

THE CYCLE OF "MATTHEW EFFECTS":
UNDERSTANDING THE EFFECTS OF READING DISABILITIES
ON ADULTS' LIVES

by

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Abstract

A two-part multiple case study combining qualitative and quantitative data was conducted to explore the effects of reading disabilities in adults' lives. The main purpose of the study was to add to an understanding of the theoretical construct of Matthew Effects in reading which are hypothesized to be the result of deficits in phonological awareness (Stanovich, 1986). The relationship of phonological awareness to adult readers' decoding difficulties was examined. Finally, a comparison was made of the test scores of those with reading disabilities on four measures of phonological awareness and one test of word identification to the scores obtained on the same tests by a group of proficient readers.

Interviews were conducted with 10 adult participants with reading disabilities using a semi-structured set of questions. The participants were students at a community college and had previously been assessed and tutored by the researcher in a learning assistance setting. For the purposes of this study, each participant was administered four measures of phonological awareness and one measure of word identification. In addition to their scores on these tests, participants' previous learning skills assessment results on the *Woodcock-Johnson Psycho-Educational Battery* were also analyzed for further understanding of the participant's learning strengths and weaknesses. A second group of adults was selected who were presumed to be proficient readers because of their professional status and the implied reading demand in their respective fields. These participants were also administered the same tests as those given to the group of adults with reading disabilities.

Negative effects of reading disabilities, or Matthew Effects, were identified in the participants' interview responses in relation to four areas of concern: self-concept, relationships, education and employment. Some positive effects were also noted, primarily in relation to participants' coping strategies, resilience, and persistence. Phonological awareness and word identification test scores were lower for the adults with reading disabilities compared to those who were proficient readers, particularly on the *Lindamood Auditory Conceptualization Test, Part II (LAC Test)* and the *Wide Range Achievement Test in Reading (WRAT-Reading)*. Implications for various groups, institutions, and agencies are discussed, and recommendations are made for program development and further study.

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This thesis is dedicated to the memory of my former student and friend, Anne,
whose courage and determination were especially admirable,
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THE CYCLE OF "MATTHEW EFFECTS" : UNDERSTANDING THE EFFECTS OF READING DISABILITIES ON ADULTS' LIVES

Chapter One: THE PROBLEM AND ITS SIGNIFICANCE

Reading is an invention humans devised to enable themselves to communicate in print with each other to convey their ideas and stories (Shaywitz, 1996). It is not a natural act (Gough & Hillinger, 1980) in the same sense as speaking or listening; it usually must be learned in a deliberate manner in order to be performed accurately and efficiently (Bertelson & De Gelder, 1989). There are specific rules governing the act of reading that a person must explicitly and/or implicitly know and apply to become an effective reader. Although all four modes of language usage - listening, speaking, reading, and writing - can be problematic for some learners, reading is the most mysterious because it is such an internal activity (Gough, 1995, p. 80).

Reading is typically learned by most children when they enter school, although many children with motivation, encouragement and opportunity at home begin reading before they start school. Some children, however, in initial reading instruction, experience difficulty in one or more stages of the process. They may lack adequate phonological awareness (Busink, 1997), or they may be unsuccessful in the perception, discrimination, processing, or memory tasks involved in reading. Of these children who experience difficulty, some will struggle awhile, but eventually they will master the mechanics of the process. They will "break the alphabetic code" which will enable them to go on to read more, and to learn from what they read (Perfetti, 1995;

Ehri & Wilce, 1985; Jorm & Share, 1983). Some number of others, however, will not be successful. The focus of this thesis is the adults these children have become.

Statement of the Problem

Adults who have serious difficulties with reading who enroll in post-secondary programs at the college level usually require assessment and instruction to address their specific learning difficulties if they are to succeed academically (Adelman & Vogel, 1991; Glimps, 1994; Peniston, 1993). As adults, these students tend to be more prepared to deal directly with the causes and effects of their difficulties than they may have been at younger ages. Perhaps with maturity and life experience, they are now more able to understand and deal with the pervasiveness of their limitations, while at the same time appreciating their potential as learners (Adelman & Vogel, 1991).

Colleges that support the effort to provide services and programs for students with reading disabilities are more likely to be successful in addressing these learners' needs if they can better understand the long-term consequences of these students' learning problems (Roueche & Roueche, 1994). Advocacy is necessary for the time, expertise, and resources required to provide appropriate assessment and instructional opportunities (Scott, 1994). This advocacy might be more successful if a profile of these learners was available to illustrate the extent of these adult students' instructional needs and the possible means that might enable others with similar problems to become more effective readers and learners.

The Purpose of the Study

This study was conducted to investigate the effects of reading disabilities on a group of adults' lives, to understand the relationship of phonological awareness to their reading difficulties, and to develop a profile to illustrate the construct of Matthew Effects in relation to reading disabilities.

Matthew Effects

The problem to be addressed in this thesis is the need to understand the effects of reading disability, or "Matthew Effects", on the lives of adults. The term "Matthew Effects" is used to refer to the positive and negative effects of educational experiences on learners. This term has been used by a small number of educators and researchers in the literature to describe the cumulative advantages or disadvantages of educational experiences (Merton, 1968; Stanovich, 1986; and Walberg & Tsai, 1983).

The following section on the derivation of the term "Matthew Effects" is included here to provide background regarding the origin of its usage in educational literature, and its current application in this thesis.

Matthew Effects in Science

The earliest reference to Matthew Effects in relation to achievement was found in Merton (1968). In this paper, Merton examined the achievement of scientists in their profession as related to initial advantages of university study, work with active eminent scientists, early publication and a following by the readership, and job placement. He concluded that those with advantages in these early stages go on to become the most

well-known in their field, and that their fame goes on to contribute further to their success. He chose to describe this pattern as "the Matthew effect" after the Gospel passage according to St. Matthew which says: *"For unto every one that hath shall be given, and he shall have abundance; but from him that hath not shall be taken away even that which he hath"* (XXV:29). In short, the rich get richer, and the poor get poorer. In his words, "the Matthew effect consists in the accruing of greater increments of recognition for particular scientific contributions to scientists of considerable repute and the withholding of such recognition from scientists who have not yet made their mark" (p. 58).

Later, Walberg & Tsai (1983) investigated Matthew Effects by examining the differences in adults' science achievement scores on a test of science knowledge in relation to three variables: motivation, prior educational experience, and current educational activity. They concluded that early educational experiences predict current activities and motivation, and that all three factors contribute to the prediction of achievement.

Matthew Effects in Reading

Stanovich (1986) outlined a model of reading disabilities in which he described the consequences of the difficulties poor readers experience. He applied the term "Matthew Effects" to these consequences following use of the term by Merton (1968) and Walberg & Tsai (1983). Applied to reading achievement, this would mean that children who learn to read will go on to read more, and they will learn to learn from

what they read. On the other hand, children who do not learn to read well will be unable to go on to learn from reading. According to Stanovich (1986):

The very children who are reading well and who have good vocabularies will read more, learn more word meanings, and hence read even better. Children with inadequate vocabularies - who read slowly and without enjoyment - will read less, and as a result have slower development of vocabulary knowledge, which inhibits further growth in reading ability (p. 381).

Without effective intervention, these negative Matthew Effects compound.

Secondary learning and emotional problems develop which often become the focus of intervention and the obstacle to further learning (Stanovich, 1986; Wong, 1991).

Problems with poor motivation, self-esteem, and negative attitudes toward school and teachers develop and persist to the point that many of these students withdraw from learning and eventually drop out of school (Wong, 1991, p. 242). Later, when they realize that these problems are going to follow them into the rest of their lives, interfering with their family and social relationships, and with success at work, some of them decide, albeit rather warily, to return to school.

In a textbook commonly used by undergraduate students in a course on learning disabilities, Wong (1991) described Matthew Effects in relation to problems in the development of metacognitive awareness during the act of reading. Because students with serious reading difficulties "typically end up having substantially less reading experience outside of school" (p. 242), and in school, "typically receive phonics drills or drills in word recognition rather than passage reading", they do not have the benefit of experiences in reading for meaning that are necessary to develop metacognition about

reading. This "second-order problem" further disables these students in achieving academic success (p. 243).

Although no direct reference to Matthew Effects is made by Mather (1992), her discussion of the disadvantages of the whole language approach to reading instruction for students with learning disabilities parallels Stanovich's description of Matthew Effects. "Without explicit instruction, these students do not learn to 'crack the code' and remain deficient in phonological knowledge and, as a consequence, reading vocabulary" (p. 90).

Research demonstrates that early difficulties in phonological awareness interfere with efficient and accurate decoding in reading, and that these difficulties will persist into adulthood unless direct instructional efforts are undertaken to develop these skills (Shaywitz, 1996; Stanovich, 1986). As well, these primary difficulties in reading acquisition are often compounded by being layered over with secondary problems. Stanovich explained Matthew Effects as being the outcomes of these problems which are understood to include any or all of the following:

- (a) problems learning to use reading as a means to learn;
- (b) difficulties with other areas of the school curriculum which rely on reading skills, such as subject areas in which written text and directions are the primary means toward understanding content;
- (c) social and emotional problems, lowered self-esteem, motivational problems, and problems with self-concept as a learner;
- (d) limitations on achievement which compound over time;
- (e) false educational and vocational ceilings (p. 389-390, 392-393).

Overview of the Study

This study has two parts, one qualitative and one quantitative. In the first part, which is an exploratory multicase qualitative study, the purpose is to illustrate the construct of Matthew Effects in relation to reading disability through the review of ten adult students' case records and their responses to questions in semi-structured interviews. The problem to be addressed is the effect of reading disability on these adults' lives. It is expected that this illustration will be useful to post-secondary assessment professionals to expand their understanding of reading disabilities, the relationship of phonological awareness to reading disabilities, and how these problems might be recognized in their assessment practice. Also, this illustration will be useful in sensitizing college instructors in Developmental Education programs to the reading instructional needs, as well as the affective needs, of these adult learners.

Furthermore, this description will be useful to those who must convince Developmental Education administrators to place a priority on the intensive instructional needs of these students by providing the staffing and funding for appropriate instructional programs. In addition, the results of this study may serve to inform governmental, educational, and vocational funding agencies of the need to provide longer-term, relatively more costly, instructional opportunities for sponsored adults who have these instructional needs. Finally, and perhaps most importantly, this part of the study will alert teachers at the primary, elementary, and secondary levels to the potential consequences of ignoring or minimizing the problems of students who are experiencing serious reading difficulties.

The quantitative portion of the study will provide a comparison of the phonological awareness of the participants with reading disabilities with that of the participants who are proficient readers. The purpose here is to determine the extent of phonological awareness problems in the sample under study in comparison to the phonological awareness skills of adults who are proficient readers.

Definitions of Terms Used

The following terms are important in understanding this study and are therefore defined here for the reader's information.

- Reading: A recent issue of the Journal of Research in Reading, 18 (2), (1995), provides four researchers' definitions of *reading* that are compatible with the focus of this thesis. First, for the purposes of this thesis, Gough's definition of reading as *the ability to read and write* or "Literacy1" will be used, rather than "Literacy2" which refers to "being educated" or to "competence" or to "knowledge". Gough said that, as with history defined as a series of events that actually happened, "...there is literacy, the ability which enables many people to read and write..." (p. 80). History (with a capital H) is an account of what happened, and is the parallel to "Literacy, our account of their reading and writing" (p. 80). Gough sees reading, as I do in relation to this thesis, in this lowercase sense. This conception of reading and literacy is not social, political, or relative; it is decoding which is measurable in

empirical terms. Gough concluded that "without this skill, individuals in our society are seriously handicapped" (p. 85).

In the second article in this journal, Stanovich & Stanovich (1995) convincingly analyzed the findings from the last twenty years of research that sought to better understand the reading process. They discussed the on-going and sometimes ridiculously over-heated debate between Whole Language proponents and reading educators and researchers who support the bottom-up view of reading. Further, these researchers acknowledge that their emphasis is on the importance of word recognition in the reading process, but that certainly is not to deny that the ultimate purpose of reading is comprehension. Stanovich & Stanovich's conclusions support a view of reading as a process of word identification that leads to good reading comprehension, and they see this skill as being a necessary condition, though not sufficient in itself, for good reading comprehension .

Perfetti's (1995) focus on research about the cognitive processes that underlie skilled reading uses a definition of reading that is consistent with Gough's. He sees skilled reading as a means to comprehension, and the teaching of word identification using the alphabetic principle as the prime goal of early reading instruction.

"Accessing meaning through printed words" is the definition of reading espoused by Stuart (1995), who views print for skilled fluent readers as "a transparent window through which we look to the meaning of the text" (p. 126). "When the printed word is opaque (as it is for readers who cannot accurately decode), we cannot look

through to its meaning". This poetic description of reading coincides closely with the view of reading to be explored in this thesis.

- Reading Disabilities: A definition of reading disabilities is possible to give only after we have considered the stage of reading acquisition of the subjects being studied. At the beginning stages of reading skill development, a reading disability usually refers to the learners' difficulties applying what they know about the alphabet and its uses in deciphering print in the task of word recognition or to difficulties figuring out how to pronounce words. Of course, later in the development of reading skills, reading disability could also be referring to the learner's difficulties in comprehension. Both are types of reading disability.

In this thesis, the definition of reading disability will be focused primarily on the first type described above. Regardless of the age of the learner, difficulties of this type exist (Adelman & Vogel, 1991; Baumann, 1984; Elbro et al, 1994; Glimps, 1994; Johnson, 1985; Lefly & Pennington, 1991; Morawski & Brunhuber, 1993; Pratt & Brady, 1988; Scott, 1994; Shafir & Siegel, 1994a and b; Stanovich, 1986, 1988), and these difficulties should be of great concern to educators at any level of the educational process.

Twenty-five years ago, Rutherford (1972) advised teachers to seek "to explicate a child's reading problems in terms of reading skills that the child does and does not possess, and the types of reading activities he can and cannot perform" (p. 54). This will indicate a direction for instruction that can be addressed; this level of diagnosis of reading disabilities is termed "the prescriptive level" and it should take

into account what is known about the learner's reading instructional needs as they have been defined in any related assessment efforts, especially as they determine *how* the learner might best learn. In my opinion, this advice still holds.

- Phonological Processing: According to Torgeson et al. (1994), the definition of phonological processing as it is used by those who study early reading development is "...an individual's mental operations that make use of the phonological or sound structure of oral language when he or she is learning how to decode written language" (p. 276). They go on to say that there is now a broad variety of converging evidence that demonstrates that "...at least three kinds of phonological processing skills are positively related to individual differences in the rate at which beginning reading skills are acquired" (p. 276). These three kinds of phonological processing skills include: phonological awareness, phonological memory, and rate of access for phonological information.
- Phonological Awareness: The construct of *phonological awareness* has been discussed in the research literature for more than twenty years, but its application in the practice of reading instruction has been criticized as being too limited (Moats, 1994). The need for a working definition of this construct must be evident to some researchers because there have been many recent articles titled something like, "What is phonological awareness?" (McBride-Chang, 1995; Olsen & Griffith, 1993), and many others exploring what we know about phonological awareness in relation to reading acquisition (Blachman, 1994; Brady & Shankweiler, 1991; Busink,

1997; Pratt & Brady, 1988; Snowling, 1995; Torgeson et al, 1994). Others have gone so far as to conclude that "...even motivated and experienced teachers typically understand too little about spoken and written language structure to be able to provide sufficient instruction in these areas" (Moats, 1994, p. 81), and that their lack of knowledge of phonological awareness and its applications in the teaching of reading constitute a serious teacher certification issue. Although many kindergarten and primary teachers use rhyme, verse, song, and hand-clapping and other activities which are recommended ways of facilitating the development of phonemic awareness, obviously not all teachers know to do this. Also, while some teachers understand the point to encouraging and using invented spelling as a means to develop insight into the alphabetic code, many do not.

Phonological awareness is the ability to be sensitive to, or to consciously recognize the constituent sound units in speech called phonemes. On the continuum from sensitivity to conscious awareness, this ability would include being able to mentally manipulate these units, e.g., to match, count, isolate, segment, delete, blend, or move phonemes (Stanovich, 1986, 1988).

Phonological awareness is "a type of metalinguistic ability that allows children to reflect on and manipulate the auditory units of spoken language" (Olsen & Griffith, 1993, p. 352). In order for children (and adults) to learn to read, they must first be able to map sounds they hear in speech onto the letters that represent words (Gough, Ehri, & Treiman, 1992).

Researchers identify several components of phonological awareness as being necessary for reading success. These include awareness of: syllables, onset and

rimes, and phonemes (Bradley & Bryant, 1983; Goswami & Bryant, 1990; Gough, Ehri & Treiman, 1992).

A *syllable* is "a unit of spoken language consisting of a vowel or diphthong alone, of a syllabic consonant alone, or of either with one or more consonants" (Morris, 1982). For example, the word *syllable* has three syllables: /syl/ /la/ /ble/. Since perceiving syllables and being able to manipulate them usually gives most readers little difficulty (Goswami & Bryant, 1990), this discussion will focus on awareness and manipulation of onsets, rimes, and phonemes.

Onsets and *rimes* are units of words that are smaller than syllables, but larger than a single phoneme. An *onset* is the consonant(s) at the beginning of a syllable, and a *rime* is the vowel and any subsequent consonants at the end of syllables. For example, in the word *school*, the *onset* is /sch/, and the *rime* is /ool/.

A *phoneme* is "one of the set of the smallest units of speech that distinguishes one utterance or word from another in a given language" (Morris, 1982). In other words, a phoneme is the smallest unit of sound that can change the meaning of a word. "In order to see that a sequence of letters adds up to a meaningful word because it represents all the phonemes in that word, the child has to understand how that word is in effect a collection of phonemes" (Goswami & Bryant, 1990, p.2).

For example, in the word *syllable*, the following phonemes can be discerned: /s/ /i/ /l/ /a/ /b/ /l/. An easier example might be to simply compare the words *cat* and *mat*; the difference that distinguishes them from each other is one letter which represents the first sound in each, /c/ and /m/.

- Matthew Effects: (See earlier discussion on p.2-5). In relation to reading, it is theorized that Matthew Effects are the result of students' difficulties learning to read with fluency and accuracy which Stanovich (1986) and others (Kozminsky & Kozminsky, 1995; McBride-Chang, 1995; and Shaywitz, 1996) attribute specifically to their lack of phonological awareness. In assessing a learner's difficulties, this specificity may be obvious at first, but as the child ages, the deficits appear to become more global, affecting many other areas of reading and of cognitive functioning and academic achievement in a downward spiral.

Research Questions

This study is being conducted to investigate and seek answers to the following questions:

1. Are Matthew Effects evident in the learning histories and recollections of adults with serious reading difficulties? If so, how are these effects evident in their affective, social, vocational, and academic experiences?
2. Can Matthew Effects be defined and assessed in adults with reading disabilities?
3. Can one or more profiles be developed to illustrate Matthew Effects in adults with reading disabilities?
4. What type of assessment data is most useful in illustrating Matthew Effects in adult students?

5. What are these adults' performance results on appropriately selected tests of phonological awareness? How does their performance compare to that of proficient readers?

Limitations of This Study

In the qualitative portion of this study in which interview responses were the primary data collected, it was important to standardize the questions and the interview format as much as possible to ensure the validity of the results. It was also necessary to prepare an Interview Guide to facilitate an organized comparison of responses and the identification of common themes. Using sample questions (included in Chapter Three on the methodology of the study) three pilot interviews were conducted with individuals other than the intended participants to determine any changes or clarification of the questions needed. No significant changes were identified as being necessary.

Two limitations for this portion of the study were evident and are acknowledged: (a) reliance on self-reports; (b) the subjectivity of personal reflections and memories of past experience; and (c) the small number of participants.

In the quantitative portion of the study which involved comparing the scores on the measures of phonological awareness and word identification of the participants with reading disabilities to the scores obtained by the participants who are proficient readers, the limitations noted included: (a) the lack of randomness of the selection of the sample of participants which precludes generalizability to a population of adult

readers; (b) the study of participants who were selected with phonological awareness problems in mind; and (c) the small number of participants in both samples.

Organization of This Thesis

This thesis is organized in five chapters. This first chapter has dealt with the problem and the purpose of this study, the definitions of terms; and the limitations of the study.

The second chapter is a review of the related literature. Six sub-topics are explored which include: 1) a description of adults' reading problems and the possible reasons for them; 2) the characteristics of adults who are like the participants in this study; 3) a review of key related empirical research studies; 4) a detailed description of phonological awareness; 5) a discussion of the methods for assessing phonological awareness in adults; and 6) a summary of the results of two empirical phonological awareness training studies with adult subjects.

The third chapter describes the methodology employed in this study. First, the two-part design of the study is discussed. Then, the selection of participants is explained, and their characteristics as a group are described. The Interview Questions are listed along with a description of the tests of phonological awareness administered. Finally, the data analysis procedures are outlined.

The fourth chapter describes the data collected, explains the strategies employed in data analysis, and delineates the themes identified in the analysis of this data. A brief summary of the findings from the study ends this chapter.

The fifth chapter provides a list of the conclusions, a discussion of implications for working with adults with reading disabilities, and recommendations for further research.

Chapter Two: A REVIEW OF RELATED LITERATURE

Background of the Problem

In the field of Reading Education as it is practiced at the post-secondary level, my interest in the topic of Matthew Effects stems from seventeen years of experience working as a learning skills instructor in a community college with adult students some of whom demonstrate serious decoding difficulties in reading. These students' reading problems are similar in that they demonstrate numerous obstacles to academic progress one of which appears to be their inability to accurately and efficiently decode words (Adelman & Vogel, 1991; Baumann, 1984; Elbro, Nielsen, & Petersen, 1994; Lefly & Pennington, 1991; Lewkowicz, 1987; Truch, 1991; and Wong, 1991). That is, they can readily understand the meaning of print material only *after* they have dealt with the decoding obstacle. This can be accomplished, for example, in the situation when a tutor orally reads the material, or when these students listen to an audio-tape of the text material, or when they have struggled inordinately to decode what they could independently. For many of these students, the decoding obstacle has been insurmountable in their independent reading efforts because of their inefficiency and inaccuracy in the decoding task. Therefore, they have not progressed to the level of being able to deal with the volume of reading assigned in most post-secondary programs. Quite simply, the amount of cognitive attention these students must expend to attempt to decode "all those little black squiggles on the page" (as described by one

23 year old male student) precludes success in learning from the reading material assigned.

After an initial reading of Stanovich's seminal article (1986) in which he described his theoretical construct of Matthew Effects in reading, and recognizing the patterns he described as being what I may have been seeing with those adult students described earlier, I decided to focus this study on illustrating the Matthew Effects evident in these adult students' lives.

Recently, an apparent contradiction to Stanovich's model emphasized the need to carefully define the construct of Matthew Effects. Shaywitz et al. (1995) reported they had found no significant empirical evidence of a Matthew Effect in reading in their analysis of the data from the Connecticut Longitudinal Study. In this study, 396 children who had first been assessed in kindergarten were re-tested in grade six. From their results, Shaywitz et al. concluded that there was only a small Matthew Effect on IQ, and no evidence of Matthew Effects for reading. It seemed that a controversy in the research was developing about whether Matthew Effects in reading even exist. Since my practical experience as a post-secondary reading specialist indicates they do exist, I determined that a credible means of demonstrating these effects needed to be developed.

Interestingly, even more recently, Shaywitz (1996), commented on the analysis of data from the Shaywitz et al. study (1995), stating that the results "further support a connection between phonological awareness and reading" (p. 100) which is at the core of Stanovich's description of Matthew Effects. How could the results of the Shawitz et al. study support this connection if their results did not confirm the existence of

Matthew Effects in reading? In this present study, it may be determined that this finding from Shaywitz et al. was the result of using an inaccurate definition of phonological awareness as decoding and the resultant omission of a reading comprehension task in their methodology that resulted in the findings they reported.

Procedures Used in this Literature Review

To begin my research, I used on-line computer access to ERIC (*Educational Resources Information Centers*), a national network of educational clearinghouses that collect, index, abstract, and disseminate a wide variety of educational information. Within ERIC, I conducted a search in the CIJE (the *Current Index to Journals in Education*) database, and in the RIE (*Resources in Education*) database, using the following descriptors:

- reading disabilities
- adults *and* reading disabilities
- Matthew Effects
- phonological awareness
- and, various researchers' names, e.g., Keith Stanovich

Next, I organized the selected body of literature I had identified in my search so I could write this review in relation to the problem and purpose of my study. I used primary sources exclusively; no secondary sources are included in the reference list.

If a reference was repeatedly cited in other researchers' lists, it was more likely to be selected as one of the primary sources in this study.

References were also solicited through two listserves of which I am a member (LRNASST, an international group of more than 400 learning assistance professionals at the post-secondary level; and CRALIST, which includes many members of the Reading Education community of professionals in North America who belong to The College Reading Association).

Finally, my correspondence on related subjects via e-mail with other professionals was searched, and relevant passages were cited.

Key Research Studies in the Literature

Minus (1992), Pratt & Brady (1988), Shaywitz et al (1995), Stanovich (1986), Torgeson et al (1994), and Truch (1994) are the main sources for this review. Other selections are referenced because they provide support or challenge, or because they offer a particularly pertinent explanation of a point.

This review is organized into six sections:

- 1) Minus' (1992) and Pratt & Brady's (1988) empirical studies are examined and described here in detail. They are particularly important because they describe experiments conducted specifically with adults to examine phonological awareness and its relationship to their reading difficulties.

2) The connection between phonological awareness and Matthew Effects is explored in relation to the problems experienced by adult readers whose skills have not developed normally. The possible reasons for these problems as suggested in the literature are then explored.

3) Stanovich's (1986) contention that the phonological awareness construct is key to his definition of Matthew Effects is explained. Two longitudinal studies (Shaywitz et al., 1995; Torgeson et al, 1994) are reviewed to understand the phonological awareness construct. Numerous other studies are referenced in this section as well.

4) The characteristics of adults who are like the participants to be studied in this thesis are described next.

5) The methods for assessing phonological awareness are detailed here along with a description of the specific tests found to be useful with adults.

6) Finally, because training in phonological awareness may be the most likely direction to take in instruction of adults with the type of reading disabilities addressed in this thesis, a brief discussion is developed about the findings of two phonological awareness training studies conducted with adults (Minus, 1992; Truch, 1994).

Results of Two Empirical Studies of Phonological Awareness with Adults

At the time this literature review was completed, only the following two examples of empirical studies conducted with adult participants were identified. This scarcity in itself is of note in that so little attention within the practice of reading instruction with adults seems to have been focused on the application of the findings in the literature about reading acquisition.

Minus' Study of the Effects of Phonemic Awareness Instruction on the Decoding Skills of Adult Disabled Readers (1992)

In an empirical study for her doctoral dissertation at the University of Texas - Austin, Minus examined the relationship between phonemic awareness and reading across the full range of decoding abilities in adults from non-reader to post-college. Her subjects included: 41 upper division and graduate students, 40 students in developmental reading courses at a community college, and 36 inmates at a pre-release correctional facility all of whom were male students receiving daily reading instruction using a synthetic phonics program. These three group's skills were assessed in phonemic awareness, word identification, and decoding. Then, a group of 19 randomly selected adults whose scores had placed them in the "low-literate" or "illiterate" range received one 45-minute training session in phonemic awareness to determine whether phonemic awareness could be taught quickly to low-literate adults.

The results of Minus' study indicated that there were significant differences between the three groups of subjects in their phonemic awareness skills, and that their phonemic awareness scores were significantly and highly correlated with their word recognition and decoding skills. However, in the training component of the study, it was determined that phonemic awareness cannot be taught quickly to low-literate adults, and the treatment effects of this very brief period of phonemic awareness training were not significant in terms of any improvements in decoding skills. Minus' conclusion was that further research is needed to ascertain how phonemic awareness should be taught to adults.

Pratt & Brady's Study of Adults' Phonological Awareness (1988)

Pratt and Brady determined that the strong relationship demonstrated with young children of phonological awareness to reading is also evident in older children and in adults. They conducted two experiments, one with grade three students and the other with adult readers who had had considerable reading instruction, comparing good and poor readers at both age levels. They found "an exceedingly strong relation between phonological awareness and reading ability in both adults and children" (p. 322) that was independent of verbal and nonverbal IQ in children, and independent of nonverbal IQ in adults. Of particular note, Pratt & Brady reported that "...the verbal intelligence scores of good and poor adult readers were considerably different" (p. 322), likely because "...illiteracy seriously retards growth of vocabulary, and thus poor readers' low *PPVT-R* (receptive vocabulary) scores are, in part, a result of their lack of reading skill" (p. 322). The negative cycle of Matthew Effects is once again demonstrated in adults with reading disabilities. The findings of Shaywitz et al. (1995) concurred with Pratt & Brady's explanation of the effect of poor reading on vocabulary development, and these findings are logically seen as being a reason for low verbal scores in adults (p. 322).

Phonological Awareness and Matthew Effects in Relation to Adults' Reading Problems

In this section, the normal progression of reading skill development is described briefly with a view to understanding adults' reading problems. Then, some of the reasons for these problems are explored.

Normal Progression of Reading Skill Development

An understanding of the development of normal readers' skills, and of the differences among normal readers, is necessary to better comprehend what would constitute deviance from those norms (Goswami & Bryant, 1990, p. 130-131). As an explanation of this heuristic, the following parallel is offered for consideration: The artist M. C. Escher is known for his ability to distort perspective effectively, but he claimed that this ability was dependent first on a thorough understanding of the principles of correct rendition of perspective (Escher, 1967, p. 15). Paralleling Escher's claim, the ways in which performance of the act of reading vary can best be understood by first considering the normal development of reading skills, and then contrasting that with the deviations observed in readers who are having serious difficulties.

Goswami & Bryant (1990), Gough (1995), and Perfetti (1995) offer clear perspectives on what educators know to date about the theoretical stages of normal readers' skill development. From their descriptions, it is apparent that phonological awareness, rote associations, knowledge of grapheme-phoneme (letter-sound) associations, use of onset and rime, and ability to use analogy are skills that we could expect to observe being used by normal readers as adults. In fact, what has been observed with adults who are proficient readers is a balanced use of reading skills that enables them to decode with automaticity, to understand what they read and relate it to their background knowledge, and to efficiently and effectively make meaning from the various print materials they encounter.

Reasons for Adults' Reading Problems

Several types of problems are evident in the performance of adult readers with reading disabilities. In this section, a comparison is made of the normal progression of reading skill development to the reading problems adults experience, and the contrast between problems in decoding and problems in comprehension is explained.

Several possible reasons have been suggested in the literature for the differences between the skills of proficient readers as adults compared those of adults with reading problems. These include:

- (a) developmental delays in requisite skills;
- (b) the distinctness hypothesis;
- (c) lack of reading experience;
- (d) reciprocal causation;
- (e) problems in acquiring phonological awareness.

Developmental delays in requisite skills. In adults with reading disabilities, also referred to as adult dyslexics, what we see may not be developmental delays in the normal development of skills in the process of reading (Elbro, Nielsen, & Petersen, 1994, p. 208; Pratt & Brady, 1988, p. 322). More likely, what we are seeing are true deficits in one or more of these skill areas (Elbro, et al, 1994; Pratt & Brady, 1988).

Elbro et al (1994), in a study with Danish adults with a history of reading difficulties, reported that these adults appeared to be slower at naming pictures and familiar symbols like numbers or letters, and their naming latency (lexical access) appeared to distinguish them from other adults (p.209). However, it was non-word reading (of

nonsense syllables or words) that most clearly distinguished these adults with a history of reading difficulties from adults without such a history (p. 215); hence, they were poor readers of words they had not seen before. These results also demonstrated that adult dyslexics appeared to be much more impaired in phonological knowledge than in semantic knowledge (p. 218), and that they continued to be poor readers on all measures of reading even when differences in education and amount of daily reading were taken into account (p. 219).

The distinctness hypothesis. Elbro et al.'s (1994) results underline the validity of a definition of dyslexia that is based on poor mastery of the alphabetic principle of written language (p. 220). An interesting possibility described by these researchers is that phonological representations are less distinct in dyslexic children and adults. "The distinctness hypothesis proposes that children who become dyslexic have *poorer access to the most distinct variants of spoken words* than other children. This can account directly for some variation in reading acquisition and in differences in adult reading" (p. 223). They found that "dyslexic adults pronounced words less distinctly than the normal adults even though the dyslexics read words more slowly than the normal readers. And slow reading was expected to correlate with more distinct pronunciation" (p. 219).

Lack of reading experience. Stanovich (1988) discussed the importance of the "bootstrapping" mechanism that occurs in reading skill development in relation to readers who are having difficulties. His explanation is that because of the problems these readers experience, they tend to avoid the task of reading, thus limiting their opportunity to learn from what they read (p. 163), which in turn negatively affects their

development of vocabulary knowledge, and content knowledge across the curriculum. Hence, the cycle of Matthew Effects begins and continues.

Reciprocal causation. Stanovich (1986) discussed the idea that relationships of "reciprocal causation" may exist between reading and other cognitive processes, such as auditory processing or phonological awareness, and that these interlocked relationships may be an explanation for individual differences in the development of reading skills which then affect the development of skill in the other cognitive process (p. 378). Unraveling these relationships may be impossible, but understanding the possible relationships between these related processes is important in determining the best directions for instructional efforts with adults with reading disabilities (McGuinness, McGuinness, & Donohue, 1995).

Problems acquiring phonological awareness. From their study of adult poor readers, Pratt & Brady (1988) concluded that these readers had "a fundamental problem in acquiring awareness of the phonemic structure of language" (p. 323). Therefore, they concluded that it is phonological awareness deficits, rather than developmental delays, inadequate reading instruction, or a lack of reading experience, that are the cause for these adults' reading problems.

Stanovich's Contention that Phonological Awareness is the Key to Reading Disability:

The Results of Two Related Longitudinal Studies of Phonological Awareness

Stanovich (1986) contended that phonological awareness is the key causal factor in reading disability. He established his position by eliminating other variables as being secondary effects of reading disability, and he posited phonological awareness as the

original deficit from which others derive. He called for future research efforts to conduct longitudinal studies, and the studies of Shaywitz et al. (1995) and Torgeson, Wagner, & Rashotte (1994) followed.

Shaywitz et al. (1995)

In a follow-up report using data from their original longitudinal study of 445 children, Shaywitz et al. examined the data for the 396 Grade 6 children remaining in the sample who had been followed as a longitudinal cohort for 7 years. Their purpose was to address the hypothesis that Matthew Effects would be evident in the developmental course of good and poor readers. The participants were assessed on a series of child- and teacher-based measures related to the academic, cognitive, and behavioural domains. As well, ability was measured by the *Wechsler Intelligence Scales for Children - Revised (WISC-R, 1974)*, and achievement in reading and math was measured using the relevant subtests from the *Woodcock-Johnson Psychoeducational Battery (W-J, 1977)*. A complex set of regression analyses, using standard scores and Rasch scores, yielded results which were compared to the predictions "about what these metrics should show longitudinally if a Matthew Effect were operating" (p. 898). Efforts were made to control for various statistical problems, such as "the elimination of increased variability over time that occurs because of standardization of standard scores which might obscure the presence of a Matthew Effect", and regression to the mean which is not corrected for in the analysis of Rasch scores.

The results of the Shaywitz et al. study (1995) showed that, over time, IQ tends to increase in children with higher mean IQ scores, and that IQ falls in those children with lowest IQ scores. However, no such effect was apparent for the trends in reading scores. In fact, "children in the lower quartiles of reading ability show *greater* improvement over time relative to children with reading disability in the higher quartiles" (p. 902).

The results of Shaywitz et al. (1995) were reported as demonstrating that "...there was no evidence to support the notion of a Matthew Effect for reading decoding skills" (p. 895). The problem identified here is that their data did not include sufficient evidence of this same trend in relation to reading comprehension, which is where Matthew Effects may have been more pronounced in their older readers. The authors acknowledge this limitation by saying that "...these results reflect the manner by which reading was assessed" (p. 902), and they conclude by saying that: "A systematic assessment of comprehension skills might have produced findings more similar to the results for IQ (for which evidence of a Matthew Effect was found)" (p. 902). As well, they qualify their results saying that they apply to "early school grades (Grades 1-6)" (p. 902), suggesting that study over a longer period of time might be necessary.

On the specific question of phonological awareness deficits, Shaywitz et al. (1995) say that "...many (if not most) poor readers have poor phonological processing skills that persist across the lifespan" (p. 902). However, since their study was not carried out with the specific intention of assessing phonological awareness, no further comment was made.

Shaywitz et al.'s (1995) conclusion that "...children's relative reading achievement may be stable at a very early point in their school careers" (p. 904) has "...important implications for determining those factors having the greatest influence on reading achievement at an early age as well for the kinds of interventions most likely to affect the reading process" (p. 904). They say that it is the mix of "social and environmental influences that interact with the child's basic biologic endowment" that are the most important factors at school entry that influence the reading process. They call for early intervention programs to minimize these negative factors.

Torgeson et al. (1994)

This two-part study was conducted for the purpose of furthering an understanding of the relationship between various phonological skills and individual differences in the rate at which beginning reading skills are acquired. When they began their research, Torgeson et al. already believed that "...a family of phonological skills developing from the child's pre-reading language experiences, and existing independently of reading and general intelligence, may be uniquely important in helping children acquire early reading skills that involve translating between oral and written language" (p. 277). Their goal was to develop a model of the causal relationships between individual differences in reading growth and phonological skills.

First, they conducted a preliminary study to test their measurement model, and to confirm their choice of tests for assessing five distinct but correlated phonological variables they had identified: serial naming, isolated naming, synthesis, analysis, and memory. Second, they conducted a longitudinal study using this new and

sophisticated measurement methodology that they claimed overcame the limitations of previous research. By identifying latent rather than observable measures, they said they would be able to more accurately estimate the correlation between the variables.

In the longitudinal study, a sample of 288 children randomly selected from kindergarten classrooms in six elementary schools were studied. A battery of 22 different tasks was given to assess their reading skills, general verbal ability, and the three major areas of phonological skills most frequently studied by previous researchers: phonological awareness, phonological memory, and rate of access for phonological information. Then, this same battery of tasks was re-administered to the same children at the beginning of first grade, and again at the beginning of second grade. In the second grade sample, 244 children were left. Of note is the fact that at the time the children were first tested, no formal reading instruction had begun, but that all the schools in which they were enrolled had adopted the whole language approach to reading instruction, albeit with substantial variability in implementation.

Two findings from Torgeson et al.'s longitudinal study of these children's growth rates in reading and phonological skills have special implications for understanding reading disabilities. First, they were able to demonstrate "...the stability of individual differences in phonological skills over time" (p. 283). Second, they were able to provide "...powerful support for the conceptualization of phonological skills as stable, enduring individual difference characteristics, at least across the early elementary period" (p. 283). These findings strongly support the theory of phonologically based reading disabilities which says that these disabilities "...are the cause of a substantial proportion of reading disabilities in young children, adolescents, and adults" (p. 284).

The results of this study also confirmed phonological awareness as the variable most strongly related to subsequent reading skill, leading to the authors' efforts to investigate the potential impact of intensive training in phonological awareness. Two training studies were conducted and were reported separately, but a summary of them was included in the research report. The major finding from the first study was that significant growth in phonological awareness was produced in the majority of children, although "no measurable growth in phonological awareness" was found in about 30% of the at-risk sample.

In the second study, the training period was longer (12 weeks as compared to 8 weeks in the first study) and the training goals were more elaborate (focused on developing analytic (segmenting) and synthetic (blending) skills). However, the results again showed that about 30% of the children in the training group made little gain on both tasks. Interestingly, the two pre-test measures that were most predictive of the after-training performance of individuals in the sample were a measure of invented spelling and one which measured rapid serial naming of digits.

Overall, Torgeson et al.'s results support the conclusion that "...phonological awareness training prior to reading instruction may be one way to significantly reduce the incidence of reading disabilities among young children" (p. 285), leading to the authors' strong recommendation that "...training in phonological awareness be included in any preventative or remedial program for children either at-risk for or identified with reading disabilities". But, they caution that "...training procedures that are more explicit or more intense than those typically found in the research literature may be required to

have a substantial impact on the phonological awareness of many children with severe reading disabilities" (p. 285).

The Characteristics of Adults Like Those to be Studied in this Thesis

With the previous descriptions in mind, we may now orient ourselves toward adults with reading disabilities, and the particular reading problems they experience as they will be approached in the present study. A composite description of this group, using references from the reading disability literature, will be developed next.

The adults about whom we are concerned in this thesis are 18 years and older. As children, they would have attended elementary and secondary school, and depending on their experiences, they may have persisted to completion of the high school program that was available to them. However, each of them would have had a long-standing history of reading difficulty, and as well they would have a history of other academic, social, emotional, vocational, and interpersonal problems. In some rare instances, they may have achieved a high degree of academic success usually attributable to their general intelligence, personality factors such as determination and courage, as well as to effective support groups. Most often, however, their academic development would have been stymied by their reading difficulties, and their achievement in life is often stalled. Some may have developed work related skills that are not compromised by their reading problems, but most would have experienced difficulties if they have attempted to progress beyond entry level employment positions in anything but the most physical of jobs.

Some of these adults could be ones who eventually decided to face their reading problems, and who therefore enrolled at their local community college looking for assistance. Others may have enrolled in open admission college programs requiring only limited pre-requisites such as completion of grade ten programs but no specific course or grade requirements. In many Canadian publicly supported post-secondary institutions, these students get past the front door with little trouble. However, once they have begun a content program, they are usually faced with reading demands that exceed their present skills. Once again, they experience the familiar dismay of realizing they cannot succeed because of their reading limitations, and they decide, or are advised to, access the assessment and instructional services available to enrolled students.

Many of these adults would have been diagnosed as "dyslexic" in elementary school, and some of them were placed in special programs or received learning assistance as they went through school. Differences in treatment would abound, depending on their age, location (i.e., urban or rural), local school district policies and programs, and any advocacy efforts made on their behalf by parents or teachers.

Others would have been treated as problem students, shuttled between schools or programs, and sometimes relegated to the back of the room drawing pictures or doing worksheets while "real" instruction was being conducted with children who could benefit. Often, but not always, these would have been the older adults' experiences, whose schooling took place when political correctness regarding equity of opportunity were not the issues they are today.

The majority of the adults considered in the group addressed in this study would be expected to be male, and an explanation for this gender-related reality of reading disability is now available from neuro-biological studies which have identified physical differences in the brains of male and female dyslexics. According to Shaywitz (1996), research results have shown that

...in men, phonological processing engages the left inferior frontal gyrus, whereas in women it activates not only the left but the right inferior frontal gyrus as well.

These differences in lateralization had been suggested by behavioral studies, but they had never before been demonstrated unequivocally. Indeed our findings constitute the first concrete proof of gender differences in brain organization for any cognitive function (Shaywitz, 1996, p. 103).

With respect to reading, the main problems identified in this population of adults are poor decoding and oral reading, as well as difficulties with phoneme segmentation and structural analysis, retrieval, and pronunciation (Adelman & Vogel, 1991; Baumann, 1984; Lewkowicz, 1987). These problems have been attributed by many to difficulties with auditory analysis, linguistic awareness, and decoding (Adelman & Vogel, 1991, p. 564). In spite of these weaknesses, however, listening comprehension is often noted as a relative strength for these adults (Baumann, 1984; LaBerge & Samuels, 1974).

Another particularly pervasive problem of this group is slow reading rate which is attributable to a lack of automaticity, decoding problems, underlying language deficits, and anxiety (Lefly & Pennington, 1991). Reading comprehension skills in many cases are significantly better than decoding skills because of good use of background

information and context, as well as persistence and effective use of other reading strategies, but because of such low reading rate, these adults simply cannot cope with the volume of reading demand they face. Even compensated adult dyslexics (those who are not diagnosably dyslexic as adults, but who had clear histories of reading problems as children) demonstrate oral reading speed more similar to that of dyslexics (p. 144).

Dr. Sally Shaywitz (1996), who co-directs the Yale Center for the Study of Learning and Attention with her husband, Dr. Bennett Shaywitz¹ defines dyslexia as being "an unexpected difficulty learning to read despite intelligence, motivation, and education" (p. 99). One likely explanation for dyslexia is that it is caused by "a deficit within the language system at the level of the phonological module which impairs (the reader's) ability to segment the written word into its underlying phonological components" (p. 100). In adult dyslexics, this phonological deficit masks what are often excellent comprehension skills because of this limited deficit in phonological processing which impairs decoding and prevents word identification (p. 100).

In contrast to the explanations above which reflect an emphasis on the mental operations involved in the act of reading, Johnston (1985) addressed the context of reading failure and the affective factors such as anxiety, maladaptive strategies, conflicting motives, and causal attributions that he suggests contribute to these readers' difficulties. Using three case studies of adult disabled readers chosen as subjects because of their relatively better awareness of mental processes compared to children, he explored the various notions that are used to explain reading failure. He determined that rational and irrational use of self-defeating strategies, and negative

affective responses must be considered along with the evidence of conceptual difficulties in order to derive a useful understanding of reading disability in adults. Although he acknowledged controversy about the limitations of the use of verbal reports (e.g., from personal interviews) as a data source, he asserted that case studies can provide invaluable insight into complex problems that would be unavailable otherwise. He concluded that reading failure can be prevented by emphasizing the educationally modifiable components. Further, he posited that the longer a reading problem goes undetected, the more difficult it will be to remedy (p. 174).

Although some researchers also noted the problems adults with reading disabilities experience in other academic areas, particularly spelling, writing, and mathematics (Adelman & Vogel, 1991), it is my assertion that many of these difficulties stem from, or are the result of, the reading problems these adults experience. From my experience in working with students with reading problems, when a person cannot read to learn, he or she often avoids reading for any purpose. Limited reading experience often results in poor spelling, especially for people with adequate visual processing skills but weak auditory processing abilities; if they have not seen the word, they often cannot spell it. In addition, poor phonological awareness may also account for spelling difficulties. In writing, these students have not seen the organizational methods of presenting ideas, thoughts, and information, so they are hampered in their ability to express themselves. In math, either they skip the text's explanations of what they are to do, or they misunderstand directions in the math textbooks. Therefore, these other academic problems will not be dealt with directly in this thesis because it is assumed that improvements in these areas would occur given improvements in reading.

¹ This wording is necessary to distinguish Sally Shaywitz's comment from the 1995 shaywitz et al. report 38

Assessing Phonological Awareness

A number of different tasks have been devised to assess phonological awareness, such as matching, rhyming, counting, segmenting, isolating, reversing, deleting and renaming nonsense words and real words. Several reasons explain why some of these tasks are better indicators of phonological awareness than others (Yopp, 1988). Differences in the degree of linguistic awareness or in the cognitive requirements of the tasks are the two most important of these reasons (p. 160).

Efforts to Refine the Construct of Phonological Awareness

Various researchers have focused effort on the refinement of the construct of phonological awareness (Yopp, 1988; Shapiro, Nix, & Foster, 1990). First, Yopp identified and validated two highly related factors, which she called Simple Phonemic Awareness, best measured by tests of phoneme segmentation, and Compound Phonemic Awareness, which is tapped by measuring phoneme deletion. By determining which of the 10 tests administered loaded on these two factors, her analysis eliminated tests of simple rhyming and auditory discrimination because they did not require that the subject manipulate the sounds in the stimulus item (p. 173). This led to her refinement of the construct of phonemic awareness, which she redefined as: "...the ability to manipulate individual sounds in the speech stream, or more simply, as control over phonemic units of speech" (p. 173). Therefore, according to Yopp, "a combination of two tests, one from each factor, holds greater predictive validity for the initial steps in reading acquisition than does any test alone" (p. 175).

Shapiro et al. (1990) determined that there were four factors in the broader construct of auditory perceptual processing: advanced phonological awareness, sequential memory, discrimination, and simple phonological awareness. When they analyzed their results, they concluded that: "Tasks which measure advanced aspects of phonological awareness (Factor 1) and sequential memory tasks (Factor 2) are the best predictors of reading ability" (p. 130). Measures of auditory discrimination (Factor 3) were found to be unable to discriminate between average and disabled readers. Simple segmentation tasks at the word and syllable level (Factor 4), which precede segmentation at the phoneme level (included in Factor 1), were also not as useful as the first two factors, especially when age differences were considered. In particular, the tests recommended for use with older readers are those that are not likely to have a problem with ceiling effects because of an insufficient range of difficulty in the test items (Pratt & Brady, 1988; Shapiro et al., 1990).

Tests of Phonological Awareness

Specific tests that researchers have used in assessing phonological awareness in adults include the *Auditory Analysis Test (AAT)*, (Rosner & Simon, 1971), and the *Lindamood Auditory Conceptualization Test (LAC)*, (Lindamood & Lindamood, 1971). Pratt & Brady (1988) found that these two measures were able to convincingly differentiate good and poor adult readers.

In addition, the combination of the *Yopp-Singer Segmentation Test* (Yopp & Singer, 1984) with the *Bruce Phoneme Deletion Test* (Bruce, 1964) was found to have the best predictive validity for success in the initial steps in reading acquisition (Yopp, 1988).

For adults with serious reading difficulties, it may make sense to use a battery that combines these two short measures with those discussed above to ascertain the depth of their deficits in phonological awareness.

Results of a Phonological Awareness Training Study
with Adult Subjects

Truch (1991) recognized the importance of the recent research in phonological awareness, and the fact that instruction in phonics is not enough to enable many students to become independent and automatic decoders. Therefore, he determined that this "missing link", which is at a more basic level of processing, must be the focus of instruction. After several years of program development, Truch (1994) conducted a study using pre- and post-test data for 281 clients ranging in age from school-age through adulthood at his Reading Foundation clinic in Calgary, Alberta to evaluate the effectiveness of the program. Post-test data was collected after 80 hours of instruction using the Auditory Discrimination in Depth Program (ADD Program). According to Truch, "Highly significant gains were evident on measures of phonological awareness, sound/symbol connections, word identification, spelling, and decoding in context" (p. 60). "The ideal delivery of the program for reading-disabled individuals is on a one-to-one basis, four hours daily, five days a week for a minimum of four consecutive weeks" (p. 63). "The ultimate objective of the program is to have the client develop "automaticity" in the decoding process" (p. 64). In general, the sequence of instruction in the ADD Program is as follows:

- a) training in an awareness of the consonants and vowels of the English language, particularly with reference to the articulatory actions that produce them;
- b) an introduction to the letters symbols associated with the phonemes;
- c) instruction in how to "track" sounds within the speech stream using coloured wooden blocks to represent the sounds, with practice in how to segment, blend, add, delete, substitute and shift phonemes;
- d) a careful transition to the discovery of the connection between the processes above and decoding and spelling, moving from simple to complex to multi-syllable levels, using both nonsense syllables and real words;
- e) overlap to contextual reading using materials at level student can "track".

Although only 15% (42) of the 281 subjects studied in Truch's sample were adults aged 18 and over, their results were so promising that attention is warranted here. Subjects were selected because of their type of reading difficulties; clients who did not require work in phonological awareness and decoding were excluded. "What the subjects had in common was an initial deficit in phonological awareness (as measured by the LAC Test) and all of them complained of some difficulty in reading (decoding), spelling or written language" (p. 68). The majority of the subjects met traditional criteria for being "learning disabled" or "dyslexic"; others would be described as "slow learners" or "mentally challenged"; a few suffered brain injury or attention-deficit disorders. However, no attempt was made to classify subjects on the basis of these categories for the purposes of this study.

The standard battery of tests administered to the subjects included:

- (a) the *LAC Test* (Lindamood and Lindamood, 1979);
- (b) an informal sound-to-symbol test;
- (c) the Word Attack subtest from the *Woodcock Reading Mastery Tests (WRMT-R)*, (Woodcock, 1973);
- (d) the Reading subtest from the *Wide Range Achievement Test - Revised*, the *WRAT-R* (Jastak and Wilkinson, 1984);
- (e) the Spelling subtest from the *WRAT-R*;
- (f) The *Gray Oral Reading Test (GORT)*, (Gray, 1963);
- (g) the *Peabody Picture Vocabulary Test - Revised (PPVT-R)*, (Dunn and Dunn, 1981), and/or the Vocabulary subtest from the *WISC-R* (Wechsler, 1974), the *WISC-III* (Wechsler, 1991) or the *WAIS-R* (Wechsler, 1981).

The analysis of the post-test results showed that 84% of the adult subjects (n=24) demonstrated a gain of 4 or more years (grade equivalents) on the *WRMT-R* Word Attack measure (p. 73), which is a remarkable result in terms of improvement in decoding accuracy. Since the *WRMT-R* is not time-limited, improvements in automaticity are not measured.

Adult subjects also demonstrated a significant degree of gain on the *WRAT-R* Reading subtest, with 41% of the subjects showing an increase of 16-30 points, and another 17% showing an increase of 31 points or more (p. 74). The gains on the Spelling subtest were lower with 26% of the adult subjects showing an increase of 16-30 points, and only 8% with an increase of 31 or more points; this result may be because "the spelling process is more difficult to change" (p. 74). However, Truch

commented that an error analysis showed that "most clients became far more phonetic in their misspellings" (p. 75). A small but significant group gain was also demonstrated on the *GORT* in terms of accuracy though not yet in terms of speed or "automaticity".

From the results of his study, Truch concluded that phonological awareness can be taught, and that such remediation yields significant gains in decoding, word identification, spelling, and contextual reading. The most important conclusions in relation to the present study are that these results "extend the success to much older ages" (p. 76) than previous phonological awareness research, and that "...similar effects are possible even with students and adults who have experienced long-term problems with decoding and encoding" (p. 77).

The primary difference between the results of Minus' study (1992), which was discussed earlier, and Truch's study (1994) is in the intensity and duration of instruction provided. This difference will be instructive in any discussion of curriculum development for adults with severe reading disabilities.

Conclusions from the Literature Review

The growing body of literature on phonological awareness and adults with reading disabilities provides hope that the cycle of negative Matthew Effects can be broken. However, an illustration of Matthew Effects that conveys the consequences of this type of reading disability and its effects on the lives of these adults has yet to be developed

in the research literature. That gap is what this present study is primarily intended to fill.

Chapter Three – RESEARCH DESIGN AND DATA COLLECTION

At Selkirk College, where I am employed, adult students with reading disabilities are supported by our attempts to provide appropriate assessment services and instructional opportunities. However, more effective instructional efforts are needed college-wide. This study has been undertaken to identify improvements in assessment and instructional practices that will be useful in planning and providing services and programs for these students.

Each year at Selkirk College, approximately twenty-five to thirty adult students who are experiencing serious learning problems in college programs are referred for an individual Learning Skills Assessment. Often, the referrals are made because the learning assistance instructors or other instructional faculty have determined that the student's difficulties are so profound and/or puzzling that short-term, content-oriented learning assistance or peer tutorial help would be inadequate to address their needs.

In some of these cases, the student's Learning Skills Assessment results indicate the need for undertaking intensive remedial reading instruction. Often, these students are eager to attempt intensive remedial efforts to improve their reading skills in the hope that these efforts will increase their chances of future academic success.

Participant Selection

Potential participants were selected by reviewing past and present case records gathered in individual Learning Skills Assessments from the approximately 75-90 case records available in the Learning Skills Centre files from the most recent three years. A set of participant profile characteristics was used in the selection process based on scores on subtests from the *Woodcock-Johnson Psycho-Educational Battery - Revised (WJ-R)*, (1989), and other standardized tests used by the Learning Skills Evaluator (myself). Those students whose profiles showed extremely weak decoding skills (at

the 25th percentile or below in comparison to their age peers), but significantly better listening comprehension and oral vocabulary skills, were chosen as potential participants.

Students were excluded from this study if their assessment profiles indicated their primary reading instructional needs were in reading comprehension. Also, readers for whom English was their second language, and anyone with a diagnosed hearing impairment were excluded from participation.

As much as possible, cases in which the student's previous school records were available were considered for inclusion in the sample so as to show evidence of the initial onset of problems, the resultant patterns of poor achievement, and any attendance and behavioral problems that could be noted. For these purposes, Permanent Record Cards from the public school system were reviewed, as well as any earlier assessment reports, report cards, and/or anecdotal comments on grade reports. Careful confidentiality and disclosure procedures were followed throughout this review.

No consideration was given to differences between potential participants in terms of the educational level they have achieved, their family supports or relationships, or their income.

In September, 1997, letters were then sent to 20 potential participants who best matched the above criteria to invite them to meet with the researcher to discuss the purpose of the study and to secure the agreement of the participant. The final selection of the case records to be discussed in this study was determined after this initial contact was made.

Participant Interview and Testing Procedures

Following the identification and selection process, and the initial contacts with each of the potential participants, 10 individuals with reading disabilities agreed to participate. The research interviews were scheduled and conducted with each participant in the fall and winter of 1997-98 in my office at Selkirk College. In the

interview, each participant was asked about the effects of reading disability in his or her life. The interview consisted of asking each participant the following semi-structured series of questions.

Interview Questions

- Let's review your school history and experiences. We'll start with the beginning - in kindergarten... Where did you attend? Who was your teacher? What do you remember about your experience that year? (Continue year by year, or level by level - primary, intermediate, junior high, high school - depending on the participant's memory.)
- What encouragement (or discouragement) did you receive from family, teachers, friends and siblings as you went through school?
- Who helped you learn to read (to whatever extent you are able)? How old were you at the time?
- What are your earliest recollections of trying to learn to read?
- How do you think your difficulties in reading may be limiting you?
...in school? ...at work? ...in relationships?
- How do you feel now about reading?
- How do you manage with the level of reading skill you have attained? How have you coped with your limitations? What have you learned to do to compensate for your reading difficulties?

- How do you feel reading fits into your future plans?
- How would your life be different if you could read well?

In addition to the above described group of participants, a group of 10 proficient readers was selected. This group consisted of adults who have attained a minimum of a bachelor's degree or significant credentialed training in their field, and who work in occupations in which there is a substantial implied reading demand (e.g., college instructors, teachers, an assistant librarian, a speech pathologist, and an employment counselor). They were administered the same battery of phonological awareness and word identification tests (described below) to provide data for comparison to the test results of the group of adults with reading disabilities.

Tests Administered

Following the interviews of the adults with reading disabilities, a battery of four tests of phonological awareness and one test of word identification was administered to each participant in both groups. The testing time varied for the whole battery from 45 minutes to 60 minutes which was the total of the times suggested by the test developers.

The four tests selected to measure phonological awareness were as follows, in the order in which they were administered:

1) *Yopp-Singer Segmentation Test* (Yopp & Singer, 1984) - presents 22 words which the person is asked to break apart by telling each part in order. For example: when I said /old/, the participant would be expected to say /o/ /l/ /d/.

2) *Bruce Phoneme Deletion Test* (Bruce, 1964) - requires that the person tell what word would be left if a sound were taken away from a particular part of each of the 30 stimulus words. Two examples of test items are: a) "What word would be left if the /t/ were taken away from the middle of stand?"

b) "What word would be left if the /k/ were taken away from the middle of mon-k-ey?"

3) *The Auditory Analysis Test* (Rosner & Simon, 1971) - the longer version of what was later to be revised and shortened, but which in the shortened version might have presented ceiling problems when used with adults; this version has 40 items compared to the 13 items in the shorter version. Participants were asked to repeat a word I said, and then to say it again without a part of the word. Two examples of test items are: 1) "Say cowboy." "Now say it again without (boy)." 2) "Say desk." "Now say it again without (s)."

4) *Lindamood Auditory Conceptualization Test* (Lindamood & Lindamood, 1971) - requires the person to use coloured blocks to represent phonemes (separately and in nonsense syllables) and to make changes in the number and order of the blocks to represent changes in spoken stimuli; there are 16 items in which separate phonemes are used as stimuli and 12 in which nonsense syllables are used. One example of each type of test items is: "Show me /s/ /s/"; and "If that says /vops/, show me /vaps/."

To measure word identification skills, *The Wide Range Achievement Test (Revised, Level 2)* (Jastak Associates, Inc., 1984) was also administered. This test is widely used at the college level because it is normed through adulthood, it is quick to administer, and it correlates well with other measures of reading.

The interviews with the participants with reading disabilities were audio-taped and transcribed verbatim, and the responses were qualitatively and quantitatively analyzed and summarized. The assessment and instructional efforts made at the College with each student were summarized from their Learning Skills Assessment reports and instructional notes or progress reports, as well as from their transcripts.

Data Analysis Procedures

Several references on qualitative research methods were considered to identify the best method of analysis to use with the type of qualitative data generated in this study (Neuman, 1994; Schumacher & McMillan, 1993; Silverman, 1993). It was decided that each participant would be briefly described as an individual, and that any patterns of responses common among participants would be delineated.

In the data analysis stage, following Neuman's suggestions (1994), I completed a first pass for open coding through the interview transcripts to identify the themes that were evident. Next, I made a second pass for axial coding to identify the connections between the themes already identified, and to look for any additional codes or concepts. Finally, I completed my third pass for selective coding to review the data sample to look for quotes to illustrate themes, and/or to make comparisons or contrasts.

Following this three-part process of data analysis, I planned and conducted a one-day workshop with a group of my professional colleagues to seek their input in the qualitative data analysis. Each person was asked to read a small sample (about 10%) of the data to check the reliability of the list of themes and effects I had identified to verify my analysis. They were then asked to review a summary of the data from each of the transcripts to identify the axial relationships, and to ascertain pertinent quotes.

Throughout this process, I maintained a notebook in which analytic memos were recorded and cross-referenced to the data; this material formed the basis for the analysis section (Ch. 4).

Both groups' test scores from the measures of phonological awareness and word identification were summarized in table form. As well, the test scores on the *WJ-R* from each reading disabled participant's file were tabled.

Chapter Four: RESULTS AND DISCUSSION

The present study has produced an enormous collection of data rich with the details of the participants' lived experiences. This richness has been discerned carefully by studying the words of the participants from their interview transcripts *together with* current and past evidence of that experience, such as assessment results, instructional observations collected over time, and school records when available. This combination of qualitative and quantitative data form a dense body of details about the participants' lives and their experience of having reading disabilities.

This chapter is divided into two main parts: Qualitative Data Analysis and Quantitative Data Analysis. Each part will be addressed separately first, and then a brief synthesis of the results will be described.

Qualitative Data Analysis and Results

The qualitative data collected in this study includes the interview transcripts and my file notes developed about each individual during the assessment and instructional periods in which I was involved with each of them. I initially analyzed the transcripts to identify themes relevant to my research questions, and then I facilitated a workshop to involve my colleagues in verifying the reliability of my data interpretation.

Interviews

Of the twenty potential participants invited, ten people (50%) agreed to participate in this study on the effects of reading disabilities on adults' lives. I interviewed and tested nine of the ten participants individually in my office at Selkirk College and one at my home due to an unexpected closure at the campus. In the interview with each participant, I followed the same list of nine main questions with any related probe questions that seemed natural and needed. The only exceptions to this procedure were: (a) one participant who is a fairly high functioning academically who does not think she has a reading problem, and (b) one participant who was not feeling well at the time of the interview and who cut off questions before we had finished.

The questions were posed in a semi-structured, but conversational format and tone. The total time of the interview audiotapes was approximately 12.8 hours, with individual times varying from 38 to 142 minutes. These audiotapes yielded word-processed transcripts from 10 pages for the shortest interview to 33 pages for the longest interview for a total of 204 pages. I think the sizable variances in length were likely to have been due to: (a) the variations in verbosity of the participants, (b) the number of digressions in our interaction, (c) differences in age and life experiences of the participants, with younger or less experienced participants sometimes talking less, and/or (d) the duration and level of familiarity (intimacy) of the participant's relationship with me. In the two longest interviews, the participant brought up a current problem at some point(s) and discussed it in some great detail, so although not every response was pertinent to the specific questions being asked, my evaluation of these

participant's experience was further detailed and enriched by these digressions. (See Table 1 for details about the time and length of each participant's interview.)

Table 1

Details of interviews with participants with reading disabilities.

	# of minutes	# of Pages
	in interview	in transcript

Participants:

1. John	55	15
2. Samantha	73	20
3. Micki	35	10
4. Gavyn	109	30
5. Jack	62	17
6. Carole	88	24
7. Garnet	142	33
8. Thomas	75	20
9. Will	40	11
10. Martha	88	24

TOTALS = 767 minutes / 204 pages

The group of participants included four women and six men all of whom are native-born Canadians of English speaking backgrounds. They ranged in age from 22 to 53 years at the time of the interview; three were in their twenties, two in their thirties, four in their forties, and one was in her early fifties. Only two had ever had any formal experience trying to learn a second language (one with French in kindergarten, the other with Latin in high school). All of the participants attended public schools. Six of the participants attended schools within the same school district for all of their schooling; two attended schools in three school districts, and two attended in two districts. One participant was schooled in an urban centre of Manitoba; one in rural Alberta; and the other eight attended schools in British Columbia. Of this group of eight participants from B.C., two attended suburban schools in Vancouver and the other six were enrolled in rural or small town schools in the interior of the province.

The number of years of schooling each of the ten participants attended varied from 8 to 12 years. Three participants completed high school, one left part way through his grade 12 year, two left after grade 11, one left at the end of grade 10, two completed grade nine, and one was expelled at age 13 when he was in grade six. Nine of the participants reported they had had no serious illnesses or accidents which kept them out of school for any more than a week of consecutive days.

Seven of the participants received special education services while in school. Five were enrolled in self-contained classes for students with learning problems for some number of years, while two received extensive learning assistance on a pull-out basis

in elementary school. The three youngest participants continued to receive learning assistance throughout their secondary school years.

Eight of the ten participants were registered at some point in the past three years as students in the Adult Basic Education (ABE) program at one of the campuses of Selkirk College. I provided regularly scheduled learning assistance to the five who were enrolled at the Nelson campus; the other three were referred to me from another campus for a learning skills assessment but they were assisted on an on-going basis by a different learning assistance instructor. One person was provided learning assistance services while enrolled in a pre-apprenticeship program, and the last one was referred to me for a fee-for-service assessment by Vocational Rehabilitation Services because of the difficulties he was experiencing while he was enrolled as a third year apprenticeship student at British Columbia Institute of Technology (BCIT). Of the nine enrolled at the College, three continued and successfully completed a career or technical program at Selkirk, and the BCIT student will graduate with his journeyman ticket this year. (See Table 2 for specific demographic information about each participant.)

Six of the participants were currently employed at the time of our meeting, four of them full-time and two part-time. Three of the participants are currently unemployed and receiving social assistance, and three others have been on social assistance at some point in their adult lives. One has just reached her educational goal and is currently engaged in a job search.

Three of the ten are presently married, four have been divorced (one has since re-married), one is widowed, and three are single. Two are single parents, one male and

one female. The youngest participant, a male, is the only person in the sample who has not yet been in a long-term committed relationship. Nine of the ten have parented at least one child, and five of these have at least one child who is receiving or has received learning assistance.

Table 2

Demographic Information on Participants with Reading Disabilities

	Gender	Age	Years of schooling	Location of school(s)	Interventions
<u>Participants:</u>					
1. John	M	41	Gr. 1-7, retained twice + 3 in ABE	urban prairie	self-contained spec. ed.- 5 yrs.
2. Samantha	F	28	K-gr.12, retained once + 2 in ABE + 3 in Post-Sec.	rural interior BC	LA throughout
3. Micki	F	44	K-gr.12, + 2 in ABE + 3 at Post-Sec.	suburban BC	pull-out reading + Lang.Arts
4. Gavyn	M	36	gr. 1-9 + 1 in upgrading + 4 in apprenticeship	rural BC	None
5. Jack	M	40	gr. 1-10 + retained once + 2 in ABE	rural + sub- urban BC	occupational class in HS

(table continues)

Table 2

Demographic Information on Participants with Reading Disabilities (continued...)

	Gender	Age	Years of schooling	Location of school(s)	Interventions
<u>Participants:</u>					
6. Carole	F	53	gr. 1-9, retained once + 1 in ABE + 1 at Post-sec.	rural Alberta	None
7. Garnet	M	30	K-gr.11, retained once +2 in ABE	small town BC	pull-out LA, + self-contained spec. ed. in HS
8. Thomas	M	25	K – mid gr.12, retained once	small town BC	LA throughout + self-contained SLD class for 2
9. Will	M	22	K-gr. 12.9 + 1 in Trades Training, no cert.	small town BC	LA throughout
10. Martha	F	42	gr. 1-11, retained once + 1 in ABE	rural interior BC	None

Mind-Mapping Workshop

To interpret the richness of the 204 pages of interview transcripts accurately, I enlisted the help of several of my colleagues at Selkirk College along with two professionals who were also familiar with this population. I planned a one-day workshop which I facilitated with the help of one of the Counsellors at the College who has developed a great deal of expertise and knowledge in using mind-mapping as a note-taking strategy (Buzan, 1993). I selected mind-mapping as the method for this process because I decided it would be an effective and appropriate strategy for analyzing the complex and wide-ranging responses to the interview questions.

Before the workshop, I practiced the mind-mapping strategy on the transcripts to confirm the usefulness of the strategy for this data analysis purpose. With practice, I found it useful to work through the transcript highlighting all of the relevant responses or exchanges in a color-coded pattern (e.g., red for Self-Concept, orange for Relationships, blue for Employment, and green for Education; miscellaneous responses that did not code readily into the four main areas were included on a map marked Other Issues, and they were written in multi-colour). With this pre-preparation, I was readily able to create a mind-map based on each participant's transcript in each of these four areas, plus add to the map that included Other Issues as needed.

For the workshop, I invited ten colleagues who either have regular contact with ABE students or who have responsibility within the College for providing services to students with disabilities. The other two invited participants were Employment Counsellors from Human Resource Development who frequently work with this client

group. Altogether ten people accepted my invitation, and they were sent another small packet of reading material to orient them to the content of the day. (Unfortunately, on the day prior to the Workshop, three of the expected participants canceled for various reasons, leaving me only seven people. After a number of calls, I was able to locate one other person who agreed to participate on very short notice, and she arranged her time so she could come in early to do the pre-reading.)

For the day of the workshop, I arranged two listening stations with the interview tapes cued to a pre-selected starting point, and I printed a 12-page handout of excerpted material from my thesis draft. I also planned a brief initial introduction describing the study and the data analysis task to be completed. The Counsellor prepared a handout on mind-mapping in which he demonstrated and explained the procedures involved in mind-mapping. I supplied all of the materials needed (e.g., flip-chart paper, felt markers, and copies of the transcripts). The assignment of the transcript to be read and analyzed by each of the Workshop participants was made randomly as was the pairing of participants for the afternoon activity.

On the morning of the Workshop, the participants spent approximately 2-1/2 hours reading, highlighting, and mind-mapping their assigned transcript. Each of them also listened to a 10-15 minute section of the audiotape of the interview to hear the voice of the person to enrich their understanding of the tone and content of the interview. In the afternoon, the participants worked in pairs to summarize the points made about one of the four major themes using the eight sets of mind-maps constructed in the morning. Group summaries were made to the whole group afterward, and a general discussion ensued which continued for another hour and a half.

Each of the eight professionals who participated on the day of the workshop mind-mapped at least one transcript in relation to the four major themes, thereby ensuring that eight transcripts had been analyzed by myself and at least one other reader. One transcript was actually read and mind-mapped by three people: the Counsellor, a Workshop participant, and myself. Two transcripts were not read and analyzed by anyone other than me.

Following the productive efforts of the workshop participants, I used their mind-maps combined with my own to write a profile of each of the ten participants. Also, by using the descriptive summary maps of the workshop group's perceptions, I was able to further validate my interpretation of the effects reading disabilities have had on the lives of the adults interviewed. I was able to complete the analysis and writing process with confidence that the reliability of my initial sorting of participant responses had been verified, or in a very few instances, to direct my effort to modify the interpretation. Finally, I was able to select notable quotes from the transcripts as identified by the Workshop participants and myself to illustrate each of the major points made about the four themes.

Common Themes and Shared Perceptions

In this next section, each of the participants with reading disabilities are profiled briefly in the order in which they were interviewed to describe the history of their personal, family, school, and work life as well as their current situation. Following the ten profiles, the commonly identified effects of reading disabilities in the lives of these ten people that have been found in the interview data are described in relation to four

major themes. Quotes from each of the transcripts are included to illustrate major points made about each of the individuals and about the four themes.

Ten Individual's Profiles

1. John is a slight, stoop-shouldered man with light brown curly hair beginning to grey, warm sad eyes, and a husky, low, heavy-smoker's voice. He sometimes wears wire-frame glasses, and he is usually dressed cleanly and neatly. He has wonderful skin coloring but he looks very worn and weathered for his 41 years of age. He has a wry sense of humour that conveys a genuine liking for other people.

John was born and grew up in an urban centre of a prairie province in a poor but working-class family. He has three older sisters who were mentioned briefly in his self-reported history. He also has a younger brother who was not mentioned in the interview. As a pre-schooler, he remembered that his sisters occasionally read to him, and one or another of them was often assigned to take care of him. As an adult, he apparently does not interact with any of his siblings because of distance and circumstances.

At the early age of five, John started developing a strong work ethic helping his Dad in the potato fields weeding, picking potatoes, and loading the boxes. He did not start school in kindergarten that year because his Dad kept him out, saying he could start next year in grade one. Possibly because of his premature birth or related problems caused by anoxia, or because of his late start in school, or maybe due to his family's poverty and the resultant environmental deficiencies, John had learning problems in school right from the beginning. He "failed grade one twice", each time being returned

to the same teacher's class. He remembers this first teacher, Mrs. S___, in great detail as being "mean... just mean to all the students" causing him to decide to skip out as often as he could. After his third try in grade one, John was sent for testing "up at the mental hospital". The outcome was that he was moved to a self-contained special education program in which he remained for the duration of his short school history. He was "kicked out for good" when he was in grade six at age 13 or 14 after skipping out with two classmates, getting drunk, and then returning to school belligerent and spoiling for a fight. Although a nearby school allowed him to enroll, John only lasted there another couple of months before he left school again.

At fifteen and a half, John married his pregnant girlfriend in what he referred to as a "shotgun" wedding. Although his young wife miscarried, John stayed with her anyway, demonstrating early on his basically good and loyal nature. His wife became pregnant many times over the next several years, but she was never able to carry to full-term losing "three sets of twins and two singles". John finally left after seven years of marriage when he was still only twenty-two years old leaving her their house and everything in it, and taking only his packsack and heading to another city. He found work painting houses or doing janitorial work. Ten years later, he moved to Nelson with a new wife and he returned to school to try to upgrade his academic skills.

In this sample of ten adults with varying degrees of reading and/or learning disabilities, John is one of the most seriously disabled. He is a long-time alcoholic who has lived on social assistance for the majority of the past ten years. He has the most severe limitations on his employability due to his low levels of literacy and numeracy, and because he also suffers from arthritis and chronic bronchitis which further limit his

vocational options. However, his vocational aptitudes (e.g., visual and spatial perception and discrimination, dexterity with and without tools, coordination, and spatial relations) were assessed eight years ago during his first enrollment period at the College. He demonstrated average or above average performance on eight of the ten vocational evaluation work samples in the *Talent Assessment Program* (the TAP) system. John continues to be unemployed though, and he now has at least temporary custody of his two children from his second marriage. In spite of all of this, he is hopeful that his luck will change for the better sometime in the future.

2. Samantha is a tall, large-boned 28 year old young woman who is attractive and well-groomed. She has dark brown eyes and hair that she wears in a short, precisely cut style. She has a rich full voice, and a delightful sense of humour. She dresses stylishly for her age, making the most of her limited income. As a single mother of one daughter who is now in primary school and is experiencing learning and behavioural difficulties, she is constantly dealing with issues related to her own reading disability.

Samantha was born and grew up in the southeastern mountainous region of British Columbia called the Kootenays as the middle child of three in her family. In elementary school, she received extensive learning assistance but her self-confidence suffered greatly because of her learning difficulties. She enjoyed plenty of outdoor and athletic activity, and eventually sports became a motivation for her to stay in school as evidenced in this exchange during the interview:

Catherine: You were a hot jock, right?

Samantha: Well, I was playing all the time (laughing)....If it hadn't been for sports, I wouldn't have kept going."

Samantha was well accommodated at the secondary level with readers and scribes, but no effort appears to have been made to help her continue working on skill development. Her early and persistent difficulties in school were evident in her school records, but in our interview she recalled very little detail. She reported that she has one older brother who also has severe reading disabilities, her mother cannot read very well, and her father is thought to be a non-reader as well.

At the College, Samantha first enrolled in a trades program that she was able to pass without using any accommodations or tutorial assistance. However, after graduation, performance problems developed on the job which were related to her reading and learning disabilities. Seeing that she would not be able to keep employment in the trade led her to decide to return to school again. She chose to enroll in ABE to upgrade in English and math for admission to a Human Services certificate program. With extensive accommodations and tutorial assistance in ABE and throughout her content program, she was able to be successful in completing the program and finding work in her field. She has been employed full-time for over a year, and she is now considering a possible return to school to continue her education toward a degree in Social Work.

When asked if there was anything more I should know about her experience that relates to reading, Samantha said, "Just that I struggled all the way through and it was always a problem.... At one time, there was a substitute teacher that said I had to read

aloud, so I started reading, and my friend couldn't handle it so she jumped in and helped me out."

Samantha's most outstanding quality is her determination to succeed against the odds to achieve a college education. Her willingness to take instruction, and her persistent efforts to do as much as she can on her own also contribute to her educational and personal success.

3. Micki is a 43 year old woman with curly salt-'n-pepper hair and a deep gravelly smoker's voice. Her face is weathered and well-wrinkled probably from working outdoors along with her years of hard times stubbornly trying to achieve success as an independent person with learning disabilities. She has lived in western Canada all her life, growing up as the youngest of three daughters, and attending school primarily in urban or suburban communities.

Micki experienced difficulties with reading and spelling very early on and received several years of "phonics" instruction in pull-out programs at the elementary level. She never thought she read badly though, and she remembers "reading a lot of books about animals". She said it was only on tests that she knew there were problems, because "I could never get marks that were what I expected".

After grade school, Micki recalls being mainstreamed through to the end of grade 12, where she remembered "passing, but not well" and often being advised into less academic courses (i.e., typing and cooking) even though they were not in her interest areas (i.e., sciences). However, she persisted to complete Chemistry and Biology

courses, and four years of Latin (failing the first year and repeating it, much to her advantage), and discovered her learning strengths in listening comprehension and auditory memory. When asked what she would tell her teachers she would need to be successful if she could go back to high school, she answered: "...every woman's wish - permission to babble (laughing)...". She also recalled that after she completed her assessment with me, "it made me do a lot of thinking back on how I did things before, and I figured out that when I really wanted to know something, I found I read it out loud to myself, and I'd repeat it to myself a couple of times".

Micki married at age 18 and became a housewife and mother of four sons, all of whom have had learning difficulties in school. After her husband's death in a house fire, she found herself widowed and virtually penniless at age 26. For the next decade, she worked sometimes up to three jobs at a time to support her young family. Three years of that period were spent working in forestry-related jobs that convinced her Forestry was the field in which she wanted to study and work.

Micki related that she has had to deal with the bureaucracy of the school system to advocate for appropriate services for her youngest son who has serious reading and learning difficulties. At the same time though, she said she has learned a great deal about learning differences, and how they can be effectively accommodated within the educational system. She feels strongly that if the test-taking accommodations she has been receiving at the College (i.e., extended time to allow for her slower rate of reading and writing, and testing in a quiet room so she can read aloud as needed) had been available to her as a secondary student, she could have been more successful at that level as well.

As an aspiring Forestry Technician about to receive her diploma, Micki has already demonstrated she can keep up with the best of them in the woods. She knows her learning strengths and how to maximize her job performance, and she is looking forward to a successful career in her chosen field.

4. Gavyn is a talkative man with a strong personality who uses colourful language to convey a great range of emotions in his spoken words. He describes himself as a recovering alcoholic and drug addict who has had a long history of personal problems. He remembers that as a boy growing up in the '60s and '70s in northern B.C., there was much stress and trouble in his family and at school. In discussing recent changes that have happened in his life, he said, "the only emotions I used to feel were anger and fear". His father was alcoholic and physically abusive to his wife and children, and "their co-dependency made life at home a hell on earth". Gavyn said his family was "very dysfunctional" and that he "couldn't get close to either of [his] parents".

As an elementary school student, Gavyn recalled that he did not receive learning assistance or any special help with reading. Instead, he felt that his disruptive problem behaviours received all the available attention, albeit mostly negative, from his teachers and his parents. He remembered being repeatedly reprimanded, humiliated, and being called "stupid" or "dumb", but he does not remember any of his teachers trying to work with him to help him improve his skills. Of the four children in his family though, he has gone further in school than anyone else; he reported that several of them have had similar difficulties in school.

Recently, as an adult in his 30's, Gavyn was diagnosed by a psychiatrist as having Attention Deficit Disorder (ADD) and learning disabilities. Until then, he had always thought of himself as being "just bad", "a no-good" who was "always under a reprimand". Since his diagnosis and treatment began, he has been actively "trying to improve [his] life", and his efforts and motivation appear to be quite genuine.

As part of his effort to improve his situation, Gavyn sought sponsorship and assistance to better understand his learning disabilities and what he could do about them. After an assessment of his learning skills and his present level of achievement in reading, writing and math, he returned to school with documentation of his needs for accommodation.

Gavyn is now completing his fourth year in a trades training apprenticeship program, and his success is largely due to the assistance and accommodations he has received from his instructors once his needs were clear. With a better understanding of his previous struggles, he is now making good use of the available services for students with disabilities, including tutorial assistance, counselling, and test-taking accommodations. His employer and apprenticeship sponsor fully support his efforts to complete his program, and they are willing to provide accommodations as necessary on the job to ensure his success. He describes himself now as "comfortable, relaxed, and competent" working at his trade.

5. Jack is a young-looking handsome 40 year old man of medium height with dark wavy hair, clear blue eyes, and a wonderfully clear complexion. He is married and is

the father of two school age children. He has been a partner in a small construction-related business for the past few years. Prior to that, he had been employed as a construction tradesman for nearly 20 years until a work-related overuse injury forced him to make a change. At that point, he came to the College in the hope of upgrading and retraining in a field that would allow him to maintain his family's lifestyle.

In his interview, Jack was good-humoured, expressive and focused. Describing his school history, he disparagingly blamed himself for his poor academic achievement in spite of having very discernible learning disabilities that are quite evident in his written language and oral reading skills. He said, "It was all fine and dandy at the time, but as the years went by and looking at where I was and ... some of the aptitude that I had outside of the English end of it, I think that it is my own personal fault". But he also pointed out that he had been enrolled in a "backward" elementary school that at that time did not have any services or programs for children who were having difficulty, compared to the treatment his daughter is receiving currently because of her reading problems.

As a student, Jack said "I don't think that we got first-rate teachers, and I was shuffled through the system". No behavioural problems developed, but he did not think he was going anywhere; "...maybe I wasn't trying, but there was no backup - there was no direction". He left school and entered the workforce at age 16, was never out of work, and did well until his injury "did my body in".

Following his assessment at the College, Jack enrolled in a small-group Reading Improvement class as well as trying to make it through regular ABE courses in English and Math. He learned to use some aids and accommodations, such as a word-

processor with a spell-checker and a peer editor for most written assignments.

However, life kept pushing him to get on with things, and he left the College before completing the upgrading requirements to go on for further post-secondary education.

In his present roles, Jack relies on the assistance and support of his wife at home and his business partner at work who handle the reading and written language demands, such as researching sources for products, preparing advertising copy, and writing up client quotes. Jack feels "dependent on their help" though, calling them his "crutches". He says that although his difficulties make him feel "self-conscious" and "inferior", "I don't cry on anyone's shoulder... it's just something that developed and I just have to work around it". He worries about how his children will perceive his reading and spelling problems as they get older, but he is more able to deal with his disabilities matter-of-factly.

6. Carole is a tall statuesque 53 year old woman with short strawberry-blond hair and clear blue eyes. Her voice is precise and clipped, but expressive and warm, too. She looks and sounds wise and authoritative, which in fact is the way she is. As a professional social service worker, she has influenced many people in their efforts to become effective foster parents. By taking leadership roles in various community groups over the years, she has become widely known for her organizational skills and her big heart.

Carole was born and grew up in a small northern prairie town. As the oldest of 11 children in a farm family, she was often given chores to be done or babies to look after.

She described her family as being "quite a dysfunctional family, a family of a lot of abuse and alcohol use and noise and fighting". When she first started school in grade one, she viewed being able "to go to school (as being) like going away to a picnic or to camp... school was absolutely wonderful for me... It was just a haven to go to school".

As a young student, Carole said she was "extremely shy", she "did not talk", and she "did all the things I was told to do". Because of her "excellent memory", she said, "I could read well because I memorized every last one of the words". By grade four however, when there were more words than she could just memorize, she said she began to flounder. Her teacher at the time, Mrs. D___, was extremely critical, and Carole described the negative effects her treatment had on her self-esteem. She remembers struggling with reading and writing "from then on", having to repeat grade five, and her difficulties persisted until she left school at the end of grade nine. Though she eventually developed mastery of beautiful handwriting, her poor spelling and slow reading hampered her in most language tasks she was assigned.

Later, when she tried to seek training for employment, Carole's difficulties again caused problems. First, she tried attending business college, but she soon found her way blocked by her poor spelling. As she said, "You have to spell the words to do shorthand and shorthand was something like a foreign language because it's all based on knowing all of those sounds, and that was just something that I could not accomplish". She also had trouble typing "so the concept of becoming a secretary was a total failure". Next, she decided to become a nurses' aide, and she managed to complete the first half of the training passing all the subjects except Anatomy, but again her decoding problems interfered. As she said. "Anatomy has words this long

that no matter how hard I tried (laughing)... I would just try to memorize them but they were too long of words just to recognize by sight".

Needless to say, Carole did not become a nurses' aide either. However, she did get a job as a nursing assistant in a long-term hospital where she continued to work for the next eight years. In this position there was no reading or writing to do, and she had the "people skills, physical strength, and strong back" needed to be successful. The stresses of working with terminal patients took their toll though, and at 25 years of age, her doctor told her she would have to get out of this kind of work.

Warehousing jobs were easy for Carole to get because of her physical abilities. Over the next few years, she had several warehousing jobs. She would start, but then she would do well and be promoted into the office where she would have to try to deal with all the paperwork. She changed jobs a number of times, but each time she landed in a management role where she "covered up what I couldn't do 'cause I was extremely smart and able", and she learned to "manipulate others to do it [her written work]". In describing this in retrospect, she expressed "strong feelings of guilt about using my power this way".

Only when she could no longer depend on her physical abilities to earn a living did Carole look for ways to deal with her situation differently. After having four daughters, a divorce and a few bad relationships, she decided it was time to make the change. It took until she was 47 years old when she started back to school at the College for her to understand that she had been coping with learning disabilities all her life. With upgrading and assistance learning how to effectively use strategies appropriate for students with disabilities, she achieved her goal of completing a certificate program

which has enabled her to find satisfying work ever since. Carole now word-processes all her work-related reports on her computer making extensive use of the spell-checker, and then she has her daughter edit them for any other errors. By using these compensations, she has also found a way to achieve her personal goal of "writing without embarrassment".

7. Garnet's attractive appearance does not fit the stereotype of a person who is down and out. He dresses in a neat but casual style that draws glances as he walks down a hall. He is 30 years old, of average height, maybe a bit shorter, with a lightweight but well-proportioned build. His straight brown hair is cut longer in back but quite precisely. He wears wire-rim glasses occasionally that seem like an add-on with which he is not yet comfortable. Altogether, his presence is of one who is somewhat self-contained, intelligent, sensitive, and well-spoken.

Garnet is the youngest in a family of four children. When he was three, the family moved from eastern Canada to B.C. His parents separated and divorced when he was six, after which his mother and three sisters moved out of the area, and Garnet remained with his father. Out of necessity, he became quite independent, often cooking his own meals by age nine while his Dad worked long night shifts.

Garnet attended schools in the same district from grade one through grade 11 when he withdrew. His school history was replete with academic, social and behavioural problems. He remembered failing grade one and having to repeat the year, and getting kicked out and moving to another school in grade seven. School became "just

a place to hang out", and he was placed in special education classes for everything except Math which was a relative academic strength for him. His best grades were consistently in Math, but his other marks were mostly P's and F's even in Physical Education and Automotive Mechanics because of "low test marks". No individual assessment was indicated in his school records, nor does Garnet remember ever having gone through one. It is interesting to note that the only measure of intellectual ability indicated on his Permanent Record Card showed that in grade two, his IQ was 104 (on a *Peabody Picture Vocabulary Test*).

Garnet recalled that he "spent more time in school kicking the soccer ball around than I did with a pencil in my hand". He claimed that his attendance was "perfect" because his father's rule was that if he was not in school he would have to get a job, but there was no push from home for good marks. He said he "only learned to read after grade nine" and that he has "learned more from 18 years on than everything before". Now, in fact, he says he "can read aloud comfortably".

Garnet's speech is clear and fluent; he is very talkative and well-spoken about many topics, and he is quite willing to discuss and offer his opinions. He said,

I know that I speak well; I've heard that from a number of places. Most people who speak well usually read well....I've been in relationships, and they've said: "Gee, when I met you, you spoke so well and you were so clear. I can't understand why you have such a hard time with reading and writing". And that's when it starts, you know. You start to break down the level of where maybe I am and maybe where the girl I'm seeing is, and once you get through that, whether it's a maturity thing or an age thing or whatever, it does cause a problem....I guess not being able to read

or write means I haven't been educated as well as this person....The expectation for me is that if you speak clearly, they expect more from you maybe....So maybe I've painted a picture for myself in relationships that kind of back-fires, I guess.

Garnet has a strong work ethic, and he has held a large variety of labour, trades and construction jobs since he left school at age 16. He says that his lack of reading and writing skills limited him in terms of how well he could read rules, regulations, and safety notices. In describing these difficulties and the consequences of them, he said:

When I was working in a body shop, I had to know what the rules and regulations were to the chemicals, and sometimes I skipped some words that maybe I shouldn't have skipped. You know, I sent myself home sick a few times just because I couldn't get through some of the instructions. I've never lost a job because of it [reading and writing problems], but I've definitely been slowed down, impaired, or maybe even taken off the corporate ladder – you know, the corporate ladder's pretty short... when you can't make it through some pretty important parts.

Garnet lives alone with his dog. He has an 11 year old daughter from a previous relationship who visits him during the summers, and he treasures their time together. He would like to be able to move into some kind of employment that is not so physically demanding because his body is feeling the toll of all the physical work he has done over the years; he says he "sounds like popcorn" when he wakes up in the morning. He is currently living on income assistance and looking for work.

8. Thomas is a 25 year old handsome young man who is very sociable and interesting. His appearance changes as styles change especially in terms of his hair and beard. He has wavy brown hair and friendly brown eyes. He usually dresses quite casually but his grooming is excellent, and he behaves so naturally it seems he could fit in anywhere. It is only when he begins talking about school and his learning difficulties that his fragility and bitterness becomes apparent.

Thomas is the second oldest of four children in a close-knit family which also has many extended family members who live close by. The family moved to British Columbia when Thomas was in primary school, and his learning difficulties were soon recognized by his classroom teacher. He was provided with learning assistance from grade three, and he was individually assessed periodically. In grade five, he was placed in a district-wide program for students who had severe learning disabilities, but when he moved up to the junior high school the next year, there was no similar program, so again he was mainstreamed with some time out for learning assistance. In grade nine, he started realizing that "there was nothing wrong with me" and he insisted on "going mainstream" with the outcome that he "failed everything". According to him, "the reason why I failed everything is because I was missing the links in that ladder, the building blocks. It was like English and stuff, I was still taught phonetics and stuff. So when I went into English 9, I didn't have English 8, 7, or 6; therefore I didn't have the structure of verbs, nouns, and adjectives". After taking English in summer school, "they passed me with 51% which I think was kind of ridiculous. It kind of felt like 'Oh here, yeah, here you go onto the next grade' – kind of

just being spit through". He objected to the fact that he had been assessed so many times without any outcomes that he saw as being helpful, especially in the long run.

In high school, Thomas' learning disabilities were accommodated but he did not continue to receive any further help to develop his reading or writing skills. Scribes, readers, and modified assignments were provided which Thomas described fairly cynically because, especially in retrospect, he feels he did not receive a good education. Halfway through grade 12, he dropped out of school saying "I really feel guinea-pigged and disgusted with this". Since then, he re-enrolled at the high school once and earned a couple of more credits, and then dropped out again to go to work. Recently, he enrolled in ABE, but he "only stayed a few months, didn't get any credits, didn't pass anything... and that was it for my education".

Thomas has a wide circle of friends and acquaintances. He enjoys listening to music and playing blues on his harmonica. He has had entry level employment laying carpet, tarring roofs, working in housing construction, and teaching skiing. For some reason, though, he has not kept a job for any more than a few months at a time. His dream is to earn certification "tickets" as a ski instructor, scuba instructor, lifeguard, bartender, and in industrial first-aid; then he figures he could travel anywhere and be able to get work as he goes. Eventually, he would like to run a ski school and manage his own blues bar at a ski resort.

Thomas has a pre-school aged son with whom he spends a great deal of time. He says his child's mother has given up on him "because I'm a nowhere guy", because he is living on income assistance, he does not have a job, and because he does not even have the confidence to go out and try to find one.

9. Will is a quiet, good-looking 22 year old man who has short, dark brown hair and brown eyes. He appears to be fit and healthy, although he reports that the work he is currently doing at a lumberyard is "hard on my body".

Will is the eldest of two boys in his family. He attended school in the same district from kindergarten through grade one. He experienced early difficulties learning to read and he received help on a one-to-one basis in the classroom in grade two. In grade three, he was placed in a full-time learning assistance program with "someone who knew how to teach people with disabilities, so I learned better". When he moved up to the secondary level however, he was enrolled in regular classes with learning assistance available as needed which was the arrangement that continued until he completed grade 12. Will reported that he had more social problems at the secondary level than he had had earlier, and that his teachers really did not understand his difficulties very well. He said, "There wasn't usually anybody like me that would get that far in high school – they would usually drop off – so they (his teachers) didn't have to deal with anybody like that". He went on to say:

But now they're helping people with learning disabilities get through; that is why a lot of people with disabilities are in high school or college now. Before it wasn't like that. They would get kicked out or drop out 'cause they would be so frustrated. So now it's really important that teachers know people with disabilities are getting through high school and going on to college. Instructors now need to know how to instruct these people with disabilities... you know, work with them.

Will has a well-documented, long-standing history of learning disabilities which seriously affect his language processing. His rate of speech is very slow, and when speaking with him, one must speak slowly if he is to understand. He has learned to ask for repetitions as needed, and for definitions of words with which he is unfamiliar. According to his recent school records, his learning disabilities also limit his reading comprehension, word retrieval skills, and auditory and sequential memory.

Will's parents have been very supportive of his efforts to continue his education, and his mother has taken an active role in the local chapter of the Learning Disabilities Association. He hopes to return for further trades training at the College in the future, but for now, he would like to acquire more experience working. Because he has a good understanding of his strengths and limitations, he knows he must be prepared to choose carefully when considering the available employment options. He said,

I know what I can do and what I can't do, and the jobs that don't pay very much are easy jobs to get. Getting any job right now is hard, but working at a gas station or at a fast food (restaurant), you know, I would have a hard time with that. ... I'd be better off to stick with millwork. I have a good idea of how things work with moving parts and machinery and stuff. I think if I didn't have a reading disability I would like to own my own business and manage it, or do something that's not physically hard.

10. Martha is a delightfully friendly 43 year old woman who is willing to share her thoughts on many subjects. Although her bubbly voice and breezy manner sometimes belie her depth of feelings, she is very open about the pain in her life and the learning

difficulties she has experienced. She enjoys outdoor athletic activities, and she is very active in her church. She describes herself as "a doer, not a listener".

Martha attended schools in two rural districts in B.C. from grade one through grade one at which time she withdrew and moved away from home. As the youngest of two children in her family, Martha remembers wondering early on why she was having such difficulty in reading compared to her older brother. "Even when he was in grade two and I was in grade one, he was learning to read and I was struggling, and it's shown all through our lives." She recalled that there was a controversy at her school that had to do with different approaches to reading instruction "something about the difference between sight and phonics", and the teachers and parents "were going off to lots of meetings" and the parents "were not happy with the teachers". Because of her own difficulties with reading, she inferred that her problems were the result of how she was being taught. She remembers "...sitting on a chair in the middle of the kitchen floor, having to try reading aloud while my mother was busying around doing her work. It almost felt like I was being disciplined, that there was no encouragement there, no one was helping me with it." She does not recall receiving any learning assistance or special help with reading although her report cards indicated her weaknesses in oral reading and reading comprehension as early as grade two and again in grade four. According to her grade two teacher,

Martha's inability to read affects all her subjects. Her oral work is good. Her arithmetic is good as long as no reading is required. She cannot read problems or directions for other work. She should read as much as possible choosing easy

reading books within her vocabulary range. Martha has the ability to become a good student if we can overcome the reading barrier.

Unfortunately, in spite of the obvious seriousness of Martha's difficulties, the only intervention appears to have been to have her repeat grade three with the same teacher in the same classroom. She commented, "Maybe it was just a 'let's run it by again and see if it doesn't stick this time' kind of approach". Since this was happening in the early 1960s, no learning assistance was available, and there was as yet no formal recognition of learning disabilities. Even though her grade two teacher clearly understood the consequences of her reading problems, Martha said, "They never did anything, like there was nothing there on the teachers' part or the parents' part to encourage me".

By grade 11, Martha had decided to leave school because of continuing difficulties at home in her relationship with her parents. She moved away with the help of her boyfriend and enrolled in a bookkeeping program at a small business college a few hundred miles away. She remembers that she "just whizzed right through it" capitalizing on her strength in math, but because of homesickness she returned home and took a job as a flag-person with Highways never using her bookkeeping training. Emotionally, she was "a wreck", unable to deal with the seething anger she felt toward her parents, but too reticent to initiate making effective decisions for herself. She married her boyfriend during this period, and they went through a very rough time trying to start a family. Over the next ten years, she miscarried twice before finally

giving birth to her son. However, within just a few more years the marriage deteriorated and her husband left her.

Martha remarried three years ago, and she and her new husband are very much in love. However, her personal issues keep coming up, and she is worried about the way they are affecting their relationship. "The only way I see is to change within myself, which is what I'm dealing with right now." She enrolled at the College during a year long leave from her job with a government office with the goal of trying to improve her reading skills and to explore other training and employment options. When asked how she thinks her life would be different if she could read well, she replied:

Free! Freedom! I feel so wrapped up with this not being able to read. There's times that I fantasize about being able to read, the freedom of everything... If I have to read something, I am totally stressed and drained at the end of it. I'm just a mess, I want to go have a nap.... Like I'm hanging on to my job now, like I may have to go back to school, and there is the fear of 'can I do it?' Whereas if I could do it, there would be the freedom to grow, to be able to change my career, the freedom to move on.

With some understanding of these participants' lives as presented in the previous profiles, it is now time to move into an analysis of their words taken directly from their interview transcripts.

Four Major Themes

In the first pass for open coding through the ten interview transcripts, I found that participants' responses could be divided into four major themes or areas of concern in their lives which are:

1. Self-Concept
2. Relationships
3. Employment
4. Education.

When participants' responses were considered in relation to the effect of their reading disabilities on their lives in these areas, a number of shared perceptions and common issues emerged under each of these areas of concern. Other important responses that did not code readily into one of these four areas were listed under the separate heading of Other Issues.

After the Mind-Mapping workshop described earlier, the details of these four areas of concern were further analyzed and refined, and salient quotes from the participants' transcripts were selected to illustrate the following summaries.

1. Self-Concept

Participant responses were considered under this topic that related to how individuals felt about themselves, about their abilities or strengths, and about their perceived weaknesses. The primary theme identified revolved around how the participants coped with the embarrassment they felt about their reading problems and their consequent learning difficulties. Five categories of coping behaviours were identified in the data: (a) hiding, (b) manipulating, (c) being extremely independent, (d) being defiant, and (e) helping others. These are reported below with the number of individuals in parentheses who gave a related response. Other responses related to

reading disabilities issues that did not readily fit into these categories were noted separately and are briefly described as well.

Coping Behaviours

Hiding. Several participants reported trying to hide from their problems in the past, which was evidenced in a few instances by withdrawal or avoidance behaviours, such as alcohol and drug abuse (n=3). John reported getting drunk for the first time at age 12, and that "...ever since I was 14, I had a 'mickey' in my pocket all the time". Gavyn is now a recovering alcoholic who has attended Alcoholics Anonymous meetings regularly for the past several years. Garnet referred to previous problems with alcohol and drug abuse when he said, "I mean I've had my battles with things and what not in the past, and I sure the heck know when I got away from them, my life was a heck of a lot better... my whole well-being turned around".

Others coped by running away from their problems by quitting school early or by leaving jobs with demands they could not meet (n=5), or simply by avoiding reading and writing demands whenever possible (n=7).

Some hid their disabilities from others, but as a consequence, did not experience the closeness of being known and understood by their teachers or good friends. For example, when asked if any of her teachers or fellow students knew about her disabilities and understood them, Samantha replied, "Not really, because I wouldn't allow them to at that time. I kept it sheltered. I just kind of liked it better that they thought I was dumb, because I thought I was dumb Everybody could see that there was something different about me, but nobody really understood.

Carole recalled experiencing a significant shift when she started high school in the way teachers and fellow students viewed her:

Like at first, you felt like you were really stupid, and then by the time you got into high school you just began to know that you just couldn't do this or that, and from being stupid I just kind of went to being lazy. So then they treated me as if I didn't want to do the work, like because they knew that I was smart, and somehow I knew I was smart. I just couldn't understand how come I couldn't do the reading part, I just was stupid at it, right? But I was smart because I could figure out stuff better than other kids could figure out stuff. So then they treated me as if I just didn't want to do this, and that was even more hurtful than thinking I was dumb in some ways, do you know what I mean? They thought I was just lazy or whatever - unmotivated I guess is the word now....It was just as if I was a bad person, like I went from being in the dump... to being a bad person.... Because as a dumb person I just didn't know how to do it, but like when I was a smart person who didn't do it, then I'm a bad person.

A few described receiving considerable negative attention to behaviours that they saw as being their reaction to repeated failures and embarrassments thereby diverting attention from the real problem - their learning difficulties and consequent poor achievement. Gavyn reported that he was "always under the reprimand of never doing anything right, like including with other students"; although his attendance was good and he tried his best, no individual assessment and/or learning assistance was provided.

Manipulating. Others developed what they described as manipulative behaviours, such as: (a) observing body language for messages of approval or to determine correct answers, particularly in relation to the use of scribes in test-taking situations at school (n=2), and (b) conning other people into doing their work for them. For example, according to Samantha, "The people who read tests to me got used because a lot of times, they knew the answers and they'd give them to me, or I could tell the answer by their body language".

Another example was given by Thomas who said,

I had the ability to go in to take a final exam in any course, take that final exam out of my class, walk into any other class in the whole school, choose whoever I wanted to be a scribe... go into a private room, sit there, ...and turn it around so when the scribe would ask me a question, I'd end up getting the answer from the scribe.

Another behaviour described by participants as "manipulative" was demonstrated when they at some point became dependent on others through an attitude of "take care of me" (n=6) or "do it for me, because I can't" (n=3). Jack, for example, described his use of "crutches" referring to the help he receives from his wife and his business partner. Carole related how she "learn(ed) how to get others to do it for me", but that in the end, she felt "like a con person" who "was using people all the time". She said these feelings developed when she realized she had "manipulated" the employees she was supervising as a manager in a warehousing job to write her reports for her.

Being extremely independent. A few evidenced extreme independence in their lives which came through as being stubborn in their determination to "do it" on their

own in school, life tasks, and jobs (n=3), or "to just struggle through" (n=6). The consequence of this otherwise positive behaviour was seen by several as meaning that they did not access useful services that could have been available had anyone been more aware of their needs. On the other hand, this determination "to just deal with the struggle", although negative in some ways, may have been an important contributor to the eventual success of three of the participants who mentioned this attitude and who have continued on to complete post-secondary training programs.

First, there is Carole who went so far as to hire her own writing assistant before her disability was assessed even though the College would have paid the cost to provide her this assistance had we been aware of her need. Second, in Micki's situation in high school she "just figured I had to study twice as hard as anybody else to get half the grade" as she stubbornly continued to enroll in difficult courses and eke out barely passing marks. It has only been recently, with appropriate accommodations that she says she has been able to achieve the level of marks she expects; "I can finally perform where I figure I really am at, as a B or higher student". Finally, it is in Samantha's case that this determination to succeed is most evident. In high school, one of her friends saw how hard she had to work at school and complimented her efforts. The next year when they were both at the College, they observed that some of their friends who had gotten A's and B's in high school were "flunking out" at the College. Those same students were amazed that she was being successful but she said, "That was just because they didn't study in high school, and they had no study skills whatsoever!"

Being defiant. Three participants reported developing defiant behaviours, such as: verbally bullying others who put them down (n=1), using physical violence toward their perceived enemies (n=3), or engaging in minor criminal activity, such as breaking and entering, stealing, and assault (n=3).

Others were angry and "blame the (school) system" (n=4) even to the extent of one participant indicating thoughts of suing the School District for his lack of educational achievement (n=1). A few felt "guinea-pigged" (n=4) in the sense that they thought their teachers were "experimenting" at trying to teach students with disabilities and that they were using methods and techniques with them with which they were inexperienced. Most reported being overtly put down by some of their teachers' negative comments and/or treatment (n=7).

Gavyn related numerous examples of being reprimanded and humiliated in high school in front of other classmates. Even at the post-secondary level, he has had to deal with instructors who patronize him, and classmates who goad him about taking his tests orally.

Another example from Garnet illustrated the difficulties many people with reading disabilities experience when they are expected to read aloud. He described his reading as being "so slow and stuttery" that he eventually just refused to do it in front of the class. "You'd stand up in front of your classmates and do that, and you'd know that lunch and recess (weren't) going to be that much fun. It gives the other kids something to do at lunch. Unfortunately, picking on other kids is what they do best. I didn't mind with the other kids in the special class because I knew they all had the same problems as I did."

Helping others. The inclination to help others avoid the kind of difficulties they have experienced was reported by several participants. Two of them said this was their motivation to complete Human Services certification programs at the College. Carole chose to be a foster parent with special needs children her life's work, while Samantha says she found she was able to be much more empathetic with people who have disabilities because of her own experiences. Others noted this in relation to how they work at being good parents (n=6), by staying on top of how their children are doing in school, by seeking early intervention with their children at school when needed, by trying to educate teachers and other students on disabilities, and by offering their opinions about how children's needs can best be met.

For example, Jack expressed satisfaction seeing his daughter receive special help in reading as soon as her problems were apparent. "I like to see that because of where I've come from....I think it's essential today for kids' problems to be recognized so they can be helped and these situations don't happen."

Other Effects on Self-Concept

In addition to the five coping behaviours described above, several additional effects of the participants' reading disabilities on their self-concept were noted. Several participants indicated that their reading disabilities have had some positive effects in the sense that they have learned to deal with adversity (n=4), that they are more empathetic toward people who have disabilities (n=3), that they have developed useful survival strategies (n=7), and that they have generally learned to "take life as it comes" (n=3).

It was also noted that several of the participants have other parts of their lives about which they feel positively and which affect their self-concept significantly. Some mentioned hobbies, such as playing musical instruments (n=2) or working on cars and other mechanical devices (n=4). Others enjoy sports (n=3). A few even said they enjoy reading novels for pleasure as long as there is no time restriction (n=3). For instance, Carole says she is

...an avid reader now....I guess I got to be a really good reader, or I got to be a person who liked reading once I didn't have to answer questions about it. To be very honest, I use reading an awful lot as an escape; you go off into this little fantasy world, you know, with whoever the characters are. So reading became something that I was very good at, even though I can't read very fast.

Another example comes from Samantha, who said,

I'm quite willing to pick up any kind of book now. There are still some I can't figure out though, but I try. What I need sometimes is for someone else to read the book ahead of me and give me kind of an outline, and then I can follow the timeline and the plot. I'm not sure I like those 2" thick kind of books – I'm much better with short stories."

The pair of participants in the Mind-Mapping Workshop who were assigned the topic of Self-Concept to summarize concluded that effects of reading problems on self-concept are evident throughout the transcripts in relation to the other three topics (Education, Employment, and Relationships), and that, in fact, they think the

participants' self-concept is at the centre of this whole study. They also conjectured that the inclination to help others evidenced by some of the participants may be a way of keeping the focus off their own needs. However, it must be kept in mind that these two people are both counsellors by training and experience, and that their view in most questions would be strongly client-centered.

2. Relationships

Interview responses that describe participants' thoughts, perceptions, and feelings about relationships in their lives in which their reading disabilities have had some effect were considered under the general topic of Relationships. These responses included ones about: a) their family of origin (parents, siblings) and their teachers; b) their peers (friends, fellow students, co-workers, current social network); and c) relationships of choice (boyfriends/girlfriends, partners, spouses, and their own children).

Interestingly, much overlap in the data was evident. Since effects on relationships were also apparent in relation to each of the other three topics (Self-concept, Employment, and Education), I highlighted some participant responses in the transcripts in more than one colour. Then later, when I reviewed the transcripts that had been highlighted by the Mind-Mapping workshop participants, many of those same responses were also multi-highlighted, confirming these axial relationships I had noted in the data.

In reviewing the transcripts highlighted by the workshop participants and by myself, it was useful that important responses about each of the four topics (using the color-

code described previously) were highlighted. This facilitated choosing the quotes to be used to illustrate each of the main sub-topics describing the effects evident in each main area of the participants' lives.

Relationships with Their Family of Origin and Their Teachers

With their parents. Fathers were not mentioned frequently, and the few responses given about them were mostly neutral or negative. Nine of the participant's fathers lived with the family, although there were two divorces, one in which the father moved out and was no longer a presence in the son's life (Jack), and the other in which the son stayed with the father after the divorce (Garnet). Only one participant's father was described as having taken an active role in the child's academic or intellectual development (Micki). Several were seen as "not valuing education" (n=5), although the participants may have learned useful things from their fathers. For instance, John recalled his father's lessons regarding work, saying,

I can remember when I was 15, all I could do was sign my name, but that was good enough to get my paycheck, so it didn't matter, eh? And that's what Dad told me, 'As long as you can remember your SIN (Social Insurance Number) and sign your paycheck, you'll be OK for the rest of your life...'.

Garnet recalled his father insisting that he attend school every day so he would know where he was. Carole related being kept at home to do farm chores or childcare, even though she really wanted to be at school. One of the female participants reported

having been physically abused by her father saying that her relationship with him continues to be quite negative.

A few participants recalled that their mothers read to them as young children (n=3), and two recalled their mothers trying to help them with schoolwork. For example, Gavyn said,

I remember one time my Mom sitting down trying to help me with my homework and getting so frustrated with me. I remember I was bawling, I'm saying 'I can't! I'm trying, but I can't!' And I was so upset emotionally what with her intimidation and her 'Do it! Do it!', and she just all of a sudden hauled up and whacked me in the head four or five times just out of frustration. Then I, I... Why am I getting' hit on again?

In a more positive example, another participant described his mother as being an advocate for him at school (Will), and he said she also took a leadership role in the local Learning Disabilities Association. Otherwise, the role of the participants' mothers in relationship to them was primarily maternal and domestic. Generally, most participants' responses about their parents and the support they received from them elicited answers that attested to the participants' detachment from their parents and others in their families. In fact, eight of the participants described some level of estrangement with one or both parents.

With their siblings. Brothers and sisters were sometimes mentioned when the participants related their school history or details about their personal circumstances. All of the participants had at least one sibling, and some had up to ten brothers and

sisters. In most cases, these relationships appear to be recalled as being peripheral, neutral, or negative. One exception was in the case of Carole whose younger sister, by one year, became an important and supportive ally when they ended up in the same grade five class after Carole had been retained. As Carole described, her younger sister was more popular and " ...she wouldn't let anyone NOT play with me". The only other references to siblings were about their achievement in school or work in contrast to the participants' difficulties.

For instance, Martha related that her one year older brother did much better in school learning to read, but she attributes the difference to how they were taught. "He learned one way and I learned the other, and obviously I wasn't learning the best way."

As compared to herself, Samantha said that what was different about her brother, who also has a reading disability, was that "he would try anything because he had the self-confidence to think he could do it, and if he failed, it wouldn't be a big deal". She said she thought the reason there was a difference between the two of them was because their parents "don't expect much from me", and because she "was too scared" and "had no self-confidence".

In another example, in answer to the interview question asking how his life would be different if he could read and write better, Jack responded by bringing up his brother's success wistfully:

I probably would have been in a different position by now. Like I've got a brother who has a construction company who's been interviewed by *Forbes* magazine... So I mean, he has the same enthusiasm and background to be able to put it together.

It's hard to say how successful I would have been. Maybe I could have developed a business when I was 20 instead of being 40.

With their teachers. In this study, the participants with reading disabilities described their relationships as children with their teachers as being mostly negative or neutral. Earlier in this chapter, Carole's Mrs. D__ and John's Mrs. S__ were mentioned in some detail in their individual profiles, but there are many other examples. For one example, Jack said his "elementary teachers were not first-rate" and his school "did not provide good support for students who had learning disabilities". He went on to say that he thinks "it's essential today for kids to be recognized and be helped so these situations don't happen" because he was "...just one of a whack of kids" with serious reading problems.

Micki's problems may not have been so obvious, but she still felt she had just been "pushed through" and that "...nobody ever stopped the ball, and said, 'Hmmm..., what's going on here?'" When she would be having difficulty, she was "simply encouraged to drop the course"; no assessment or learning assistance was offered. Will and Garnet just did not think their teachers knew enough about learning and reading disabilities to help effectively. Finally, Gavyn did not feel understood or well-treated by any of his teachers until after his diagnosis with Attention Deficit Disorder and concomitant learning disabilities.

In contrast, however, a few of the participants talked about their relationship with specific teachers who helped them in some concrete way. Samantha recalled that it

was one of her grade seven teachers who was particularly helpful in trying to help her with reading. She said,

At the elementary school, they tried (to teach me to read), but they gave up quickly.

But Mrs. Z__ helped me get started – she was the best one. I didn't get the feeling from her that she didn't think I could achieve, whereas with some of the other teachers, you knew they were just doing it because it was part of their job. She never came across as that – she thought I could...

Another teacher who made a positive difference was Garnet's grade eight teacher who provided "a reward at the end of the road" by teaching his special class students a card trick at the end of each week "for getting through something or getting something done". He says "to this day, I still know some of those card tricks".

At the College in Adult Basic Education (ABE) & in other programs, some instructors and other service providers have helped these students as adults develop better self-understanding and self-confidence by demonstrating an appreciation of the significance of their learning problems and by providing effective accommodations. For example, since her assessment at the College, Micki has proven herself to be a very capable student once the accommodations she needed were provided, and her instructors have gained a great deal of respect for her.

Martha too said that "...being a student here was very encouraging, to have the support from the instructors that I had, the daily encouragement of them seeing me improve..."

Samantha related that she "...didn't think I really had any self-confidence until I came to the college, and now it's a lot better – 100% better, but there's still room to grow". Her English 110 and Psychology 100 instructors were "amazed" with her honesty and her end results in their courses, while at the same time appreciating her efforts to educate them about the learning process from the perspective of a student with severe reading and writing disabilities.

As a final example, Garnet explained that he does not "...shy away from reading anymore". He went on to say, "It doesn't bother me to have to read now. I'm a lot better at it since working with (his instructors). I feel a lot more confident, so it's not any issue like it once was.... I've learned more in the last two years than I did in the last five years in public school".

Relationships with Peers

With classmates. Most participants mentioned classmates and fellow students only in passing even though one interview question asked directly about whether they had received encouragement from friends and other students. Those who had been in segregated special education classes sometimes reported they had made friends with other students, and they received support from each other (e.g., Garnet and John). Several of those who were mainstreamed, however, mentioned feelings of isolation from other students (e.g., Samantha, Will, Carole, and Micki). A few situations erupted into verbal or physical conflicts (e.g., Gavin, and Garnet when he was mainstreamed). The differences between individual participants may have been due mainly to the participant's personality and temperament rather than to any overt problem with other

students. Interestingly, a couple of participants described themselves as “loners” in their current situations (e.g., John and Will).

With friends. Several participants mentioned their friends in the descriptions of their experiences. Garnet described friends as being “his family”, and he elaborated more than anyone about his relationships with them. He said,

...If a lot of people understood why they are the way they are, maybe they wouldn't be as bad off as they are. I know I have three friends who are super great people, and one fellow cannot read or write at all, and for me to sit down – I get along with him well – I tell him, ‘Hey, let's sit down’. At this point, this person's UIC had run out, he can't read or write, he was into the Welfare office, and he got so embarrassed because he spelled his last name incorrectly, and the Welfare worker had questioned him (with a snide tone): ‘You know, you spelled your name wrong’. So he got so embarrassed, he just got up and walked out – he's been penniless for about four months now. At any rate, I sat down and I talked to this guy and gave him a hand and helped him out, tried to get him some cash to get him going. It's real easy to help with an application. Perfectly good person, just so embarrassed that he can't read or write that he would actually rather go hungry than try to do something about that. But, I sat down, I could see ...I thought I got embarrassed or put in a bad spot, but when I see people like this...

Samantha described her friends helping her when she had trouble reading assignments in high school, saying:

If I had to read something for school, I'd try, but if I couldn't, I'd ask all my friends questions about it. I knew all the right questions to ask, like, did this character get killed? What was this character like? What was the message in the book? Blah, blah, blah... you know. ...I was very good at asking the right questions. If you did that, you could find out the whole gist of the book.... And some of my friends would keep me up to date on novels.

A few participants pointedly stated that they have made friends with "intelligent" people almost as if to make a point about their own intelligence. For instance, Thomas said,

The ironic thing is that my best friend, my son's godfather, is an A+ student, and I grew up with him in high school, and I was one of the worst students in there. So go figure – I hung out with the A+ students, that's just the way I was, I guess.

With co-workers and employers. On the positive side, a couple of participants told about people at work who have been helpful to them (n=2). For example, Garnet described working as a shipper/receiver at a work site at which his employer set up an intercom on his desk to accommodate him so the secretaries could ask about what he had written on the invoices when they could not read his writing or spelling.

In another example, Jack talked about his working relationship with his business partner saying,

You know, there's quite a difference between myself and my partner who has had oodles and oodles of education – he has his degree in people's habits, whatever

that is... sociology or something. So that's the mix we have. He is very good at that end of things whereas maybe my social skill might seem to be able to get me through to where I am today....He is quite understanding and very supportive, and it (Jack's reading and spelling difficulties) doesn't seem to bother him. He feels that I have strength in other areas that are important to the business. We work off each other's strengths and take it from there.

In contrast, most participants have had negative experiences with co-workers or employers related to their reading, writing, or spelling difficulties (n=7). Some said that their reading disabilities interfered with communications with others on the job, and they also either limited their employment possibilities and/or required understanding and accommodations. For example, Martha talked about being mistrusted by her co-workers because some tasks take her so much longer. Will explained he has sometimes quit jobs...

...when I could tell that it was not going to work with the boss, and I just didn't want to make myself look bad. So, I thought, no, and I gave them a good reason so things wouldn't get worse, and I wouldn't get frustrated with it. I thought I better leave... on a good foot instead of a bad foot.

Samantha recalled the problems she experienced trying to get started as a newly licensed hairdresser. She had no difficulty getting jobs because she interviewed well and she has excellent people skills, but once she was on the job, her difficulties would become apparent to her boss. She would get phone numbers mixed up, misspell the

names of customers, and of much more consequence, she was criticized for cutting off center or off balance. Only afterward did she discover that she has serious directionality problems that are related to her reading and learning disabilities. One employer offered her work as an assistant, but "...she thought I'd never make it as a hairdresser". After three tries, Samantha decided she would need to re-train, so she returned to school.

Carole also described several situations in which her difficulties became an issue. In the first one, she described that she had originally been hired as a labourer in a warehouse but she was promoted to a supervisory position which meant she had to do paperwork. She said,

They would ask you if you want to move up, they would want you to take on those roles, and I would always try them but I would find once I got up there, then it was a real struggle for me. Anything that had much paperwork would be a problem. And also... this is where your schooling or some emotional things that happened at school came up again 'cause then you went back to being dumb, you went back to being really dumb you know, not wanting people to know you're so dumb. And yet you accomplished all of these things, and people are looking up to you, and they have all these expectations of you and you yourself know that you are really dumb 'cause you just have these stupid things that you do. Of course you're supposed to be able to write, you know, and you get really clever..., and I think that in the end what really kills you is when you have to do something about it. You get really like a con person and you learn how to get others to do it for you and you become very manipulative. It is like being a con person, and I would say to myself, 'Well, I'm a

nice person so these people want to do it for me'. And on the other hand, you know that you were using them or taking advantage of them, or conning them - manipulating them so again you end up not feeling good. Like I feel bad because I'm getting credit for something you did because I manipulated you into writing that report, and you did that report because you just wanted to be my buddy and all that stuff. And I took advantage of all of the other people basically below me to do my work for me in that area. I got very good at it. I got very, very expert in manipulating other people to do my paperwork to cover up my inabilities. By the time I was 30 on most of my jobs, I was the management boss and just took that position and covered up what I couldn't do...

Later, when Carole had to look for new employment options due to chronic back problems, the following incident prompted her to come back to the College to work specifically on developing her writing skills. She had already completed a certificate program in Human Services and had taken a position in a long-term care facility for her required practicum experience. Her practicum supervisor complained about the mistakes she made in the daily log, and she told Carole's instructor that they would not hire her because of her writing and spelling difficulties. Even though she had been evaluated very highly in all other aspects of the job, she again came up against her same old problems.

Relationships of Choice

With boyfriends / girlfriends or committed partners. Several participants related incidents that had to do with their reading problems that have occurred with a person they were seeing (n=5). Some of these participants reported they are very sensitive about their problems, and they know that negative comments “trigger” a defensive response in them. For instance, Samantha said her disabilities have affected her relationships with men she was seeing

...really badly! As soon as a guy calls me dumb, and I've just recently figured that out. Yeah, 'cause as soon as he said “dumb”, I would tense up. I would become defensive automatically. He said he could see it in my body, he did it once and he got a reaction, and the next time he did it, he backed up on it, saying ‘Well, I’m not saying you’re stupid or dumb, just that what you said was really weird’. ...I’m starting to look back on the relationships I’ve had, and I’m realizing there were things I misinterpreted, quite a bit of stuff, and I over-reacted. I don’t know if that involves my learning disability but I’m starting to figure out that there are these little triggers in me, and the next person I get involved with, I’m going to sit down and explain, because I’ve never done that.

Samantha also said she has noticed that “...I always tend to try to find someone of lower intelligence than me”, and she says that she often ends up dating men who are construction workers who will not be around long “...so they won’t get to know about my disabilities”.

In Carole's case, her physical attractiveness and intelligent good humour made her very appealing to the men she met. However, she said,

All the self-esteem stuff comes down as it's all part of it. You don't feel like you're good enough, or you feel like you're stupid or bad, and then you also don't think that the guy would be interested in you as a partner. Like why would someone who went to college or university be interested in me? So you pick partners in life who are also, for whatever reason, not educated. And in my case most of them were really stupid guys (laughing), so I left them, but you do that, you know. ...Like I mean, to be very honest, I have more in common with really educated people because I am quite a self-educated person although I have not gone to university. I've done a lot of reading and I go to a lot of seminars and workshops.... I really picked people to be my partners based on (the fact that) I didn't think other people would be attracted to me anyway, or really like, or have too much in common with me. So I have had two bad marriages and one string of bad relationships, and it definitely does affect your life...

Another example from Garnet describes a more positive angle on the problem. He said,

You know, my girlfriends have always been very intelligent people. Like my last girlfriend was Assistant Administrator to the Minister of _____. I mean, I can't say – she was crazy, but she was no dummy.... I've never seen anybody go at things the way she could, and she had total understanding of everything. Maybe I choose girls that are like that because maybe I don't read or write so well (laughing).

Others are aware of how this sensitivity about their disabilities restricts their willingness to expose weaknesses. For instance, Will said that almost none of his girlfriends have known he had a disability. He said he does not tell them because he would "...feel like a lower class person". He went on to explain,

The one girlfriend who did know just didn't understand. She's like 'Maybe you should try this...'. She doesn't understand that I've done a lot of things throughout the years. She doesn't understand what I have been through, like she is trying to tell me... that makes me more frustrated because I already know".

With spouses. The three participants who were currently married described their relationships as being ones in which they can be honest about their reading difficulties and in which their spouses are generally supportive. Jack related that his wife "...is an excellent speller and very good with English...", and that she "has helped me through all of this". Martha's husband struggles to understand the significance of Martha's problems, but he "...was very encouraging about her return to school", and he often tells her to "...quit being so hard on yourself". Gavin described several fairly intimate details of incidents with his wife where their differences have been an issue, but he did not mention any lack of support from her related to his difficulties as a student.

With their own children. Several participants mentioned that their child or children are aware of their difficulties (e.g., Jack, Samantha, Garnet, and Carole), and that they sometimes correct their spelling or the pronunciation of a word they have read. Jack's two children are still quite young, but he figures "...they're going to realize that Dad's got a spelling problem...". He is prepared to explain to them that "...that's why there

are so many different avenues for kids to go today” and that they are “so fortunate to have the opportunity to get help when they need it, so you can nip it at a younger age ‘cause then you know it’s a lot less energy spent as years go by”. Garnet’s daughter sometimes helps him read, and it seems they have worked out a comfortable way of dealing with his difficulties. Carole has even gotten to the point of being able to ask her adult daughter to proofread her reports for work.

Several participants worry about how their children will do in school knowing they experience similar difficulties to their own (n=5). For instance, Carole hopes her adult daughters will return to school to find out more about their own learning disabilities so they can figure out how to succeed in employment beyond their current minimum wage jobs. In describing her hopes for them, she said,

Being a mother of four children, and really suffering a lot from what I thought education would have done for me had I had one then, I think I was very tough on my kids. I didn’t realize then that several of them have learning disabilities, too. I was really tough on them, really demanding on them to get an education. And most of them have turned against it, instead of like I wanted them to accomplish this so they would become teachers and, you know, highly educated people.

In another instance, Samantha is struggling with her daughter’s primary school teacher to address her daughter’s difficulties before they affect her self-esteem negatively. Micki, too, is making serious advocacy efforts on behalf of her teenage sons with learning disabilities spurred on by her knowledge of how much she struggled until she was properly accommodated.

Others mentioned being "relieved" that their child seems to be learning to read without difficulty (n=3). As Martha said,

My child is ten, in grade five. He's an excellent reader (in tears)! That is the one thing that I've really focused on with him, because I know how much I struggle with it, and (with a vehement tone) I do not want to see my son struggle with these issues....It affects me with my child though, like we will be reading, he is watching word-for-word, and he is correcting me. I don't know how many times when we read a page that he corrects me, but I am getting more tense and I'm thinking, 'This child is going to pass me long before I am ready to have him pass me', and that was one of the reasons for taking the course here.

3. Education

On the topic of Education, it is important to note that factors of self-selection are apparent since this group of participants are ones from the population of adults with reading disabilities who have sought assistance at the College to work on their reading and learning problems. There may well be characteristics of this group or sample which differentiate them from that larger population.

The participants in this study were asked to review their school history with me in their interview. Participant responses that were considered under the topic of Education included: (a) descriptions of reading and/or learning problems experienced; (b) interventions provided such as learning assistance (LA), special education classes, tutorial assistance, or help received at home; (c) descriptions of treatment by teachers and "the educational system"; and (d) descriptions of feelings about learning and

school in general, other students, and self as learner. The pair of Mind-Mapping Workshop participants who were assigned to summarize the topic of Education confirmed the effects within the four areas listed above.

Reading and/or Learning Problems Experienced

All of the participants provided some description of the difficulties they experienced, which included poor reading in terms of decoding and/or comprehension, spelling, and written fluency (n=10). For example, Carole related a description of her difficulties during the transition between primary and intermediate reading and learning demands:

One of the things that I know about myself now is I have an extremely excellent memory and I can memorize really well, and so like in grade one and the younger grades... because I mean I was quiet, because I paid attention, because I really concentrated on every word and every breath the teacher took, I was an excellent student in grade one. Because I have an excellent memory, if you have only a 100 words to learn to read, I could read well because I memorized every last one of those words. By grade four though, there were either too many things to remember, or there was...you had to do independent thinking stuff, you had to guess what sounds were to make a word. Well, that was totally foreign to me. I can't get that part, I still can't get that part. Don't ask me what a "woll-la-la" is 'cause I have no idea, and it does not make a word. And so when we got to the parts where there were more words that you just didn't memorize... then I had a problem.

Carole's difficulties continued to plague her as she attempted to complete vocational training in preparation for work:

I was going to be a secretary, but you have to spell the words to do shorthand, and shorthand was something like a foreign language because it's all based on knowing all of those sounds, and that was just totally something that I could not accomplish. And then I went to nurses' aide training. I managed to take the first half... it was a ten month course at the time, and I passed all of the subjects except anatomy. Again anatomy has words this long that no matter how hard I tried (laughing), I couldn't write all of those words 'cause I couldn't say them, so I would just try to memorize them, so I never made it. Too long of words to memorize, you know, just to recognize by sight, right? So, of course I did not become a nurses' aide either.

Specific mention of problems with phonics. Several made specific mention of problems with phonics or phonetics (n=3). For example, Martha said she was "confused about which instructional approach - sight or phonics", had been used to teach her to read in primary grades, characterizing her instruction as having been "a subject of contention between parents and teachers at the school".

Thomas claimed he was assigned to learning assistance in grade three where he was taught "phonetics", which he thinks was "the beginning of my downfall as a reader". As he said, "I think that's a totally absurd time to make a choice on such a young child".

Micki said she was "put into a phonics program" in grade two after having "a really bad first year in grade one". She remembered this because she was taken out of

regular classes, but she does not remember being able to read better as a result. As she said, "I never thought I read badly. I read a lot of books, I was into animals galore, so I read quite a few books on animals and such, and if it wasn't under pressure, I could tell you the whole story of the book, and you could go read it and find out what I said was what it was". She went on to say that even though the phonics program did not seem to be helping her performance, she was continued in the phonics program through grade five.

Early retention. Seven out of the 10 participants were retained for at least one year as elementary students. For most, this was not perceived as a problem but rather as just a fact. As Garnet recalled:

I had failed grade one or repeated grade one anyways. And I, as far as I remember, I don't remember that ever being a problem. I thought it was great - I remember saying, 'Dad, I get to go back to the same classroom' (laugh). I thought it was great. I didn't know that the deal was to go on to another classroom (laughing)...

Martha remembered:

I don't remember us being singled out or the three of us in a group for extra help or anything specific... maybe it was just... 'Let's run it by again, and see if it doesn't stick this time'. It might have been that kind of approach - 'Let's give them a chance to do it again'.

Samantha recalled her experience of repeating grade three, saying, "I guess I finally passed (but it)... didn't do much for my confidence because all my friends were gone".

Interventions Provided

Extra help outside school. Most of the participants recalled receiving some help with reading from someone outside of school, whether it be from their mother (n=2), father (n=1), siblings (n=3), or from friends (n=2). In some instances, there was a lack of home support (n=3) in the sense that there were "no books at home", and their parents did not read to them or with them. At least in retrospect, many said they wished their parents had been more involved in helping them (n=6).

Learning assistance, special class placements, or one-on-one tutorial assistance in the classroom. The participants who received assistance through some kind of formal program or service recalled the teachers involved positively even though most did not recollect the help making much difference.

Samantha remembered in early elementary school "...being pulled out for spelling and reading", and "them trying to put glasses on me, like to make me read at the right level, they thought I needed glasses and so I wore glasses for a while. When they found out that didn't help, then they took off the glasses." She recalled "endless writing practice" but little innovation in terms of strategies. In high school, she received regular assistance from readers in test-taking situations, but she was very upset that arrangements had not been made for the same assistance when she had to complete her English Provincial Exam.

In retrospect about his initial placement in grade three in learning assistance, Thomas recalled feeling quite compliant at first, but by grade five, he remembered, ...wondering why I was put in there, but I really didn't say anything or do anything. I was developing at that point in my life with someone saying... when I guess I was totally normal and there was absolutely nothing was wrong with me, and I was a bright child and someone was dampening my growth with saying, 'Oh, you know, there's something wrong with you'.

Later, in high school when he was mainstreamed in most subjects, Thomas recalled his learning assistance teacher as being "quite the power booster". He paraphrased what he remembered this teacher saying at the outset of beginning work with him:

'Hey, Thomas, it's OK. This is it, this is just school, this is how you deal with it. These are called scribes. You don't need to do anything. I'll have all these people read and write for you. You just sit there and use your noggin, just use your brain. You know, maybe there's a couple wires crossed, and hey, you have the information in your head, you know. There's nothing wrong with you, you have that aspect, you know. Let's not work with this tool – you don't need reading and writing – just use the scribes...'

From his own description, Thomas became fairly cynical about this arrangement

calling it "...sloppy, not disciplined at all". He said he "feel(s) more damaged than anything from the school system itself", even though he does not "blame any one teacher". At the end of this line of discussion, he asked pointedly,

Hey, where's my scribe? For the rest of my life, I need a scribe. Sure, I'll sit here and have people do everything, as long as the school district wants to pay for a scribe for the rest of my life, through all my jobs, sure, I'll do that, that'll be fine.

Garnet remembered receiving learning assistance in "special" classes from grade three or four, but he said there was "never any real structure in it", that "there was never a penalty" if students did not complete work. He described going for learning assistance in the library: "I felt it was a place for us to go to get us away from the other students so that they could learn at a normal rate of speed". He said, "I probably never finished anything through school, but somehow I made it from grade to grade... it was just easy to slack off in those classes, so it was just as easy to slack off in the other classes and not really do anything in school".

Some participants said they did not remember receiving any extra help even though they were struggling (n=3); however, it should be noted that these were the oldest participants in this sample who were in school in the '50s and '60s prior to the introduction of formal services for students with learning disabilities. As Martha remembered,

There were three of us, myself and two guys, that repeated grade three, all because of our reading. And we had been in the same classes in the same school right from grade one, and... we went to school together right up to grade seven before we

were separated. And we... all three of us struggled right through school, but I don't remember anything special of needing to work on the issue at school.

Treatment by Teachers

Some participants described vivid memories of negative teacher behaviours (i.e., physical punishment, humiliation, and low expectations) related to their poor achievement (n=4). These memories are conveyed most accurately within the context of the interview exchange, so longer segments of these are quoted here.

For example, in the following exchange with John, he conveys his perception of his grade one teacher and his reaction to her treatment:

C: And what was your teacher's name... do you remember?

J: Sure... her name was Mrs. Smith....She was mean... to all the students, she was mean.

C: Yeah, how so?

J: Like if you whispered or something, she had a book on her desk - it looked big, but I think it was just a dictionary, right? She'd nail you on the top of the head, eh? If you did something wrong, she'd use her pointer and her fingers on your shoulders... And washroom - washroom, she was weird. If she seen someone that had to go bad, she'd make you hold it and wait till recess.

C: Yikes...

J: I put up with that for a few weeks, and then I'd go in one door and out the other... right?

C: So, you'd be gone???? (incredulously)

J: Yeh...

C: ... for the day???

J: Yeah, I'd either be down at the river fishin', or if it was uh... you know. I'd be down over at the town's gardens and fields looking to see if there was any work, 'cause I didn't want to go to school.

C: At six years old, you were saying, "I'm out of here"?

J: Yeh, I'm outa here - that teacher's just too mean.

C: Ah ha, so did anyone come and get you and take you back to school?

J: Yeh. My Mom came, and then my Dad came huntin' for me too. And then they had a routine where my sister would sit me in my desk and wait for the teacher to come in, 'cause if they didn't, I'd be up and gone, and out the door, eh? (laughing).

C: (laughing, too) So did this go on for a long time?

J: Yeh, all the time I was in grade one, and I failed three times!

C: (inhaling...) Did you go back to the same teacher's class?

J: Yeh.

Gavyn also related descriptions of his memories of negative teacher treatment which were quite vivid, as illustrated in the following exchange:

G: There was one teacher that sticks into my mind. She was my grade one teacher and her name was Mrs. H__. She was extremely um... (pause) hostile towards me. Constantly ah... humiliating me. Um, damaging stuff, like always watching me so I could screw up so she could discipline me with a whack of the pointer, or put the mark on the chalkboard with the chalk and I had to put my nose on it for 10 minutes, and then I had to go back to my seat, and I couldn't wipe the stuff off my nose. When she read us stories, I had to lay across her lap while all the other kids sat on the floor, across her lap and on my belly, and she would do the

story thing or whatever, and if I squirmed or moved or did anything, she'd whack my ass with her hand or a book or something flat and wide. Um... constantly...

C: So that's your memory of starting school...

G: Yeah, and with - even at recess - like she'd see me do something like normal kids do, and with undiagnosed ADD or LD doing the ridiculous things, you know, normal characteristic things of a child with (those) disorder(s). I would have to come and stand in front of the class while she whacked my a__ - like 5 times or 3 times, or whatever she'd chosen at the time. And then ah... constant reprimand for everything I'd done, I couldn't do anything right.

C: So how did you react or respond to all of that?

G: Ah, nothing that really comes to mind... other than just... I thought it was normal, you know. I didn't know any better or any different... That's what I thought teachers were allowed to do, was to humiliate you or just plain reprimand you, or call you stupid or dumb or can't-do-nothing-right, can-you? Or hand everyone else's papers out, and take mine and crumble it up and give it to me (angry tone), you know... and it was just an awful, awful thing.

C: What about your performance as a student? What do you think drew this kind of negative attention? ... and how did those situations affect you academically in terms of your progress in trying to be a student?

G: (pause) Attention toward me? My actions, or my undiagnosed attention deficit disorder? It affected me tremendously... tremendously, because they were... I was always under the reprimand of never doing anything right, like I couldn't ah... couldn't do anything right, like including with the students. Like you know... "You're stupid", or "You don't belong in this class... You should be over there with them other ones". You know, or I'd have to have my desk turned around, facing the opposite wall, whatever, the class is looking up front at the teacher, at the very far back on the corner. And if I turned around, well, then I got reprimanded.

C: What an impossible situation for a kid! Ah... (long sigh).

G: Oh, it was. And I just thought it was normal. I never really paid much attention to it, like I tried my best, and it was never any good, like even my parents coming home from a PTA or a parent-teacher thing or whatever... And then I'd get in trouble for that, you know, whacked around or a licking because I wasn't trying hard enough, or grounded, or under a reprimand of sorts because of that, of not being able to um... function in it.

In a final example, Carole described one of her teachers in the following manner:

Carole: Mrs. D___ was one of those old English school teachers and um..., uh you know, like I mean kind of like, she was really mean, like she was mean in the fact that there was an expectation to learn, and you had to learn it. If you didn't learn it, then you were just a stupid person, and that was the way it was.

C: Is that how you felt, or is that what she said?

Carole: (nodding her head) It's just what she said, too. She was not a nice lady, she was a very mean woman. You could be bad because your parents were bad, you could be bad 'cause you didn't know how to read, you could be bad for whatever reason. She was not a nice lady, and she did not take any calm in telling us we weren't very good people (laughing). We hope the Mrs. D____s of the world do not teach school anymore; Mrs. D____ was a very... like when I was that age she was already like... like close to 60, like she was an old lady, she was from England and she was very much like our kind of... typical kind of way we look at English people as being cold, brassy, hit-you-across-the-knuckles with the ruler type, and she did that, at that time.

C: What was the effect of that on you?

Carole: Well, what it did for me, it definitely by that time... I definitely began my self-esteem problems - what I now know as self-esteem, of course, I didn't know that self-esteem existed then (laughs) - I was in grade four. We never had that word in our English language back then, but I guess we know now looking back that that's when I started feeling like I was not a worthy person, that I was a stupid person, that I was incapable of learning stuff. So that kind of whole self-image thing... and that kind of who I was, was taken away from me in those two years when she taught me in grade four and 5.

Feelings about Learning, School, the "System", Other Students, and Themselves as Learners

Learning was and is a struggle. Many left school early because of the difficulties they were experiencing, and the problems that developed as a result (n=7). They expressed strong emotions which were mostly negative of embarrassment, avoidance, anger, and feelings that something was wrong with themselves. Most reported that they "hated school" (n=8).

According to Thomas, he is "angry at the school system for just spitting me through", and he went on to say,

...It's been on my mind lately to actually... I'm serious about going to find a lawyer to get some legal advice, just to see if I could sue the school system.... And if I could talk to the school system, I would love to sue the school system, saying I was supposed to grad in '91. So therefore a reasonable settlement would be, minimum wage is \$20,000 a year, and I've not really had the confidence, and (inaudible), you know, just to... the confidence in me, the concrete motivation and everything to hold a job. And I'm not blaming it all on the school system, but the majority, yeah. And yeah, so that's 7 years at \$20,000 a year. I would like to do that, that would be a fair settlement. And I wouldn't just do it for the money. I would tell other people, and I would say, "I would like to see massive, massive changes in the school system. I really felt like I was just spat out of the school system, and no one really cared...

Garnet described many feelings of being isolated, of being labelled, and of

needing help. He said, "Like I know I don't blame anyone for my situation, because I know that I piled on a good share of problems on top of all that (his initial reading problems) and made things worse". He said he generally thought that "school was a place to go or to hang out, but you know I never missed much school... it was more of a place, a big daycare, than a learning institution". He acknowledged that he avoided reading whenever he could saying,

I can still remember the teacher saying to me "You can do this, why don't you?" I can still remember the teacher saying that to me... I must have heard it a lot. But the only thing I didn't like or really go with was the reading or the writing and even then I think maybe if anything it was because I wasn't good at it. I just kind of shied away from it.

On the effects of his reading disabilities, Garnet related the following in an exchange with me in his interview:

C: What is it about reading that has such a pervasive effect?

G: Pervasive... what is that?

C: Pervasive... it affects so many things we try to do.

G: Well, maybe a person might want to read a recipe. Maybe a person might want to read a book. Maybe a person just might want to read the TV guide to see what's on television. Who knows, if you can't just get through that, I don't think you're

really getting through life. Maybe if you've got to go grocery shopping and you can't figure out the directions on a bag of rice, then you probably can't cook that bag of rice even though it is a very simple process. I know for a fact sometime back, I was not nearly as bad at reading as I once was. There were some things I would go to the grocery store to get, and I would not buy certain things, because I had a hard time with the cooking directions.

There have definitely been a lot of jobs that I've sat back and thought I simply can't do safely or adequately. I'd feel I would be a safety hazard if I can't get through some simple reading instructions. And all equipment has... no matter where you are, all equipment has warnings and operating instructions to read and you need that to be able to do that. If you can't get through an instruction about how to maybe run a chain-saw or maybe just to drive your truck, you could cause some serious problems. I know that I don't like putting myself in dangerous situations, and I don't have any right putting anybody else in a dangerous situation. That is the way I feel and that's the biggest reason you need reading to succeed. If you want to succeed, you have to read - that's the way I think. I know that I think that if half the people out there that can read and can put that to good use did so, they might get off welfare and get out of these situations and go in another direction. I know that if I could read and write as well as some people I know, I sure as heck would be in a different situation right now.

On coping with his problems now, Garnet acknowledged in the following exchange that change has occurred, but that reading is still a struggle for him. He was describing a situation in which his daughter had corrected a reading mistake he had made.

C: You've learned to handle the situation more openly in the last couple of years too, so maybe that's part of what's affecting your reaction to that situation. I think that two years ago, you might have had a harder time.

G: Well, maybe 2 or 3 years ago probably, or 4 years ago, I know that if anybody gave me a hard time about reading or made a joke out of me pronouncing a word wrong and you know the way kids maybe do. I know some time back, I'd have gotten real hot. I'd have gotten real bothered about that, and chances were I'd have done something about that. And through that now, most of my friends that know me know that I have a bit of a hard time with reading. But nobody ever makes a kick out of it or a joke about it, because now I think people are getting a little older and starting to understand that it is not something to laugh about and it's not something that is funny. Instead most people will sit down, and know this is how you work that out, and I get more help now than I did then, but only because I was hot when I was younger and these people now know 'Well, you can't laugh at him. He doesn't like to be laughed at'.

C: Well, and maybe they can empathize better now.

G: Yeah, people are getting older and starting to grow up a little in the mind.

C: And there's been more in the media about reading and learning disabilities so that people can get their heads around the fact that it really happens to people... that it really is like that. There was a time that I would get that reaction from students that didn't have problems. "Ah, come on... nobody's that bad at it (reading)... nobody has that much trouble". But, some people do.

4. Employment

Participant responses were coded under the general topic of Employment that described work-related goals or ambitions, specific work experiences they have already had, or work-related situations in which their reading disability has had an effect. According to my initial interpretation of the data and the Mind-Mapping Workshop participants' confirmation of it, the three main effects of the participants' reading disabilities which emerged from the data on the topic of Employment were: (a) limitations on employment options, (b) the need to develop compensatory skills and strategies, and (c) the emotional consequences of work-related problems. Each of these effects is elaborated below with pertinent quotes and/or examples from individual participants, and with the number of individuals indicated in parentheses who gave a related response (out of the possible 10, unless otherwise indicated).

Limitations on Employment Options

Limitations were perceived and/or experienced by the participants in this study on the types of work they can do because of several reasons. First, some have a lack of training and/or certification that would prepare them for available work (n=4). These

participants are the ones who have the most serious academic skill limitations, and they therefore have not yet been able to go on to training programs in which they would need to be able to learn from what they read (e.g., John, Garnet, Thomas, and Will). For example, Will said,

I wouldn't mind working in a building somewhere warm and a lot of these jobs I work outside in the cold, and it's miserable. You're pouring concrete, you're cleaning boards. It's pretty rough, it's miserable, and you know I would rather be indoors. I would like to be able to read books and stuff like that if I was getting paid, but like you know, I just don't understand, and I could get in trouble taking on a job like that.

A few participants briefly mentioned having difficulty passing employers' tests when applying for work (n=3). However, no one mentioned asking for any accommodations or modifications while taking these tests (e.g., Will, Thomas, and Garnet).

Some of the participants who are employed think there is a lack of opportunity for promotion in the work they are presently doing because of their difficulties dealing with the paperwork in more advanced jobs (3 of the 5 who are working). They generally find paperwork "demanding", "scary", "embarrassing", or "threatening", and they "make frequent mistakes" and/or "work too slowly" (e.g., Carole, Samantha, and Martha)

Several participants have suffered injuries on or off the job that have forced them to try to shift from more physically-oriented work to jobs that demand skills in their areas of difficulty or weakness (n=4). Carole managed to be successful in making this

transition by effective use of technical aids, i.e., her computer. Jack's situation is working well, too, because of the working relationship he has with his partner. However, Garnet and John are still unemployed. Will feels limited to physically demanding work that is hard on his body, causing him to worry about his employment security if his body wears out.

Many have had multiple low-paying, physically-demanding jobs for much of their working lives (n=5). The implication is that these jobs required very little reading or writing skill, although difficulties reading warning and safety signs were mentioned by several (n=4).

Need to Develop Compensatory Skills and Strategies

The participants described the need to develop compensatory skills and coping strategies to meet their respective employment demands. Several descriptive examples are drawn from the data.

First, finding a work partner whose strengths complement their areas of weakness was mentioned by two participants. Jack's situation has already been described and is an excellent example of how things can be worked out most advantageously. Will has had a bit of experience working with a partner, and he said,

I've had difficulties with people I work with, like one-on-one, and there's things I don't understand. In the job I'm doing now helping a cable guy put cable up on poles, I've gotten my partner to do some things, and then I would do his work, and we would kind of switch off... so, doing that, you know, I learn a lot.

A couple of participants have been fortunate to learn how to understand and read blueprints and building diagrams on the job with the help of their co-workers (e.g., Jack and Garnet). They have been able to use these skills in a number of employment situations.

Having control over the paper-work they are required to complete in their jobs has been very important and helpful. For instance, Carole and Samantha have worked out being able to do their reports at home where they can word-process and spell-check them. Jack uses several computer programs at work to complete price quotes for clients.

Enlisting the help of a proof-reader or peer editor prior to submitting any important written work has been helpful for several of the participants (n=5). Carole and Samantha utilized this assistance when they were preparing assignments to be turned in, and they have both continued to use the assistance of a proof-reader to complete reports for work.

The use of various aids was mentioned, such as an intercom by the secretaries to obtain clarification from one participant working as a shipping and receiving clerk (n=1), or the use of a word-processor to complete required written work (n=3).

Emotional Consequences of Work-related Problems

Many examples were provided by the participants about the emotional consequences of their reading disabilities at work. Five main effects emerged from the data, some of which overlap with the earlier discussion about Self-Concept.

First, several participants related that the stress of dealing with their disabilities in relation to their jobs had contributed to stress-related illness (e.g., Carole , and Martha), or severe headaches (e.g. Will). In response to further probing to understand the reasons for their stress, these participants' explanations included: "frequent embarrassment", "fear of failure", of "being found out", of "getting in trouble", "of making mistakes", and fear of "losing the job". As Martha explained,

It (my reading disability) has created a lot of stress for me, because of the paper flow – e-mail now... we get tons of this e-mail that comes in. And reading stuff like computer manuals... what was I doing a while ago? Oh, merging... I can merge on WordPerfect, now we're on Word – no idea how to merge on Word. I sat there and I was so nervous, so scared that I wasn't going to be able to do it, so scared that I wasn't going to be able to figure it out, determined that I was going to do it and not ask anybody, and when it came right down to it, I had to ask and now when I ask, I'm thinking they're all watching me. They know how long I've been working on this... I'm looking in the manual, and the supervisor says, "What are you doing that for? Why didn't you come and ask me? I know how to do that." I'm always getting the impression that I'm wasting time, because I'm sitting there trying to figure it out myself when she's got the answers.... But now she wants you to find it, and I really struggle to figure it out on my own. But if you show me how to do it, I am on it, I have no problem. But if I have to stop and read this manual and try to figure it out, the fear of it overwhelms me.

A second effect noted by a few participants was that they have suffered from depression because of the intractability of their situation (n=3, Thomas, Garnet, and John). With disabilities as severe as theirs, they fear being unemployed or underemployed forever. As Thomas said, "When I'm not working, I get in a hole...I get so depressed and so unhappy about not working".

Others characterized themselves as having low levels of confidence (n=6), which interferes with their ability to look for work, or to come across well in job interviews. Most described themselves as having frequent feelings of embarrassment (n=8). Finally, some indicated they feel guilty when they avoid work activities that involve reading, even when those activities would be more interesting (n=2, Carole and Martha).

5. Other Issues

A few important responses are included here that could not be readily coded in one of the four main areas of concern already described and discussed. First, several participants stressed the need for educators to "keep seeking some middle ground" on the question of mainstreaming versus segregation of students with disabilities. Also, although several mentioned being "more comfortable with others who have similar problems", they said to avoid the risks of being ostracized requires opportunities to work within the larger group whether it be at school or on the job.

Several participants had strong opinions about how some teachers mistreat students. For example, Garnet thinks "...teachers should be run back through school a few times in their career, not to just update them, but to bring them back to reality, you

know, to remind them they are teachers not just baby-sitters". He also thinks children should be taught that there are many kinds of disabilities and that some of them are invisible such as learning disabilities. "That way, come lunch or recess, they'd say, 'Oh well, whatever, that's that kid over there who doesn't read so well, so what? The other kid over there doesn't see so well'".

Finally, several participants emphasized the need for instruction to help them learn coping strategies to compensate for their difficulties, while at the same time continuing to try to improve their skills.

To summarize, the previous section introduced and described the ten participants with reading disabilities and presented an analysis of their interview responses in relation to the four main areas of concern. In the next section, the quantitative data will be presented and discussed.

Quantitative Data Analysis and Results

The quantitative data reviewed and analyzed in this study includes three groups of information collected about the participants. The first group was comprised of assessment information (i.e., my file notes, *WJ-R* test results, and my report) from recent Learning Skills Assessments conducted with each of the ten participants. The next cluster included previous school records (i.e., Permanent Record Card, teacher grade reports, and/or assessment reports) from the assessment case file of four of the participants. The third group of data was composed of the test results for both groups of participants on the four measures of phonological awareness and the single test of word identification that were previously described in Chapter Three. These tests included the following: (a) the *Yopp-Singer Segmentation Test*; (b) the *Brucé Phoneme Deletion Test*; (c) the *Auditory Analysis Test*; (d) the *Lindamood Auditory Conceptualization Test*; and (e) the *Wide Range Achievement Test in Reading*.

These three groups of information or data sources, in combination with the qualitative data from the participants' interviews, provided a more complete picture and, in some cases, an opportunity to cross-check information about each participants' experience of reading disability. This procedure of triangulation or cross-validation contributed to the reliability of the interpretation of the data.

The analysis of the three groups of data is presented in the following section with relevant tables included as needed. Table 3 is included to provide the reader with a summary description of each of the participants in both groups for ease in following the rest of the data. Table 4 presents the percentile scores of the participants with reading disabilities in the seven *WJ-R* Cognitive Ability clusters in comparison to their age peer

norms. Then, in Table 5, the subtest scores are shown from which these cluster scores were derived to detail these participants' assessment results. Following that, in Table 6, the participants' achievement subtest percentile scores are presented with their predicted aptitude cluster scores in bolded parentheses. Finally, the scores of both groups of participants on the tests of phonological awareness and word recognition are given for comparison in Table 7.

Table 3

Anecdotal Information About Participants

Participants with Reading Disabilities:

1. John - male in his early 40's; long-term Social Services recipient; unemployed and difficult to place; alcoholic; family problems with ex-wife; shares custody of two children; interested in song-writing, carpentry, helping others.
2. Samantha - female in her late 20's; single Mom of school-age child; identified as "dyslexic" early in school; brother has history of LD; reading and writing accommodations; completed two post-secondary certificate programs; employed full-time in her field.
3. Micki - widow, in her early 40's; mother of three sons, two of whom have identified LDs; upgraded in ABE, current student in Forestry; uses test-taking accommodations to verbalize thoughts and to read and spell aloud.
4. Gavyn - male in late 30's; identified by family doctor as ADHD; long history of behavioural and academic problems; BCIT apprenticeship student in 4th year; severe written language disability; copes by using test-taking accommodations; creative, exceptional visual skills.
5. Jack - male in early 40's; married, supportive wife; father of three school-age children; partner in private tile business; strong employment history in construction trades; great social skills; strong work ethic.
6. Carole - female in early 50's; divorced, mother of 4 grown daughters, foster mother to two school-age special needs children; has held varied executive positions in social service agencies.
7. Garnet - male in early 30's; single; father of school-aged daughter who visits during summer; varied employment history mostly in construction trades, warehousing; good mechanical skills; unemployed for 3 years following accident which limited physical labour capacity; wearing new glasses; very articulate.
8. Thomas - male in mid-20's; single; father of pre-schooler; strong family ties with parents, siblings and extended family; early identification as reading disabled, but much confusion; creative, musician.
9. Will - male in early 20's; single; periodically employed; having trouble getting much going; long history of language processing problems.
10. Martha - female in early 40's; married; mother of school-aged son; interpersonal and self-esteem issues; may be under-educated; history of school under-achievement and reading problems; dissatisfaction with reading skills.

(table continues...)

Table 3

Anecdotal Information about Participants (continued...)

Participants who are Proficient Readers:

1. Wenda - female in late 40's; married, mother of three teens/young adults; a working professional (M.Ed.) in employment counselling; reads for information and entertainment.
2. Heather - female in early 50's; married, mother of five adults, grandmother of two; B.A. college Developmental Education English instructor; reads widely and avidly for information and pleasure.
3. Deb - female in late 40's; married, no children; B.A., college instructor in support courses (College Success); currently enrolled in distance ed. program for ESL teaching certificate; reads widely.
4. John - male in early 50's; married, father of two adults; M.Ed., elementary teacher for 25+ years; avid reader for information and entertainment.
5. Randall - female in early 50's; married, mother of three adults; recently completed M.Ed. in Teaching English as a Second Language; reads widely and avidly.
6. Ray - male in early 40's; partner, step-father of one teen; B.Ed., college Special Ed. instructor; reads for information primarily; many hobbies and activities that require detailed information.
7. Rosie - female in mid-30's; married, mother of one pre-schooler; speech and language therapist, recently completed M.A.; reads for professional purposes and entertainment.
8. Marilyn - female in mid-40's; married, mother of two school-age daughters; B.A., elementary teacher for 20 years; reads professional material, and for information and entertainment.
9. Peter - male in early 50's; married, father of two older teens; avid outdoorsman; B.Sc., college instructor of Developmental Education computer and math courses; reads consistently for information and entertainment.
10. Jim - male in late 40's; divorced, father of one older teen; electrician by trade, college instructor in trades program; reads for information.
11. Isabel - female in early 50's; divorced, mother of two children; college librarian assistant; remembers early difficulties learning to read; now reads widely for information and pleasure.

Learning Skills Assessment Results

During their previous contact with me, all ten of the reading disabled participants completed some type of an assessment of their learning abilities and/or their levels of achievement using relevant parts of the *Woodcock-Johnson Psycho-Educational Battery - Revised (WJ-R)*, (1989) and other commonly used standardized tests. Some of these assessments were more comprehensive than others depending on the reasons for referral and related time constraints, but the minimum level of assessment included at least the four subtests in the Reading Achievement cluster for all but one of the participants (Micki). In her case, other reading test data was available which was substituted for the purposes of this study. This was done because her written language difficulties had been the primary focus at the time of her initial referral to me. Therefore, although I had assessed her aptitudes in all areas, her achievement in reading was not assessed on the *WJ-R*. It is interesting to note, however, that her reading aptitude on the *WJ-R* was at the 85th percentile, which was considerably higher than her reading achievement scores on the other tests for which scores were available. This discrepancy is one of the reasons she was invited to be a participant in this study.

Tests of Cognitive Ability

To enable the reader to have some understanding of these participants' cognitive strengths and weaknesses, Table 4 is provided to show their percentile scores on the seven *WJ-R* Cognitive Ability Clusters in comparison to their age peer norms. For further detail, Table 5 is included to provide the participants' percentile scores on each of the individual *WJ-R* Cognitive Ability subtests.

From the information contained in these two tables, it can be seen that the participants demonstrated widely varying levels of intra-cognitive performance in the aptitude areas measured. As well, comparisons between participants' profiles yield little clue as to common reasons for their difficulties. For instance, some of John's aptitude scores are considerably lower than Samantha's scores, while others are higher. Generally however, both profiles are quite spiky which is often characteristic of people who have reading and/or learning disabilities (Adelman & Vogel, 1991). Most of the participants demonstrated similar contrasts between their cognitive strengths and weaknesses with one or more cluster or subtest scores being considerably higher than their other scores.

Interestingly, seven participants showed a relative strength in the Sound Blending subtest (#11), in spite of their decoding problems in reading. This subtest requires the person to listen to words and to identify them. These words are pronounced by the speaker (on the test audio-tape) broken at first into onsets and rimes, then into individual phonemes, but there is no visual component to the task as in reading. It might seem that this task would be related to the task in some of the simpler measures of phonological awareness (i.e., the *Yopp-Singer Segmentation Test*), but it actually requires the reverse skill of blending in contrast to segmentation.

Table 4

Percentile Scores of Participants with Reading Disabilities on 7 *WJ-R* Cognitive Ability Clusters in Comparison to Their Age Peer Norms

	1	2	3	4	5	6	7
<u>Participants:</u>							
1. John	19	73	2	14	26	21	9
2. Samantha	16	62	15	22	22	7	50
3. Micki	61	88	45	91	33	45	64
4. Gavyn	33	25	47	32	93	27	31
5. Jack	27	30	9	69	17	38	19
6. Carole*	--	46	--	--	--	--	36
7. Garnet	20	9	2	44	20	29	24
8. Thomas	57	16	23	88	89	30	77
9. Will*	--	--	--	--	--	--	--
10. Martha*	--	--	--	--	--	--	--

* Note. Not all participants were administered the complete *WJ-R* Cognitive Ability battery depending on the reason(s) for referral (e.g., Carole, Will, and Martha); therefore, cluster scores are not available for these participants.

The names of the 7 *WJ-R* Cognitive Ability Clusters are as follows:

- 1 - Long Term Retrieval; 2 - Short-Term Memory; 3 - Processing Speed;
- 4 - Auditory Processing; 5 - Visual Processing; 6 - Comprehension-Knowledge;
- 7 - Fluid Reasoning.

Table 5

Percentile Scores of Reading Disabled Participants on *WJ-R* Cognitive Ability Subtests 1 - 14, and 20 in Comparison to Their Age Peer Norms

	1	2	3	4	5	6	7	8	9	10	11	12	13	14, and 20
Participants														
1. John	4	89	2	23	34	7	4	50	52	9	17	28	40	29 --
2. Samantha	10	79	11	0.5	8	6	57	28	47	40	74	50	11	48 37
3. Micki	43	90	42	47	41	44	38	75	77	47	97	34	42	89 --
4. Gavyn	33	53	43	59	91	31	15	34	14	10	23	87	20	56 --
5. Jack	30	46	10	72	44	25	18	26	23	16	66	13	50	26 62
6. Carole	--	56	37	--	--	21	--	91	42	--	25	45	53	98 48
7. Garnet	12	21	3	40	17	23	21	28	7	5	48	36	34	32 33
8. Thomas	43	48	11	33	97	29	83	70	5	83	98	44	34	68 28
9. Will	--	6	9	--	--	--	--	--	--	--	50	10	--	-- 28
10. Martha	--	62	33	--	--	--	--	--	--	--	62	21	35	-- 44

Note. Not all participants were administered the complete *WJ-R* Cognitive Ability battery depending on the reason(s) for referral (e.g., Carole, Will, and Martha); therefore, cluster scores are not available for these participants.

The *WJ-R* subtest numbers and names are:

1 - Memory for Names; 2 - Memory for Sentences; 3 - Visual Matching; 4 - Incomplete Words; 5 - Visual Closure; 6 - Picture Vocabulary; 7 - Analysis-Synthesis; 8 - Visual-Auditory Learning; 9 - Memory for Words; 10 - Cross Out; 11 - Sound Blending; 12 - Picture Recognition; 13 - Oral Vocabulary; 14 - Concept Formation; and 20 - Listening Comprehension.

Tests of Achievement

Table 6 provides the percentile scores these participants obtained on the *WJ-R* Achievement Subtests in comparison to their age peer norms along with their predicted Aptitude Cluster scores in bolded parentheses. Seven of the nine participants who were tested on the *WJ-R* demonstrated Word Attack skills at the 25th percentile or less in comparison to their age peers' norms as had been specified in the methodology of this study. The other two (Will and Martha) scored within the lower half of the average range. Even though their Word Attack subtest scores were higher than what was originally specified as criteria for participation in this study, it was decided that their inclusion would be useful because of their learning histories. They were invited because the descriptions of their reading difficulties taken from my file notes had paralleled the other participants in some important ways.

In the Passage Comprehension subtest in the Reading cluster (#23), six participants' scores were their highest of the four Reading cluster subtests. Because this measure is not time-limited, it is a good way to see how well the reader can use other comprehension strategies in spite of poor decoding skills. Higher skills here often attest to the reader's potential for overall improvements in reading achievement given gains in decoding skills. Of note consistent with this pattern, Micki's total reading comprehension score on the *SDRT*, which is generously time-limited for most readers, was also considerably stronger than her *WRAT-Reading* score, the measure most closely related to the decoding task.

In contrast to the pattern described above, Will's and Martha's Passage Comprehension skills were demonstrated to be weaker than their decoding skills shown in the Word Attack subtest, especially so for Will. Garnet's reading cluster

scores presented an anomaly since his Passage Comprehension score is virtually the same as his Word Attack score; his Reading Vocabulary score is actually his strongest.

Table 6

Percentile Scores of Participants with Reading Disabilities on *WJ-R* Achievement Subtests in Comparison to Their Age Peer Norms with Aptitude Cluster Scores in Parentheses

	Reading					Written Language										Mathematics		
	22	23	31	32		26	27	34	35	P	S	U	H			24	25	33
1. John ¹	2	24	4	2	(19)									(12)				(4)
2. Samantha	5	9	0.4	1	(30)	0.4	19	9	1	3	2	5	8	(18)				(20)
3. Micki ²	(WRAT=34; SDRT=60), (85)					36	44	27	86	37	25	34	46	(79)		89	64	84
4. Gavyn	17	37	13	13	(29)	1	11	11	23	1	7	12	11	(23)		31	33	36
5. Jack	15	20	15	17	(37)	2	80	13	18	4	3	22	11	(33)				(16)
6. Carole	19	81	25	45	(38)	18	63	46	29	62	33	20	99	(44)				
7. Garnet	3	7	8	19	(14)	1	10	3	5	1	1	6	11	(16)		36	29	14
8. Thomas	6	48	10	26	(42)									(47)				(39)
9. Will	6	5	34	7	(5)													
10. Martha	26	28	46	33	(41)													

Note. Some participants were only administered subtests of the *WJ-R* Achievement battery based on the reason(s) for referral; therefore, scores in other clusters were not available for these participants. The *WJ-R* Achievement subtest numbers and names are: in Reading: 22 – Letter-Word Identification; 23 – Passage Comprehension; 31 – Word Attack; 32 – Reading Vocabulary in Written Language: 26 – Dictation; 27 – Writing Samples; 34 – Proofing; 35 – Writing Fluency; P – Punctuation and Capitalization; S – Spelling; U – Usage; in Mathematics: 24 – Calculation; 25 – Applied Problems; 33 – Quantitative Concepts.

¹ John, Thomas, Will, and Martha were only assessed in reading achievement.

² Micki did not complete *WJ-R* subtests in reading; therefore, scores from her initial *WRAT-Reading* and *Stanford Diagnostic Reading Test – Comprehension Total* are substituted here for related information.

Previous School Records

The original intention in this study was to choose participants for whom previous school records had been requested and obtained. However, in reality, it was found that in most cases, these records had only been obtained for the potential participants who were most recently assessed and who were generally the youngest of those on the list. In some other case files, my notes indicated that records had been requested but had never been received. Therefore, previous school records were only available for five of the ten participants in this study. These records included documents such as the Permanent Record Card, teacher grade reports, Individual Education Plans (IEPs) and/or individual assessment reports.

When they were available, Permanent Record Cards were reviewed to understand the participants' performance progress through school, their attendance patterns, and any indications of mobility between school districts. I have found these details to be useful in discussions with students being assessed to understand their experience of school and related events in their lives. Sometimes looking over these records together prompts the students to recall details they might not otherwise have remembered, such as illnesses or family events that might explain periods of absence, or other important details of their experience.

Teachers' comments on grade reports were reviewed to discern patterns of performance and learning problems. Efforts were made not to dwell unnecessarily on any one teacher's comment unless it appeared to succinctly describe a relevant pattern.

Previous assessment reports were read again to look for patterns of performance in the student's past history, and to be aware of previous diagnoses that either confirmed or contradicted the findings of the present assessment.

If an Individual Education Plan (IEP) was available, it was sometimes useful in determining what the next logical steps might have been to take in assisting the student. Often, ideas were obtained for learning strategies or accommodations found

to be useful for the student in the past that could be used in the student's present educational plan.

From the records available for five of the participants (Samantha, Garnet, Thomas, Will, and Martha), it was evident that all five had been relatively stable in their school enrollment with only Thomas and Martha attending in more than one district. All five had good attendance records overall with few absences noted and no long periods of absence. The only exceptions were for Garnet who was at home in grade five for an extended period recovering from an accident, and Gavyn, who was at home for six months recuperating from rheumatic fever when he was in grade six.

All participants' subject grades (as noted on Permanent Record Cards, transcripts, or original grade cards) showed progressively weaker performance as they aged with frequent grades of "P" (pass) or "F" (fail) in several cases in high school. Only Will's grade reports and transcript indicated any modification had been made.

Only Thomas' and Will's records as received from the school districts contained previous assessment reports. Will's were especially useful because they were very thorough and descriptive, and because they were quite recent. Thomas' last assessment had been conducted and reported when he was in elementary school, and the results were not consistent with the findings of the assessment completed recently at the College.

Only Will's records contained a copy of an IEP written for him at his high school. On the basis of the recommendations there, his instructors at the College were able to plan appropriate accommodations for him.

Phonological Awareness and Word Identification Test Results

Following practice sessions to learn and refine the administration procedures, the four tests of Phonological Awareness described earlier were administered to each of the participants with reading disabilities after their interviews. Also, the Reading subtest from the *Wide Range Achievement Tests (WRAT-Reading)* was administered as a measure of word identification. These same tests were also administered to the group of participants who were proficient readers. Table 7 shows the scores obtained by each individual, as well as the statistical means and standard deviations on each test within each group.

It is clear from the participants' results on these tests that differences between the two groups exist. The mean score on every test for the group with reading disabilities was lower than the corresponding mean scores for the group of proficient readers. While it is evident that differences on these measures favour the proficient readers group, these might have been predicted since the group with reading disabilities was chosen on the basis of poor decoding skills. What is of interest are the within-group differences and the possible implications of these differences. For instance, in the group with reading disabilities, six participants scored higher on the *LAC-Test* than the lowest scoring participant in the proficient readers' group. This could be interpreted to mean that the participant in the proficient readers' group has weaker phonological awareness skills than those in the group with reading disabilities. Another observation is that there was a much larger variation and range of scores on all phonological measures indicating that perhaps more readers with reading problems have difficulties with the skills tapped by these tests.

As an additional point of analysis, the subtest scores of both groups on the *LAC-Test, Category II* were examined separately to determine how useful this measure

Table 7

Raw Scores on Tests of Phonological Awareness and Word Identification

	Yopp-Singer Segmentation Test (22)	Auditory Analysis Test (40)	Bruce Phoneme Deletion Test (30)	LAC- Test (100)	WRAT- Reading (89)
Participants with Reading Disabilities:					
1. John	14	21	12	51	37
2. Samantha	16	14	17	54	43
3. Micki	18	35	30	84	56
4. Gavyn	22	25	25	63	54
5. Jack	22	33	22	52	47
6. Carole	21	29	25	87	46
7. Garnet	14	33	23	87	40
8. Thomas	22	27	22	88	44
9. Will	22	29	27	98	42
10. Martha	22	37	30	92	61
<hr/>					
<i>M</i> =	19.30	28.30	23.30	75.60	47.00
<i>SD</i> =	3.29	6.60	5.29	17.44	7.25

(table continues...)

Table 7

Raw Scores on Tests of Phonological Awareness and Word Identification (continued...)

	Yopp-Singer Segmentation Test (22)	Auditory Analysis Test (40)	Bruce Phoneme Deletion Test (30)	LAC- Test (100)	WRAT- Reading (89)
<u>Participants with Proficient Reading Skills:</u>					
1. Wenda	22	39	30	88	85
2. Heather	22	38	30	99	89
3. Deb	22	37	30	83	73
4. John	22	37	30	100	88
5. Randall	22	38	30	100	85
6. Ray	22	38	30	99	77
7. Rosie	22	39	30	99	81
8. Marilyn	22	37	30	99	78
9. Peter	22	39	30	99	85
10. Jim	20	37	29	93	66
11. Isabel	22	36	30	98	79
	<i>M</i> = 21.80 <i>SD</i> = .58	37.73 .96	29.91 .29	96.09 5.42	80.55 6.58

might be in identifying reading disability. This part of the *LAC-Test* measures the more demanding task of analysis and synthesis as compared to the easier tasks of auditory discrimination in the two parts in *Category I*. In the *Category II* subtest, the person is required to construct and re-construct word-like forms using coloured blocks to represent the sounds in each item. In a previous study, Shapiro, Nix, & Foster (1990) determined that this second part of the *LAC-Test* (referred to in their study as *LACT3*) was a particularly telling indicator of reading disability which measures the subjects ability to analyze and synthesize auditory stimuli (p. 126). This trend was confirmed in these participants' results with the group who have reading disabilities scoring considerably lower on average compared to the group of proficient readers. The group with reading disabilities demonstrated scores ranging from 24 to 66 (of the possible 72 points), and these scores were fairly variable. In comparison, the group of proficient readers demonstrated scores with much less variability.

On the four measures of phonological awareness and the *LAC-Test, Category II*, the mean of the raw scores of the group with reading disabilities resulted in the most difference on the *LAC-Test, Category II* when compared to the corresponding mean for the group of proficient readers. This was determined by calculating the ratio of the means of the group with reading disabilities to the means of the group of proficient readers; the smaller the result, the better that test was in discriminating between the two groups of participants. The order from the most difference to the least difference between the two groups showed the *Auditory Analysis Test* to be the second most discriminating, the *Bruce Phoneme Deletion Test* to be the third, the total *LAC-Test* to be the fourth, and the *Yopp-Singer Segmentation Test* to be the fifth or the least discriminating. For example, Will's score on the *LAC Test* and Martha and Micki's scores on the *Bruce Phoneme Deletion Test* were higher than the mean of the

proficient readers' group. On the *Yopp-Singer Segmentation Test*, five participants with reading disabilities scored above the mean of the proficient readers' group.

Within the group of participants with reading disabilities, seven individual's raw scores on the *WRAT-Reading* were their lowest scores when their raw scores were compared to the number possible on each test. This pattern was the same in the group of proficient readers, but their raw scores were considerably higher. The range of raw scores on the *WRAT-Reading* for the group with reading disabilities was from 37 to 61, while the range for the proficient readers was from 66 to 89 out of a possible of 89.

Using these comparisons, it was evident that the combination of the *WRAT-Reading subtest* and the *LAC-Test, Category II* provided the most discriminating measures compared to the other tests used with these two groups of participants.

Research Reliability and Validity

Although this was not solely a quantitative study, there were many chances for error in selecting, gathering, handling, and reducing the data which influenced the accuracy of the findings.

Interview Data

The ten participants who were interviewed did so willingly in response to my invitation; no coercion was used to secure their participation. (See Appendix B, the letter of invitation to potential participants, and Appendix C, the Participant Consent Form to confirm the procedures used.) The audiotapes of each of these interviews

were transcribed verbatim, and they were then proofed and edited for punctuation, pacing, and inflection.

Test Results Data

All test results were derived under carefully managed testing conditions following the prescribed test directions or protocols. Efforts were made to be sure the results were accurate measures of the participants' skills or abilities by being aware of their alertness and their comfort level, and their need for breaks.

Generalization of Results

Because of the small sample size of the groups, and due to the fact that the group with reading disabilities was chosen based on their weak decoding skills, no generalizations of the results can be made to the larger population of adults with reading disabilities or to the population of adults who are proficient readers.

A Synthesis of the Results

The results of the qualitative part of this study indicate that the participants' lives were affected by their reading disabilities in many ways. These effects were described in relation to four main areas of their lives: Self-Concept, Relationships, Education, and Employment. Although most of the identified effects of their reading disabilities would be characterized as negative, some positive effects were also evident.

The results of the quantitative part of the study showed that the participants with reading disabilities scored in the below average range on one or more of the measures

of cognitive ability. Overall however, their cognitive abilities were stronger than their achievement test results in reading, written language, and/or mathematics. Further, the means of their scores on the four measures of phonological awareness and the measure of word identification were lower than the means of the scores on the same tests for the participants who were proficient readers as was expected due to the selection criteria. However, the within-group variability is interesting in that it provides reinforcement of the theoretical principle of a developmental skills continuum from weak to strong, or from beginning to more advanced. This variability also underscores the difficulties of attempting to use test scores to make comparisons between groups that are not neatly homogeneous.

Chapter Five: CONCLUSIONS, IMPLICATIONS and RECOMMENDATIONS

This study has yielded valuable data to contribute to a better understanding of Matthew Effects in the lives of these adults with reading disabilities. The conclusions, implications, and recommendations that have been derived from the analysis of this data are presented in this final chapter.

It is important to remember that the data collection from this study is based on the results from a small, non-random sample of ten adults with reading disabilities of varying degrees of severity and limited to deficiencies in decoding and word identification. Therefore, no generalizations can be made to the larger population of adults with reading disabilities. However, the results may be instructive in future research efforts, and in working with other adult students with reading disabilities in post-secondary settings.

In this study, the definition of Matthew Effects (as presented in Chapter One) specified that a deficit in phonological awareness is at the core of this type of reading disability (Stanovich, 1986; Wong, 1991). Further, the definition specified that the secondary problems that develop as a result of this disability, also referred to as Matthew Effects, can include any or all of the following:

- (a) problems learning to use reading as a means to learn;
- (b) difficulties with other areas of the school curriculum which rely on reading skills, such as subject areas in which written text and directions are the primary means toward understanding content;

- (c) social and emotional problems, lowered self-esteem, motivational problems, and problems with self-concept as a learner;
- (d) limitations on achievement which compound over time;
- (e) false educational and vocational ceilings.

Conclusions

The most important overall conclusion is that the adults with reading disabilities who participated in this study do indeed demonstrate Matthew Effects in their lives as described by Stanovich (1986) and Wong (1991). These effects are evident in their learning histories and in their present learning difficulties in relation to the four themes or areas of concern elaborated in Chapter Four.

Under Self-Concept, the Matthew Effects that are evident in a number (three or more) of the participants' cases include:

- Participants experienced diminished self-esteem which they perceive as resulting from repeated difficulties and failures in learning to read and write.
- Participants have developed various coping behaviours to deal with the embarrassment they feel as a result of having poor reading and writing skills. These coping behaviours include:
 - Hiding – i.e., withdrawal or avoidance, alcohol and/or drug abuse, quitting school early, leaving jobs, withdrawal from others;

- Manipulating – i.e., observing body language in the use of reader/scribes, conning others into doing their work for them, adopting a “take care of me” attitude, using people;
 - Being extremely independent – i.e., taking a “just struggle through it” approach, not taking advantage of available services;
 - Being defiant – i.e., verbally bullying others who put them down, using physical violence toward perceived enemies, engaging in minor criminal activity;
 - Helping others – i.e., by choosing to work in Human Services field, often with those who have disabilities; by trying to help their own children or friends who are having difficulties.
- Participants have learned some positive lessons through experience dealing with their reading difficulties, such as:
- Learning to deal with adversity;
 - Becoming more empathetic toward others who have disabilities;
 - Developing useful survival strategies;
 - Learning to “take life as it comes”;
 - Putting emphasis on other abilities, i.e., sports, music, fixing things, even reading when it can be done without pressure.

Under the theme of Relationships, the Matthew Effects that are evident in a number (three or more) of the participants’ cases include:

- Participants have had to deal with consequences of their disabilities in nearly all of their interpersonal relationships including relationships with their family of origin, teachers, peers, and in relationships of choice.
- Participants are aware of being inordinately sensitive to criticism from others, especially in relationships of choice with boyfriends/girlfriends and partners.

- Participants who have their own children are concerned about how they are progressing in school, and they are very empathetic with their child or children if they are having learning difficulties.

Based on the responses categorized under the heading of Education, the negative Matthew Effects evident in a number (three or more) of the participants' cases included:

- Participants experience(d) a variety of reading and/or learning problems.
- Participants sometimes received help from home and/or school, but often it was inadequate.
- Participants experience(d) negative treatment and extreme stresses in their relationships with teachers and "the system".
- Participants often have very negative feelings about learning and school in general.

Under the heading of Employment, the Matthew Effects identified in a number (three or more) of the participants' cases included:

- Participants have experienced limitations on their employment options.
- Participants have recognized the need to develop compensatory skills and strategies.
- Participants have encountered emotional consequences of their work-related problems caused by their weak reading and/or writing skills.

The second major conclusion from this study is that the group of adults with reading disabilities had considerably weaker phonological awareness skills as demonstrated by their scores on the tests of phonological awareness and word identification as compared to the scores attained by the group of proficient readers. While it is recognized that the group with reading disabilities was limited to individuals with word identification difficulties, this finding lends support to Stanovich's definition of Matthew Effects as being at the core of this type of reading disability.

The scores of the group with reading disabilities were especially low on the *LAC-Test, Category II* and the *WRAT-Reading* test. Although no formal statistical tests were completed on this data, it is apparent that the results on these two tests, in combination with other appropriate assessment information, could likely be used to identify adults who have deficits in phonological awareness and word identification.

In summary, the qualitative and quantitative data from this study show that the participants with reading disabilities demonstrated a primary disability in phonological awareness as well as one or more of the following secondary problems, or Matthew Effects, in their lives:

- Limitations on how well they can use reading as a means to learn;
- Limitations on their educational success related to how well they have learned to read;
- Related social problems such as stresses in their relationships with parents, siblings, teachers, fellow students, friends, partners and/or spouses, their own children, co-workers, and employers;
- Diminished self-esteem, or threats to self-esteem;
- Employment ceilings and/or limitations of employment options due to lack of skills and/or training, and lack of skills required to complete training.

In addition, a few very important positive Matthew Effects were also apparent in the data about several of the participants, such as extraordinary resilience, persistence, or

motivation. At least six of the ten participants have taken conscious and deliberate steps to try to overcome or get around some of their obstacles. These personality or character attributes may be related to these participants' experiences and successes in coping with their reading disabilities.

From the theoretical and empirical evidence in the literature and the results of this study, it is concluded that adults with reading disabilities in word identification who present with primary deficits in phonological awareness (Minus, 1992; Pratt & Brady, 1988) are also likely to demonstrate secondary Matthew Effects (Stanovich, 1986; Wong, 1991). From this, I would conclude that a tentative profile to illustrate Matthew Effects in adults with reading disabilities would include: (a) low test scores on the *LAC-Test, Category II* and the *WRAT-Reading* subtest; (b) relatively lower percentile ranks on the *WJ-R* subtests in Word Attack and Letter-Word Identification, with relatively higher percentile scores on the Passage Comprehension, Listening Comprehension, and Oral Vocabulary subtests; and (c) a substantial history of learning and life difficulties that parallel those identified as Matthew Effects.

Considering all of the data from this study, it is evident that several of the participants with reading disabilities demonstrated serious difficulties in phonological awareness. However, since no such instruction or practice was provided in this study, conclusions regarding potential benefits of instruction in phonological awareness cannot be drawn. Also, it must be acknowledged that a serious lack of phonological awareness may constitute a dysfunction in this area, and that instruction may not be successful.

With these reservations in mind, it is suggested that five of the ten adults with reading disabilities who participated in this study may be likely candidates for instruction in phonological awareness on the basis of their test scores and their learning histories. Another three of them might also benefit from such instruction although one or more of the criteria specified above has not been met. One would still be questionable in terms of likely benefit, and one would not fit at all. Based on this

interpretation of the data and the evidence from the literature cited, it is suggested that instruction and practice in phonological awareness would possibly benefit eight of the ten participants studied.

Finally, it is suggested that unless these underlying reasons for their reading and learning difficulties are specifically addressed with appropriately "intense and explicit" instructional intervention in phonological awareness (Torgeson et al., 1995), success in remediating these adults' reading problems may be thwarted. This is in agreement with Minus' conclusions (personal e-mail communication, March 28, 1998) that training in phonological awareness should be carried out over a six to eight week period of time, and that it should be integrated into a complete reading program. Further, periodic checks should be carried out to see if the instruction is working; if it is not, the efforts should be abandoned to avoid the effects of further unsuccessful instruction.

Too often, administrators, instructors, and sometimes the adult students themselves object to the time, effort, and money which is necessary to provide appropriate services to attempt to break the cycle of negative Matthew Effects. With the preceding illustrations of Matthew Effects in hand, it is hoped that efforts to lobby all those involved to support the provision of these services will be more successful.

Implications

The results of this study have implications for several groups of people, and for institutions and agencies that deal with people with reading disabilities. Each group, institution, and agency is listed below with the relevant implications related to each.

➤ Other adults with reading disabilities:

The problems identified in this study are real and pervasive, and these problems are logical though painful consequences of this type of disability. There is no magic

cure, but there are steps to try that may improve the situation. Other adults with similar reading problems should take heart, know they are not alone, and seek help.

➤ Post-secondary assessment professionals:

The problems of weak phonological awareness skills can be identified by using the *Lindamood Auditory Conceptualization Test (the LAC Test), Part II*. Related difficulties in word identification can be discerned using the *Wide Range Achievement Test in Reading (WRAT Reading)*. Identifying these specific problems can help assessment professionals more accurately describe the reading skills of persons they are assessing, and this identification can help in making appropriate recommendations for instruction and/or accommodation.

➤ College Instructors in Developmental Education:

Based on other research findings, students whose assessments confirm that they have a reading disability related to weak phonological awareness skills may not be able to improve their reading decoding skills significantly without explicit and intensive instruction in phonological awareness (Minus, 1992; Pratt & Brady, 1988; Torgeson et al., 1994; and Truch, 1994). These students may also demonstrate problems in many other areas of performance as well as in interpersonal relationships with instructors and other students. Their affective needs will need to be considered as seriously as their instructional needs since problems with self-concept are likely to be very pervasive. Instructors in Adult Basic Education (ABE) also need to help these students learn to use appropriate accommodations, such as readers and scribes, to enable them to continue with content courses.

➤ Other Post-secondary Educators:

Some students admitted to post-secondary programs or courses may have reading disabilities that are the result of weak skills in phonological awareness. These students will likely have difficulty reading text assignments and tests. They will need to be referred for assessment and/or instruction if they are to improve their reading skills, and they will need to be accommodated with readers and scribes if they are to cope effectively with the academic demands of their program or courses.

In addition to the above, several suggestions resulted from the implications derived from the qualitative data analysis of the interview transcripts. Although the groups addressed previously are most directly affected by the implications of this study, the following suggestions have significance in the bigger picture.

➤ Advocates who are seeking support for staffing and funding:

Informed advocacy efforts by and on behalf of adults with reading disabilities are needed. The results of this study can be used to provide examples of adults who would likely benefit from specialized instructional programs to improve their reading skills. Extensive funding must be secured to provide this type of specialized instruction as it would have to be very intensive in terms of staff demands and time if it is to be effective.

➤ Funding agencies (e.g., Ministry of Education, Skills, and Training; Human Resource Development; Vocational Rehabilitation Services; etc.):

If any of these agencies' clients present with this type of difficulty, there is little help available at this time. Professionals working with funding agencies will need to advocate with the colleges and other groups, such as Project Literacy, to develop

appropriate programs to address these clients' needs. Also, they will need to be prepared to fund these clients for longer-term, relatively more costly instructional opportunities if their reading skills are to improve sufficiently to enable them to use these skills to learn from what they read.

➤ Teachers at the primary, intermediate, and secondary levels:

As the adult participants in this study have evidenced, students who are having serious difficulties learning to read, or who have on-going difficulties reading at grade level, need help. Their difficulties will only compound over time if they are not addressed; they will not just go away, nor will the child "just grow out of them". Treating these children with respect, and sympathizing with them are first steps. Ridiculing, criticizing, or humiliating these students because they cannot read or write well is simply inexcusable. Allowing other students to treat them badly is also unacceptable. Given what we know from this study about these students' needs and the eventual consequences of minimizing or ignoring them, it is imperative that every effort be made to provide them with appropriate instructional opportunities and sensitive, caring support. It is imperative that educators find ways to continue working on reading skill development at every level of the educational system.

Recommendations for Program Development

Improved intervention efforts are needed at every level within the educational system to better address the needs of students with reading disabilities. Within the limited scope of this study however, only the following recommendations can be made:

- Current learning assistance instructors at the post-secondary level should be encouraged to enroll in an introductory course focussed on learning and/or reading

disabilities. There are several options available for taking such a course, including summer school and distance education offerings.

- Two-pronged reading improvement programs should be developed for students with phonological awareness and related word identification problems which would attempt to increase these students' decoding skills by first helping them develop better phonological awareness skills. Such programs would need to be intensive and explicit. The second part of such a program would provide concurrent opportunities for these students to improve their skills in reading connected prose for meaning, information, and pleasure. Other life-reading difficulties could be addressed in this part of the program which were identified by the participants with reading disabilities in this study, including problems with banking; and with reading and using recipes, manuals, and the *TV Guide*. These objectives should be addressed as they are brought up in class to contextualize reading skill development whenever possible.
- It is essential that counselling and support services be provided parallel to the reading programs described above to address the considerable needs of these students in relation to self-concept, self-esteem, and interpersonal relationships.
- Efforts also need to be made to educate potential employers about the difficulties these adults with reading disabilities experience to provide examples that may help

these employers envision ways to understand and accommodate others with similar difficulties.

Recommendations for Further Research

There is a need for continued research into the causes of reading disabilities and useful interventions for dealing with them. However, at the same time, the following caution written fifteen years ago by Frauenheim & Heckerl (1983) ought to be kept in mind to maintain balance in the effort:

Within the field of learning [and reading] disability, there seems to be only limited awareness or acceptance that some learning [and reading] disabled individuals may not achieve functional literacy skills despite adequate intelligence and educational opportunity.... Intervention efforts must encompass life-long considerations bridging many areas including social, psychological, academic and vocational (p.345).

In conclusion, it is quite apparent that there were many "chicken or egg" questions raised in this study which require further study. No doubt the biases of self-reporting are evident too, as many participant responses *could* easily be interpreted as potential evidence of various kinds of psychological problems, such as displacement of blame, denial of problems, or distortions of reality. Notwithstanding these potential flaws, the results of this study are instructive. We should all keep in mind the vagaries of our

life's circumstances and remember "...there but for the grace of God go I" (John
Bradford 1510-1555, as cited in *Bartlett's Quotations*).

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