I would buy the Cole's notes and quickly read it and I would get the general point of it... and then hope to get by the exam or the test... I don't even think I read a book in high school to tell you the truth. (I/16)

William also found that performing activities while learning helped him concentrate and allowed him to better understand topics of conversation. Interestingly, no sooner did these words come out of his mouth than he reverted to his enjoyment of sports, suggesting that there was a connection between classroom learning through concrete experience and sports. He talked of how he could relate easily with science as a subject:

Science, I remember kind of enjoying that subject because we'd always be doing stuff, doing experiments, as opposed to just sitting there learning theory... obviously I enjoyed Phys. Ed. I was into a lot of sports. (I/16)

Science was interesting precisely because it involved seeing-and-doing: "You had an

experiment to do... you could see it all happening as opposed to reading.” (I/16)

We can relate this comment to an earlier statement regarding his getting lost in larger classes. It seems that William was better able to follow explanations and understand his learnings when teachers clarified the lectures one-on-one. William’s ability to recall significant past individuals and situations demonstrates an important understanding of his learning strategies: “He was an older guy. I can’t remember his name... I can see him... he kind of took a liking with me... he was a really good teacher...” (I/17)

This teacher took an interest in William's progress and the personalized attention helped increase motivation and understanding: “He’d teach the student individually... I remember him helping me out a lot with experiments. I think that helped motivation a bit.” (I/17)

Another important insight regarding William's learning strategies came from his observation that he went for a general picture when learning something:

I need to go through all the general concepts first. Like reading the table contents and things in general... so I could understand the working down... more details to associate with details a bit. Understanding general concepts were important. So it makes me ask more questions like how and why. It was important um.... and why things work a certain way and how they are all connected. So I can keep it in mind when I am learning stuff. (III/33,34)

This observation was indeed revealing and is crucial to understand how William learned. Rather than infer a generalization by abstracting from specific details, William prefers to “know” the generalization first, believing that it will then be easier to infer the specifics from it. Another

observation he made further clarified the comments above. He spoke about learning through association, that is, associating a detail with a general picture.

How I learn best? The fact that I have...to associate them to things I already know...

I'm learning something I missed, and started off learning knowledge... general aspects first. General parts of the whole picture first and then working of all the details afterwards...associate each detail with a larger picture. (II/26,27)

We can clearly see how William must have progressed to learn. We could say that it was important for him to contextualize pieces of information in a global framework in order to grasp them.

William had made it clear that in his youth he was not very aware of how to help himself learn. He would truly seem to have been lost in that area and this led to a lack of motivation. With time and reflection, he was more able to conscientiously clarify those situations which helped him understand his courses of study, for example his enjoyment of science in labs.

He even showed attempts at self-regulation, for example, reading Coles's notes and making use of hands-on and visual experience. However, due to the many psychological and learning struggles he experienced, William was unable to capitalize in an effective manner upon these early attempts to mediate his learnings.

Section III

Research Question #3: How did William cope with various tests used to identify his learning disability?

William's initial reaction towards the testing was one of trepidation. The taste of failure was all too familiar: "I really did not want to know about myself... I was too afraid to go ahead. There was a lot of fear in it... a fear to learn about myself... Learning that I was stupid." (III/35)

However, as the tests progressed, William went through the process rather well. He was sometimes nervous, but did not find any of the tests disturbing in the sense that they did not produce anxiety or panic reactions. In fact, he approached the tests rather philosophically, seeing them as a challenge worthy to be accomplished because they would help him to understand and refine his current and future learning strategies: "I enjoyed some of tests, not all of them... interesting... challenging." (II/24)

Some, of course, were too challenging, inviting frustration: "In some of the tests I had problems with... I guess I had some thoughts, to not doing so well. I was very frustrated." (II/24)

As William reviewed and reflected upon his testing experiences with Dr. Groves, however, we can see that there were several elements that likely contributed to his ability to concentrate and perform successfully during testing.

William is significantly more mature now than he was in high school. In the intervening years he has had a number of life experiences and the tests put many aspects of his learning and himself in perspective: "Testing... was a very positive learning experience... learning about myself and how I learn... how I react to different situations." (II/19)

In addition, William said that his values had changed over the years. As opposed to the earlier inclination to tune out, he was now enthusiastic about returning to studies: "Going back to school [returning to university] taking various courses and doing well at school. It was really important to myself." (II/26)

As noted in earlier sections of the profile, it is very likely that the role played by William's parents contributed to his sense of his own worth. This would be an important contribution to William's positive self-concept, particularly as a counter-balance to his educational disappointments in past years. He came to the testing with the full support of his parents: "I was living with my parents for a time and they were supportive of the testing. They were there to help me, financially and emotionally." (II/25)

Finally, the supportive environment provided by Dr. Groves and his staff, including their patient clarification of the task requirements in each test, helped William focus his energies on the task at hand:

The people were nice, they explained everything to me. What I was supposed to do and everything was straightforward. Going through a few examples and all that. I think it seemed to work out well, I knew what I had to do in each test. (II/25)

Although William could always tell us the strategies he used in each test, we can sometimes surmise the strategy by the nature of the test and task requirement. An example would be Test #7 of the WJR. Here, he was given an outcome and a series of possible strategies that could lead to that outcome. All this was presented by way of coloured squares with a very limited language component. Normally, a systematic and deductive approach is rewarded with success, just as an intuitive approach will most often lead to failure. Remembering that the goal was most often clearly defined in this test, William commented that: "One of the tests that I enjoyed was the coloured squares... I had to solve puzzles [WJR Test #7: Analysis/Synthesis]... by putting them together... that was very good." (II/20)

What William was not told was the fact that these coloured squares were visual and

symbolic representations of mathematical formulas. Although William was not aware of this, his comments about SATA Test #3: Quantitative Reasoning were revealing:

A lot of the math tests I found it was great, comprehending quite well and math reasoning test...using numbers and logic. Figuring out the next number and they would give you three or four numbers and you had to figure out what goes with that...I was able to figure that out. I found that challenging and fun. (II/20,21)

The comments suggest that his systematic reasoning, which he had developed through thinking out moves in sports, had benefited him in mathematics.

In WJR Test #14: Concept Formation, the factors that were to be compared and contrasted were clearly defined in the test. William commented: "Another test was shapes and colors and you had to put them together to associate them with the pictures.... I found those very good." (II/20) Evidently, when the task is clearly defined for him, he is quite capable of highly abstract reasoning.

William's remarks about the strategies that he used to succeed in several of the tests help confirm his need to ground his memory and learning processes in visual concepts, like associating names with faces. He needs to visualize the face before he can associate a name with it:

I was given pictures and had to associate pictures with something [WJR #1: Memory for Names]. I had to connect them through their names... I don't remember what I did for WJR #4... I think for Kiptron I thought he looked like a cat... maybe a space cat... I thought Kiptron sounded like a cat's name. I sort of look for ways to associate... connect the faces with some name. I always started with their face first... it just seemed to be the place to start. (II/19)

He supported this statement by following it up with another that confirmed his need for visual experience:

They showed you some pictures which you had to remember and you had to go back and remember the stuff like... the order they were in... The outcome I think [was] that I...had a visual image in my head. As I was saying earlier when I experience something or see it...it would help me. So some of the tests I did, with that were very helpful... one of them showing pictures and had to show another set of pictures...connect them. [WJR Test #12: Picture Recognition]. I just remember being quite confident in tests and doing well then, enjoying it. (II/22)

He further clarified that not only did he operate best with a visual orientation but that he also benefited greatly when he began with a global perspective. This helped orient his thinking. As he understood the outcome, he could better associate and relate individual components.

There was a test I was given a big picture and had to draw over it [Rey Complex Figure]. I learned a lot because it had a big figure.... I figured what would be the most efficient way to draw it and that was starting with the whole picture and working on the details. I get the whole picture first and I can attach the details to the whole picture. It was a lot easier for me. (II/20)

Similarly, his comments on another test in the same series showed how he began with the big picture and then filled in the details that he remembered:

The second test I was given [Rey Complex Figure: Memory], I had already been shown the pictures and then I had to draw the picture. So I think what I did was I

drew the whole picture around the whole... like and... square I drew right around it... and then I started adding on all the... anything I could remember to add to it....
(II/20)

Through the assessment feedback with Dr. Groves, William had the opportunity to reflect upon other learnings he had gained from a review of his performance in the Rey Complex Figure.

The other thing I mentioned earlier was that the test where I [am]... working with general concepts and... working out all the details and putting the general details to the concepts. [Rey Complex Figure]. I was off on the details on connecting the lines. I'd overshoot the line or you know the line would not quite touch. Just little details like that which kind of affected making the connections on every detailed coloured picture. I was told that. Just missing a couple of connections I guess sounds like me.
It is something good to be aware of. (II/21,22)

His strength as a systematic and visual thinker and his need for a global perspective were further confirmed when William discussed the results and strategies of SATA Test #2: Non-verbal Reasoning. With a little extra time, he was able to discern the patterns correctly:

You had a series of shapes, designs [and boxes]... You had to fill in the third box in the third row.... the empty one... and you could choose from five... choices A, B, C, D, E.... Well I'd take A and put it in the empty box and see if it looked right... if it seemed to be... part of the puzzle... part of the pattern... and if it wasn't then I'd put in B or C.... It would just look right... it would just complete the series. Like

once it was there it would just fit right in... if they were moving the dots from left to right then it would be the furthestest one to the right... With extra time I did a lot better. (II/21)

William's understanding of various factors that inhibit his learning are of course just as important as identifying his strengths. It is here that he learned to give himself time to understand and learn and to ask questions so that he may be clearer about his learning. William did not fare so well with tests that measured the speed of certain cognitive processes. Thus the Visual Matching sub-test was "tough":

I guess I had a tough time with picking out one test... they were giving out a bunch of numbers [WJR Test #3: Visual Matching]... we had to pick out the matching numbers. I had a tough time with that... speed wise I was a little slow in identifying that... I certainly had problems with that. (II/23)

Similarly, the Cross Out sub-test was "frustrating":

I think there was one with numbers and one with shapes {WJR Test #10: Cross Out}.

I was a little slow on that. I don't know if I was a little frustrated doing it but getting results it's... it took me a while. (II/23)

A particular weakness of William was his difficulty in the use of language to identify patterns and relationships. This was brought to the fore by SATA Test #1: Verbal Reasoning:

I didn't enjoy the ones with the vocabulary as much. The language reasoning one, using language to solve problems. You're given a sentence of something and you had

to figure out what the problem was... the puzzle... like in the practice hot is to cold as big is to _____. Similar to the visual ones but they're using language. I remember not doing as well because it was getting a little more complicated on that. (II/22)

His difficulties with language were further highlighted in tests that involve *both* language and mathematics:

There was one using math, but it was a ...they were using more vocabulary than math [SATA Test #7: Applied Math]. Something like Shirley has \$5 and goes into the store and buys...so I was integrating both math and vocabulary. I didn't do as well on that well... because there was vocabulary involved. That's the only math test I found I wasn't comfortable with. (II/23)

Even William's visual skills, which we have seen were instrumental in his learning, had their constraints. A visual picture that exhibited parts of a whole could not always be deciphered, indicating William's difficulties in putting together parts to *achieve* a global picture:

There is one test that wasn't a complete picture [WJR Test #5: Visual Closure].... There were pieces missing in it and I had to figure out what it was. There was one with an airplane that wasn't fully together, and we had to figure out what it is. I didn't do quite as well. As I was saying before if I know the outcome or had experience in it...it helps me. (II/23)

Thus, it can be seen that though William had some difficulties in the testing process, the

predominant outcome was a positive one. The implications of this will become clearer in the next section. At this point it is important to note that the *positive* feedback he received about his intelligence from Dr. Groves and his affirming experiences through the testing process had crystallized a new reality for William. The old conflict in him, whether or not he was intelligent, loses its relevance as William consciously deliberates upon his strengths and weaknesses.

Looking back on the tests, I kind of realize that in high school and primary school that actually I was a lot smarter than I thought I was... I was looking at my strengths and not seeing what they were... what my strengths and weaknesses were when I was younger. I think that really hurt my confidence when I was questioning how intelligent I really was. But looking at these tests I can see now, I am quite capable of doing the lot of the work out there which is detailed and knowing that about myself helps. (II/27,28)

This reality, of the irrelevance of the intelligent-not intelligent conflict, gives a whole new meaning to his life.

Section IV

Research Question #4: what personal meanings does William give to his past and present learning experiences?

We have seen William's past history of learning struggles and the anxiety and fear that were associated with it. Some of the strategies he adopted to learn, the most important being his need to visualize and globalize, and how sports helped him to focus on his studies and regain self-esteem,

were recounted. It was then showed how he went into the testing process with some trepidation, but came out it with confidence and enthusiasm with regard to his future. The tests, in fact, are groundbreaking as they helped to meaningfully relate his past experiences of learning to his present reality:

The tests ...helped a lot to realize the connection between the past and today. I am able to deal with the problems I had in school as well as the problems I had in my life. [There is] increased self-awareness...now, and [this has] helped me in school and [to] learn to solve things in every aspect of life...I felt the assessment was good and that it helped me with more than just school...the act of learning is more than just school. (III/38)

Significantly, it is the very fear and worry which learning evoked in the past that now help him to re-focus his efforts on reassessing his learning abilities and his life in general. Within the background of his break-up with his girlfriend, the loss of employment, the return to his supportive parents' home and his decision to return to university, he realized how important it was for him to focus his mental efforts on learning. With all the past and recent disappointments, it would be difficult for him to face yet another disaster.

Being a worrier helps me learn... helps me with the processing of it all. That's a funny thing to say... I mean in high school I worried and that sure didn't help me. But well... I worried mostly about... fitting in, not really about school... with all the stuff that's happened to me you know... my job, splitting with my girlfriend, I just had to do good at school this time. So I guess I was just too scared to mess up this

time. So worrying helped me think about all the things I had to do, to do good in school this time. (III/36,37)

After testing and feedback from Dr. Groves, William developed a much more conscious and self-regulated approach to his learning. This certainly helped him to give a clearer meaning to his academic aspirations:

I have a clear understanding of what I need to do in school. I have a clear understanding of what I need to do... what's needs to be done.... and just what is the best way I can do it and spend a little more time studying. I have to become involved in the class, like tuning in as opposed to never showing up to class. I have to ask a lot of questions... I have to make sure... Well not so much asking a lot of questions, just asking questions when class is going very fast for me. (III/31,32)

Two points stand out in the above comments. One, he realized he had to spend more time studying. This is crucial. An insight he had gained, his epiphany, was that he was a slow learner and all he needed, really, was not more intelligence but more time. Indeed, he realized that because he did not take the time to slow down (or was not given the time to slow down), he was put off learning altogether:

Well looking back I was a little worried when I was in high school, that's why it took me so long... a lot of time I needed to learn stuff. It probably turned me off the learning. So I understand why I got turned off the learning. (III/37)

The need for time to learn, he realized, affected not only his studies at school but his career as well:

I think I had come to grips that I had to spend a little more time going through material...I needed a little more time to understand...which...as I look back at problems I had in jobs and stuff like that... everything was taught to me very quickly.
(III/33)

William has actually begun to put into practice the realization that he needs to take time to study. Slowing down gets him *started*, and from there the going is relatively easier: "I might go a little slow at the start but once it gets going... it goes well." (III/36)

The second point worthy of observing in the comment on what he needed to do is that he should get more involved in class. Rather than withdraw to the back of the class, he needs to participate, ask questions and seek clarifications:

If you ask any questions... they might clarify. I'll ask a question but he'll explain what they had just said. I'll say, "Is that right?"...and he'll say, "Oh yes, that is right... but like this". So if I explain it back to him... what he just said... in different words, in a different meaning he might say, "Yeah". We have time in class to do that.
(III/32)

Here again, William has implemented this proposal in the classroom, with the result that, in contrast to his school days when he found it difficult to communicate with teachers, he can now build a rapport with the teachers:

They [teachers] describe me as somebody very keen, somebody that is there and wants to learn... asking questions, good questions, understanding the material.
...becoming involved in everything, and talking to the teachers, building rapport with

the teachers...I'd be one of the more keener people in the class...as opposed to high school [where] I never asked questions or never answered questions (III/36)

Let us see a little more closely how William brought about these changes. William achieved success as the result of re-focussing his efforts. In the past, much of his attention was focussed on coping with his identity as a dull student. Self-image was more important than learning. William changed this locus of control from the external to the internal. He thus re-directed his mental resources to the act of learning and he is now better able to focus on his learning:

I am able to focus on the school work and learning as opposed to worrying how I fit in... That gives me a sense of empowerment that I can have the energy to concentrate on my work. (III/33)

Reorienting himself also generated motivation. As compared to his earlier thoughts on the relationship between intelligence and motivation (i.e., no intelligence equals no motivation), now his belief in the test results, which showed that he is not inadequate in intelligence, renews his motivation to learn

I'm very motivated to know...to seeing the results of the test. I [have] become more aware of myself and it motivates me to do well. And knowing that I can do it really puts me on a motivation trip. (III/37)

Another meaning that William gives his renewal was expressed in terms of self-confidence and self-esteem:

Right now being more involved, as going to school now and understanding my learning strategies will help me help myself as a person, my self-confidence, my self-esteem... (III/30)

William goes on to rank self-confidence and motivation as the most essential ingredients of his empowerment:

...self-confidence...pretty much [the] total belief that I can do well at school, that really empowers me...before I did not have the belief in me/myself. It [this belief] gives me more ambition to do well...I did not have motivation before. Now that I understand, I am motivated to do well...I think the motivation will add to the ability.

Those two combined will help me get through school doing well. (III/32)

The renewed William has already tasted success. Apart from creating a rapport with his teachers, he is doing well in the course: "Right now I think I'm probably in the top 20 percent. It is new territory for me... it feels good." (III/36)

It can thus be argued that the success he is currently having in school is a direct outcome of the re-focussing of his efforts. As William noted, simply trying to study learning techniques was not effective for him. To use study techniques effectively William had to understand what processes worked best for him and, even more important, he needed to draw his attention away from how he might look and direct it to the act of learning itself.

The life crises he was confronted with, combined with support from his family and his assessment, surely went a long way in helping William in this re-focussing. They allowed him to learn patience and simple learning strategies.

There is a poignant moment in the interviews when William eloquently says: "... in life, you are always learning everyday." (III/32). This remark is most significant from William, as it was his experiences in life (e.g. sports) which helped teach him how to learn.

Roy's Profile

The third participant to be interviewed was Roy (pseudonym). A very pleasant and well-spoken person in his mid-40's, he is married with two children and has returned to university as a part-time student after a hiatus of several years.

Roy sought a psycho-educational assessment from Dr. J. Robert Groves, Ph.D. (C) Psyc. on his return to university and in response to life-long educational problems. In particular, his previous attempts in graduate school led to a disturbing and profound debacle where memorization of the material no longer sufficed as an adequate learning strategy.

The assessment took place towards the end of the year 2000 and although he found this process most constructive, he did clarify in the interviews a difficulty in converting the new information into proactive learning strategies. In fact, one reason for Roy's participation in this research was that the step would help him to further integrate new understandings derived from the testing and feedback process into a more effective approach to his studies. Testing showed Roy to have particular cognitive strengths in verbal intelligence. This was revealed especially in those tests in which there were no time constraints.

Roy was always on time for the interviews, highly cooperative, very articulate, appeared confident and self-assured, verbal and enthusiastic.

Section I

Research Question #1: What was Roy's history and learning experiences?

Despite starting as a traumatic experience, Roy's first day at school remained a pleasant memory:

The trauma in the beginning was they had an opening for a kindergarten student only a few days before school was to begin. I had to be carried into kindergarten, kicking and screaming, and then by the end of the day I was doing very well and people had a hard time getting me out of the class. (I/1)

However, his overall memories about primary and secondary school were in fact closer to his sense of not belonging and not fitting in. The result was anxiety:

I felt myself kind of feeling, it's [a] funny, slightly tearful feeling...[in] primary school, anxiety is a really big term. I always sort of felt a little on the outside. (I/1)

Roy attributed the need to belong as being particularly related to his academic struggles – struggles that he identified as confusing and disturbing. The confusion arose because he would seem to have the potential to do better, but it was simply not clear why he was unable to do so:

The first report cards, and some of them could be quite poor...So the fear would be 'Oh God, he's capable of this stuff', I mean, there's no problem, so why aren't we getting the marks here? (I/9,10)

Right from grade two there was a growing awareness that something was wrong somewhere

and this became an ongoing theme throughout Roy's schooling,

In the early part of grade two, I started to sort of sense patterns that would continue through my life where there were strengths or weaknesses or subjects that would be a concern. (I/1)

During the interviews, there was a repeated emphasis on "potential" and the failure of "application" (Roy uses the term "application" in the sense of putting in one's best effort. To say that we apply ourselves to a task means that we put all concentration and effort in that task).

I knew that it was an issue of application...not an issue of grey matter, potential...

I knew I had the potential, again that was a term that was used fairly frequently, too, with school and elsewhere... (I/14)

One talent Roy learned, which seemed to please adults, was his verbal abilities, all the more remarkable because he was "generally the youngest in primary school" (I/2): "Adults were very impressed on my use of language." (I/2) However, despite a flair for language, there developed some confusion regarding Roy's learning problems: "As the years go by... teachers... had all the more difficulty... understanding why I would be so obtuse in mathematics." (I/2)

Roy repeatedly identified math as his major nemesis in school. The problem surfaced in grade three: "I think it was probably in grade three that they realized that there was a problem that seemed to manifest itself in mathematics..." (I/6) It continues into high school where special tutoring became necessary:

As school went on I fell into more difficulties eventually in mathematics... In grade eight I got into some difficulties with math and... hired my math teacher during the summer to tutor me. (I/2)

A careful review of the interviews confirms that Roy in fact experienced learning problems not just in-math but in a variety of subjects:

I certainly remember struggles relating to non-math subjects... not comprehension, but just I couldn't bring myself to sit down with a book, social studies, history, or whatever, and just grind and learn the stuff. (I/7)

The learning struggle was felt even in subjects in which he had a genuine interest: "I seem to have increasing difficulty applying myself within those subject areas I was interested in." (I/1) Eventually, Roy's own reflections gave him cause to doubt the myth that discalcula was his only problem: "Another of other subjects for which there was really no excuse based on the math theory... I think even geography I had trouble with." (I/13,14)

Roy's reflections upon his learning difficulties brought to the surface a long-standing reality – a problem integrating information through reasoning and "rules of logic," typified in math: "... I think I captured the ultimate description of rules and logic [which] would have been arithmetic." (I/5)

It is the "rules of logic" that stultify Roy. It is this problem that, in his mind at least, took the focus of learning problems away from math to other subjects:

... it took so much energy, to study the stuff... now I don't think it was, because it was hard ... I particularly thought that I had trouble with the learning aspect, with the

integration of it. That became... that was always to me relevant, or more relevant in the cold logic rules courses, because... I couldn't get away. (I/5)

Indeed, Roy suggests that his aversion to cold logic evoked, and often still evokes, a physical reaction, which leads us to suspect that the level of anxiety caused by reasoning tasks might have been indeed very high. Roy did not specify what kind of physical reaction logic evoked, but he did say: "...so rules and logic would have been even as I, even as I think about it now, a physical reaction." (I/5)

During the assessment tests, Roy was taken back to the "panic" reactions he felt as a child:

My only memory, sensation, is incredible anxiety, panic... when confronted by... [pause] this level of abstraction or need to create this type of understanding ... I would go into a panic mode as a child. In fact not only would I panic at those moments, but I lived in anxiety of when they would next appear. (II/20)

The school environment being such that something new is learnt every day, anxiety and panic seemed to have been Roy's constant companions. It was the anxiety of anticipation of what he would be called upon to learn next.

That is no clear understanding, just a vague apprehension that at any time I could be asked to learn something and this panic would set in. A panic related to: 'I don't know what you want, I don't know what you want me to do, I don't understand how to think that way.' (II/20)

The problems in math, which began in primary school, were extended, by the analogy of the

"rules of logic" to other subjects in high school. Even English, despite his flair for language, could be stressful when it came to the cold rules of grammar:

English was friendly as long as it involved creative writing, story telling, as compared to cold grammar. You know [with] that kind of thing, you came back to the rules and logic...Forms of that...troubled me as I got into high school, you know physics, same principle, chemistry, whereas history and what I guess in primary school, what was called social studies, geography, history...I still fell down... (I/5)

We shall see in later sections that the inability to integrate showed up even in his recent university studies and in Dr. Groves' assessment tests:

My most recent course of study [has] been a form of study that's... highly analytical and relies on tremendous integration of principles and ...it has really left me exhausted from time to time because, again I sort of study the isolated facts, the mechanics and then suddenly I have to sit back and try to apply them. (II/25)

Problems with reasoning, logic, abstraction and integration were further exemplified when Roy pointed out that he was unable to piece together pieces of information to discern a pattern:

I can't clearly remember a specific incident, but I think I believe it has something to do with the patterns, the need to connect concepts, images to form patterns...And I could never be sure. I could never know when that would next occur. You understand I had absolutely no sense of that as a child. (II/20)

Another major problem that Roy indicated was long-term retention. He could remember

information for only short spans of time and had difficulty recalling it and integrating ("re - explaining") it in a new context:

Okay, the fact that in class I would seem to understand what was being said, but a few minutes later I would feel that I just hadn't retained it, or couldn't get it down...Or couldn't re-explain it. In fact my ability to (quote-unquote) regurgitate uh repeat, a series of words, or sentences or whatever, a series of, uh, pieces of information, in the short term was not difficult, in fact I was quite excellent at it. But then it's worth while to think then why later that an hour or that evening or the next day, or during the exam, why that information...disappeared; how did that get lost?
(II/29,30)

Roy's problems with reasoning, logic, abstraction, integration and discerning patterns, which brought on anxiety and panic, were compounded by several unpleasant experiences brought about by certain teachers. One such unpleasant incident that reinforced feelings of confusion, failure and humiliation stood out in his memory:

At the beginning of grade 2...I had a teacher who would demean me a fair amount...I remember at one occasion she ordered me to stand up, sort of made fun of me, and I was crying...it was right in the middle of the class. She persisted in dealing with this, and I just remember all those feelings...the kid's nightmare, of feeling ...so upset, as a little kid, that you have to cry. But she was berating me for crying, and...it was stuff that went to your heart... you felt a failure... you were a failure in front of your comrades. (I/6)

We see glimpses of how the difficulties in learning were beginning to affect his self-concept. The self-image of being a "failure" was germinating. The struggles seemed to prevail not only at school but also in Roy's attempts to study at home:

One of my first recollections when I had homework... again it just seemed so alien to me... It wasn't necessarily... I can't do this... it didn't have to do with capacity, it had to do with more the discouraging bleakness of sitting, dealing with uninteresting things to me. (I/10)

When Roy was afraid to be found out, afraid that his lack of understanding and what he believed and explained as a lack of effort might be discovered, he hoped that honesty would be the best policy. This brought forth the very situation he most feared:

There was a grade 7... social studies teacher. He was a very angry person... and I think was given to a certain amount of physicality... It was one time when I had done my homework, or I had done some of my homework, enough of it to have qualified as...morally having finished my homework, and the guy asked: 'Has anybody not done their homework?' I think I put up my hand because it...seemed parts incomplete. [As] I was going out into the hall...he accosted me about not having done my homework, and it was tremendous anger... at first it was verbal... but he progressed and he grabbed me by the shirt...and sort of threw me up into the air... sure as hell I landed solidly on the ground... I remember just wishing that the other students hadn't seen that. (I/10)

Roy blamed himself for such debacles: "I just remember... feeling it was my fault, I'd

asked for it..." (I/10). He was surprised by the retribution, yet blamed himself for bringing it upon himself:

I was a goodie, goodie. I wasn't sort of inviting that kind of physical discipline... I was just mortified... for which I blamed myself largely, my work had been, I felt incomplete. (I/11)

Roy was all the more shocked at this violence for, as he noted above, it was a major coping mechanism of his to try to please, a theme we hear frequently throughout the interview process: "I was a very well behaved little kid, you know, the anal retentive good behaviour stuff." (I/2)

An unsympathetic mother reinforced the negative experiences with teachers in school. Roy says that she was a "pretty cold, authoritarian type" (I/5), but because his father's work kept him away from home for much of the time, his mother was "my sort of main connection with the world" (I/2). Unfortunately, Roy noted that his experiences at home were all too often not dissimilar to many school experiences. When his marks were poor, "when you didn't look like you were applying yourself" (I/12), his mother "would challenge me by raging" (I/13).

When Roy found himself in a crisis at school, he sensed his mother "giving up" on him: "this put the fear of God in me and I started working like crazy". (I/13)

Not only was there lack of support from his mother, she seems to have reinforced Roy's negative self-concept with constant name-calling and badgering:

That was a constant sort of refrain from my mother... and general evaluations of me... When I was in therapy ... I made up a list of all the names I had been called at one time or another... it's formidable... I have terms... like 'bone lazy'...

'inconvenience', 'uncooperative',... 'an imposition on the universe' ... tremendous chiding, nagging, it was constant. (I/11)

Again, Roy seems to have explained such a hostile attitude by blaming himself. The source of the problem was his alleged laziness, inattentiveness and inability to "apply" himself to learning tasks: "The problem was a lack of attentiveness, lack of application, laziness, actually I mean that's particularly me." (I/9) He thought that if it were not for the failure to apply himself, he could have had some self-esteem:

I didn't perform up to standard in any of my subjects. I'm still inclined to use the terminology that I didn't apply myself... but you know with that would come a sense of self-esteem (I/3).

In addition to the home environment created by his mother, there was the stress of social expectations brought on by his father's success:

...people would ask if I was going to be like my dad and do what he was doing... I already had more than a sense that I wasn't and I would have died to have done that. (I/4)

This expectation seems to have added anxiety to the educational process. The sense of personal failings reached extreme levels, which can be gauged from Roy's choice of words. In the midst of high expectations and constant discouragement, all his efforts at learning were permeated by the anxiety and stress of an impending catastrophe: "I think the discouragement was the fairly ready reaction that I was just staving off some sort of disaster." (I/3)

We can see how the locus of control in Roy's development was situated in the external

world. The subjects, the learning, teachers and the mother: it was these influences that dominated his perceptions and factored both his worldview as well as his self-concept.

Fortunately for Roy, there were significant adults who did support him. A particular teacher conveyed much-needed motherly concern:

I believe one teacher... one of the only teachers I had that really seemed to care about me as a person. You know, it's not even [on a] par with the feeling that she had any special feelings about my intelligence or anything else, just... I just had an impression about someone who had a motherly streak... it was a very amorphous feeling, and it may have well been what I needed it to feel. (I/7,8)

More than any teacher, it was Roy's father who stood by him as a rock. Although Roy's father's work often kept him away from home, he seems to have had a strong affirming influence upon Roy: "I think dad always tended to be supportive, he was a gentle guy by nature, pretty nurturing..." (I/6) "I have tremendous feelings of affection for my dad..." (I/12).

Roy reached one particular crisis as he entered high school. Here he realized that one of his major coping strategies – acting sweet and gentle – was totally ineffective at this point. High school demanded solid effort and academic achievement:

I guess a key sort of moment for me... was grade 9 for me, because up till then I was passed because I was a nice kid...I seemed really intelligent... because I spoke well...Suddenly. it was a big high school... and it didn't really matter how charming you were. Plus I was on the shy side, so I guess I wouldn't have...gotten to know the

teachers... and I got into deep trouble... Where I [was] obviously not being sort of nudged over the pass mark, I was failing subjects. (I/13)

The first semester was a disaster. He failed in math and other subjects as well. His mother seemed to acquiesce to this failure and "gives up": "Well, maybe you just haven't got it. Not everybody can be doctors and lawyers...but it was this feeling of someone giving up on you." (I/14)

Roy met this challenge by studying intensely with his father and excelling at the very subject which had so frightened him. In fact it was his father's direct intervention that stalled Roy's steady slide towards failure: "...my dad began helping me in math and he'd be dog tired, he'd worked long hours, but he would sit down with me and go over math with great care..." (I/14)

What might have been a disastrous year turned out to be a success:

It turned out to be a fabulously useful year because my marks from the end of that first report phase... went from say 38 in math to...it must have been closer to 90.
(I/14)

Upon reflection, Roy said that this type of guidance and assistance worked in certain other past situations: "I had a similar experience [Grade 5]... I actually studied for the exam, and my dad helped me too...and... 87% was what I got." (I/14)

After grade nine, however, Roy continued to struggle with math. There were problems as well as successes with other subjects in high school and thereafter. The overriding concern, however, emanated from Roy's comments quoted earlier about his struggles with reasoning and integration. Those problems persist to the current period.

What is crucial in Roy's personal history is the devastating effect that his learning struggles

had on his self-esteem. The discouraging comments of teachers and especially the harsh criticisms of his mother were debilitating, leaving impressions of severe "dysfunction." The sense of personal failure led to a self-hatred.

I was fed a staple diet of criticism, of an extremely severe harsh nature, where demeaning terms would be thrown at me, I'd be described in such terms, by my mother ordinarily, in her own frustration and rage. I would just assume that when you are brought up [during the] most profoundly sensitive developmental phases, with that kind of presentation...it's got to be reflected in years later and through the years, in [a] kind of self-hatred. (II/18)

Roy also experienced depression and discomfort in the course of struggling to learn:

I could follow the rules, but that my discomfort was very high...that discomfort was particularly would seem to be with myself. And when I flip high discomfort and low expression together, that would be consistent with my statement of depression. That means the discomfort would likely be experienced by me as depression. (II/22)

Thus a historical perspective on Roy's learning experiences reveals that he did not encounter anyone who could truly identify the depth and breadth of his problems. In the absence of any clarification on this matter, explanations were put forth suggesting that Roy's problems were somehow related to mathematics.

However, Roy shares with us what was almost a secret reality, that is, that he knew that his learning problems seemed to weave their way through all of his subjects. He however preferred as a child, at least in public, to adhere to the theory that only math was his particular problem. He also

seemed to accept the fact that he was the source of this problem as he believed he simply did not apply himself.

Many of his school experiences, as well as aspects of his home life, created great anxiety in the act of learning. An examination of Roy's learning strategies, as reflected through the second question in the study, will help us understand what learning strategies he developed to cope with all these situations.

Section II

Research Question #2: What strategies has Roy used to self-regulate his learning?

It might be useful to begin a discussion of Roy's learning strategies with his remarks about his intelligence. Throughout the interviews we find a certain amount of self-confidence in his own intelligence, which stands in stark contrast to the negative self-image that we have seen, to the extreme of self-hatred: "I was someone who had reasonable intelligence, maybe above average." (I/3), "I was reasonably intelligent." (II/15), "I was a very intelligent guy." (I/9), "I mean the stereotype of, actually, of a highly intelligent kid." (I/9)

"Actually I would have thought I was pretty intelligent, pretty darn intelligent, but I'm not saying brilliant, but capable of certain feats of near brilliantness." (I/9)

Despite his belief in his intelligence, a review of the interview process shows that Roy identified his ability to maintain attention as a primary difficulty while trying to learn. The inclination to daydream was noticed as early as grade two: "I was in grade two or something...I wasn't getting it, for various reasons I've alluded to, [I would] daydream and so on." (I/5) This inattentiveness was more acute in math:

As school went on I fell into more difficulties eventually in mathematics. I'd daydream. Previously, it was widely noted in my report cards through the years. (I/2)

It is possible to argue that this problem of attention can be viewed not only as a difficulty in itself but rather as a strategy developed by Roy to cope with his confusion over the rules and logic inherent in what he was learning. Roy helps us see this when attempting to explain that his struggles in mathematics led to "avoidance":

I used to daydream my way through the material... and it was, it was the cold logic, you know it's weird...the techniques for avoiding...avoidance would have been the word to describe the lack of application. (I/4)

While daydreaming might be seen as a strategy to cope with reasoning, Roy also developed the art of hiding, masking and role-playing. The impression he gave was one of being a well-behaved, well-spoken boy.

As time went on, the thing that was interesting was that I was a very well-behaved little kid and I was reasonably polished...my language reflected that, a lot of time with my mother who had spoken good English. So I was...typically well behaved, I mean... what the primary school teachers went through in terms of, you know, the anal retentive good behaviour stuff... (I/2)

We have seen how he used this appearance as a means to moving ahead in the early school years: "...because up till then I was passed because I was a nice kid...I seemed really intelligent... because I spoke well." (I/13)

Thus Roy attempted to deal with the myriad of anxieties attached to his learning struggles

by suppressing any outward signs of struggles: "In fact I was kind of considered, I remember in high school, I was a pretty calm cool type... which is ridiculous cause it wasn't what I felt inside." (II/23). In fact the role-playing seems to have developed into strategies designed to give the appearance of having studied, learned and understood his school work:

What you sometimes do is...raise your hand, but a lot of people raise their hand, [so] you wouldn't be asked, but it would be noted that you raised you hand, so it would be okay he's done his homework. Ultimately it was a big picture, feeling lousy about yourself... As the years went on I just wouldn't so much do the homework, I had a variety of techniques making it look as though I had done the homework, so in effect I'd become an accomplished actor... (I/4,5)

Similarly, he feigned concentration to show he was applying himself. The "concentration posture" appeared to be a favourite. Recollecting a situation during testing in which he adopted the posture, he described the posture as follows:

I would have hunched my shoulders forward, edged forward in my seat leaning towards the tester and allowed my eyes to go out of focus as if staring off into space...it certainly would have looked like I was concentrating. I think I do that to convince myself I'm putting in an effort. (II/17)

The posture was in fact an indicator of tension:

But as I reflect upon that posture it's so consistent with tension so it is as if I created a certain, a particular physical tension through my posture. It's as if I equate a tense posture to concentration. (II/17)

Roy also seemed to think that many of his rationalizations about himself and his family were part of a bigger picture that involved myth making. Indeed, he says myth making was a strategy to explain away the reality. During the interviews, he struggled with the explanation that a myth has no truth to it, yet the very act of creating it points to a truth. A myth has:

no substance to it but [one has to] admit that there is substance to the creation of the myth itself...that substance has been interpreted by the mind of a five or eight year old child. (II/23)

Significantly, he was aware that myth was not mere fiction but that it emerged from some deeper human reality. He defined myth as a "cover-up" for a reality:

I'm not sure but I believe that weird definition of myth...that myth is created to deal with something happening, some truth happening, which was being dealt with by the child, in terms of mystifying...to create a myth to surround it... My point when you say...there was no substance, but in fact there's substance that the myth is used to cover up...(II/24)

He recollected that there was much in his childhood that was apparently deception and self-deception, which could be covered under the umbrella of myth: "...look at all the things that flowed from self-deception, and various forms of deception, uhmm, mythology around family, and so on..." (II/19)

However, although Roy talked about "wasting a tremendous creative energy, trying to make 'these things' stick together according to the myth" (II/23), there was no explicitly stated distinction between what the myth was and what it was "covering up." We can only infer that in his childhood,

the confusion surrounding his undiagnosed learning disability was the driving force for the creation of myths. The primary myth was that he was responsible for his mother's distress over his inability to perform ("laziness") at the academic level expected of him. This complex situation resulted in Roy adopting behaviors like feigned concentration, social etiquette, *as well as his self-recrimination*. They were intrinsic to myths created to cope with his learning struggles and the associated stress and anxiety.

As regards strategies that were consciously utilized to learn, Roy observed that his aversion for rules-and-logic subjects stemmed from the fact that they were impersonal. Talking of arithmetic, which typified rules and logic, Roy said: "I think I captured the ultimate description of rules and logic... You couldn't relate to it...you couldn't personalize it, at least I couldn't." (I/5)

This would seem to indicate that Roy identified his studies as easier to follow when he could personalize the information, possibly by seeing historical figures or at times imaging himself going to some country or region identified on a map. For instance, he said an interactive process would assist him even in mathematics: "I'd say I could gauge better with another person there who could keep me interested, at some level..." (I/5)

Personal interaction would take the focus away from the textbook to something that would visually stand out. He recalled studying history with his father:

I think we've got it from an atlas somewhere, on a yellow piece of paper on a mini pad or something, uhmm with arrows on it, and a few dates. It would reflect Columbus's travels, which is the heart of this exam, and in that piece of paper is a lot of meaning for me... maybe I just did respond better. (I/15)

One of Roy's major learning strategies was to read out aloud and reason by talking to

himself. A slow reader otherwise, he believed this would help him retain information:

In the past and present I would often have to... almost always... study at home. This is because I needed to speak out loud, talk to myself about my readings. And I've had too many embarrassing moments, caught at school and at the library doing just this. I'd be studying in an empty classroom and someone would walk in and see me talking to myself. I know I just can't hang on to what I'm reading unless I speak it out loud. So as an adult, I've long had a sense of being a laboured, or a slow reader.

(II/20)

The need to study aloud persisted till adulthood. In his later academic years he took to tape-recording lectures. He would spend hours making transcripts and going over the material again and again. We learn that Roy had a mortal fear of missing out even a single detail. Indeed, we now get to the key learning strategy that Roy adopted: gather as many facts as possible and you won't fail. In fact the obsession with detail came at the cost of structuring the details into a pattern. He was so engrossed in identifying the trees that he missed the forest, so to speak. This is borne out through the following quotations: "I sort of study the isolated facts... and then suddenly I have to sit back and try to apply them." (II/25)

At another point in the interviews he said: "I take such an atomistic approach. Trying to understand each atomic component for what it is... I just won't even go to the molecular level."

(III/37)

He also identified a kind of obsessive drive to gather information: "So this here we see... is my tendency... to want more and more information." (III/37) and: "I can never have enough information." (III/37)

This strategy of learning permeated Roy's entire academic life. What is important to note is that he did not develop any strategy to organize that information. Apart from the fact that he needed the marks to pass, he was unable to see the objectives that the information could accomplish:

Roy also revealed that he had a deep "emotional" attachment to this methodology:

...there is an emotional quality... it is so dynamic, so intrinsic to me, intuitive almost, that I find myself thinking in terms of: well 'Can I possibly have the full picture?' ...the answer is no. I can never have enough information. (III/37)

The emotional dependency on gathering facts was so strong that he could not contemplate making a blueprint or defining a purpose in his painstaking listing of details: "...a blueprint ... the whole objective [what you are] building towards...I have no idea." (III/39)

Such a strategy, however, had its pitfalls. He would have to memorize entire chunks of facts, details, to get by. The fear was that if he forgot one little detail especially in an exam, he would be seized by a mental block:

I guess it is this ... something where your dealing with some kind of weird physical structure of.....things like that...you know...if one of them is lacking...you may get a complete block then in the exam. It's a weird thing. So you master everything. (III/38)

Later, Roy was able to identify how time-consuming his learning strategies had been.

I guess in effect...it is self-deception you tell yourself it is in two hours it will be done and I will have done that and I will move onto something else. You find

yourself in five or six hours later...you know thinking gosh I'm running out of time.

(III/36)

They were not only time-consuming they are exhausting: "it's a wearing down...it's a grinding down..." (III/33)

The method Roy used to assimilate the details was memorization. We can understand this method better if we remember that Roy identified attention as a problem and how this difficulty could affect any of his subjects. So he defined the act of learning itself as memorization. In other words, he equated learning with memorization:

And a great deal of the information is related into what is another fact I need to know here, what's another fact, what's another fact, okay, what's another fact...Almost a process of pure memorization, in a linear sort of way. (II/25)

This strategy, however, also had the potential for a negative cascade. A limited learning approach, which tends to stress memorization and linear sequential organization is highly vulnerable. The vulnerability is exposed when one detail in the list is forgotten. The rest of the list is also likely to be lost. It is the same logic as operates in learning chunks of individual pieces of information.

Moreover, constant repetition, which memorization involved, was monotonous: "It's actually come to mean... conscientious repetition, it's the boring aspect of learning, you know the repetition of stuff you understand." (I/6) However, he realized the limits of rote learning, especially in high school and college, where analytical skills were called into play:

I really have felt the ill effects, of that [memorization] during my most recent course of study, because I've uhm it's been a form of study that's intrinsic...highly analytical and relies on tremendous integration principles. (II/25)

The tremendous amount of mental effort required by Roy in order to assemble (integrate) from the atomic level must have been exhausting. At the same time he would use anxiety to help counterbalance these problems and force him to focus on his studies: "There was fear of disgrace that went with failing the year." (I/3)

Thus we can see how the locus of control in Roy's learning lies in the external world. Failure and humiliation dogged him through school and anxiety did seem to have been an effective motivator, especially from high school onwards. In order for anxiety to be an effective motivator, Roy would have to first be confronted by an imminent failure or public humiliation. Only then would this fear reach high enough levels to counterbalance the inherent difficulties involved in trying to study without understanding.

As we can see, Roy's learning strategies were quite limited. They included verbalization and memorization for learning and the use of fear to try and focus his attention and compel him to study.

Roy's constructed world view, including the construction of his identity and the resultant self-loathing, can be seen as myths emerging from a myriad of interlocking social realities that were brought down to bear upon him while he attempted to understand how to cope with his undiagnosed learning disability.

Section III

Research Question # 3: How did Roy cope with the various challenges presented by the tests used to identify his learning disability?

During testing, Roy is confronted by a very disturbing experience, which causes confusion and great discomfort. The test calls for forming a pattern out of geometric shapes.

I do recall a particularly disturbing experience during testing. There was a test with symbols and geometric shapes, I believe there was a total of 25, [SATA Test #2, Non-verbal Reasoning] and as I recall this series of various geometric symbols would form a pattern, a pattern that I was required to complete from a selection of options. [There was] a total sense of being lost, confused, virtually no understanding of how to approach these puzzles... (II/19)

Memories of childhood struggles came flooding back and Roy was seized with panic. What was a revelation to Roy, an epiphany, was how *powerful* the anxiety was:

And I can clearly remember almost instantly going directly into panic mode... My only memory, sensation, is incredible anxiety, panic. It brought back... in fact I'm just realizing it... not only brought back feelings I had as a child, but at this moment I'm realizing... I was never actually aware of the power of these feelings until this moment... It's incredible. (II/19,20)

As Roy continued his narration, he connected the challenge of this test to his childhood inability to discern patterns and experiences and the resultant panic, which were discussed in Section I. As if the experience of panic wasn't powerful enough in itself, Roy's much-avowed verbal skills

too were challenged. There was no panic, of course, but he felt exposed and vulnerable and experienced frustration because of the time constraints involved. He found he was not quick enough in completing the test:

Another one that brought forth strong feelings was [WJR Test #21, Verbal Analogies]. I remember it, both because it was somewhat inconsistent with my sense of intelligence... It was a series of words, which would have some relationship.... My expectations were ... I won't have any trouble with this one.... Except as the test went along of course it got harder, and I remember finding it increasingly difficult... I recall the results here were surprisingly lower... I just didn't have the time... I knew I could understand the relationship, I just didn't have the opportunity to identify and verbalize it. That's why it was frustrating instead of frightening. (II/20)

Similarly, several preconceived positive impressions of his intelligence crumbled in the testing process. Even in a memory test he fell short of his own expectations:

One of the taped tests... a sequence of words [WJR Test #9, Memory for Words], phrases [WJR Test #2, Memory for Sentences], I think we had to note those, it seemed to me to be a test of memory of some kind... I think a lot of the impact of some of these tests, had to do with the fact that I had preconceived idea about my nature, my level of performance on such tests. (II/16)

Hidden cognitive struggles surface. For example, he was disoriented by an "inner tension" while trying to the associate words with colours:

One test [Stroop Colour & Word Test] that had great impact on me, and it was the one that has a series of words written out each describing a colour... and those words themselves were printed in different colours... I thought nothing could have been simpler, more straightforward, and inviting an A+ result... But as I went through it I found that there was this inner tension... between what I was seeing intellectually, with the written work, the spelling of that word, on the one hand and underlying colour that I guess was so often in conflict with the word itself. I was amazed over the struggle over that. (II/16)

Multiple-choice questions in a reading comprehension test became an obstacle as the paragraphs grew in length and complexity. Consciously using the strategy of reading the questions before reading the paragraph was of little benefit because he found himself having to go back-and-forth to double-check many answers, which might have helped, but it slowed him down:

The one with time constraints [SATA Test #5, Reading Comprehension]. In the beginning I would simply read the paragraph... and then proceed to the multiple-choice answers. But as the paragraphs got longer, I knew to use a different strategy. I would read the questions first and then proceed to the paragraph. But in fact this may have helped but not a great deal, because I found all too often I would get confused in the multiple choice answers... my reading speed was far below my other verbal skills. (II/20,21)

Such difficulties inevitably led him to discomfort and depression:

One of the tests [PSI] that I went through suggests that I was quite reflective and self-aware or had the potential for it...Although I could follow rules, my discomfort was very high... the discomfort would likely be experienced by me as depression...

(II/22)

As Roy reflected upon the testing, he said the tests brought to the surface not only his difficulty in integrating pieces of information but also his difficulty in relating information to his own experiences, his own reality. In other words, he found it difficult to contextualize information in a real environment, a real world.

In the previous section we saw how he identified his strong need to make emotional connection to the text in order to have a contextual understanding of his reading. The test results, however, strongly reflected his compulsion to stick to the details without relating them to his emotions. He referred to how little he was able to integrate his past experiences with present learning:

One of the tests that I did, and that's the Learning Styles Inventory... My results in that test got me to start thinking more about that [integration]... That test in particular...deals with emotions a great deal and integration with our own emotional reality... What I've shared is that, how very little amount of my energy is[used in] bringing past experiences into the present realm of learning, and how much of my energy is simply listing data...Almost a process of pure memorization. (II/25)

The testing, however, brought about a change and an integrating process was brought into play: "I don't have the that global feel for whole situation, as Dr. Groves said, and that's what I've

learned, thanks to the testing procedure." (II/26)

Thus the psychological test results gave Roy a better understanding of the emotional cost he paid by separating his learnings from his own experiences and using memorization as his dominant technique.

Roy's role-playing also came out during testing. We have seen he had difficulties concentrating, and how he learned to appear *as if* he was concentrating. The behaviour he exhibits more than once during testing seemed so familiar:

[In the Stroop Colour & Work Test] I believe I just did my typical concentration act.

I'm not certain but I believe I just stared very hard at the page as if focusing my eyes would represent my concentration. That sounds so typical of me. A sort of performance art. (II/16)

During the other tests [WJR Test #9, Memory for Words and WJR Test #2, Memory for Sentences]: "Again I'm not certain, but I suspect I put on my concentration pose." (II/16)

Through the feedback session with Dr. Groves, Roy begins to understand that his role-playing and acting has led to fragmented thinking: "My comments in the surveys suggest I had separated parts of me..." (II/23)

While acting protected him and put a mask over his internal struggles, he himself was propelled into a world constructed out of "myths", the locus of control in his personality. Such a construction, however, could not put coherence into his inner struggles. He was unable to relate, for example, confusion, anger and sadness:

That struggle between with what's wrong with me and what I'm allowed to show.
And you know the confusion and anger and ultimate sadness would lead me to that
and I hadn't particularly made those connections...things like you know anger and
sadness, just the lexicon hadn't seem to go together, until... they were pointed out
to me and... the mechanics were explained. (II/22)

Roy now realized that this role-playing required him to separate and act out different parts
of himself. In fact he began to realize that the so-called myths surrounding his learning problems
were created to help explain those problems and that he, as a young child, had believed in the myths
(that he was lazy, that math was his only problem, that he comes from the "perfect family" [II/19]).
Now he could re-evaluate the *need* for the myths. He felt the assessment-interview phase had helped
to process his emotions and integrate his fragmented thinking:

My comments in the surveys suggest I had a... sort of fragmented thinking process;
[it is] a more synthesized process now... You're not wasting a tremendous creative
energy, trying to make these things stick together according to the myth that maybe
has no substance to it...

But in fact there's substance, that the myth is used to cover up...the truth behind the
myth... As an adult with new skills, abilities... [I can] re-examine the creation process
of the myth. (II/23, 24)

This new awareness created a respect for the testing process itself.

It gave me great respect in other things for the subtleties, the brain, my own reactions, the fact that you could have these struggles below the surface level. That I'd spent my life being unaware of. (II/16)

The process is one of demystification, the peeling away of the layers that had enclosed a struggle in a cocoon of mythology. In other words the assessment is a path toward perceiving the reality:

It [the testing] strips you of a some of that disciplined camouflage, that's the world you develop...hiding, shortcomings or doubts about yourself... what it essentially says to you is we can get behind all of them anyway. (II/28)

It is a comprehensive process of boundary demarcation and integration of the external world and the internal as well: "The integrity of reality in... it [the testing] wasn't a limited process, it was a broad spectrum." (II/28)

One significantly positive outcome of the testing was that it dispelled the myth that math was his "bête noir". His mathematical abilities were but average, but certainly not disastrous. Indeed, Roy had always been aware of his difficulties across all subjects:

I had known...that my mathematical skills were limited and a problem, and the result I got from the testing showed that indeed they were considerably more modest than my language skills, my verbal skills, but of course they were not as, not as disastrous as I guess I had thought... (II/18)

The fact that his abilities in mathematics could be revealed through the test was itself a "revelation":

The testing procedure helped eliminate some myth or some confusion...It was a life times revelation. It was so key, such a keystone in my understanding of my academic performance over a lifetime... remarkable actually. (II/17)

As Roy builds confidence in the tests, he develops a respect for the integrity of the process. This admiration allows Roy to accept not only the testing process but the results as well:

I'm clearly...the beneficiary of huge amounts of empirical advanced study in North America, and the world, over the last generation or two, and it quite struck me that when I was doing that, a computer-based test. (II/27)

Section IV

Research Question #4: What personal meanings has Roy given to his past and present learning experiences?

Roy entered this assessment-interview process after 25 years of "genuine academic disasters." His experiences had been "murderous for self-esteem that was already depleted..." (III/32) We can see how his fears and anxieties are still a very real part of his thinking as he tries to elicit some meaning from his past and present realities.

We saw earlier how Roy had a compulsion to gather individual facts, to the extent that he missed the forest for the trees. There is sufficient ground to argue that this has been a major cause of his learning difficulties and Roy, on reflection, began to see the significance of this compulsion. The analogy from chemistry that he used to describe his approach to learning drove home the point:

I take such an atomistic approach. Trying to understand each atomic component for what it is. I won't guess [that] well, maybe this is carbon, you know, I could be wrong. Maybe it's really silicone. Even [in] my example here, ... what I really need to be thinking about is: 'Is this organic or inorganic?'... and well, could it be a human being, or maybe a goat, I just won't go there...I just won't even go to the molecular level. It's as if my experiences, my emotions, my own day-to-day realities conflict with my learning. Well maybe that's the problem, they don't conflict, but they just don't connect". (III/37)

The last comment deserves further elaboration. It seems that there was a conflict between what he *knew* was the reality and his learning strategy. They do not connect. That was the problem. This lack of connection between his atomistic approach and *knowing* that this approach was wrong (he should be going for the molecular picture instead) is intriguing. There was a compulsiveness to his approach, and he realized it. He said there was an "emotional attachment" to his obsession with detail, almost like an addiction. Then, correcting himself, he went on:

Probably I chose the wrong word, 'emotional attachment,' but yeah there is an emotional quality...I guess it's that feeling...it is so dynamic, so intrinsic to me, intuitive almost, that I find myself thinking in terms of: well 'Can I possibly have the full picture?' Of course yes...given the sort of personality I demonstrated to have through testing [but] the answer is no. I can never have enough information. Um...but it is an intrinsic, sort of inherent, drive, but because of that it is not an intellectual thing. That is why it is all the more difficult to struggle with it and fight against it. It is not optimal. So...this is really the ultimate challenge in a way, since

it's like all these things you hear about....people struggling with addictions...and other non-rational things....(III/37)

The "drive" for information was not "intellectual," that is, it was not based on reason, and so it was difficult to resist. The "addiction" to detail, as Roy sees it, is the "ultimate challenge." That is Roy's epiphany.

There are several fallouts of this addiction. One, Roy saw his struggles crystallizing when he understood he was actually organizing his learnings "backwards". There is a hint of counter-dependency in his statement. Roy might not only have been struggling to eliminate the possibility of committing errors, he might also have been creating his own unique conceptual framework or reality. Having grown up in a hostile environment, Roy might have needed to save some semblance of identity through a counter-dependent stance:

my own feeling is that I am doing it back to front. It is as simple as that. So that is not optimal for me. That is not as though...I'm buying into someone's preconceived ideas...what should be best for me. I know this is a disaster for me. (III/38)

Two, the "backward" approach was physically exhausting. If we recount his earlier comments about how he would painstakingly transcribe tape-recordings to memorize every detail, his following comment helps us understand how devastating he had found this process:

"Then you see the utter violence that works on the physical or at least on the energy level... You had to realize that motivation wasn't enough... desperation isn't enough... obsessive compulsiveness isn't enough... it's a wearing down...it's a grinding down. (III/38)

The logic that he could slow down, expend less energy, even if he got lower marks, did not hold for him. It was more important to go through the grind and get high marks than it was to slow down. The risk of failure was too high:

Well I think ... it's like the sublime to the ridiculous... people have said to me... very well meaning people in my past, family: 'Why put in this amount of time? If you put in the absurd amount of time, and you get A's or A+ or whatever, why not put in 20 % or 30 % less time...and suffer [less]. Settle for B+ or something.' I would then respond absolutely honestly... that I would love to be able to do that. But I cannot seem to determine, gauge the trade-off of so much time for so many marks. But what I feel that, and I may be kidding myself, but... what is my conviction, with my lifetime's experience, is that if I don't do all of this in preparation... I risk failure.
(III/38)

He also understands *why* he had adopted such an exhaustive approach. His focus was clearly on "the other." For example, even now his need to please and impress his teachers is so important to him that he has been willing to pay a great price to do this:

Well once it clicks... it's almost destined... to produce breathtaking... precise results... you know teachers and professors absolutely adore [it]. They are blown away... but of course the same teachers and professors have no idea the investment of energy that goes into that... and how in effect destructive it really is for the return you get back. (III/38)

In childhood school years, one can observe a similar need, which became all the more

significant as Roy began to reflect on his relationship with his mother and understand the kind of influence she wielded over him. Roy did not need to organize the details simply because his mother was the predominant organizing force in his life.

My mother was absolutely hyper critical about things...but combined with that is the fact that she was the sort of supreme organizer. My mother was...[a] sort of supreme organizer... I mean to the point of being obsessive-compulsive...it wasn't up to me to organize anything. That was taken care of... you just...sort of do what you're told to do... (III/39)

This devolution of the organizing task was easily accomplished because of the fear of making a mistake. In other words, he left the organizing to her in order to avoid the possibility of making an error:

...you would be demeaned and screamed at...[To] do just as simple a [thing as] put clothes into the dryer and turn on the dryer, I mean that can be a major thing. If you made the slightest error...it was deemed easier for my mother to just do it herself ...you felt that crashing disappointment and all the criticism, failure...a sense of failure. (III/40)

When Roy was asked whether he saw any connection between his mother organizing his life in terms of clean clothes and him organizing his learning, Roy remarked that "I didn't do very well at it [organizing learning]". He did make attempts to organize, but: "They were terrible... but there is a major risk in trying to do it." (III/39,40)

The pattern that emerged was that Roy has been unable to take the plunge. The risk of failure

was too high and he doesn't want to go anywhere near such a possibility. Hence he rigidly held on to his personally constructed learning methodologies. The suggestion that he ought to prepare a blueprint, a work plan, before undertaking an academic task, was virtually dismissed as impossible: "How do you develop a blue print? That is... God that is awful, trying!" (III/39)

He came to realize, however, that it was *important* to have a blueprint. That was another epiphany. But as far as making a blueprint is concerned, he didn't have a clue:

To me, you've got to develop a blueprint at the outset; it's your guide, it's the whole objective [what you are] building towards, but... I have no idea. I mean, it's really amazing. I have no idea... You know it's never really been up until now... that I have realized [that] that is just so alien to me. (III/39)

After his marriage, Roy found support in his partner. She took over the task of organizing his life:

I was very fortunate in the early phase to have found myself married to somebody who appreciated my good side... my sincerity, [my] wanting to be a decent person, and elected to stay with me through a lot of these difficulties. (III/32)

She helped him create blueprints. Yet he strongly emphasized how specifically detailed and clear this blueprint must be so that he may actually lead himself right back to his detail-gathering ways:

[My wife] emphasized the importance [of the] relatively correct beginning, just stating in a brief sentence [or] paragraph what the purpose is ... I mean just make it correct in the beginning... just stating in a brief, absolutely clear [manner] so there

is no way you can escape from it. Then from each movement in the paper, always say to yourself 'Is this answering that objective or question? (III/40)

However, his wife expressed her inability to provide the kind of time and intellectual commitment that Roy's learning tasks demanded, and Roy gave the impression that he has often had to fall back on his own resources.

This author has so far tried to pinpoint the kind of understanding that Roy has about his past learning experiences. The testing, feedback and interview process has further clarified his past and given him some indication of the direction the future can take, although he still does not have a clear understanding how he can turn his weaknesses around:

For areas of study and future work, how can I best tailor myself – anticipate the weaknesses that I do have? (III/31)

But a start had been made. For one, he was now in a position to organize his thinking better than before:

The thinking is now definitely more organized than it was before...because before I was at best a gross amateur – having some odd theories about what I may or may not have sensed [about] what were my areas of strength or weakness, whatever. So in that sense, it was a feeling of a major first step... those operational and emotionally dealing with the reality of my situation. (III/31)

In fact, Roy identified organized thinking as a major learning area he can identify with. In the past, he realized he avoided organizing facts because the fear of making mistakes made that a "dangerous place to go":

So...testing has suggested that I have...have trouble to select and organize in the terms of processing data and in that act I made mistakes...but instead of being allowed to learn from those mistakes. That just becomes a very dangerous place to go. (III/39)

Now, he began to make tentative attempts at organizing such mundane activities as buying groceries.

A list of random items, he realized, could be easily categorized:

I was thinking about...how I do the groceries nowadays...And when I make up my list I tend to organize it. You know, fruits and vegetables, meats, dairy products, desserts, like that. And that helps me save energy when at the store. By classifying the list it even helps save mental energy just planning the list. And that was the key.... (III/36)

However, he was still too scared to attempt such classification in academics:

When I study I just don't do that [classify]. I think I'm afraid to make a mistake, so I'm hoping the information, the data, it will organize things for me. But you know it doesn't really. (III/36)

With a great deal of honesty Roy said that his compulsion for more information, without any organizing principle, was still very real, though not as "fanatical" as before:

I guess my reaction is...almost automatic...and I can't let go... of doing that kind of thing...even though, you know, I have convinced myself that I must let go on a fanatical level. (III/39)

Roy had clearly not had enough time to refocus his efforts and integrate his new strategies into his learning. He admitted he had so far not been very successful in trying to grasp the big picture before looking for the details.

An emphasis, global understanding, broader understanding rather than the inclinations of list making... isolated facts. I haven't been very successful in that.

(II/26,27)

However, it would also seem that in recent times Roy learned to reflect upon his experiences in a way that that was conducive to self-affirmation and self-esteem:

[Dr. Groves'] no-nonsense approach to all this helped to just explain...that I wasn't crazy. That these were fairly well-known paradigms and I, you know, I fit the bill of a few of the paradigms. (III/34)

He was even able to reflect on the positive relationship between his mother and his children and see that, through it, he could affirm himself – not in a superficial way that denied the sadness he experienced, but rather that his unhappiness was a healthy reaction to an unhealthy situation. The bonding between the grandmother and her grandchildren was a validation of what he really needed from her.

That it gives me perspective of... a validation: Gee, I wish that it had been true for me... but then it validates that my wishes were not so unhealthy. (III/41)

The earlier self-hatred that he had developed is still there "in the background," but he has begun to take more time and is learning to be more patient. Though taping lectures, making

transcripts and painstaking memorization are still his strategies, he has learned to slow down. If his attempts at dealing with his learning difficulties do not foster radical change, he has more patience with his present strategies and can see that there is "nothing wrong" in taking it easy. The pressure had eased:

[The testing and feedback process] it's made me a little more patient less frustrated with myself and that's hardly a bad thing if self-hatred is hovering in the background. I know that the average person would not need to go through all the tapes and the lectures and so on... But I need to and... it's going to take me a fairly ridiculous amount of time, but I understand why that is, and it's for know reasons that are quite operable, there's nothing wrong with being a little bit slow to take in this or that.
(II/24,25)

There is evidence in Roy's statements that he is attempting to be less negative and self-abusive with regard to the pace that he set for himself:

Having learned about my limitation... weaknesses... on the... amount of time it may take me to achieve things... it can allow me to and has allowed me to plan more effectively the amount of time it will take for me to do things. It also allows you not to beat yourself up about... about having advantages in terms of accommodating.
(III/35)

The slowing down has reduced the occurrence of sudden and overwhelming attacks of panic. He still experiences panic, but now he can "ease" into it:

It [the testing experience] allowed me to ...have confidence in the value of sitting back as I am easing into a panic...during study, and breathing deeply and sort of saying well you would expect yourself to have a little panic. (III/34)

Thus Roy has derived at least some positive meaning from the assessment, feedback and interview process. It has allowed him to continue to reflect upon test results and his doctor's feedback. He has begun to self-regulate with new strategies, albeit in a small way. At the point of the third interview, he clearly continued to struggle with the act of learning. Although he intellectually understands his need to adopt more effective approaches to learning, the risk of failure still makes that very difficult.

The dialogue, however, has begun. Roy's *need* to verbalize his thoughts is highly consistent with what we have seen in the assessment-interviewing process. The very act of discussing his experiences is itself a strategy that will help him integrate what he has learned from them.

Beginnings are meaningful, but the future is uncertain. Whether or not Roy effects a radical change in his learning habits is not known. Even he is uncertain whether he can accomplish it. Perhaps, he says, he'll wait till school's over:

It's as though my default guy has me going back to the lists, so at some point I'd like to follow that up... when there isn't quite the panic of school. (II/27)

Evelyn's Profile

Evelyn (pseudonym) was the fourth student to be interviewed. At the time of the interviews, she was her early 40's, married, with two children and was attending university full-time. She had held a number of jobs over the years, but never truly developed a career. She attended private school for both her primary and secondary education.

Evelyn reported that due to what she experienced as a lack of structure, her attempt at university studies in her early 20's was disappointing and she eventually dropped out to start working. Her husband was supportive, but highly preoccupied with his career.

As a child she experienced her family environment as tense. Her mother was caring, but she found her father's demands difficult to live up to.

Evelyn's frustration at not being able to hold a job led her to seek a full psycho-educational assessment with Dr. J. Robert Groves Ph.D. (C) Psyc. in the latter half of the year 2000. The tests showed Evelyn's cognitive abilities to fall in at least the range of average intelligence. However, anxiety likely affected some test results which, as will be seen ion her narrative, was typical of her educational experiences.

Evelyn was punctual and cooperative during the interviews. However, she was noticeably the most anxious of the four participants. Interestingly, Evelyn made by far the most remarks about the office décor, for example, the colour scheme of the office and pictures that seemed a little crooked. These observations were highly consistent with Evelyn's comments about being a very visual person.

Section I

Research Question #1: What was Evelyn's history and her learning experiences before her assessment?

Evelyn identified school as one of her more positive memories about her childhood, although we shall later see that she qualifies this statement considerably. She said: "I think I liked school a lot actually. I think I enjoyed. It felt like a safe place to go." (I/1)

The school environment being supportive, Evelyn was able to pursue her learning with a sense of enjoyment: "I liked learning... I still like learning...always liked to learn. It felt fun to learn... fun to know things." (I/3)

School was particularly inviting because of Evelyn's home environment. Although her mother was supportive, her "authoritarian" father's expectations of her were far too demanding, leading to a relationship fraught with tension:

It was kind of tense in my family. I remember my mother was very supportive of me.

She wasn't well educated herself, so she couldn't help in a lot of things. But she did try to help me. My father was in the military... Always worked a lot. He tried to help me some evenings with school work particularly my math, etc. He was very demanding, though, and very... sort of aggressive, authoritarian, in his demeanor.

That always created a lot of tension amongst us. (I/1)

She gave several examples of how difficult it had been to meet his demands:

I was pretty good at French... when I had to take a French test... [I] remember I got 95%... I did really well at it. I brought that home and I was really proud. I was the

best student in that exam... and his reaction again was mixed... He said well you know that's nice you got 95 and that's a good grade. But when I go to work I give it 100%. That's the problem with you ...you never give 100%. (I/2)

The very fact that Evelyn chose to narrate this incident, obviously one of wounded pride, implied that it was deeply imprinted in her memory. Similarly, she narrated other incidents that contributed to the tension between them. For example:

When I got passed grade seven later. He [father] would say: 'You've already passed me...you got more education ...you already know more than I know.' But at the same time there was this kind of competitiveness. He would say that he would also kind of show how he knew more. It was a very difficult, very stressful relationship between him and I. (I/3)

In light of the tension in her home environment, we can better understand the significance of her comments about how much she enjoyed school. The teachers gave her the kind of attention that facilitated learning: "It was a very small school and I enjoyed that... there was a lot of attention from the teachers..." (I/1)

However, all was not well, even in school. We get glimpses of reading problems in primary school. Her definition of being a good reader was at odds with reading as an act of comprehension. She likely read the words correctly, but believed this was what she had to concentrate on:

I always thought I was a good reader and I remember back in primary school – I was kind of shocked because... we had some tests and such on reading

comprehension...I was in the lower average... I was surprised... how weak it was compared to what I thought. (I/7,8)

Further, she discovered that she was prone to making mistakes. Her supportive teachers tolerated the mistakes, indeed rectified them: "I always made a lot of silly little mistakes in primary school, but because the school was small the teachers could help me." (I/1)

Evelyn seems to have thrived on the attention she received at school. Few children would prefer to study with a teacher rather than play with their friends. Yet Evelyn did prefer her teachers' company for the personal attention she got. The attention fulfilled her need to feel valued and safe, which became a prime importance in her life. She narrated an incident about how the teachers paid special attention to getting her up to speed after she had recuperated from a car accident. The value she attributed to the attention was evident:

I remember in grade six I had a car accident. It was kind of serious and I had to recoup at home after the accident, and for several weeks, and so I fell quite behind in school. But this is an example when I would go back the teachers would keep me in during recess and parts of lunch hour... whatever it took to help me with schoolwork and go over it. I would actually like that... I mean I liked the attention.

I liked that. They felt safe [to me]...trying to make sure that I ... caught up with all the back work... So I didn't mind staying in and I enjoyed the attention. (I/2)

The attention that Evelyn received in primary school continued into high school, which, again, was a small one:

Secondary school... it was quite small ... it was about 350 students in the entire school So there was a lot of attention... the teacher had a lot of time to go over things. (I/5)

In the midst of this contrast between a stressful relationship with her father and the safety of her teachers, Evelyn became aware in high school that the negative influence in her home environment had told upon her studies. The relationship between tension and her grades was clarified following an incident:

My father had to go away when I was in 11th grade – I believe. Then my grades went up... I think that relieved some tension at home – it helped probably. (I/12,13)

However, it is important to note that though she felt her father was so difficult to please, she also believed that there was some truth behind his criticism. After all, despite all the help she received at school, *she kept making silly errors that she could not account for*. This inexplicable tendency to make mistakes was confusing:

I myself never understood...and always thought that he [father] had a good point and that there was something wrong here. Why couldn't I do better? Why? It seemed to me I should do better...I was studying very hard. (I/3)

Forgetfulness added to the confusion brought about by mistakes:

I keep forgetting and making mistakes... it was just sort of... a very confusing vague reality. I knew it was true, I would forget things, but I could never understand

exactly what I was going to forget. It just didn't all fit together for me... it was as if... this big picture [was] missing for me. (I/4)

"Missing" the "big picture" gives us a hint of an area that is significant to understand Evelyn's learning difficulty. Even as an adult, she seemed no clearer about what might help her organize her memory better:

I'll tell you I can walk into a room and you can introduce me to 6 or 8 or 10 people and I leave the room...I can't even remember... any of their names. I don't remember who took sugar in their coffee, cream...and it's sometimes confusing to me. (III/25)

But to return to the structuring theme, what Evelyn means concerning lack of structure became clearer as interviews progressed. She identified that she seldom had any organizing theme to her study materials. She had to rely on Cole's notes, reading them several times, to get the organizing principle:

I'd always read something in English ...and I'd always get Cole's notes and I'd always read those and actually I'd read those several times, because when I would read anything in literature. I'd always just miss the point. So I would read it, once or twice and um... afterwards I'd always get the notes. After I got the notes, I found out ... who had done it and whatever and I'd go over the story and realize I hadn't noticedwho'd picked up the candelabra in the library or who had slipped something in their pocket or ... I had missed that, somehow, when I was reading the story. It was only when I read the notes – and I went back over the story the second

or third – whatever time that I would also... I wouldn't catch it. Now I knew who had done it. Until I did, I would miss those details. It just didn't have anything that tied it together. (I/9)

We learn that she also had difficulties in following instructions. The perceived sources of confusion thus increase in number:

I just felt I had to try harder... I could never understand it myself. I was always confused... it just wouldn't make sense to me... I would be given the instructions in class. Everybody else seemed to be able to follow the instructions... I just couldn't follow them.... if there were three or four points in a series of instructions... I always leave one if not two or three out. I just couldn't seem to get it all right or remember. (I/3)

Mixed messages she received from her father only served to compound her sense of confusion:

I get kind of a mixed reaction from my father... he would identify me as a nice little girl... sweet and kind... but he always said I wasn't trying hard enough. I wouldn't concentrate... I couldn't seem to remember. (I/2)

The pattern of committing errors continued throughout her education and into adulthood.

But that always happened... to me right into my adulthood... I worked at a bank. I had a year's contract [and] everyday I would make a mistake or three. Like, my cash never balanced. Now, the people liked me. All of the customers, all liked me, but at the end of the day, when I would go to cash out, my cash just wouldn't balance.

The assistant manager would go over everything with me during the day and inevitably we'd, find the mistake I'd left out... The pieces that caused my till not to balance... But it was so frustrating because everyday I made a mistake. (I/4,5)

This tendency to make mistakes had an interesting fallout. Because she had committed every possible error that a bank teller could make, and had been told where she went wrong, she became an expert in rectifying other people's mistakes! However, the mistakes ultimately cost her the job:

In fact it got to a point... Everybody always came to me because I had made every mistake you could make... So they would come to me and I would always be able to help them find the mistake they had made... at the end the assistant manager she just said she couldn't keep me there... because it was just too much work everyday to keep going over the work... she had to spend just too much time. (I/5)

Evelyn never did get a clear understanding of what was causing her to commit errors. In her understanding, she linked her nemesis with her having done something wrong as a child. Perhaps, she thought, she made mistakes because she had failed to organize herself adequately:

But in the past... I don't know that I ever asked myself [the] question... 'How can I organize myself?'... Kind of looking back... I know I felt unorganized, disorganized... felt sort of scared and... thought maybe I did wrong. Thinking that was what it was about.... (I/13)

This sense of failure developed into guilt and anxiety. Her sense of guilt becomes apparent from her belief that she did not deserve higher education. She believed everyone else at university was an Ontario Scholar and she did not belong there:

I didn't have a sense of belonging in university. I wanted to go, but I wasn't an Ontario Scholar. I was embarrassed and actually a little ashamed of that. I really didn't think I belonged to that university....all these other 200 people were much smarter than me because... I just thought they were Ontario scholars. (I/10)

Despite her sense of anxiety, she had limited awareness of its causes. She did not stop to reflect why she felt anxiety. Although she knew for many years she studied much harder than others, she did not want to question it to the end: "I don't actually think I stopped and had that conversation with myself... why I am having trouble..." (I/3)

Perhaps, by then it had become too late. The patterns became routine: "I didn't explain it [the tendency to make mistakes] to myself, it just became a routine after a while." (I/5) It was only in recent years that she allowed herself to reflect upon certain excessive habits and tried to understand why they were necessary. The awareness that she might have a learning disability dawned on her:

Later in life I started hearing about learning disabilities. That's the first time it dawned on me that I had studied so much harder than others and there must be a reason. (I/11)

As noted above Evelyn's problems were not limited to her educational experiences. She struggled in the work force and eventually her frustrations compelled her to return for a post-secondary degree.

I've done everything...sometimes full time, sometimes part time... I had a sense I had to get trained to do something specific... I needed some specialized education...

I wanted to go back and get a degree in and specialize in an area so that I could work in the future. ((I/11)

Thus, evidence of Evelyn's learning disability can be seen in her struggles with school. She was prone to making mistakes and forgetfulness and could not follow instructions or organize herself. Her father's interventions only exacerbated Evelyn's confusion, self-doubt and frustration, leading to self-blame (she was responsible for her problems), guilt and anxiety.

However, the fact that she went to private schools and the attention she received from teachers helped her cope with her learning struggles. At the same time, this assistance may have masked the nature of her problems and inhibited her ability to address them directly.

Evelyn's confusion about the cause of her repeated mistakes, and the anxiety evoked by the anticipation of a mistake, led her to focus on evolving strategies on how to avoid mistakes.

Section II

Research Question #2: What strategies has Evelyn used to self-regulate her learning?

Evelyn says one of the reasons why she got the special attention of teachers was that she was very well behaved. We could believe that this was not merely a role-playing strategy to attract attention. We could give her the benefit of the doubt. Yet the possibility persists that perhaps she was a good girl *in order to* get attention *in order to* compensate for learning difficulties. Perhaps she was a good girl *in order to* get attention *in order to* compensate for the stressful relationship with her father. We do not know. What we do know is that she had the *need* for the attention, she *got* the attention and *enjoyed* the attention:

I was a very good, quiet little girl. Very obedient and I think the teachers liked me and were willing to give me the time to make sure that I understood everything. (I/1)

Our suspicion that perhaps Evelyn developed some role-playing habits are somewhat confirmed when she said there were situations where she had to act smart. Now, a child would have to *act* smart only if she had had some doubts about her intelligence. She said she tried to finish an exam quickly, even if that increased the risk of more mistakes, in order to give the impression to others that she was smart:

Back at high school when I thought about myself, when I'd take exams ... I'd always make sure I was the first one done. That was my way of making sure, my way of saying: 'See, I'm [as] smart as anyone – or smarter than anyone in the room' I could always remember thinking well, maybe I shouldn't go quite that fast and taken a little more time. But, actually I knew that didn't matter, because I always made a mistake – no matter how long I took.... (I/12)

Apart from such coping strategies, Evelyn also developed learning strategies. At the initial stage, in primary school, the learning tasks were well structured, or well organized. Everything was explained simply and the demands of the tasks apparently presented little difficulty. All she had to do was follow the structures provided by others:

They laid the work out [in] primary school, very clear in what you had to do each night and how much you had to study and so on. I would always do everything I was told. (I/1,2)

This strong reliance on the organization and structure provided by teachers continued right through high school. This may also have led her to misunderstand what learning was about. She seemed to have believed that learning was solely the accumulation of facts.

I think I was fortunate to go to such a small school with so few students and have all that structure. That allowed me to spend most of my energy on learning facts. (I/13)

The necessity of developing appropriate schema for integrating knowledge did not cast much of an impression on her. Evelyn's limited use of any personalized structures for organizing her learnings led to much disappointment when she entered university. Suddenly, the onus of organizing and structuring fell on her:

Actually that was a big shock... when I started in university. Two hundred students in class with me... two-thirds of the school I had attended ...you couldn't get to the professor. In university there was no structure to it...it was: 'Here are your text books, start reading'. I just didn't have a real sense of having things very well organized.. In high school they had organized me very well in how to prepare for things. (I/10)

But in school she had already developed the habit of collecting facts, without putting a structure on them. She did not adapt to the university environment by developing organizing skills. Instead, the strategy she developed to adapt to an environment that could not provide the structure was sheer hard work. She worked herself to the bone, metaphorically speaking. This again was a habit that she had developed in school.

First, there was the painstaking process of taking notes:

I took notes in class – pretty much like I did in high school. Almost every word, and I never would really know what was the important pieces or not. I didn't have a sense of that. (I/14)

Next, she would copy her notes over and over again. She did not reorganize them, she merely re-copied them. This was a rote-learning approach that help her to memorize the notes:

Sometimes I'd go home and copy my notes in fact over and over until 1[a.m.] I understood it better... Each time trying to make them neater and at the same time, by copying them, [to] learn them. (I/6)

We thus see that Evelyn continued to have problems remembering the content of her learning. This was borne out by her comments that she tried a number of strategies to remember easier, for example, looking for questions on the text, making up questions, making up rhymes and songs or even asking a teacher for clarifications:

I would read each chapter over and over at least three times. ... I'd answer the questions at the back of the chapter and things like that. Sometimes, I would get notes from other people. I'd make up questions to myself of what may be asked and I'd try to answer my own questions. ... I'd make up little rhymes or songs or things to try and remember things. That would sometimes help. Sometimes, if I didn't understand things, I'd go to the teacher after class, ask ... about it, ... (I/7)

What was so remarkable about her learning methods was the number of hours that she put into the whole process, especially if an exam was approaching:

I'd study from maybe 5 in the evening until midnight. If I had an exam within the next few days or week... I'd even get up at five or six in the morning and I would go over my notes the next morning again. (I/6)

She hid the fact that she worked so many hours from her peers:

I would talk to my friends and you know they would say ‘I really studied hard for this exam. I studied two or three hours’ and I’d just laughed to myself. I wouldn’t tell them ...didn’t want to let people know...I studied thirty or forty hours... Nobody studied like I studied. (I/7)

The stress of learning was high, even to the extent that, in later years, Evelyn would secretly begin to doubt her sanity:

I was afraid that a piece of me sort of felt I was crazy...not really...but I certainly was putting a crazy effort into learning. (III/27)

The strategies Evelyn did develop in school were highly consistent with her statements about her not understanding how to organize her learning.

Evelyn’s limited use of effective self-regulated learning was reflected in her need for intensive, even exaggerated, use of her mental resources. She did not seem to have had any way of finding out which techniques were the most effective for her so, instead, she attempted to learn by using a wide variety of approaches, hoping one of them might help.

At least in part, this problem was her limited use of reflection. For example, she was aware that she studied a great deal harder than any of her fellow students, but was so driven to study that she never stopped to ask herself what she might do to cut down her study time.

With lack of clarity on how best to learn, she measured her learning through effort – hours of study in her room. Of course there was likely a secondary benefit by staying in her room at home – it kept her safe from what she identified was a hostile environment.

Section III

Research Question #3: How did Evelyn cope with the various challenges presented by the tests used to identify her learning disability?

Evelyn admitted to a long-standing fear that somehow she was broken and yet, by going through the process of identifying her learning disabilities, she felt affirmed.

I think when I sat down with Dr. Groves... that was probably the most helpful as we went over different test results and as they began to make sense to me. I didn't feel broken as much as I did in the past. (II/18)

It can be assumed that the supportive atmosphere in the doctor's office helped her deal with her fear of making a mistake. This atmosphere may have helped Evelyn not to judge but rather accept her struggles:

I think maybe the first things that helped was the general atmosphere. I was so frightened to take a risk and make a mistake. I didn't want to make any mistakes. (II/18)

We can see just how deep this sense of being "broken" was for Evelyn. The "secret" about excessive work that she had harbored for so many years surfaced, and she broke down in tears as she recollected the pain and the suffering of it all:

I see that was a real sense of relief. I was sad. I remember I cried in his office, I cried at home. I had never shared any of this with anyone, about how hard I had worked, and I guess that was more frightening that I knew and um... how hard I had tried for so many years. (II/20)

Evelyn's struggles were confirmed as she reflected upon the tests. For example, tests related to short-term auditory memory evoked old frustrations:

There were tests that I had to remember [WJR: Test #2: Memory for sentences & WJR Test #9: Memory for words, WJR Test #17: Numbers Reversed]...sentences and words and words in certain sequences or numbers and I clearly...remember being frustrated during that test and had a vague sense that I probably didn't do very well [and] in fact it really didn't go well. (II/15)

She spontaneously related her experiences during these tests to her childhood experiences of difficulty in recollecting instructions. For Evelyn, the tests only confirmed the reality of that difficulty:

... for the first time I began to understand how that [remembering] was a problem for me. It kind of confirmed a sense of myself that when teachers would give me things to remember – a series of instructions – I would always leave pieces out. I just couldn't always remember; or, if I was doing a test, exam, which had three steps to it, somehow I always would leave out the second step or the third step or I would leave a piece out. Never quite score what I could have. (II/16)

The difficulty in remembering also surfaced when she was asked questions on a text she had read. Often she could not remember the answer and had to revisit the text to locate the answer. This kind of processing of information slowed her down:

It [SATA Test #5: Reading Comprehension] was slow not just because I did have to read something but I had to answer a series of questions. I would often have to go

back and read almost the whole passage over again to find the answer to the question. I knew it was in there, but ...I didn't very often remember the specific answer. So I would have to go through it... over the whole material to find them.
(II/17)

Evelyn's comments regarding how she experienced her math test [SATA Test #6: Math Calculation – Normed by Age] suggested that the effort that she put in to memorize formulas in secondary school might not have paid off in long-term learning. This test also showed up her difficulty in retaining what she had learned, especially when there was nobody around to trigger the memory:

I was... disappointed in the math test...because I had approached math in such a literal way that I would often have trouble remembering the formula. I was given a series of formulas and I knew...I knew how to do them...something about them...I knew if somebody sat down and spends 10 minutes or 15 minutes with me on a particular formula I would remember a whole bunch about it. During the testing, no one could do that so...I remember when I went to do that I was so frustrated because I knew I knew certain...something about this. I knew I was close to it but I had that memory gap again. (II/17)

In the tests on non-verbal abilities, too, Evelyn experienced difficulties. We see that the dynamics of her learning problems went beyond short-term memory to solving picture puzzles:

I remember one in a test [SATA Test #2: Non-Verbal Reasoning]...where I had to solve these puzzle. I think there were 25 and I had to do them in a time limit. Then

they gave me others. I remember how hard I found... solving the picture puzzles. I like it a lot more when I only had to solve puzzles using words. (II/17)

As we have seen, Evelyn is by all accounts very visual. Yet how she coped with a visual non-verbal test [SATA Test #2: Non-Verbal Reasoning] is most revealing. She had to turn the visual shapes into words in order to comprehend them:

I would have to discuss them [the shapes] with myself. Again like when I was younger ...I used to study in my room but I used to talk to myself. I used to have to turn and discuss my ideas and I never knew why that was but... somehow solving the shapes...I had to talk to myself then...to understand them. Looking at them in itself wasn't enough. (II/17,18)

Evelyn gave us the opportunity to follow her thinking processes. Within the Rey Complex Figure, she revealed a detailed consecutive approach in copying the figure. This approach can produce a successful copy. However, the effort required is seldom worth the outcome. In fact she realized (during feedback from Dr. Groves) that despite adopting a painstaking method, her reproduction looked rather "segmented":

One of the tests [Rey Complex Figure] I had to do and I had to draw this shape – um...they gave me. They just gave me some colored pencils and asked me to draw this shape. It was made up of squares and x's and triangles and diamonds and different pieces. I remember having some difficulty with it... I had approached it, trying to make sure I did everything right, line by line, step by step. So I would draw a line and lines attached to it and so on. And although I drew things that were

attached when others... very much in a sequence, I realized when I looked at it, it was also very segmented in nature. (II/16)

We can better understand how much effort was wasted in Evelyn's approach when we look at her results of the memory portion of this test, given to her only two minutes after completion of the copy portion. The test made her tense. Again, because she had focussed on the details, she could not remember the overall picture:

Piece by piece by piece. That was a very incremental approach – a very segmented approach. I lost track of the whole shape of it. I lost track of it. Actually, I did quite a good job of copying it, [but] it took me an awful lot of energy to do that. I remember that. Feeling quite tense about that. Then later, ...one of the assistants asked me to draw that from my memory and there...all sorts of pieces [were] missing. If I would miss something, then I'd miss all sorts of other things...that might be attached to it. So I had a hard time recalling it because I had lost sight of what the drawing was about. I had lost sight of the picture it self. That confused me...the act of drawing it. That's kind of how I have always studied. (II/16,17)

What is significant in the above comments is that all her concentration was focussed on little details to the extent that she lost sight of the picture itself. Evelyn's responses to a learning style inventory confirm her tendency to miss the forest because she'd got lost among the trees. In fact the test served to confirm "exactly that approach" which she had towards learning. Being excessively methodical and orderly with regard to individual facts took up so much of her time and effort that she had little inclination left to integrate the facts into a comprehensive picture:

Then there was another one called the learning styles. I had to take it home and answer a series of questions. It sort of confirmed exactly that approach. A very...I just would gather one fact after another, in a very orderly manner. ...I was not connecting them in anything but primarily in a very segmented way. (II/17)

It must be noted that though Evelyn talked about several weaknesses, she came away from the testing process with a sense of her strengths as well: "I remember I did very well in several different verbal tests where I had the English language...like my vocabulary was strong [SATA Test #4: Vocabulary]." (II/17)

Similarly, she did well in composition: "I had to write a story [SATA Test #9: Writing Composition] and I did pretty good in that and I enjoyed that part of it." (II/18)

However, there was always that nagging doubt that something was wrong somewhere – that she was approaching her studies the wrong way. That she did not, or could not, reflect on the problem leads us to suspect that she found her existing ways safe and that this safety was reason enough to box herself into her way of doing things:

It just never came to my mind to do something different. I just never reflected...that there was something wrong with that approach. The problem is that I just do that so much. (II/17)

Through the assessment-interview process, Evelyn began to realize how she had limited her avenues of learning. The awareness dawned on her that her tendency to put facts into little boxes had separated those facts from the rest of reality – from her experiences, from other facts and from other people. This, in fact, was a revelation, gained from the assessment-interview process. Her

following comment was most revealing in this context:

One of the things that I thought, with a lot of my experiences and so on... [I] didn't use a lot of my own experience to learn with. Each time I learn something. [I] isolated that learning...[it had] a separate reality from everything and everybody.
(II/19)

Indeed, Evelyn found her feedback with Dr. Groves enlightening. For the first time in her life she realized that alternative ways of thinking and learning were even possible:

Until the testing, it had never dawned on me there was any other way to approach learning. It never dawned on me [that] anyone else approached it any other way.
(II/17)

The epiphany, however, was yet to come. The test results and the supportive atmosphere of the assessment-interview process led to an entirely new perspective, gave a new meaning, to why she learned the way that she did. The missing piece in the puzzle finally fell into place – anxiety:

You know I did some psychological testing and it ... showed that I had a lot more discomfort than I had wanted to admit to... It had a very strong ring of truth... I realize I have learned to use that anxiety to drive me ... (II/19)

Evelyn's words are fraught with meaning. She used anxiety to drive her, keep her focussed on the fact that she must produce results commensurate with expectations. Her own expectations were set in the background of her learning difficulties (how to overcome these difficulties and show she was smart) and possibly the goals set by her family environment. What added to the anxiety was the fact

that she must hide the amount of effort she must put into her studies. She must hide it or else, she feared, others may get the impression that she was not so smart after all:

It [anxiety] has become a tool...it's how I go about writing everything down. It really keeps me moving to keep me studying...trying to find the books and the resources and learn and, at the same time [it] may be a bit frightening to...let anyone know just how hard all this was for me. I use that to direct me, keep me going, keep me... in a way focused, driven. (II/19)

Evelyn had gone through her testing recently and may not have fully assimilated the implications of all her comments. What she came away with from Dr. Groves' office was the experience of emotion-charged reactions. It is likely that the emotional release (for example, crying as a result of realizations) allowed her the possibility of attributing a new meaning to studying and learning.

At the time of writing, it is not known whether Evelyn has been able to put this new awareness into action. It can only be hoped that the assessment-interview process will also foster new learning practices.

Section IV

Research Question #4: What personal meaning has Evelyn given to her past and present learning experience?

Evelyn's comments in the final interview might have been influenced by certain readings she had done preceding this meeting. The second interview had clearly stimulated Evelyn's reflections upon the testing process. Either in anticipation of the focus of this third meeting or in

response to a spontaneous need to create meaning out of the second interview, Evelyn looked up some reading material given to her by her doctor. This material might have influenced her answers in this interview.

Towards the end of the interview, Evelyn shared with us her reason for seeking a psycho-educational assessment. Her comment also helps us understand why she agreed to take part in this research. Her academic pursuits, she said, had tired her and she needed to find out why: "I'm old enough...that I need to sort this out. I am getting too old to be this tired." (III/28)

As Evelyn reflected upon her test results and the doctor's feedback, she identified just how little she had understood herself and her learning experiences in the past. For instance, she narrated how she failed to connect her new learning experiences with other experiences in her life:

It's like each time I'd learn something...the first time. I never compared old learnings to new learnings. Just got myself all worked up and learned each time as if it was the first time. Why I didn't connect [new experiences] more in the past...it was always like school was something outside of me and had nothing to do with my life. (II/21)

Upon reflection, Evelyn recognizes a long-standing conflict, almost as if it was something she had always known: "A piece of me always knew that was true. Now is the first time I really put them together as one truth, and saw sharply...the conflict." (III/26)

Evelyn recounted that Dr. Grove's assessment had led to the conclusion that her approach to learning was right-hemisphere dominant. She was told that such individuals tended to start with the general picture first, or go from the conclusion to the beginning. While she found this information "confirming and satisfying" (III/22), it was also "confusing" because she was only too

aware that it was "almost in a way [at] odds" with her compulsion to go for the details at the cost of the general picture. It is almost like "two opposite ways of thinking"(III/23).

Evelyn's observations were revealing in that they pointed to a many-faceted conflict within her. If she approached learning from the right hemisphere, why did she have an anxiety-driven compulsion for details? It is possible that the compulsion arose out of a need to please her father.

We have seen in the third section how during the assessment-interview process Evelyn realized the significant role that anxiety had played as a motivator to learn more and more, irrespective of whether or not the learning was organized and structured. It is necessary to dwell on the anxiety factor a little more as it is this aspect of her life that helped her to give meaning to both her past and her present. Significantly, some interesting contradictions emerge.

Though with the awareness, through the assessment process, that she was right-hemisphere dominant and that she could get a general picture with less effort, she was still driven by the fear that she would likely forget a detail and then commit a mistake. She was still caught in what she experienced as a dilemma, namely, the harder she worked, the more prone she became to making mistakes. On the other hand, she could not relax because if she relaxed, she would still make mistakes. She worked hard, she made mistakes; she did not work hard, she made mistakes. Anxiety had trapped her: She knew it was counter-productive, yet she could not escape it:

I make mistakes because I really don't work hard enough or I try to work so hard...that I make mistakes. That is the feeling I get...and I can't seem to ... do anything else. I've got to...try to find a way ...not to bounce form one extreme to another...making mistakes or ...one feels...more relaxed...but when I get

relaxed...then I get anxious...because I am relaxed and I know I will make a mistake. (III/25)

Further, she believed that she had to study excessively in order to understand. On the other hand, she knew that studying hard "burns up so much energy." Both were "true", and herein, again, lay the trap:

It is almost two opposite ways of thinking... this is how I make sense out of it...that helps me understand a little bit ...why I am burning up so much energy trying to learn. The point is that I believe that both are true. (III/23)

Then again, she was aware that her anxiety over learning more and more led to further confusion. Yet she was aware that anxiety was also her prime motivator to learn more.

So, to protect myself...I've had this...anxieties to not miss the important points. So I really worked very hard to try to learn everything. But I realize more and more how confusing that is for me. I don't know what to do with that. How confused I get that when I try that... I think ...the harder I try...the more anxious I get. But I also know that when I don't do...that...when I don't try to learn it, something I need, that I have no motivation. (III/23,24)

We thus get a fair picture of Evelyn's predicament and the feeling of being trapped. The pain of it was evident. She cried during and after the feedback session. But, through it all, Evelyn began to identify the battle within herself. It was a battle that could be seen to arise out of a compulsiveness. She knew that anxiety, as she experienced it, was counter-productive and that it had caused much pain and suffering. Yet she could not live without it. Her epiphany, that she was

driven by anxiety, became all the more complex. But now at least she recognized that the battle was not "out there," so to speak, but within her:

Well I think I'm becoming more aware of... I don't know if it's me as a learner... but more like... how much energy I put into fighting myself. That's the understanding of this. (III/27)

Through the third interview, Evelyn evidently created a new meaning as regards her learning disability. Indeed, it was not the learning disability that was important – that could be dealt with. It would appear that for Evelyn it was more important to be able to deal with the extremes to which the disability took her: "My disability would not [concern merely]... my ability to learn... so much as... the extremes of how I learn." (III/26)

As pieces of the puzzle fell into place, Evelyn identified the need to contain her anxiety in order to process and integrate her learning in an effective manner. She may not be able to get rid of it entirely, but she could at least slow it down, as she put it, in order to increase the perimeter of her focus and integrate diverse information:

I have to hold tight to my anxiety to learn... but I have to slow it down in order to think about it in many different ways. How I have to connect that information to things I've already understood and experienced in life. (II/20)

This re-focussing of her efforts was also evident from her willingness to give up her competitive coping strategies:

I guess the first thing I have learned is not to be the first one done. ... I don't feel the need to be the first one finished in class anymore... I do not have to prove myself anymore. (II/21)

As she tried to give up her external locus of control, Evelyn was able to re-focus her efforts away from her past strategies. She began to provide meaning to her learning from her strengths. Perhaps she could make more use of her keen eye for visual detail:

I'm the kind of a person who can walk into a room and in a glance...sort of understand the colour scheme and type of decoration and if you just left me there for 10 seconds...I could come out and tell you the kind of furniture and colours and pictures on the walls. (II/25)

Visual processing could also become more meaningful as she identified how strongly connected visualization and emotion were for her: "I would even remember I liked them [bank clients]...before I would remember their names." (III/26)

As Evelyn moved ahead, we see how she has begun to make at least some effort to change. She has been trying to make cognitive connections and integrate her knowledge:

I try not to collect facts... but... try to understand the point and maybe if I can connect that to something...I have already known or understood. So I have been trying to kind of do that... (III/24)

She talked about a technique that might help her organize and integrate her lectures, although the old fear of leaving out a detail still haunts her:

Maybe what I need to do... is read ahead... before class... read the summary or something or when I'm in class I have a better understanding of... the point of that section. [But] I'm afraid I'll just learn one thing or something and that's not going to be enough. (III/25)

Near the end of the third session Evelyn identified a strategy which might turn out to be the most meaningful for her. In the past she had used her verbal abilities to repeat and memorize her learning. Now, for the first time she suggests she might use these very abilities to help her understand and integrate her learnings. (In fact, this was the technique she used for SATA Test #2: Non-Verbal Reasoning.)

I think I'll just... fill in and talk about it carefully with friends ... and sort of try and understand. I'm not talking about exactly how they study... I'm talking about how they deal with it... [the conflicts and ways of thinking] (III/28)

Until recently, Evelyn seems to have limited the use of her verbal skills as a tool for rote learning. In part, this was due to the fact that she had a motive for hiding her struggles and therefore did not seek out opportunities to discuss her thoughts and feelings.

The assessment-interview process gave her the opportunity to discuss her childhood, past learning strategies and how she coped with her difficulties. It is possible to argue that the process provided her a tool to integrate information about her school days through her verbal skills.

As was pointed out earlier, Evelyn was still working hard to come to grips with her new awareness. She still seemed uncomfortable about giving up her anxiety. She saw it as a major form of motivation. However, rather than giving up her anxieties in some absolute way, she did consider

re-focusing her efforts and self-regulation and connecting her learning to her own realities. In time, if this is effective, she might be able to lower her level of anxiety as the act of learning becomes a more positive experience for her.

CHAPTER 5

INTERPRETATION OF THE DATA

This chapter will discuss each participant's profile individually. The focus of each discussion will be to interpret the profiles both in terms of the meaning that this author attributes to them as well as through contemporary literature.

Specific issues to be addressed include the nature of the cognitive dissonance that each participant had with regard to their intelligence, and the myths created to cope with the dissonance. The cognitive dissonance in each participant is seen as having risen from conflicting and contrasting social cues given by various individuals and situations that were present throughout the formative years of the participant. The myths which developed are seen as an attempt by each participant to cope with the cognitive dissonance and at the same time to help stabilize a confusing environment.

In light of the limited knowledge that each participant had as a child regarding learning problems, these myths can be seen as functional in the short term as they helped to organize their world view. In the long run the myths may be seen as maladaptive as they may have inhibited individual growth (Krippner, 1990).

In addition, the role of anxiety will be considered as it is seen to affect each participant's levels of self-awareness and self-regulation. The self-determination theory (Ryan and Deci, 2001b.) will be used to understand the nature of motivation and self-regulation that each participant exhibits.

An attempt has been made to look at the profiles from a social constructivist perspective. The narrative approach taken by this study tried to place the participants' experiences in a social context. It was also hoped that the very act of narrating their experiences would create a new awareness about their cognitive strengths and weaknesses. The profiles themselves did reveal a new

awareness that the participants in the study derived from the assessment-interview process. This awareness was identified through epiphanies. The epiphanies shown in the profiles are addressed in this discussion in the context of their significance for reflection, mediation and new forms of self-regulation.

As the reader reflects upon the individual profiles in the previous chapter and reads through the discussion below, one of the themes that will emerge relates to the degree of mental effort each participant identifies as necessary to organize the act of learning. The intense effort they put into studying not only adversely affected their ability to automatize the act of learning but was also a fundamental cause of their experiencing new information as a threat. Novel stimuli created a state of disequilibrium in their state of knowledge and the schemas that they used to organize the world, which only caused more confusion and required more mental effort. However, according to constructivists, disequilibrium is a precondition to growth in that the self attempts to give more complex and differentiated meaning to experiences in an attempt to overcome that disequilibrium (Kegan, 1982). In the case of the participants in this study, the threat of novel stimuli results in turning away from the new in order to maintain the equilibrium already attained. This resulted in their frequently boxing themselves in existing schemas and structures, hence limiting their ability to accumulate more complex experiences and meanings.

Fundamental to this understanding is the fact that the sense of intelligence these four participants have is a fragile reality. It has been observed that a fragile sense of self is particularly true in the case individuals with undiagnosed learning disabilities (Orenstein, 2000). In this study, the four participants have fought a constant battle, not always successfully, to protect this sense of intelligence from several threats that challenged it in society.

The next chapter, Conclusion, will address common themes among participants and address implications and limitations of this study.

Anna

In accordance with the objectives of this study, as stated in the chapter "Purpose of Inquiry," an attempt has been made to explore the education experiences of Anna. By eliciting narratives from her, this study attempted to provide a description of her experiences of learning situations in academia. I was interested in exploring the learner as a person. The study was directed by the following principal research question: "How do adult students with recently diagnosed learning disabilities studying at the university level perceive themselves as learners?" This query was made more specific by the four related sub-questions, which provided the structure for Anna's profile.

Accordingly, an attempt has been made to record Anna's experiences related to her learning history and establish the principal issues with which she struggled and the strategies she used to cope with them.

A major issue established in Anna's profile was the cognitive dissonance between opposing thoughts and experiences regarding her own intelligence, which caused her a great deal of confusion. The confusion, combined with limited support for affirming her intelligence, kept her in a state of on-going anxiety. This anxiety further fueled her confusion. As Gerzon (1997) aptly put it: "When we become anxious, the first casualty is mental clarity...Anxiety's primary weapon is confusion, which weakens the will and impairs the ability to think and plan" (p. 127).

Anna recalls that in her early childhood she frequently related her academic learning to her life experiences. However, over time she found this increasingly difficult to do, particularly as she often eliminated new information which did not tightly fit into her own experiences, thus limiting

her ability to expand and abstract her knowledge. This increasing inability to mediate new knowledge through previous knowledge is in contrast to the learning model described by Simon (1995) from a constructivist perspective: "We construct our knowledge of our world from our perceptions and experiences, which are themselves mediated through our previous knowledge. Learning is the process by which human beings adapt to the experiential world." (p.115).

Anna found it difficult to attend to what others considered relevant words and details. Indeed she tells us that when confronted by novel information it took her 200 to 300 percent of her energy to identify a meaningful pattern. With all of her mental efforts going into attending to novel stimuli, she was unable to automatize the processing of information. As Sternberg (1988) has pointed out, failure to automatize leads to a breakdown of information processing:

If complex tasks can be executed only because many of the mental operations involved in their performance have been automatized, failure to automatize these operations, fully or in part, results in a breakdown of information processing and therefore in less intelligent task performance (p.63)

Due to her confusion over her difficulties in class, Anna took on a passive learner's role, identifying herself as a sponge into which the teacher or professor must pour knowledge. This is a common learning myth – that we must be passive and receptive to "absorb knowledge" – but one which is controversial because "true learning is an active process of examining information, evaluating it for some purpose, and going on to the next action." (Gross, 1991, pp. 48-49).

As a young child Anna sat quietly, expecting the teacher to catch her interest. In her last few years of high school and in university, she became very vocal and "aggressive." However, even in this so-called aggressive stance, in which she demanded that professors pour the knowledge into her,

her cognitive processes remained basically passive. She could cognitively engage the information only when she experienced it visually or in some narrative form as then she could personally identify with it.

Anna found that the effort required to learn was exhausting. In order to cope with the massive effort that was required to both organize bits of knowledge as well as integrate them, she found it expedient to choose only one of these tasks required of her. Oftentimes, she chose to adopt a rigid organizing schema, strongly based on visual and experiential learning, which placed each new bit of knowledge in a separate box, and she found that she could only put limited effort into relating and integrating those separate bits of knowledge.

The struggle to process new information only furthered Anna's self-doubt. Throughout her profile Anna has shown us how she repeatedly found it necessary to defend or protect her intelligence in her childhood. The impact that this struggle had on her fragile self-esteem can be gauged from her statement that every question was perceived as a "threat" (III/33). One of the few persons who made positive observations about her intelligence was her godfather. His comments and her own experiences helped cope with doubts about her intelligence.

Thus, we can see that Anna's anxiety has its roots in the cognitive dissonance inherent in her beliefs: "I am smart - You say I am stupid (*I hope I'm right - I'm afraid you might be right*)."

It has been argued that individuals who are caught in a cognitive dissonance are motivated to "change attitudes and behaviors to reestablish consistency" (Carkenord and Bullington, 1993, p. 41). Therefore, it can be assumed that Anna's anxiety compelled her to restore a measure of consistency by choosing to adopt measures to protect her own sense of intelligence from the perceived "threat" of the question. The perceived threat drove her to focus her mental resources not

on answering the question but on proving her intelligence to others.

We can see how her social environment influenced the construction of a cognitive dissonance. Further, the strategies she constructed to resolve the dissonance can also be examined in a social matrix in as much as they were designed to protect her sense of intelligence from the threat of those around her.

One of the ways that Anna coped with her dissonance was to create the myth that rich kids were given more attention by teachers (and parents), while she was discriminated against in school. Other myths that sustained her in her dissonance were that she was smarter than teachers; teachers were to blame for her difficulties; and teachers couldn't be trusted. Another myth she constructed was that excessive verbalization could result in saying at least something that was intelligent. These myths functioned to protect her from having to question her intelligence. At the same time, these myths did not allow her to reflect and develop more self-regulating skills. As such, they were maladaptive.

Further, she played roles in order to protect herself and minimize attacks on her sense of intelligence. She played the role of a quiet, sweet, smiling child whom the teachers could not fail. It has been observed that individuals with learning disabilities often use acknowledgement responses (smiling, nodding, uh-huh) to protect themselves from the embarrassment of exposing their lack of understanding (Reekie, 1995).

In as much as Anna's energies were focussed on protecting her sense of intelligence from others as well on seeking affirmation from others, her locus of control can be seen to lie in the external world rather than in herself. According to the theory of locus of control, individuals with an external locus of control indicate that events "are controlled by other persons, chance, or other

factors, and they have little or no influence on the outcome of events in which they are involved." (Kennedy, Lynch & Schwab, 1998, p. 161). Children with learning disabilities have been found to exhibit a more external locus of control than average achieving children (Dudley-Marling, Snider & Tarver 1982), although research has also demonstrated that this finding is questionable (Mamlin et al., 2001).

There are several complexities and gradations in the locus of control of each individual. For example, in their theory of self-determination, Ryan and Deci (2000b.) theorized that extrinsic motivation is characterized by four regulatory styles, and Anna's profile is highly consistent with the introjected style, which:

involves taking in a regulation but not fully accepting it as one's own. It is a relatively controlled form of regulation in which behaviors are performed to avoid guilt or anxiety or to obtain ego enhancement such as pride (p.72).

However, it can be observed that in Anna the schoolgirl, the locus is not a fixed point of reference. There is an oscillation on what Dudley-Marling et al. (1982) call the locus of control continuum. On the one hand, Anna was focussed outwards and her schemas were driven by the need to construct a positive self-concept and affirm her self-esteem in the eyes of others. On the other hand, for the same need of self-esteem, she often rejected the cognitive structures offered by teachers and others if she perceived that they threatened her fragile sense of intelligence. This seems to indicate at least some self-directed motivation.

Anna's protection-rejection behavior could be seen as a counter-dependence stance. In literature, this stance represents an individual who is dependent on others, but for various reasons rejects authority, resists suggestions and outside influence and adopts a pretense of independence

(Kass, 2000). In the case of Anna, this stance is evident from the fact that she battles her teachers so that she might proclaim that she needed no help. In schema therapy, Anna's counter-dependence could be identified as counterattack:

When we counterattack, we try to make up for the lifetrap [schema] but convincing ourselves and others that the opposite is true. We feel, act, and think as if we are *special, superior, perfect, infallible*. We cling to this persona desperately.

Counterattack develops because it offers an alternative to being devalued, criticized, and humiliated. It is a way out of that terrible vulnerability (Young & Klosko, 1993, p.40)

Anna evidently had a fear of comparing what she understood about the external world's schemas and structures with her internal reality. To make the boundary clear she would have to explore her internal reality and the fear lay in the belief that the internal reality might identify her as stupid. This in itself helps us to understand why her efforts were focussed on the external world rather than on her internal reality. There was an ambiguous belief that somehow the external world had the correct answer, was smart, and that the schema provided by the external world was valid. It was only when she became aware of the boundary and allowed herself to explore her internal reality did she begin to demystify the external world and understand it in terms of schema that *she* had validated.

I have slowly but surely decreased the exterior energies and put it more to the interior. That there is a sense of self that is aware and works out of forming itself.

(III/30)

Evidently there is a discernible shift in the locus of control. Her extrinsic motivation moves from introjected regulation to identified regulation, which suggests that her locus of causality is somewhat internal, and her regulatory processes are personal importance and conscious valuing.

During the interviews Anna, who seems to have a right-hemisphere orientation, expressed her thoughts through metaphor and analogy in order to help clarify her own thinking. "The right cerebral hemisphere in most people is the residence of the metaphoric mind." (Samples, 1976, p.19).

Through metaphor and analogy, Anna showed us how she organized her knowledge into compartmentalized lines of thought. She compared her thoughts to the separated lines of a fishing net. The lines, vertical or horizontal, were not connected to one another. We can see, therefore, that most fish if surrounded by the net, could push aside the lines and escape capture. If we see the separate "lines of knowledge" as schemas that are necessary to catch new bits of information, then we can appreciate that, at best, all that Anna could catch was whales. This is consistent with Anna's comments in the interviews that she would only be able to capture general, big thoughts, but the small details would escape her.

Only at the very end of the last interview did Anna crystallize an understanding, her epiphany, that what she identified all her life as "webbing" was actually connecting the separate "lines of knowledge."

When an idea comes into the metaphoric, a sudden rush of relationships flashes into being and the original thought expands rapidly outward into a network of new holistic perceptions. (Samples, 1976, p. 19)

As Anna ends her narrative we see the possibility that her newfound awareness will help her to self-regulate her learning and explore alternative strategies to accumulate and integrate her

knowledge.

To recapitulate, Anna's unique experiences and strategies are the following:

- **Cognitive dissonance:** "I am smart - You say I am stupid (*I hope I'm right - I'm afraid you might be right*)."
- **Primary social influences:** Negative – Teachers; mother; peers. Positive – Godfather; teachers.
- **Myths:** Rich kids get the attention; teachers victimized her; she was smarter than teachers; teachers were to blame for her difficulties; teachers can't be trusted; being nice would compel teachers to pass her; summers were mystical; compulsive verbalization would produce some affirmation for her intelligence
- **Abilities:** Extensive use of metaphors to express herself, e.g. "mud on my face"; "magical summers"; "fishing net."
- **Epiphanies:**
 - The underlying reality of her struggles was not a personality problem but a learning disorder
 - She has been expending too much energy on understanding the external world at the cost of her internal
 - She can control excessive verbalization
 - She can learn how to weave the net, tie knots, and harvest knowledge ("Reflection... is like the needle and thread that sews it all together" - III/36)
- **Locus of control:** Discernible shift in locus of control after a clear demarcation of boundaries.

William

William's profile reveals that, as a child, he became increasingly aware of reading difficulties that probably affected his ability to learn other subjects. He began to take it for granted that he was not one of the intelligent children. This image he had of himself was enforced by the criticism of certain teachers.

William's predominant experience in school was one of being uncomfortable in the presence of others, and this continued beyond primary school. He feared looking stupid and being ridiculed.

"I had a lot of anxiety and fear and uncomfortableness in myself." (I/15).

The negative self-concept that William developed because of perceived low intelligence, however, was not itself without doubt. He began to question it. He wondered whether part of him was in fact intelligent. This feeling was confirmed when he saw he could improve his grades when he got personal attention in a small class. Confirmation also came through personal relations with others and the encouragement he received from his parents.

Thus William's cognitive dissonance could be typified as follows: "You say I am stupid - I might be smart (*You might be right, I might be right*)." Doubts about his intelligence created anxiety, while the belief in his intelligence created a certain measure of self-esteem and self-confidence.

The predominant emotion in this dissonance, however, was anxiety over looking stupid in the eyes of others. The focus of his energies shifted away from learning to maintaining a self-image. First, he tried to play the goof in class. Later, he resorted to drugs to cope with his struggles. In the absence of a diagnosis of a learning disability, which might have given teachers a proper understanding and approach to his problems from a "sick" perspective, he was labeled a "sinner" for

lack of effort and use of drugs (Clark, 1997). This may help explain in part his limited rapport with teachers and some of their outbursts against him.

Ultimately, William's self-doubt led him away from academics altogether and he dropped out of high school, returning to studies several years later. We can discern a pattern that Bandura (1986) understood well:

People who underestimate their capabilities also bear costs, although...these are more likely to take self-limiting rather than aversive forms. By failing to cultivate personal potentialities and constricting their activities, such persons cut themselves off from many rewarding experiences. Should they attempt tasks having evaluative significance, they create internal obstacles to effective performance by approaching them with unnerving self-doubts (p.394).

A number of studies have confirmed that a disproportionate number of students with learning disabilities drop out of high school because of the stress associated with their learning (Haring & Lovett, 1990; Zigmond and Thornton, 1985). The dropout rate in the population of students with learning disabilities has been found to be as high as 40 percent (Lichtenstein, 1992). William's dropping out of school can be seen as a withdrawal from confronting society because such a confrontation was permeated with self-doubt, confusion and anxiety.

A myth that William constructed to cope with the cognitive dissonance regarding his intelligence can be seen in his actively taking on the mantle of being "stupid." He did this to the point of deliberately giving silly or incorrect answers in class, thus creating the myth that goofiness could, both for others as well for himself, blur the line between really not understanding classroom information and pretending not to understand it.

He also constructed the myth that intelligence comes from motivation, and since he did not have motivation, he could not be intelligent. "I thought that [intelligence] thrives on just motivation... I just was not motivated as a kid... I did have problems learning." (III/31) He saw lack of motivation as something missing within him, as a personal deprivation.

For many, this sense of deprivation stems from an inhibition of potential. They may fear that their deficits will be revealed and may never try to fulfill their goals.
(Orenstein, 2000, p. 43)

Later, William constructed the myth that he was just a mental burnout from drugs. Through this myth he did not have to confront the possibility that he was stupid. This myth can be seen as a continuation and elaboration of the myth he created in primary school about goofing around in class.

The schemas with which he constructed his self-concept and his sense of intelligence, which might have been functional in the short term because they enabled a blurring of the distinction between intelligent and stupid, were essentially maladaptive in so far as they made him vulnerable to anxiety, a familiar consequence of such schemas (Beck and Clark, 1988).

Thus, we can see how the meanings that William gave to his experiences were constructed in a social environment, primarily his school, and these meanings determined the construction of a cognitive dissonance. The school environment also influenced the myths that he constructed as strategies to resolve the dissonance.

It can be seen that, in certain respects, William's anxiety was focussed outwards and his schemas were driven by the need to blur the "stupid" image and maintain some sense of esteem in the eyes of others. As such it can be argued that his locus of control lay in the external world. At

other times, however, the belief in his intelligence would seem to shift the locus to himself as he refused to be completely swayed by the perception that he was "stupid". Thus, as with Anna, in William too there was an oscillation on the "locus of control continuum" (Dudley-Marling et al, 1982).

The adult William is to a large extent able to resolve the dissonance and reinforce belief in his intelligence, thereby positioning his self-concept towards the internal end of the locus of control continuum (Dudley-Marling et al, 1982). The earlier tendency to suppress his intelligence and play the role of stupid began to reverse when he was in his twenties due to the recognition that came his way for his intelligent strategizing on the playing field. There is evidence that athletic abilities and extracurricular activities can help people with learning disabilities to reaffirm their self-esteem and increase participation in school (Millar et al, 1990) and William seems to be an apt example of such an affirmation.

William was driven back to school by desperation. However, William's supportive family may have helped him to adapt to a learning environment quickly. Moreover, the self-confidence and self-esteem he gained in sports, coupled with skills in strategizing, gave him a positive self-concept, leading to a smoother return to academics.

By following the Ryan & Deci (2000b.) model of self-determination, we can see how William makes a remarkable progress from amotivated, non-regulated behavior to regulation through identification.

When amotivated, people either do not act at all or act without intent – they just go through the motions... A more autonomous, or self-determined, form of extrinsic motivation is *regulation through identification*. Identification reflects a conscious

valuing of a behavioral goal or regulation, such that the action is accepted or owned as personally important (Ryan & Deci, 2000b., p.72)

That William reflects an orientation towards regulation through identification is borne out by the fact that he is able to focus on self-regulation and integration in his learning.

I am able to focus on the school work and learning as opposed to worrying how I fit in... That gives me a sense of empowerment that I can have the energy to concentrate on my work. (III/33)

After Dr. Groves' assessment, this ability to integrate helped William to first understand the theme of a chapter and then link individual details to that theme in order to complete the learning cycle. Thus, he constructively used schema with which he felt comfortable and "most at home" (Young and Klosko, 1993).

As a result of his epiphany, among the methods that William currently adopts to cope with classroom difficulties is that he slows down his learning process. Another method he has consciously adopted helps him to deal with his difficulty in processing language. He frequently makes comparisons and analogies to information he has already understood. The habit he has developed of asking teachers questions enables him to web concepts with other words, thus facilitating comparisons, contrasts and analogies. This tactic allows William to find a common understanding between two words. Moreover, the field of study that he is currently enrolled in, information technology, is highly compatible with his cognitive strengths.

The fact that William, once a dropout, is now in the top 20 percent of his class demonstrates that these simple strategies have paid dividends.

We have learned in this discussion that William's unique experiences and strategies are the following:

- **Cognitive Dissonance:** "You say I am stupid - I might be smart (*You might be right, I might be right*)."
- **Primary social influences:** Positive – Parents; peers; sports team-mates; fans. Negative – Teachers.
- **Myths:** Goofing around would draw focus away from judgements about his intelligence; drugs can reduce/eliminate school problems; he was drug burnout (an excuse to eliminate question of intelligence); withdrawal from confronting the social world (dropping out) was the answer to self-doubt, confusion and anxiety
- **Epiphany:** He was a slow learner and all he needed was not more intelligence but more time.
- **Abilities:** Exceptional athletic abilities and non-verbal skills, with difficult access to crystallizing and verbalizing his understanding
- **Locus of Control:** Discernible shift in the locus of control towards autonomy.

Roy

The narrative that was elicited from Roy about his learning experiences in school and university was directed by the principal research question and, therefore, was centered on how he perceived himself as a learner. Subsequently, his profile was structured on this narrative, which also touched on the social pressures that influenced his conception of reality.

Roy's confusion as a child emanated from the dissonance between the frequent praise that he received for his verbal skills and the struggle to establish relationships among mental constructs.

Roy did have the ability to explain simple constructs verbally in school. In math, for example, memorizing a formula and carrying out mathematical procedures in a rehearsed scenario was fine. However, if the same information was presented in a changed pattern, he found it difficult to recognize it and associate it with a previously learned mathematical construct. In other words, he could not establish a relationship between a new construct and a previous one, possibly because he had not understood the intrinsic relationships implied by the first one. As he put it, he found mathematics "a different language."

Although math anxiety is among the many faces of achievement stress (Tobias, 1980), what is intriguing in Roy's case is the fact that he secretly experienced difficulties in other subjects as well. This only added another dimension to his anxiety. He lived in dread every day, not knowing when next he would be confronted by a learning situation that dwelt on establishing relationships. Roy has the "fragmentation experience" (Orenstein 2000):

The "chasm" is the subjective experience of expecting oneself to learn, but in that moment of trying, being totally unable to do so. It is the endless moment in time when a teacher or supervisor explains something and then says, "Do you understand

now?" It is the time before one answers during which one doesn't even have the slightest understanding of what is being said but is too embarrassed to say so. This is a fragmentation experience, and within it, learning becomes impossible. (p. 37)

In childhood, Roy was unable to identify and verbalize the nature of his confusion, and this limited his ability to participate in and make mental constructions through classroom interaction. "The reference to social interaction indicates that children make these constructions as they participate in... practices of the classroom community." (Cobb, Perlwitz, & Underwood-Greg, 1998, p. 75). Moreover, because of his learning difficulties, Roy was unable to understand the nature of the learning tasks demanded of him. As was pointed out in the review of literature, Butler (1998) has noted that students with learning disabilities often have difficulties in both understanding tasks and interpreting tasks as a key learning activity.

Roy said that even the act of asking questions was associated with high levels of anxiety. Like Anna, for Roy anxiety is "an anticipatory state of active preparation for dealing with threat" (Riskind et al., 2000, p.837). The anxiety over anticipated public humiliation in school was compounded by harsh criticism from his mother. Apart from being overly critical, his mother always demanded that he have the right answer to a question. His failures inevitably led to low self-esteem:

Children growing up with critical, perfectionist parents are never quite sure of their own acceptability. There is always some doubt about whether you are 'good enough' or significantly worthy. As a result you are constantly striving to please your parents and maintain their approval. As an adult ...you often come to internalize your parents' values. (Bourne, 2000, p.31)

His father provided some support in his studies, and Roy attributes some of his academic success to him. However, Roy's overriding belief was that he was responsible both for his difficulties in learning and for upsetting others.

Frequent derision at home and several disturbing incidents with teachers at school only served to fuel his anxiety. His mother's high achievement demands could themselves have likely induced stress (Elkind, 1981). "Lazy" was one of the frequent epithets that she threw at him. Learning disabled children are often at particular risk for achievement stress, frustration and anxiety stemming from the insensitivity of significant others, who treat these children as if they choose not to perform, when in fact they are unable perform at their ability level (Rubenzer, 1988).

Thus we can see how a cognitive dissonance was constructed in Roy's consciousness, mediated by his learning disability and his relationships with his teachers, peers and parents. This dissonance could be phrased as "You say I am smart – I'm not smart (*I'm afraid I'm right; if you're right, I'm lazy but I can't put in any more effort*)."

Positive impressions of his intelligence came from his teachers' praise for his verbal skills and his father's ability to instill a measure of self-confidence in him. Negative impressions of his intelligence came from his own learning difficulties in math as well as other subjects, and were reinforced by certain teachers and primarily his mother. Anxiety was "really a big term" (I/1) that marked his learning experiences.

One of the coping strategies Roy adopted so as to limit upsetting adults and incurring their wrath was to resort to role-playing. In an attempt to placate parents and teachers, and even receive affirmation from them, he played the role of "a pretty calm cool type" (II/23) of person. He developed the skill of showing as if he was concentrating. As observed earlier, role-playing is one of the strategies that students with learning disabilities adopt to cope with learning difficulties

(Reekie, 1995).

Another coping strategy Roy used was to support and propound the myth that the only learning difficulties he had were in math. This allowed for others to focus on the myth itself and keep the light from shining on Roy's fear that he might be stupid because he had difficulties in other subjects as well. Another myth he perpetuated was that he came from the "perfect family." (II/19) Interestingly, Roy developed an acute awareness of the role and usefulness of myth in adapting to a social environment. He says that myth-making was a strategy to "cover up" social realities. (II/24) It was "self-deception." (II/19)

In the absence of any clear operational schema to cope with this undiagnosed learning disability, Roy tried to focus his efforts on the accumulation and memorization of more and more facts. As he advanced in school, this strategy was less and less effective as teachers and later professors required an integration of relevant aspects of his learning in terms of explanations. Roy found himself incapable of giving up his compulsion to collect isolated facts. It was like an "addiction." (III/37) Young says this is a "lifetrap":

Lifetraps are long-term patterns [schemas]. They are deeply ingrained, and like addictions or bad habits, they are hard to change. Change requires willingness to experience pain. You have to face the lifetrap head on and understand it (Young, 1993, p.42)

As academic demands increased, Roy put more and more effort into his studies. Although at times this did lead to academic success, and the praise he so desperately hungered for, the personal cost was absolutely devastating, leading him to withdraw from academics for some time

and recoup from the stress it had caused him.

It can be observed that Roy's locus of control is situated externally, especially in the context of the harsh criticism from his mother. In self-determination theory, among the characteristics for an individual to feel self-empowered are internal locus of control, self-awareness and self-knowledge (Wehneyer & Kelchner, 1996).

In Ryan and Deci's (2000b.) model of self-determination, Roy's motivation can be seen to be extrinsic. His regulatory style is external and, as such, includes compliance to his mother's obsessive nature and focussing on his mother as well as his teachers and professors in the hope of getting rewards and avoiding punishment.

During the interviews, Roy was able to verbalize a rational, intellectual understanding of his struggles. However, he remarked that he had not really been able to integrate his understanding into a more effective approach to his studies. The assessment-interview process did help him to realized that anxiety had been a powerful emotion associated with his learning struggles. The compulsion for details was crystallized and he came to realize that this addiction was the "ultimate challenge." Also, his fear of math was somewhat dissipated as the assessment showed that his abilities in this area were not "disastrous."

Further, Roy began making conscious efforts to plan and organize his learning better because of the realization that this was a major learning area he should identify with. However, at the time of writing, he still displayed a compulsion for detail, his addiction.

In this discussion of Roy's unique experiences and strategies, we learnt the following realities:

- **Cognitive Dissonance:** “You say I am smart – I’m not smart (*I’m afraid I’m right; if you’re right, I’m lazy, I don’t apply myself*).”
- **Primary social influences:** Negative – Mother; teachers. Positive – Father; teachers.
- **Myths:** The only weakness is math; poor performance is due to laziness and failure to apply himself in his studies; compulsive accumulation of facts will solve academic difficulties; he is a calm cool type; he belongs to the perfect family.
- **Abilities:** Exceptional verbal skills, with difficult access to conceptual relations, particularly at the non-verbal/symbolic level.
- **Epiphanies:**
 - ❑ Anxiety could be such a powerful emotion
 - ❑ The addiction to detail is the “ultimate challenge.”
 - ❑ Math abilities were not “disastrous”
 - ❑ Organized thinking as a major learning area he should identify with.
- **Locus Of Control:** No discernible shift in the locus of control

Evelyn

Evelyn's narrative of her experiences of learning situations in school and university established the principal issues with which she struggled and the strategies she used to cope with them.

During the assessment-interview process, we recognized how many of her cognitive strengths were at odds with her father's definition of learning, and that this was a major issue in her struggles.

Both testing and Evelyn's reflections on her past experiences revealed that her major strengths in learning were modulated by visual constructs. This allowed her to first create meaning by synthesizing details into a picture in her mind. In so doing, it was inevitable that she would leave some details that might confuse her grasp of a simple pattern. The distinctive areas of strength of right hemisphere thinking are holistic, pictorial, simultaneous and spatial (Gross, 1991).

This helps us understand why when studying with her father, the atmosphere became filled with tension. Her father, a military person with limited education himself, was, by Evelyn's accounts, very demanding. Many of her efforts at studying or performing well at school simply did not meet his expectations. She therefore came to attach to her learning an anxiety that was related to the need to be correct and therefore safe. She adapted her belief in how to know to her father's parameters of what it is to know. The need for individuals to epistemologically prefer adaptability and survivability over objective truth is a recurrent theme in constructivism (von Glaserfeld 1998; Guidano 1991).

Evelyn's father persisted in pointing out mistakes or missed details, which might indeed be a typical behavior of the times. As Gross (1991) points out, "modern society discriminates against

the right hemisphere" (p.21). Her father's demands influenced the way that Evelyn would study, which was to memorize as many facts and details as she could. This compulsion to do things the "right way" was ingrained in her learning habits. In fact, till today, if she sees that her learning comes too easily, Evelyn becomes anxious, certain that this is a sign that she will make a mistake. The shame and humiliation associated with making mistakes was a consequence of her father's training. Such shame, however, is self-destructive:

Excessive, habitual shame – shame that is too intense, too frequent, and lasts too long – is destructive and painful and can lead to a chronic internalized pattern of self-denigration. (Orenstein, 2000, p. 40)

We can see how Evelyn's cognitive dissonance was constructed in a social context. She had visual construct strengths, and it is through these that she could best create meaning for herself. Therefore, in her first attempt to understand, she would have a tendency to describe a meaningful picture she saw. However, her father's study techniques emphasized details like naming people, places and dates and he would deride her for not trying hard enough and doing better. Self-doubt and the cognitive dissonance "I am smart - You say I am stupid (*I'm afraid you're right*)" began to take hold, leading to anxiety.

Evelyn's anxiety inevitably revolved around leaving out a detail or making a mistake. Dissonance is a psychological state of tension that people are motivated to reduce (Shultz & Lepper, 1996; Carkenord & Bullington, 1993). Evelyn tried to reduce the dissonance, and the tension between her father and herself by trying to be so perfect in school that she would never make a mistake. She established for herself the primary myth that her father was right and that she just didn't work hard enough. She hoped to restore consistency in her dissonance by surrendering to her

father's coercion:

Surrender includes all self-destructive patterns we keep repeating over and over. It is all the ways we replicate our childhood lives. We are still that child, going through that same old pain. Surrender *extends* our childhood situation into our adult life. For this reason it often leads us to feel hopeless about changing (Young, 1993, p.37).

When Evelyn was a child, this myth could be seen as functional in as much as it served to lessen the conflict between herself and her father. Further, it took away her focus from having to consider that she might be stupid. In truth, she developed a compulsion for details, worked extremely hard and hid this fact from everyone, including herself. The myth, therefore, was essentially maladaptive because it disenfranchised her from her learning strengths.

Evelyn's surrender to her father's demands can be seen to have brought dissonance between her abilities and her learning styles:

A major part of capitalization and compensation would seem to be in finding harmony between one's abilities and one's preferred styles. People who cannot find such harmony are likely to be frustrated by the mismatch (Sternberg, 1997, p.108).

Thus, we can see how social factors (primarily her father) influenced the construction of not only a cognitive dissonance but also the strategies she evolved to resolve the dissonance.

The construction of Evelyn's cognitive dissonance and the associated myths, which occur within social relationships, present evidence that her locus of control was external, in that reinforcement and affirmation was sought from her father as well as her teachers. Ryan and Deci (2000b.) identify external motivation as the least integrated form of extrinsic regulation. It involves

coercion and the authors identify it as a kind of operant conditioning. It is the least autonomous. Individuals typically experience externally regulated behavior as controlled or alienated, and their actions have an external perceived locus of causality.

Unlike Anna and William, who struggle to establish an internal locus of control so as to self-regulate their learning, Evelyn's willingness to move freely between the internal and the external remains in doubt.

The assessment-interview process of this study might have given Evelyn cause to reflect upon her study habits. She did come to realize that anxiety was her driving force and that despite the pain and confusion it caused, she could not live without it. Also, she realized that putting details into little boxes had separated those facts from the rest of reality – from her experiences, from other facts and from other people. Most important, she realized that alternative ways of thinking and learning were possible. However, at the time of writing, the disequilibrium which may be caused by an in-depth consideration of new learning strategies is probably more than what Evelyn is prepared to consider, despite her epiphanies. Her sense of vulnerability related to her fear of making a mistake has made it difficult for her to give up her schema related to her sense of being defective (Young & Klosko, 1993). Evelyn is still very reliant on the anxiety related to her extrinsic regulation.

To recapitulate, Evelyn's unique experiences and strategies can be listed as follows:

- **Cognitive Dissonance:** I am smart - You say I am stupid (*I'm afraid you're right*).
(Also, dissonance between ability [right hemisphere] and learning [left hemisphere])
- **Primary social influences:** Negative – Father. Positive – Teachers; mother.

- **Myths:** Her father is right. She just does not work hard enough. Hard work will garner all the details. She does not deserve to be in university.
- **Epiphanies:**
 - Anxiety was her driving force. Despite the pain and confusion it caused, she could not live without it.
 - Putting facts into little boxes had separated those facts from the rest of reality – from her experiences, from other facts and from other people. Alternative ways of thinking and learning *were* possible.
- **Locus of control:** Presently, no discernible shift in the locus of control

CHAPTER 6

CONCLUSION

Earlier in this study, this author delineated a conceptual framework, including methodological elements, in order to reconstruct the experiences of adult students with learning disabilities.

CONCEPTUAL APPROACH

A social constructivist approach was adopted for this study. It was adopted in the belief that awareness about the self and the world develops in a social matrix, which is the source of meaning for human experience. Guided by this theoretical approach, a psycho-educational assessment-cum-interview method was used to establish social interaction and a dialogue, in narrative form, between the researcher and four students with recently diagnosed learning disabilities. Details of how the social setting was established have been provided in Chapter 3, Methodology.

Apart from the fact that reconstruction of the students' experiences takes place in an interactive setting, the participants' experiences have themselves, from childhood until the present, found meaning in social relationships, and this perspective provides further justification for placing their narratives within the frame of social constructivism. Furthermore, constructivists have argued that self-narratives cannot be examined in isolation from the social context, which is the source of meaning in self-experiences (Bruner & Kalmar 1998; Gergen & Gergen 1997; Palombo, 1991a., 1991b.). This belief is fundamental to a social constructivist approach to narratives as a tool for understanding consciousness and the self (Bruner 1999, 1996).

After the assessment-interview process in which the participants' narratives were elicited, the researcher adopted a hermeneutic approach to understand their experiences in the context of

their learning histories. Garrison (1998), reflecting on the writings of John Dewey and George Herbert Mead, points out that in the constructivist tradition the act of making meaning is itself, by definition, interpretation.

The validity of a constructivist approach (Watzlawick et al., 1974), the validity of the interview process (Seidman 1998), the validity of narratives (Russell et al. 1993) and narrative “truth” (Spence 1982), and an epistemological justification for using hermeneutics (Dilthey, 1976; Rubovitz-Seitz, 1998), especially from a constructivist perspective (Arciero & Guidano 2000), has been amplified in Chapter 2.

Thus, the interpretation of the narratives of the participants in this qualitative study was guided by an ongoing review of the existing literature, as well as this researcher's own knowledge and practice in the field of educational psychology.

The four adult students who participated in this study had been forced back to university because of problems in careers and/or their personal lives. All were, to varying degrees, aware of their financial dependency on others. Other details of the social background of the participants have been provided in Chapter 3, Methodology, and the background notes provided before each profile.

These social factors most certainly had a significant influence on the way the participants constructed and reconstructed their experiences.

COGNITIVE DISSONANCE AND ANXIETY

While recounting their educational experiences, all four students expressed significant cognitive dissonance with regard to their intelligence. An attempt has been made to show in the profiles and the discussion of the profiles that the cognitive dissonance elicited from each of the participants becomes meaningful when examined in a social matrix.

In all four narratives, the dissonance regarding the participants' intelligence first started with their earliest academic experiences. The sense of self and the related sense of intelligence, which had surely formed in these individuals before their entering school, came into conflict with the experiences they had once their academic lives began. The highly inconsistent experiences they reported regarding their studies only exacerbated their confusion over their intelligence – at times they seemed to fare well, but sometimes the outcome was disastrous.

Their confusion became more acute as the expectations, evaluations and judgements of significant others sharpened the dissonance. Their struggles to confront their social environment and construct a consistent, cohesive self were intensified by the expectations of significant others and sometimes the harsh evaluations of their intelligence. An unsympathetic environment might have been systemic in nature as few social systems and institutions are flexible enough to accommodate those individuals who find themselves outside the normal parameters. Such an environment only served to further confuse the participants in this study and, as such, they lost a certain amount of trust in their own abilities to learn.

Cognitive dissonance is often associated with a tension. In the review of literature it was seen how "dissonance is a psychological state of tension" (Shultz & Lepper, 1996. p. 220). This assertion is consistent with the findings of this study in that all four participants reported tension and anxiety as a significant experience in their learning histories.

Although anxiety has long been identified as common among individuals with learning disabilities, this study provides some insights into the dynamics of this anxiety. The first and foremost is that this anxiety could be traced to the cognitive dissonance that centered on the question of intelligence. As children, they simply could not identify the specific nature of their learning

problems themselves. It was impossible for them to develop thinking patterns, or schemas, which would address their learning disabilities while they were attempting to learn. How could they be expected to address the specificity of a disability that they were not even aware of?

One could almost imagine what the learning scenario must have been like for these four individuals. It was as if they were being bombarded with information in garbled signals but they had not received their “decoder book” in the mail. What only confused them more, with serious consequences for their self-concept and self-esteem, was that everyone else around them seemed to have received their “decoder book”. Therefore, they looked around to borrow someone else's book to help decode information.

LOCUS OF CONTROL

This looking towards others introduces another significant theme in this study. The nature of the cognitive dissonance and the associated anxiety was such that the locus of control of all four individuals was notably situated in the external, social environment, with varying degrees of gradation.

First, the awareness of the notion of being stupid that developed in the consciousness of the participants was reinforced in a social matrix. Second, many of the coping strategies that were adopted were created primarily to confront and adapt to an external world of significant others.

It is in this sense that their locus of control lay on the outside, in social relationships. Each participant showed a desperation, which started in childhood, to have their intelligence affirmed by others. In order to receive much-desired affirmation from others, each individual tried to decode the thinking patterns, or schemas, of others so that they could connect to them and somehow be acknowledged as bright.

Although the participants dealt with their learning dilemmas and their relationships with others in their own unique ways, there were some commonalties in terms of how they coped with their difficulties. Indeed, a disturbing aspect of their attempts to decode information was that they at the same time tried to hide from any situation that might "expose" them.

While the literature supports the hypothesis that individuals with learning disabilities have a predominantly external locus of control (Basse & Slauter, 1997; Connor, 1995; Tur-Kaspa & Bryan, 1993; Rosenthal, 1992; Hajzler & Bernard, 1991), what is noteworthy in the case of the four participants in this study is that their diagnosis of a learning disability is quite recent and has only come about in adulthood. Their unconscious reliance on a predominantly external locus of control has been hewn by many years of confusion, dissonance and anxiety. The literature consists of studies on locus of control across varying segments of the learning disabled population, but mostly encompassing those individuals who have been diagnosed earlier their lives and who had opportunities to address their disability.

More important, this study has shown that the locus of control is not necessarily a fixed variable among the learning disabled population. There could occur an oscillation between the internal and external on a continuum, as is best seen in the case of Anna and William. Thus, this study also provides partial verification of the hypothesis that individuals with learning disabilities do not necessarily have an external locus of control (Mamlin, Harris. & Case, 2001).

MALADAPTIVE MYTHS AND SCHEMAS

The cognitive dissonance also led to another significant consequence. All four participants either created or participated in myth making. Their various myths did not resolve their cognitive dissonance, rather the myths were means to deflect questions and limit any investigations into their

intelligence. As part of the myth making, the participants played roles designed to downplay the possibility of being discovered as stupid. A common role adopted was that of a quiet and shy young child. Another role was that of hiding from public view just how confusing or difficult they found their studies. Because their efforts were directed towards hiding and denying their learning problems, their schemas and myths were inevitably maladaptive. In other words, the schemas did not resolve the learning struggles but were directed towards maintaining the plausibility of their denial. They expended a tremendous amount of effort on maintaining a façade designed to conceal their struggles, to the extent that they worked hard to conceal their conflicts even from themselves. Their narratives, schemas and myths belied self-deception.

Operating under incredible social and psychological restraints, they were inhibited about self-exploration as regards their learnings. Situating their locus of control on the outside only served to disenfranchise each participant from connecting knowledge and ideas with their own experiences, reasoning processes and internal schemas which could have helped them to create meaning in their learnings. In certain situations, of course, they could interpret their learnings in terms of a rigid schema related to past experiences. Frequently, this also caused them to eliminate any aspects of their new learnings that did not fit into past experiences.

All four participants showed a distinct difficulty in integrating their learnings. This difficulty with integration did not only involve the relationship between new and old knowledge but also had a cascading effect as it interfered with the integration of facts with other facts. The more difficult this process became the less were these individuals able to extract meaningful schemas that they could transpose into other learning situations or into other knowledge. The more each participant felt disenfranchised from the act of learning, the more mysterious this process became.

SELF-CONCEPT AND SELF-REGULATION

From the above discussion, it can be seen that this study provides some insights into the dynamics of anxiety by understanding how students with learning disabilities constructed a cognitive dissonance, within a social matrix, regarding their intelligence. The consequences of the cognitive dissonance, anxiety and an external locus of control were devastating for their self-concept and self-regulation.

Of course, we all receive mixed messages from our experiences of our social world. This is the basis of the normal levels of existential anxiety most of us experience as we construct the self. However, the extreme nature of the feedback these four individuals received created a dissonance that impeded their ability to construct a coherent self. Therefore, the very act of self-regulating became a pronounced difficulty.

In this light, Anna's realization that "there is a sense of self that is aware and works out of forming itself" (III/30) is all the more profound. Here we have an opportunity to see that the act of self-regulation needs to be grounded in a reasonably stable and aware sense of self. Being particularly secretive about their struggles cut them off from discussing their confusion with others, furthering their sense of isolation and limiting their access to reflection, which is a significant component of mediation and self-regulation. The act of reflection allows us to develop a self-identity. Reflection frequently takes the form of self-talk. Mead suggests that it is especially important that an individual "talks to himself as he talks to others" (Garrison, 1998, p. 243). It is by "keeping up this conversation in the inner forum" that allows an individual to construct a self-identity (Garrison, 1998, p. 243).

For individuals to consciously develop moderating and self-regulating processes, they must

first be able to reflect and have an accurate understanding of what processes they are using and how effective or ineffective these are. But because of the dissonance, all the participants had a fear about clarifying the external world from their internal reality.

To make the boundary clear they would have to explore their internal reality and the fear lay in the concern that the internal reality would be identified as stupid. After having read this section of the discussion, Anna contacted me by telephone and suggested that although being found out as stupid was her greatest fear, she also feared being identified as smart. If she were indeed certified as smart, then too she would have been disturbed. The disturbance would have been related to her confusion about why she could not learn and do better in school. She believes such a situation might have forced her to consider that she was "crazy."

The various fears expressed by the participants help us to understand why their efforts were focussed on the external world rather than on their internal reality. There appeared to be a hidden belief that somehow the external world was smart and had the correct answer – that the schemas provided by the external world were valid.

What is mystical is their journey towards understanding the schemas that they used to construct the external world. The problem is that individuals cannot meaningfully construct the external world until the locus of meaning has been firmly validated by the internal reality. It is only when the locus of control is firmly established in the internal reality that self-determination and self-regulation become meaningful. Indeed, Ryan and Deci have pointed out that their self-determination theory takes its cue from a "metatheory that highlights the importance of humans' evolved inner resources for personality development and behavioral self-regulation" (Ryan & Deci, 2000b., p. 68).

The design of the study undertaken by this researcher encouraged the participants to create links in meaningful ways between experiences that had mystified them and to reconstruct those experiences with a new meaning. The questions were such that the participants were enabled to examine their experiences in a social context of family, school, teachers and peers.

The assessment, through testing, was not merely a stamp but a tool that was used in this study to help the participants to compare the test results and their history. How they established a meaning between the two helped them to create schemas that could allow them to give meaning to other situations.

This is the act of demystifying learning. It can open for students with learning disabilities a door that would allow them to move freely back and forth between their internal and external worlds, without fear. We can see that as their anxieties are lowered through a healthy assessment process and an interactive feedback process, individuals with learning disabilities can be potentially as capable as any other student to mediate and self-regulate.

CONTRIBUTION TO THEORY

It seems important to this researcher to note here that the impact that the cognitive dissonance had upon each participant was in fact greater than had been anticipated. It had been expected that a certain degree of confusion would be revealed from the narratives as regards the learning struggles of adult students who had only recently been diagnosed with a learning disability. It was thought that the confusion would be related to their struggles in finding meaningful schemas with which to both understand and organize their learnings.

However, the theme that appeared most predominantly from an examination of their struggles was that of the cognitive dissonance regarding their intelligence, which reached the point

where the very nature of the self was brought into question. Significantly, it has been difficult to find any literature that examines the relationship between learning disabilities, cognitive dissonance and self-regulation. As such, the findings in this study open a new perspective, namely that cognitive dissonance could have a major influence on the ability of individuals with learning disabilities to self-mediate and self-regulate.

This study may further help us to understand why individuals with learning disabilities frequently display low levels of self-efficacy in academics. While the literature has related self-efficacy to the ability to understand the nature of a task (Butler, 1998), this study might have provided a fresh perspective by showing that self-efficacy depends not only on understanding task demands but also on the ability to resolve any cognitive dissonance and establish a positive self-identity or self-concept. In other words, a stable self is an important element in self-efficacy.

This can be exemplified further through a hermeneutic understanding of the act of cognition. An individual's understanding of a given task is dependent on the meaning that the self ascribes to it. If, however, the self or self-identity has been affected by limited reflection and self-awareness, as was the case with the participants in this study, then the act of interpreting a task as well as marshalling one's resources to accomplish that task are affected as well. For example, Anna interpreted each question from the teacher as a threat. It can be seen how her fragile self clearly misinterpreted the true intentions and content of the question.

PRACTICAL IMPLICATIONS

A major implication of this study is that it clarifies the need to identify children with learning disabilities as early as possible. This could help prevent the type of confusion and struggles that these four participants experienced. The sooner we address the needs of children with learning

disabilities, the better they will be able to address their learning strategies.

Further, it has become quite clear through this study that the act of "diagnosis" is itself inevitable. If diagnosis does not take place in the supportive environment of professional testing, assessments and interactive feedback, some form of diagnosis will in any case take place in the mind of a child. Self-diagnosis, as has been seen, could lead to maladaptive myths and schemas, confirming the child's worst fears about themselves, for example, "I am stupid". Hence, there is all the more need for early diagnosis in a professional environment.

It is also hoped that professionals in all related fields will review the findings of this study with an eye to using the tests they conduct in a broader perspective. Of course, all teachers and clinicians do need to make use of tests to identify the nature of a person's learning disability. However, their professional practice need not be limited to an analysis of the results of these tests. What this study has shown is that there is a need to go beyond test results and establish an interactive feedback process to reconstruct diverse life experiences of clients. This provides the professional with a richer understanding of the client's personality and the struggle that comes of having a learning disability. Most important, it also provides the clients with an effective means to reconstruct their past and current learning experiences and develop a greater self-awareness.

Further, all professionals who undertake assessments of students with learning disabilities could keep in mind the possible need for personal counselling that the students may require. The effects of a learning disability upon personality development seen in this study certainly suggests that at least some clients could benefit from on-going counselling in an interactive environment.

The results of this study also suggest that at least recently diagnosed adult university students may at first be more in need of counselling than study skills training. Although both counselling and

study skills training may be pursued concurrently, for some students it may be more useful to first help stabilise their self-concept. It may be quite useless to teach them study skills if their self-concept remains unstable.

An important practical implication of this study is that it points to a strategy that teachers could adopt while working with children and young adults with learning disabilities. Teachers may find it helpful to students to initiate learning by asking them to first identify how they perceive and understand the materials to be taught. If teachers wish to prevent the kind of dissociation of learning that is reflected in this study, they must help the students to identify and affirm their own realities as the first step in the act of learning. It is imperative that this review of mutually accessible realities becomes the starting point from which teachers show their students how to expand their current understanding. This will help to prevent threats to the very identity of the students themselves. Such an approach may require patience and support on the part of the teacher as many students with learning disabilities may be resistant to sharing their own realities with the teacher, out of an imagined fear of not meeting the teacher's expectations.

Finally, professionals who see clients, particularly clients who experience anxiety, depression and anger, need to be sensitive to the possibility of there being a learning disability hidden behind apparent symptoms. They may wish to first explore with the client any relationship between her expressed symptoms and her learning history.

Although certain practical implications have been identified in this section, the small size of the sample population is a limitation for some purposes, such as generalizability. However, the study does represent those university students with learning disabilities who have experienced stress and anxiety during their education. It is therefore possible that the narratives of the participants

reflect the struggles of many adults with learning disabilities, to a greater or lesser degree.

RECOMMENDATIONS FOR FUTURE RESEARCH

While this study has attempted to gain some insights into the anxiety and stress that students with learning disabilities often encounter, it certainly does not purport to be an exhaustive investigation. Rather, it was designed to be a preliminary study. It attempted to examine how a recently identified adult population experienced the process of learning and how they attempted to mediate their learning experiences. It did not specifically examine why these individuals chose the regulatory styles that they did. It is apparent from the foregoing discussion, that some answers to the question “why” could be speculated upon. However, the question of why these strategies were chosen needs to be addressed by future studies.

The traumatic impact that a cognitive dissonance can have on such a population also needs to be looked at more closely in future studies. Although not in the scope of this research, a clinical review of the learning experiences of recently diagnosed adult students with learning disabilities would likely bring about a further understanding about how the struggles of these individuals affected the development of their personalities.

To conclude, this study has provided some fresh perspectives on learning disabilities and pointed to a direction for future research. The narratives that have emerged and brought forth these new insights identified the particularly painful realities that the participants experienced in the context of learning. What this researcher has learned in the course of completing this work is that the human aspects of learning disabilities can be all too easily overlooked in the attempt to identify effective interventions and accommodations for this population.

Therefore, a balance needs to be struck between providing such students institutional

assistance and leading them to a point where they can identify and accept the reality of their conflicts. Such individuals often get caught in painful self-diagnosis and denial, thus becoming prisoners of their own pain. Their freedom lies in self-awareness.

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APPENDIX A

Participant Information Form

FOR RESEARCHERS EYES ONLY

Name:

Address:

Telephone Number:

Email Address:

Date of Birth:

Date of assessment:

Relevant educational history:

University program currently attending:

Presenting problems at intake:

**Notes to file on the measured nature of learning disability, including names of tests
administered, relevant test results, and any referrals to other specialists who might be**

**Appropriate:
Limitation.**

APPENDIX B

Informed Consent Form

Principal Investigator: Tim Farmer, Faculty of Education, University of Ottawa.
Address: 1460 Bonneville Crescent,
Orleans Ontario Canada K1C 7N2
Telephone Number: (613) 590-7347
Supervisor: Dr. Raymond LeBlanc, Faculty of Education

This research is being done by Tim Farmer, as part of the requirement for the completion of his doctoral dissertation in Education. Prior to any candidate being accepted as a subject for this research, Dr. J. Robert Groves Ph.D.,(C).Psyc., will review the eligibility of all potential candidates to ensure that the primary diagnosis is that of a learning disability. He will further ensure that there are no additional psychological issues, which may cause harm to a candidate as a result of their participation in this study. If you have any questions regarding eligibility please contact Dr. Groves to discuss the matter further.

The purpose of this inquiry is to explore the experience of adult students with learning disabilities studying at university level. The hope is that the information derived from this inquiry will inform Educational Psychologists, Clinical Psychologists, and Learning Specialists about the complexities of assessing and providing feedback to adults with learning disabilities. As a result, these professionals will learn how to be better prepared to deal with, and plan appropriately for the needs of this population.

If you agree to participate, your participation will consist of three 90-minute interviews spaced 3 to 7 days apart. Interviews will be videotaped, audio taped and transcribed. You will also be asked to verify your transcripts, adding, or clarifying information, as you deem necessary. You may also delete information you are uncomfortable in sharing outside the privacy of the interview process. In addition, you may be asked to produce any personal documents arising from your experiences such as excerpts from journals, report card notations (i.e. teacher's comments) that reflect the difficulties you experienced at a younger level of education, which you are comfortable sharing with the researcher. All data utilized will be screened to eliminate the identification of the participant by name, age or place of birth, specific nature of disability or participation in specific activities, courses or degrees, as well as the name of the university currently being attended.

As noted in your Consent of Disclosure, Form 14, by signing this form you are agreeing that Dr. Groves release to me results of the Woodcock-Johnson Cognitive Battery Tests 1 through 14, the Scholastics Abilities Tests for Adults, Tests 1 through 7 and 9, the Canadian Adult Achievement Test, Test 2,3 and 7, the Stroop Colour and Word Test, the Learning Styles Inventory, the Hemispheric Mode Indicator, the Rey Complex Figure Test, the Psychological Screening Inventory, the Connor's Continuance Performance Test, and the Wender Utah Rating Scale. By signing the consent form you are agreeing to allow the researcher to use direct quotes from the interviews, informal discussions and documents. To ensure anonymity, your name will not appear in the research or on any publications arising from the research. Instead, pseudonyms will be used. To ensure confidentiality, all data sources will be accessible only by the researcher and

all transcripts and documents will be stored in a secure manner. All documents and tapes will be destroyed within five years of completion of this thesis.

All audio tapes will be transcribed by Sheilah Teahen. The audio tapes will first be reviewed by the researcher, and all statements which may identify a participant as noted in page 1 of this form, will be deleted from the tape. By signing the consent form you are agreeing to this process of transcribing your audio tapes.

As this activity deals with very personal information, it may induce emotional reactions that, at times, may be difficult. You are given complete assurance from the researcher that every effort will be made to address any such occurrences. In addition arrangements have been made to have up to five follow up sessions, with your doctor (Dr. Groves) at no cost to you, whether or not any volunteer completes or withdraws from this research project. At any time you are free to withdraw from this project, refuse to participate, or refuse to answer any questions. If you wish further information, please contact Tim Farmer at (613) 590-7347.

This research has been approved by the University Board of Ethics of the University of Ottawa. Any further information, requests, or complaints about the ethical conduct of the project may be addressed to the Protocol Officer of Ethics in Research (562-5800, Ext. 1787). You may also contact the thesis advisor directly, Dr. Raymond LeBlanc (562-5800, Ext. 4153).

There are two copies of the consent form, one for you and one for the researcher.

Your time and cooperation are greatly appreciated.

Sincerely,

Dr. J. Robert Groves, Ph.D.,(C).Psyc.
Doctoral Candidate University of Ottawa

Tim Farmer MA

I, _____, am interested in collaborating in this research project
and I certify that I understand the nature of this research as described above.

Signature

Date

If you would like to receive a summary of the findings once the research is completed please fill
in your address below.

APPENDIX C

Interview Guide

Interview 1: Reflections on childhood learning history

Tell me how you experienced school (primary, secondary, post-secondary, if relevant) I would like to know as much as possible about your school life leading up to your identification as a student with LD.

Tell me about the people in your life at the time.

How would the significant people in your life describe you at the time?

If you were to classify your different experiences, before being identified as a student with LD, what would your classification be?

Tell me about the typical study sessions, both as a child and as an adult?

How did you feel when studying? Did you feel differently about any subject?

Was there an area of study you found you had more strength in, less strength in?

How did teachers treat you? Were any teachers particularly helpful? How?

Interview 2: Reflections on present experiences as an adult student identified as having a learning disability

Tell me, as much as possible, about the details of your experience of being identified as a student with LD.

If you were to classify your experiences during the assessment/identification process. What would your classification be?

Tell me about the people in your life at the time.

What would you identify as the most significant aspect of your life at the time?

What were the most critical incidents of your experiences of the process of identification?

What processes were effective, and which ones were not?

Can you tell me about your experiences during the assessment process?

Can you tell me a bit about your life during the assessment process?

What were your thoughts and feelings during the identification process?

How do you understand that experience in your life?

Interview 3: Reflections on the meaning of the experience of being an adult student identified as having a learning disability

Now that you have talked about how you came to be identified as having a learning disability, what was it like for you during the identification process, and what does it mean to you now?

What have you learned from this experience?

How has this experience empowered you?

How have your learning strategies/studies changed?

**How has your experience of yourself as a learner changed
How has your sense of self changed?
How has your level of self-awareness changed?
How might you cope differently with this experience in your life?
What have you learned from this experience?**

All interviews will be conducted in an office set up for that purpose at 1460 Bonneville Crescent, Orleans, Ontario. The use of electronic recording equipment will be restricted to operation in that office. A lockable filing cabinet located in the same location will be used to store the tapes and transcripts when not in use.

APPENDIX D

Examples of Probing Questions

During each of the interviews, participants will be asked to clarify and expand on aspects that are unclear or ambiguous to the interviewer through probes. Care will be taken when asking these questions not to lead the participants toward predetermined conclusions, but rather to lead them to elaborate and clarify. In addition, the clarifying or probing questions will be asked in keeping with the focus of the goal of the particular interview at the time (Seidman, 1998).

1. Can you describe what that felt like?
2. Can you describe that aspect in more detail?
3. Can you tell me what that looked like?
4. How did you feel then?
5. Can you remember what you said then?
6. Can you remember what you were thinking?
7. Can you remember what you were feeling?
8. What were you doing at the time?
9. Who else was there?
10. What happened after that?
11. How would your family or roommates describe you at the time?
12. How would your boss(s), teachers(s) or peers describe you at that time?

APPENDIX E

Steps in Developing a Participant Profile

Step 1

Read and reread the transcript thoroughly, marking the passages of interest

Step 2

Compile all marked passages into a single transcript

Step 3

Read the compiled transcript with the goal of presenting the description in its most concise form.

This will be accomplished by applying the following questions while reading a text: What is absolutely essential in this text – i.e., if it were missing, what was left would not represent the experience of the participant? Only the most essential passages will be retained.

Step 4

Write the profile in the first person narrative, maintaining the voice of the participant. Any word changes, grammatical modifications, and omissions of the text will be indicated symbolically in the profile. The profile will reflect the order in which the interviews occurred to maintain the context which the information was given (Seidman, 1998).

APPENDIX F

Trustworthiness

Lincoln & Guba (1985) identified four criteria for assessing trustworthiness of constructivist inquiry – credibility, transferability, dependability, and confirmability.

Several strategies listed below will be employed to strengthen the trustworthiness of this research. Participants will be interviewed on three separate occasions over a one to three week period.

This prolonged engagement allows for participants to reflect on their experience and for the researcher to be adequately exposed to the participants and their reconstructions.

Interviewing participants over the course of one to three weeks provides an opportunity to check internal consistency in their reconstruction and to account for days that are considered idiosyncratic.

Participants will be given the opportunity to read their transcripts and to make additions and deletions as necessary

Final product will include a detailed description of the theoretical framework and design of the inquiry

Primary data will be included in the form of the participant's profiles to allow other readers to interpret the data accordingly.

APPENDIX G: Form 14



I, _____
(print full name of person)

of _____
(address)

hereby consent to the disclosure or transmittal to or the examination by _____
(print name)

of the clinical record compiled in the offices of Dr. J. Robert Groves Ph.D., C.Psych (See below)
(name of psychiatric facility)

in respect of _____
(name of patient) (date of birth, where available)

(witness)

(signature)

(if other than the patient, state relationship to the patient)

Dated the _____ day of _____ 20____

Tests results to be released to Mr. Tim Farmer:
Woodcock-Johnson Cognitive Battery Tests 1 through 14
Scholastics Abilities Tests for Adults, Tests 1 through 7 and 9
Canadian Adult Achievement Test, Test 2,3 and 7
Stroop Colour and Work Test
Learning Styles Inventory
Hemispheric Mode Indicator
Rey Complex Figure Test
Psychological Screening Inventory
Connor's Continuance Performance Test
Wender Utah Rating Scale

This research is being done by Tim Farmer, as part of the requirement for the completion of his doctoral dissertation in Education. Prior to any candidate being accepted as a subject for this research, Dr. J. Robert Groves Ph.D., C.Psych will review the eligibility of all potential candidates to ensure that their primary diagnosis is that of a learning disability. He will further ensure that there are no additional psychological issues which may cause harm to a candidate as a result of their participation in this study.

APPENDIX H

Participant Information Outline

Principal Investigator: Tim Farmer, Faculty of Education, University of Ottawa.
Address: 1460 Bonneville Crescent,
Orleans Ontario Canada K1C 7N2
Telephone Number: (613)-590-7347
Supervisor: Dr. Raymond LeBlanc, Faculty of Education

This research being done by Tim Farmer, is part of the requirement for the completion of his doctoral dissertation in Education. All interviews and research will take place in the office at the address above.

Tim Farmer, a graduate student of the University of Ottawa, Faculty of Education is looking for volunteers to participate in a research project. The object of this research is to develop more effective educational interventions that will assist adults with learning disabilities. Participants need be between the ages of twenty and fifty years of age, and have been identified with a learning disability within the last two years, but not have received a recent diagnosis within the last 30 days. The researcher is looking for two male and two female participants who are currently registered at the University level.

Those individuals interested in participating must provide their own transportation to the office noted above. This investigation will require three 90-minute sessions, over a maximum of a three-week period, with the option of any participant withdrawing at any time, for any reason they deem appropriate. This is a voluntary research project, in that participants will not receive any monetary compensation. The potential benefits to a participant might include a better understanding of their learning disability, and improve understanding of the related historical components, which may have shown up throughout their primary and secondary education. A more suitable understanding of approaches which may be more appropriate for their learning profile, with improved understanding how to further develop their study and learning habits.

Some individuals may find this inquiry uncomfortable or disturbing, as the questions are related to past and present difficulties related to their learning disability. As noted above any volunteer may withdraw at any time, without notice. In addition, arrangements have been made with Dr. Groves, to have up to five follow-up sessions at no cost to you, whether or not any volunteer completes or withdraws from this research project.

All information obtained through each interview will be accessible to the individual involved. The research will require both video and audio-tapes, which will be stored in a locked secure cabinet on site, for a period of five years, after which time they will be destroyed. Other than the researcher and your doctor, anonymity will be provided at all times during and after the study.

FOR MORE DETAILS CONTACT: TIM FARMER AT 613-590-7347

APPENDIX I

Selection Process

Appendix H will be placed in a visible location in the waiting room office of Dr J. Robert Groves Ph.D.,(c).Psyc., accessible to adults who are presently clients of Dr. J. Robert Groves. Participants will be volunteering of their own choosing by contacting Tim Farmer at the number listed on the information sheet for more details.

The first two male and female applicants will be accepted should they qualify based on the guidelines in the information sheet, and an additional list of volunteers will be kept on file to replace any or all participants should any of the initial participants choose to withdraw, during the inquiry.

All participants will be required to sign a Consent of Disclosure Form 14, to partake in the study. All information obtained will remain secure, and will be accessible to the participant should they choose to review it.

Any participant previously diagnosed or associated with the researcher will be declined participation to prevent any conflict of interest in the research.

APPENDIX J

Participants' Comments on Their Profiles

Anna

- What I write is supposed to be perfect. I don't like the way I meander around.**
- I don't feel my statements reflect my precepts of my intellect.**
- Difficult to read this is not my view of how I sound (a bit shocking to me).**
- T-o comment is hard, like a blockage-almost not wanting it (the statements) to be real.**
- Looking at the torturous process, I am afraid it will take away the feeling of good work at the end, almost like demystifying the process of how I need to learn.**
- It's like all the strategies I use, ie: coloured pens, borrowing notes to re-write, asking questions, different colour highlighters, sticky post-it notes different colour, binders different colours. These strategies only people whom are stupid use them.**
- Using strategies in class cause me to be noticeable and therefore because I don't fit into the norm I am stupid.**
- To use these strategies I had to insulate myself from what I thought about myself and what others thought of me.**
- So there is in me a conflict between my view of me as stupid and my view as a hampered genius.**
- I get an increased disdain of stupidity (not lack of knowledge)**
- What is intellect? (The ability to think) What is stupid? (Not thinking just repeating)**
- The risk of being different not being able to learn and follow rules like others had the risk of looking stupid.**
- Taking pleasure of different parts attributes that you have fitting together in an eclectic way.**

-In the present being eclectic is becoming a pleasure. Seeing myself as an individual with unique realities is a source of pride.

-When I read things like this it sounds stupid to me: “The organising cause, it’s like I’m chasing socks, and every time I chase a sock, the previous sock gets left behind...” (III/25)

William

-I was concerned about my choice of words (vocabulary) that I used, didn’t realize how vague my talking was.

-Surprised that I fooled the educational system, and just making it through primary school with little or no motivation.

-I noticed how much I accepted the fact that I was not very smart.

-I realize that drinking alcohol in high school really made me connect with myself and gave me self-confidence which is why it became a problem.

-Really enjoyed the tests and learning about how I learn.

-I’m now very self-aware at some of my anchors to help me concentrate-like sitting on my hands.

-Learning through association – I realize I have done it in the past but now that I’m consciously aware of it – this should help me in school.

-I realized going back to school this time I had my back against the wall losing my girlfriend and house – as well as moving back in with my parents, this gave me a lot of motivation to do well in school.

-Thanks

Roy

-There's nothing in the least in here to be "objected" to. Just look at my scribbles on a "for what they're worth" basis.

-I don't remember saying this: "I believe one teacher... one of the only teachers I had that really seemed to care about me as a person.... It was a very amorphous feeling, and it may have well been what I needed it to feel" (I/8)

-I wish to clarify myself. I had a great concern about the possibility and arranged my studying placed to avoid such discovery: "In the past and present I would often have to almost always study at home... And I've had too many embarrassing moments, caught at school and at the library doing just this." (II/20)

-My recollection is that "posture" (with it more physical emphasis) rather than "pose" is what I had in mind. This applies also to some of the other references to "pose" (with the theatre – acting implication) in the references to the psych. Testing). "Again I'm not certain, but I suspect I put on my concentration pose" (II/16)

-I think I meant this is "that is awful, merely trying to do this" as opposed to thinking it was "awful trying". "How do you develop a blue print? That is... God that is awful, trying!" (III/39)

-My earlier point, re: distinction between acting/striking poses, versus almost unconsciously assuming a (tense) study posture. The "acting" was my stock-in-trade in elementary ed. To a slightly lesser extent, in high school. The study posture has been the more prominent reality in grad school (especially in proportion as marks, rather than charm, were the decisive factors).

-Very, very, very good job! Congratulations!

(NB: Evelyn did not make any comments on her Profile)

APPENDIX K

Journal Notes

CONVERSATION	NON-VERBAL RESPONSES
Anna	Theme was "Performance"
Discussing school experiences	Touching of hair Posture adjustments – sitting up straight Oblong smile
Referring to parents & survival strategies	Squinting of eyes Rolling of eyes
Referring to reading experiences	Looking up Facial rubbing Oblong smile
Regarding assessment	Lips pressed together Looking down Fingers locked and on desk Sitting leaning on desk
Referring to time restrictions	Eyes darting back and forth
Regarding meaning of testing process	Squinting of eyes Eyebrow lifting Straight posture Oblong smile
Referring to how school was experienced	Looking away Smiling a lot
Referring to strategies on her LD	Arms crossed and looked up in the air
William	Theme was "High Vulnerability"
Regarding schooling	Looked up and down and away Rocking back and forth
Referring to his classification as a student	No eye contact Looked up

CONVERSATION	NON-VERBAL RESPONSES
Referring to "Not being smart" as a child	Arms are crossed No eye contact Rocking back and forth Head lifted and tilted to the right
Speaking about I.Q. in general	Eye contact Hands on the lap
Speaking about I.Q. for himself	Hands on the lap Looking down
Regarding doing more in school	Hands together on head, fingers locked Eyes looking down Fingers locked with arms behind head and arms tilted down to one side
Referring to the testing process-parents role	Eyes looking down
Regarding parents emotional support	Arms crossed Head tilted down with eyes looking at lap
Referring to "not giving up on himself"	Eye contact Rubbing back of neck with hand
ROY	Theme was "Controlled"
Regarding being a student	Sat up very straight close to desk
Referring to "being a well-behaved child"	Eye contact Hands flat on desk with fingers locked Looking down Tense smile
Referring to intelligence	Hands went down under desk Looking down
Referring to parent's role	Hands on desk with fingers locked Looked down Rubbed back of neck
Referring to his dad	Looked down Sat up straight with fingers crossed
Referring to teachers physical assault	Wiped his forehead with hand
Regarding being highly critical of self	Hands when on desk steeple style Looking up

CONVERSATION	NON-VERBAL RESPONSES
	Scratched head Tense smile
Referring to changes in learning strategies	Hands on desk playing with pencil Looked up Tense smile
Evelyn	Theme was "Deflection"
Regarding her school experiences	Looking down Nervous smile Rubbing eyes
Referring to studying	Squinting eyes Looking down
Regarding her struggles when speaking of her disability	Arms crossed Looked up to right and away
Referring to her strategies used to deal with her LD	Nervous smile Closed and opened eyes
Regarding her LD testing process	Rolled eyes Looked up Nervous smile
Reflecting on what she learned from the testing experience	Nervous smile Rubbed eyes
Referring to her father	Nervous smile Looked up and away
How the experience empowered her	Nervous smile Leaned back in chair