Twice-Exceptional Students:
Meeting the Needs of Students Who Are Gifted and Learning Disabled

By Joan Lihou

EDSP9012 Coursework Project in Special Education

Topic Coordinator: Bernice Burnip
Specialist Supervisor: Maria McCann
School of Education
Flinders University

June, 2006
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 INTRODUCTION</td>
<td></td>
</tr>
<tr>
<td>Aim of the Study</td>
<td>3</td>
</tr>
<tr>
<td>The Problem Underlying the Study</td>
<td>3</td>
</tr>
<tr>
<td>Research Methods</td>
<td>4</td>
</tr>
<tr>
<td>Significance of the Study</td>
<td>4</td>
</tr>
<tr>
<td>Definitions</td>
<td>5</td>
</tr>
<tr>
<td>Limitations and Delimitations</td>
<td>6</td>
</tr>
<tr>
<td>2 LITERATURE REVIEW</td>
<td></td>
</tr>
<tr>
<td>Historical Perspective of Learning Disabilities and Giftedness</td>
<td>7</td>
</tr>
<tr>
<td>Gifted/Learning Disabled</td>
<td>10</td>
</tr>
<tr>
<td>Identifying Gifted/Learning Disabled Students</td>
<td>11</td>
</tr>
<tr>
<td>Characteristics of Gifted/ Learning Disabled Students</td>
<td>16</td>
</tr>
<tr>
<td>Interventions for Gifted/Learning Disabled Students</td>
<td>20</td>
</tr>
<tr>
<td>Addressing the Social and Emotional Difficulties of Gifted/LD Students</td>
<td>25</td>
</tr>
<tr>
<td>3 ANALYSIS, INTERPRETATION AND DISCUSSION</td>
<td></td>
</tr>
<tr>
<td>Paradoxical Characteristics of Twice-Exceptional Students</td>
<td>27</td>
</tr>
<tr>
<td>Best Practice for Identification of Twice-Exceptional Students</td>
<td>28</td>
</tr>
<tr>
<td>Recommended Service Delivery Models</td>
<td>30</td>
</tr>
<tr>
<td>Recommended Intervention Strategies and Accommodations</td>
<td>31</td>
</tr>
<tr>
<td>Supporting the Social and Emotional Development of Gifted/LD Students</td>
<td>32</td>
</tr>
<tr>
<td>4 CONCLUSION</td>
<td>34</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>36</td>
</tr>
<tr>
<td>APPENDIX A: Contradictory Traits of Gifted/Learning Disabled Students</td>
<td>41</td>
</tr>
<tr>
<td>APPENDIX B: Recommendations for Intervention Strategies</td>
<td>42</td>
</tr>
</tbody>
</table>
CHAPTER ONE

INTRODUCTION

Aim of the Study

The purpose of this study is to examine the literature regarding students who are concomitantly gifted and learning disabled, often called “twice-exceptional”, and to investigate a number of issues in relation to this phenomenon. Although it is difficult for many people to comprehend, a child may have outstanding abilities in one or more areas, and simultaneously have moderate to profound learning disabilities. These students exhibit unique characteristics which are different from the characteristics of gifted students without learning disabilities and from those of average ability students with learning disabilities. Many of these students are provided services for only one, or sometimes neither, of their areas of exceptionality. Programs and strategies developed to meet the needs of gifted students or of students with learning disabilities are not necessarily appropriate for gifted/learning disabled students. Twice-exceptional students may be at risk of developing social and emotional difficulties as a result of their unique combination of strengths and weaknesses. This paper will explore these issues and present the best practices recognized in the literature for identifying and providing services for students with dual exceptionalities.

The Problem Underlying the Study

It must be noted that a learning disability is not an intellectual disability. Some students who show characteristics of being exceptionally able, have great difficulty with academic requirements, especially reading, writing and organizational skills (Baum, Cooper & Neu, 2001; Coleman, 2005). Some of these students are identified gifted students who have subtle learning disabilities, some are unidentified students whose gifts and disabilities may be masked by average achievement, and some are identified learning disabled students who are also gifted (Baum, 1990). Although research over the last three decades has brought increased recognition of this unique group of students, researchers continue to express concern that many of them remain unidentified and underserved (Karnes, Shaunessy & Bisland, 2004). The rigid eligibility requirements for special programs often prevent twice-exceptional students from accessing these services (Ruban & Reis, 2005).
Students who are gifted/learning disabled may develop social and emotional problems. They often have difficulty understanding their puzzling mix of strengths and weaknesses, resulting in high levels of frustration and anxiety (Vespi & Yewchuck, 1992). If highly able students begin to have trouble meeting the expectations placed on them, it may impact negatively on their self-concepts and feelings of self-efficacy (Dole, 2000). The stress experienced by these students may result in behavioural problems such as avoidance, aggression, inattention, or withdrawal (King, 2005).

The dual nature of these students’ exceptionalities makes it difficult to meet their needs in traditional programs for gifted or learning disabled students (Bisland, 2004). Programs for gifted students do not provide support for reading and writing difficulties and traditional programs for students with learning disabilities focus on remediation of weaknesses, not on development of strengths. In order to accommodate their gifts and talents and simultaneously compensate for their weaknesses, they require a unique curriculum. They need opportunities to participate in challenging, high-level activities, but at the same time they need strategies that help them compensate for their difficulties with basic academic skills. Students with dual exceptionalities require a dually-differentiated curriculum (Baum, Cooper & Neu, 2001).

These issues give rise to the following research questions to be addressed in this paper:

1) What are the unique characteristics that distinguish twice-exceptional students?
2) What is considered best practice in identifying these students?
3) Which service delivery model best meets their needs?
4) Which strategies, adaptations and accommodations best assist these students to reach their potential?

Research Methods

This Coursework Project will be restricted to a literature review of journal articles and books relevant to the field of gifted/learning disabled students in order to address the four research questions identified above.

Significance of the Study

Although research shows that gifted/learning disabled students do exist, and require specific programs in order to reach their potential, practice in identification and
programming is lagging behind research (Baum, 2004a). In the author’s province of British Columbia, Canada, the Special Education Services Branch of the Ministry of Education does not provide specific guidelines for identifying or providing programs for these students. The “Special Education Services Manual of Policies, Procedures and Guidelines” (2002) states in the definition of gifted students, that they “may also have accompanying disabilities and should not be expected to have strengths in all areas of intellectual functioning”. The guidelines for Identification and Assessment of gifted students state that, “Every effort should be made to ensure that screening and identification procedures are unbiased with respect to language, culture, gender, physical ability, learning or other disability”.

The author’s local school district, as in many small school districts in British Columbia, has limited funding available to provide specific programs for gifted students, much less for gifted/learning disabled students. Many local teachers are unaware of the characteristics of such students, the methods of identification or the most appropriate programs and strategies to meet their needs. It is hoped that the findings of this paper will improve the ability of educators in the author’s school district to assist gifted/learning disabled students to reach their full potential.

**Definitions**

**Learning Disability**

A learning disability is defined as:

…a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include learning problems that are primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage.

(Individuals with Disabilities Education Act (IDEA), 1997, in Baum & Owen, 2004, pp.18-19)
Giftedness

Gifted students are:

Children and youth with outstanding talent [who] perform or show the potential for performing at remarkably high levels of accomplishment when compared with others of their age, experience, or environment.

These children and youth exhibit high performance capability in intellectual, creative and or artistic areas, possess unusual leadership capacity, or excel in specific academic fields. They require services or activities not ordinarily provided by the schools.


Gifted/learning disabled

Students who are gifted/learning disabled:

… exhibit characteristics of both exceptionalities: giftedness and learning disabilities. Their gifted behaviours often include keen interests, high levels of creativity, superior abilities in abstract thinking, and problem-solving prowess. Similar to their peers with learning disabilities, they frequently display problems in one or more of the following areas: reading, writing, mathematics, memory, organization, or sustaining attention.

(National Association for Gifted Children, 1998, in Baum, Cooper and Neu, 2001, p.477-478)

Limitations and delimitations

This study is limited to a review of the literature in order to determine the characteristics of students who are “twice-exceptional” and the recommendations for best practice in identification and programming for these students. It is not intended to address issues of students who are exceptional in only one area (giftedness or learning disabilities). It is not within the scope of this paper to describe in detail any identification procedure, or any one service delivery model.
Many people find it difficult to perceive of joining the seemingly contradictory terms, learning disability and giftedness. However, this apparent contradiction is largely the result of lack of understanding of each term (Baum & Owen, 2004). To understand that a student can be both gifted and learning disabled, we need a clear definition of each term.

The term “learning disabilities” does not denote intellectual disability. The term was first used by Roger Kirk (1963) to describe students who showed disorders in receptive language, speech, reading and communication skills but whose learning problems could not be attributed to sensory, intellectual or emotional deficits. The disorder was considered to be attributable to underlying language learning problems resulting from some perceptual or cognitive processing difficulty (Baum & Owen, 2004).

In the United States, a federal definition of “learning disabled” was finally arrived at with the passage of The Education for All Handicapped Children Act (PL 94-142, 1975). It stated that the learning disabled were:

...those children who have a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Such terms do not include children who have learning difficulties that are primarily the result of visual, hearing or motor handicaps, of mental retardation, of emotional disturbance or of environmental, cultural or economic disadvantage (Ruban & Reis, 2005, p.116).

Federal regulations outlining procedures for identification of a specific learning disability were mandated in 1977. The regulations specified that a specific learning disability may be determined if:

(1) The child does not achieve commensurate with his or her age and ability levels in one or more areas [seven of which are specified- oral or written...
expression, listening comprehension, basic reading skill or comprehension, mathematics calculation or reasoning]

(2) The team finds that a child has a severe discrepancy between achievement and intellectual ability in one or more of these areas. (Baum & Owen, 2004, p.17)

The Education for All Handicapped Children Act was renamed The Individuals with Disabilities Education Act (IDEA) in 1990, and is currently being reauthorized. Current amendments to IDEA propose to remove the requirement for documentation of a discrepancy between a student’s ability and achievement to identify a student for services (Baum & Owen, 2004).

Despite the federal definition and regulations, there were varying interpretations of the definition and procedures for identifying students who were learning disabled. In response to this, several professional organizations also developed their own definitions, including the National Joint Committee for Learning Disabilities (NJCLD) and The Association for Children and Adults with Learning Disabilities (ACLD).

The definition of learning disabilities is important in regard to the issue of students who are gifted/learning disabled. As noted by Baum and Owen (2004), “some definitions defend the idea that students can be both gifted and learning disabled and others avoid the question” (p.20). Baum and Owen indicated that they feel the ACLD definition (1985) is particularly appropriate in this regard, since it includes the phrase “average and superior intelligence” and also allows for the possibility of a nonverbal learning disability where reading and writing are not major problems; such youngsters may have difficulty “planning and organizing, seeing the bigger picture, and understanding social contexts” (p.21).

As there is no single conception of learning disabilities, so there is no single conception of giftedness. Giftedness was first thought to be equated with high intelligence and early studies proposed that there was a general or “g” factor of intelligence (Spearman 1927, in Brody & Mills, 1997). However, this viewpoint makes it difficult to incorporate the concept of an individual having concomitant high intelligence and learning disabilities (Brody & Mills, 1997).

Researchers began to shift away from the view of giftedness as being limited to high intelligence. Renzulli (1978, in Renzulli, Baum, Herbert & McCluskey, 1999) proposed a broader definition of giftedness as the interaction among three clusters of traits: above average ability, high levels of creativity, and high levels of task commitment. Renzulli’s definition is “inclusive enough to enable the identification of academically talented students with learning disabilities” (Reis & Colbert, 2004, p.158). McCoach and
colleagues (2001) pointed out that many contemporary definitions of giftedness argue against the use of a unitary full-scale IQ, in favour of more specific attributes, including Sternberg’s (1988) triarchic theory of intelligence and Gardner’s (1993) multiple intelligences as well as Renzulli’s three-ring conception of giftedness. These more multi-faceted definitions of giftedness are more likely to accommodate the idea of a gifted child having learning disabilities (Brody & Mills, 1997). However, despite the development of wider definitions of giftedness, the idea of global giftedness (ability or talent in all academic areas) continues to be quite prevalent in today’s educational system (King, 2005; Little, 2001).

The definition of giftedness was expanded under the Jacob K. Javits Gifted and Talented Students Education Act (1988), with more focus placed on including students in gifted programs who were not traditionally identified, including students with disabilities (Baum & Owen, 2004). This more inclusive definition of giftedness stated that talented students “perform or show the potential for performing at remarkably high levels of accomplishment when compared with others of their age, experience or environment”, in intellectual, creative and/or artistic areas, leadership capacity, or specific academic fields (Baum & Owen, 2004, p.25).

As noted by Baum and Owen (2004) this policy was especially important because it acknowledged the existence of students who were both gifted and learning disabled and encouraged the development of programs to identify and serve these students. The definition of giftedness that is employed by a school district is important in the identification of students who are gifted and learning disabled, since the implicit or explicit definition influences the guidelines used for determining eligibility for services.

Research shows that identification rates for gifted programs can range from only 1-2% of the student population, to 5% or higher, and when a broader conception of giftedness (such as Renzulli’s talent pool approach) is used, there may be as many as 10-15% of students identified as gifted (Ruban & Reis, 2005). As noted by Reis (2004, in Baum 2004b), the emerging consensus among researchers in the gifted field is that other indicators than just cognitive ability tests should be used for identification of high-ability students, and that when final decisions are made about which students will be candidates for special services, these other indicators should be given equal consideration. Reis further stated that “in the final analysis, it is the thoughtful judgment of knowledgeable professionals rather than instruments and cut-off scores that should guide selection decisions” (p.xiii).
Gifted/Learning Disabled

Brody and Mills (1997) noted that attempts to describe gifted students with learning disabilities relied on definitions of each exceptionality separately, and since there was a lack of consensus in definitions of giftedness or learning disabilities, the “implications of the two conditions overlapping have not been adequately considered” (p.285).

High ability students with learning difficulties caught the attention of researchers as early as the 1930s. Studies by Orton (1937) and Terman and Oden (1947) found that many high ability students had reading problems and some nonachieving students with high IQs showed feelings of inferiority, inability to persevere in accomplishing goals and a general lack of self-confidence (Reis, Neu & McGuire, 1997). Several researchers described prominent individuals who had difficulties in school, including the sculptor, Rodin, and Albert Einstein (Coleman, 2001). Thomas Edison, Sir Isaac Newton and Leonardo da Vinci all showed “passion, curiosity and commitment to pursue learning, often in unconventional ways” (Cooper, Baum & Neu, 2004, p.162).

However, specific research on gifted students with learning disabilities began only after the passage of the Education of All Handicapped Children Act (1975) in the United States. New emphasis being placed on the education of students with disabilities led to increased interest in students with learning disabilities who also showed superior talents (Reis & McCoach, 2002). In 1977, Maker published “Providing Programs for the Gifted Handicapped”, a work which was very influential in drawing attention to this group of students (Baum & Owen, 2004). The term “twice-exceptional” was coined by James Gallegher to denote students who are both gifted and have disabilities (Coleman, 2005). By the 1980s, experts from the fields of learning disabilities and giftedness agreed that these students do, in fact, exist as a population with special characteristics and needs (Brody & Mills, 1997).

Despite the increasing research on these students, a definition of “gifted/learning disabled” was difficult to establish. Vaughn (1989), in reviewing critical issues related to the concept of gifted/LD stated that “the definition of gifted/LD is laden with controversy”, which was not surprising since “no two populations have suffered from more definitional problems than learning disabilities and gifted” (p.123).

In the field of gifted education, the challenge of providing appropriate education for students with dual exceptionalities became a priority in the 1990s (Baum, Cooper & Neu, 2001). The National Association for Gifted Children developed a position paper, “Students with Concomitant Gifts and Learning Disabilities” (1998), which stressed the need to address both the gift and disability of these students (Baum et al., 2001).
Identifying Gifted/Learning Disabled Students

The majority of students who are gifted with learning disabilities, “fall through the cracks in the system” (Brody & Mills, 1997, p.283). As Brody and Mills pointed out, “identifying students for gifted programs and for special education services for individuals with learning disabilities tend to be mutually exclusive activities” (p.286); most students with LD who are gifted rarely qualify for multiple services. Early researchers attempted to identify these students by examining patterns of scores on intelligence tests. Researchers also examined discrepancies between ability and achievement as a means of identifying gifted/LD students. However, the current consensus is that a multi-dimensional approach is required to identify both the strengths and weaknesses of these students.

Many early researchers focused on the use of the Wechsler Intelligence Scale for Children-Revised (WISC-R, 1974), attempting to identify a gifted/LD profile based on patterns of strengths and weaknesses (Brody & Mill, 1997). The first major study (Schiff, Kaufman & Kaufman, 1981) compared the scores of three groups of students (gifted students, students with learning disabilities, and gifted students with learning disabilities) on the WISC-R, and found greater discrepancies between Verbal and Performance scores of gifted LD students than for the other two groups. They also found that students exhibiting a gifted/LD profile exhibited strengths in the Comprehension and Similarities subtests, which require verbal reasoning, and weaknesses in Arithmetic, Digit Span, and Coding, which require attention, concentration and sequencing skills. Fox (1981, in Suter & Wolf, 1987), examined the case histories of 17,000 children referred for reading difficulties and found 322 who were both gifted and learning disabled on the basis of WISC and reading achievement scores. This study found large discrepancies between Verbal and Performance scores on the WISC-R of greater than 15 points for 50% of the sample of gifted/LD students; the study also found the Similarities and Comprehension subtests were the highest for the gifted/ LD students and Digit Span and Arithmetic were the lowest. Fox and colleagues (1983, in Barton & Starnes, 1989) studied the WISC-R profiles of 450 gifted/LD students with reading problems, and found that they performed best on the tasks categorized as conceptual and spatial tasks and worst on tasks requiring memorization of isolated facts, and sequencing. Suter and Wolf (1987), in reviewing previous studies, noted several common findings: 1) Large Verbal/Performance discrepancies; 2) Subscales that assessed verbal reasoning abilities (Comprehension, Similarities) tended to yield high scores; and 3) Scores on Digit Span, Arithmetic and Coding, reflecting attention and concentration, tended to be low.
Silverman (1989), in research over a ten-year period at the Gifted Child Development Center in Denver, Colorado, analyzed 1400 test protocols and found that students demonstrating a gifted/LD profile showed more variability in their WISC-R subtest scores than did students with average ability who demonstrated learning disabilities or students who were gifted but without learning disabilities. Silverman found that typically there were discrepancies of 3 or 4 standard deviations (9 to 12 points) on the WISC-R between high and low subtest scores for students demonstrating a gifted/LD profile.

Barton and Starnes (1989), in a study investigating whether or not there is a characteristic gifted/LD ability profile that differs from the gifted profile, found that “a distinctive cognitive pattern reflected in WISC-R subtest scores may provide a more accurate and sensitive means of identifying gifted children with learning disabilities than does the magnitude of Verbal-Performance discrepancies or a set cut-off score” (p.28); furthermore, “the common distinguishing characteristic across groups [of gifted/LD populations] is the commonality with the GT population – high scores on measures of Verbal Conceptualization” (p.29).

Further studies by Waldron and Saphire (1990) examined the intellectual patterns of subtests on the WISC-R of gifted students with learning disabilities and non-disabled gifted students, to determine cognitive factors characterizing the gifted/LD children. They found that these students were more reliant on verbal conceptualization and reasoning than the control students and they also demonstrated deficiencies in short-term auditory memory and sound discrimination. They concluded that “there are indicators in this study that some commonly used methods for identifying nongifted students with LD, such as a large WISC-R Verbal-Performance discrepancy or a rank order of subtests, may not be useful with this population” (p.497).

Research by Baum and Owen, over several years, analyzed the WISC-R profiles of gifted/LD students for specific cognitive patterns. They identified strengths in Similarities, Block Design, Comprehension, Picture Arrangement and Object Assembly, and weaknesses in Digit Span, Arithmetic and Coding (Baum & Owen, 2004).

However, McCoach and colleagues (2001) argued against the use of profile analysis (interpreting differences among subtest of the WISC-R as evidence of different patterns of cognitive functioning) to diagnose a student as being gifted/learning disabled. They state that “there is evidence to suggest that the scaled score range among subtests increases as the full-scale IQ score increases and that subtest scatter increases as the value of the highest subtest score rises” and “if these findings are true, then intellectually gifted children would display more atypical and scattered profiles than other students” (p.407).
A number of researchers felt that a discrepancy between ability scores and achievement scores was relevant in identifying students as being both gifted and learning disabled (Brody & Mills, 1997). Nielsen and colleagues, in the Twice-Exceptional Child Projects (1989, 1993 in Nielsen & Higgins, 2005), collected data on 259 twice-exceptional students in a large, urban, public school district and compared intelligence and achievement test scores for this group with two other populations in the same school district: 3,655 students identified as gifted and 8,614 students with learning-disabilities. The research showed that, on measures of intellectual ability, the performance of twice-exceptional students was remarkably similar to that of the gifted population; in sharp contrast, their academic performance in the areas of reading and written language was more reflective of students with learning disabilities. Nielsen and Higgins emphasized that, although the twice-exceptional students’ achievement scores were within the “average” range, the degree of difference between intelligence and achievement was great.

Heath and Kush (1991, in Ferri, Gregg & Heggo, 1997), however, pointed out the difficulties with using a discrepancy model, due to the problem of regression to the mean, which may result in over-identification of students who are bright but learning disabled. Individuals scoring at the upper ranges of cognitive ability would typically exhibit greater discrepancies among their scores than individuals scoring in the average range, due to regression to the mean rather than to a learning disability. Heath and Kush advocated for using an eligibility model that factored in regression to the mean in establishing criterion for determining significant discrepancies, and for using more than a single test score in evaluating abilities.

Brody and Mills (1997, p.287), in reviewing the debate on discrepancy formulas, pointed out that “without some measure of high ability (whether that measure is an IQ score or something else), and then recognition of a discrepancy between that ability and achievement, few [gifted/LD students] will be identified”. They argued that evidence of a discrepancy is particularly important because the relatively high achievement of many of these students, compared to their age-peers, often masks a disability “unless that achievement is compared to the student’s ability” (p.288). McCoach and colleagues (2001, p.407) also noted that “because academically gifted students with learning disabilities demonstrate such high academic potential, their academic achievement may not be as low as that of students with learning disabilities who demonstrate average academic potential”. Ruban and Reis (2005) stated that, although in the LD field the “IQ/achievement approach has become outdated and no longer reflects current research” (p.119), those in gifted education argue that the discrepancy formula is needed to identify gifted students with learning disabilities, and if it is eliminated, it would be increasingly difficult to identify these students.
Research over the last few decades indicates that multiple sources must be used to identify gifted/LD students’ gifts and disabilities (Baum, 2004a). Brody and Mills (1997) noted that this group of students is very heterogeneous, representing all types of intellectual giftedness and academic talents, in combination with various forms of learning disabilities, therefore “trying to find one defining pattern or set of scores to identify all gifted students with learning disabilities is probably futile” (p. 286).

Several researchers recommended that evidence of a processing deficit should be considered for identification of gifted/LD students. Research by Rimm (1986) and Whitmore and Maker (1985) indicated that evidence of a processing deficit can help to distinguish between a gifted child who is underachieving because of educational placement issues, and one who is underachieving because of a learning disability (in Brody & Mills, 1997). McCoach and colleagues (2001) also noted that many jurisdictions include some mention of “processing deficits” in their definition or identification criteria for learning disability, including problems in the areas of perceptual-motor, psycholinguistic and executive functioning processes.

A number of researchers argue against the use of IQ tests as the primary method of identifying ability levels of G/LD students. Silverman (1989) argued that the cut-off scores for these students may have to be adjusted downward by 10 points to accommodate the depressing effect of the learning disability. Waldron and Saphire (1990, p.491) stated that “the primary problem with the use of an intelligence test to identify gifted students with LD is that the disability may lower their IQ score so dramatically that the students do not qualify for inclusion in the school district’s criteria for gifted, even though they demonstrate strong abilities in some areas”.

Silverman (1989) suggested using a large battery of assessments, looking for discrepancies in performance (e.g. between scores on different tests; between scores on different sub-tests or items within tests; between behaviour at home and at school). Silverman also recommended that the higher scores should be considered as reflecting the student’s abilities and the lower scores should be considered as indicating possible disabilities. Furthermore, when selecting for gifted programs, these students should be allowed entrance on a probationary basis, to see if they are capable of achieving at higher levels, and more weight should be placed on the child’s performance in areas unaffected by the disability. Also, the child’s test scores should be compared to those of others who are similarly handicapped, rather than with norms for children who are not handicapped.

Grimm (1998), in examining the literature on the participation of gifted students with disabilities in gifted programs, noted that three components should be included in the
identification procedure: an individually administered intelligence test; information obtained from parents, family, teacher and the student; and observations of the student.

A number of recommendations were put forward by McCoach and colleagues (2001), in a review of the issues in identification of gifted/LD students. McCoach and colleagues proposed that the procedures used to identify gifted students who exhibit learning disabilities should include behavioural observations, an individual intelligence test, measures of cognitive processing and a full achievement battery, as well as measures of the student’s functional level within the classroom curriculum. They also recommended that achievement be examined longitudinally, as gifted students with learning disabilities, especially in reading, may perform well in the elementary grades, but exhibit problems as the work becomes more reading intensive. Screening of students who show declining achievement test scores in early grades and referral for further assessment could lead to earlier intervention for students whose giftedness and learning disabilities may mask each other.

Baum (2004a) stated that “it is necessary to document how students are achieving, strategies used to compensate, time it takes to complete classroom tasks, and assistance needed in school and at home to measure the discrepancy between ability and performance, compared to intellectual peers” (p.7). Baum advocated for “authentic identification of specific gifts and talents using performance and product assessments” (p.7).

The difficulties in linking identification and assessment of gifted/LD students with interventions for this population were noted by Ruban and Reis (2005). They described the talent pool approach, used in the Schoolwide Enrichment Model (Renzulli & Reis, 1985 and 1997), as a successful method of identification of this population. A talent pool of 15-20% of above-average ability and high-potential students is identified using a variety of measures (achievement tests, teacher nominations, assessment of creative potential and task commitment) and these students are then provided with curriculum modifications and three types of enrichment experiences to encourage creative productivity.

Researchers feel that many twice-exceptional students remain unidentified (Bisland, 2004). In a study of students identified as LD, who also show high abilities, Mauser (1981, in Reis et al., 1997) found that 2.3% of 5,000 identified students with LD had an IQ of over 120. Baum and Owen (1988, in Reis & McCoach, 2002), in a study of 112 high-ability, average-ability and high-ability/LD students in grades 4-6, found that 36% of the students who were identified with a learning disability also demonstrated behaviours associated with giftedness. The Twice-Exceptional Child Project (Nielsen,
Higgins & Hammond, 1995, in Ruban & Reis, 2005) examined the data for 22,000 school children receiving special education services who had been tested over a 7 year period, and found that 1.04% of children with LD were identified as gifted, and after 3 years of project outreach and advocacy, 3.5% of the children were identified as gifted children with learning disabilities. Winner (1996, in Bisland, 2004) estimated that between 120,000 and 180,000 students in the United States with learning disabilities also have above-average IQs.

Silverman (1989), in reviewing test protocols for 14,000 children, at the Gifted Child Development Center in Colorado, found that 200 (1.4%) of those who were gifted also had a learning disability. Winner (1996 in Bisland, 2004) noted that approximately 10% of high-IQ students read 2 or more years below grade level. Dix and Schafer (1996) stated that at least 2% of students in a gifted program should be identified as G/LD but it may be as much as 5-10%. McEachern and Bornot (2001) estimated that 2-10% of all students enrolled in gifted programs also have a learning disability. Nielsen (2002 in Ruban & Reis, 2005), suggested that estimates of the prevalence of gifted/LD students ranged from 2% to 5% of the total population of children with disabilities, but also pointed out that there was a dearth of empirical data on the incidence of gifted/LD students.

Characteristics of Gifted/Learning Disabled Students

The literature suggests that there are three sub-groups of gifted/learning disabled students: those identified as gifted, those identified as learning disabled and those remaining unidentified for either exceptionality (McCoach et al., 2001). Students who are both gifted and have a learning disability often feel as though they are a part of two worlds; they face the challenge of having a disability and also experience frustration as a result of the heightened expectations and higher standards held for them as gifted students (King, 2005). The conflict between their intellectual strengths and their academic difficulties may lead to social and emotional difficulties (Vespi & Yewchuk, 1992).

One group of gifted/learning disabled students contains those who are identified as gifted but have subtle learning disabilities (Bisland, 2004). They usually have poor spelling and handwriting, they may be disorganized and their work may appear sloppy (Fetzer, 2000). Some of these students find it increasingly difficult to achieve at a high level as the reading and writing expectations increase at the middle school level (Little, 2001). The second group includes those who are identified as learning disabled, but are also gifted
These students are noticed for what they cannot do, and little attention is paid to their strengths and interests; they are often off task, they act out and they are easily frustrated (Little, 2001). The third group of gifted/learning disabled students are those who are unidentified for either category (Bisland, 2004). These students often struggle to stay at grade level; they use their superior intellectual ability to compensate for weaknesses caused by an undiagnosed learning disability (Little, 2001). Neither of their exceptionalities is identified, so they receive no special services, unless their performance falls to the point that a disability is suspected (Bisland, 2004).

A comprehensive review of the literature on gifted/LD students (Reis, Neu & McGuire, 1995, in Ruban & Reis, 2005) identified the positive characteristics and the challenging characteristics of these students. The characteristic strengths include: advanced vocabulary, exceptional analytic abilities, high levels of creativity, high levels of productivity (particularly in the area of interest), advanced problem-solving skills, ability to think of divergent ideas and solutions, specific aptitude (artistic, musical or mechanical), wide variety of interests, good memory, strong critical-thinking skills, unusual ability to see interrelationships among ideas and concepts, extraordinary reasoning skills, task commitment, desire for knowledge, desire to explore and discover, sense of humour, and a variety of special abilities.

The challenging characteristics described by Reis and colleagues, which hamper the identification of these students as gifted, include: frustration with inability to master certain academic skills, learned helplessness, general lack of motivation, disruptive classroom behaviour, perfectionism, supersensitivity (e.g., to criticism, to feelings of others), failure to complete assignments, lack of organizational skills, careless in one’s work, demonstration of poor listening and concentration skills, deficiency in tasks emphasizing memory and perceptual abilities, low self-esteem, unrealistic self-expectations, absence of social skills with some peers (e.g., can be aggressive and defensive in relationships).

Baum and colleagues (2001) described the contradictory traits which are characteristic of gifted learners with learning disabilities. Although they exhibit characteristics of gifted students, these may be offset by deficits which are typical of students with learning disabilities. Appendix A lists the characteristics of gifted students and the problems associated with special-needs students described by Baum and colleagues.

Nielsen and Higgins (2005) noted that the areas of strength for gifted/learning disabled students do not include characteristics which are associated with basic academic and interpersonal skills, while the areas of challenge and difficulty include many characteristics which are the “antithesis of what is necessary for school success” (p.9).
Researchers have expressed concern that gifted/LD students may be at risk for social and emotional problems. Whitmore (1980, in Baum et al., 2001) reported that a common complaint of both gifted and learning-disabled students was their lack of social skills. Schiff, Kaufman and Kaufman (1981) found that gifted/learning disabled students were more likely to be referred for psychological assessment than for skill deficiencies, usually as a result of the student feeling that they did not fit in, and feeling emotionally upset. They concluded that “in many ways, the emotional concomitants of these learning-disabled students [with superior intelligence] seem striking in their severity and were apparently more exaggerated in the pervasiveness of their impact than is typical for conventional learning disabled populations” (p.404).

Suter and Wolf (1987) noted that behaviour problems magnified by poor self-concept and high levels of self-criticism arose out of difficulties gifted/LD students had with understanding the incongruity between their own higher level thinking abilities and their inability to master basic academic skills. Baum (1988, in Baum, 2004c) in a study of characteristics that distinguish high-ability/LD students from average ability/LD and high-ability/non-LD students found that the major distinguishing characteristic of high-ability/LD students was a heightened sense of inefficacy in school. Baum pointed out that experiencing success increases self-efficacy, which then further motivates the student to achieve; since gifted/LD students often do not perceive traditional remediation activities as challenging enough for them, they do not gain a sense of self-efficacy from these experiences.

Vespi and Yewchuk (1992) found that gifted/LD students had many of the social/emotional characteristics of gifted students in that they were internally motivated, they believed that their successes or failures were under their control, they believed in their own abilities and felt they would be able to achieve. However, their self-confidence tended to create high expectations for themselves which were not always realistic. These students also shared some of the negative academic characteristics of LD children. They felt a great deal of frustration and anxiety about academic tasks and the discrepancy between their performance and potential ability, resulting in a tendency to hurry through or avoid tasks, and also had difficulty concentrating on activities. Vespi and Yewchuck found that these students had a powerful fear of failure, possibly due to the conflict between the students’ expectations for themselves, and their achievement. The students also exhibited inconsistent social skills, having many positive social skills but not always making use of them. In addition, the students showed fluctuating self-image, as a result of the continuing conflict between their expectations and their achievement.
Coleman’s (1992) study of 42 middle school boys who were gifted/LD and average/LD, noted that the gifted/LD students in the study appeared to be able to activate their resources and use problem-solving methods more often than the average/LD students; they could identify specific tactics for overcoming problems, and were able to give more complex solutions to cope with their difficulties. However, Coleman noted that “these students were recognized by their school and parents as being bright, and the fact that they were identified as “bright students” indicates that they are successful at coping. The students missed by this study are those gifted/LD students who are not able to cope with school successfully enough to allow their gifts to be detected” (p.259).

A study by Olenchak (1994) found that each of the three types of gifted/LD students was at risk for different social/emotional difficulties. Those students who are identified as gifted but whose subtle learning disabilities often go unrecognized until middle school, may be especially prone to “internalized conflicts relating to perfectionism” (p.41) or have difficulty accepting that there is something wrong when they cannot achieve to their own or others expectations. Those students who are identified for their learning disabilities but whose gifts remain unrecognized may be at the greatest risk for social and emotional difficulties due to the focus on their weaknesses with little or no opportunity to develop their strengths and talents. The third group, those students whose gifts and disabilities mask each other, can develop frustration but are less likely to develop overt problems.

The literature on risk and resiliency has implications for those who are gifted/LD. Risk factors are the biological, psychological, cognitive or environmental conditions that impede normal development and make an individual more vulnerable, while resilience refers to protective factors which help to buffer an individual’s response to stressful events in his or her life (Dole, 2000). Dole noted that gifted students with learning disabilities often exhibit social-emotional characteristics that increase their vulnerability, such as poor self-concept, poor self-efficacy, hypersensitivity, emotional lability, and high levels of frustration, anxiety, and self-criticism. However, some gifted individuals with learning disabilities “have achieved success in spite of seemingly insurmountable odds because of positive personal characteristics coupled with the support of family and friends” (Dole, 2000, p.104).

Gardynik and McDonald (2005) also explored risk and resiliency in students who are gifted/learning disabled. They stated that although there is little research on the protective factors that ameliorate risk in individuals who are gifted/LD, these individuals do have some characteristics found in resilient individuals such as adaptability, intelligence and a drive to use their abilities, as well as being able to elicit positive support and reframe negative events. They stated that “…schools have considerable opportunity to take a
leading role in attempts to foster resilience because of the substantial amount of time they impact directly on children” (p.218).

Reis and Colbert (2004), in summarizing the findings of research on university students who were both academically talented and learning disabled, noted that “it is the interaction of high ability and learning disabilities that may cause confusion and create social and emotional difficulties” for these students (p.159). The students in the study indicated that negative educational experiences in elementary and middle school had profound social and emotional effects on them; half of the 15 participants reported that they sought professional counselling after graduating from high school, and many revealed that complex emotions relating to the “intersection of giftedness and disabilities” continued to affect them during their college years (p.163).

**Interventions for Gifted/Learning Disabled Students**

The literature identifies a variety of interventions that meet the needs of gifted/LD students. Experts recommend a continuum of placement options, from the regular classroom at one end of the continuum, to self-contained special programs at the other end. Strategies developed in gifted/LD programs to enable these students to compensate for their academic weaknesses, while simultaneously accessing challenging curriculum, can be used with gifted/LD students in a variety of settings.

Vaughn (1989), in reviewing the literature on interventions for gifted/LD students, stated that “most of the intervention program recommendations result from professional judgement or speculation” although a few were based on programs developed and implemented with gifted/LD students and that “none report data-based documentation of program efficacy or a process of program evaluation” (p.124). Vaughn summarized the intervention recommendations from the literature as: do not use drill and repetitive exercises; provide challenging, interesting and motivating topics; address both sets of special needs (gifted and LD); focus on growth in self-understanding and self-esteem; focus on separate programs for gifted/LD; remediate academic weaknesses and develop cognitive abilities; and provide opportunities for active participation in learning. Vaughn felt that further research was needed to evaluate the impact of program interventions for gifted/LD students, to identify specific components of successful programs, and to develop instructional factors.

During the last few decades, a number of programs have been developed to specifically address the needs of gifted/LD students. The Montgomery County Maryland Public
School system developed a comprehensive, system-wide program in 1986 (Weinfeld, Barnes-Robinson, Jeweler & Roffman Shevitz, 2002; Weinfeld, Barnes-Robinson, Jeweler & Roffman Shevitz, 2005). Gifted students with severe learning disabilities were provided special self-contained classes and gifted students with moderate or mild disabilities were provided services within general education classes. Several models for gifted education were implemented, including Gardner’s Multiple Intelligences (1983); Creative Problem Solving (McAlpine, Weincek, Jeweler & Finkbinder, 1982); deBono’s CoRT (1986) and Bloom’s Taxonomy (1986). Weinfeld and colleagues suggested that the following components of these programs could be used in educating G/LD students in any setting: gifted and talented instruction in the student’s area of strengths; opportunities for the instruction of skills and strategies in academic areas affected by the student’s disability; an appropriately differentiated program of individualized instructional adaptations and accommodations systematically matched to the student; and comprehensive case management to coordinate all aspects of the student’s individual educational plan.

Another program, the Albuquerque Public School District’s Twice-Exceptional Child Project (1987 to 1993), established self-contained classes for gifted/LD students in a number of elementary and middle schools, extending the program to high school in 1994 (Nielsen, Higgins, Wilkinson & Wiest Webb, 1994). The classes focused on helping students to discover their talents and abilities, providing an interdisciplinary curriculum, supporting social, emotional and behavioural needs, and implementing strategies from both gifted and special education (Nielsen & Higgins, 2005).

A pilot project to provide enrichment activities for elementary level gifted/LD students (Baum, 1988 in Baum, 2004c) used The Enrichment Triad Model (Renzulli, 1977). The model consists of three types of activities: Type I activities give opportunities to explore potential areas of interest; Type II enrichment activities provide training in critical thinking, creativity and problem solving; and Type III activities allow the student to become an investigator of a real problem and to produce a product for an authentic audience, preferably outside the school setting. The students in the study showed marked improvement in learning behaviours, time on task, and motivation.

The ASSETS school in Hawaii, a specialized self-contained school for gifted, LD and gifted/LD students established in 1989, provides an interdisciplinary approach to instruction. The curriculum includes acceleration and enrichment to challenge strengths, while also building basic skills and attending to the students’ social and emotional needs (Hishinuma & Nishimura, 2002).
The GOLD program (Bees, 1998), which began in 1989, provided a self-contained class for gifted/LD students at a Vancouver, B.C., high school. The students attended the program for at least three hours per week, and were integrated into regular classes the rest of the time. The program provided adaptations to compensate for learning difficulties, and also focused on developing self-awareness and self-advocacy skills.

Project High Hopes was a three year program (1993-1996) designed for gifted/LD students in grades 5 through 8 in Connecticut and Rhode Island. The curriculum was based on Renzulli’s Enrichment Triad Model (1977) and also utilized the Creative Problem Solving process (Treffinger, 2000), as well as using specific accommodations to help the students compensate for their learning disabilities (Baum, Cooper & Neu, 2001; Gentry & Neu, 1998).

Baum (1990) outlined four general guidelines for developing programs that meet the needs of gifted/LD students: 1) focus attention on developing the gift, since a focus on weaknesses can lead to poor self-esteem, lack of motivation, depression and stress; 2) provide a nurturing environment that values individual differences; 3) encourage compensation strategies to assist gifted/LD students to cope with their weaknesses and 4) encourage gifted/LD students to understand their own individual strengths and weaknesses.

A study of underachieving gifted students who were able to reverse their underachievement, identified six factors that helped these students to reverse their underachievement: a) out-of-school interests and activities which were of an intellectual or creatively productive nature, which provided the student with a sense of self-worth and success; b) parents who supported and valued the students’ out of school interests and maintained a positive attitude even in the face of academic failure; c) classes that provided opportunities for intellectual challenge and advanced studies, and independent study in areas of interest or activities that were “real” or relevant to the student; d) developing goals that were personally motivating; e) teachers who sincerely liked and cared for the student, and f) the development of the student’s self-concept, confidence and positive attitude (Emerick, 1992).

Baum and colleagues (1995, in Reis & McCoach, 2002) used Renzulli’s Type III enrichment projects as a systematic intervention for underachieving gifted students. Five major features were found to contribute to the success in reversing under-achievement in gifted students: a) relationship with the teacher; b) use of self-regulation strategies; c) opportunities to investigate topics related to their underachievement; d) opportunities to work on an area of interest in a preferred learning style; and e) time to interact with an appropriate peer group. Reis and McCoach noted that interventions uniquely designed for
students with dual exceptionalities “might need to involve a wider variety of strategies such as teaching self-regulatory and compensatory skills and opportunities to develop a stronger sense of self as well as increasing self-concept” (p.123).

Brody and Mills (1997) reviewed research on policies and practises in educating students with dual exceptionalities. They noted that these students need a combination of “gifted” programming in their areas of strength, developmental instruction in subjects of average growth, and remedial teaching and adaptive instruction in areas of disability. Numerous researchers recommended that a variety of service options should be provided, including instruction as a special group for at least part of the day from a teacher who understands their needs, and with peers who share their dual disabilities; placement in a separate class for those with the most severe disabilities; part-time resource room placement for enrichment programs, suitably modified to support areas of weakness; and regular class placement with appropriate adaptations, and subject matter acceleration in areas of strength. Brody and Mills also noted that researchers widely acknowledged the importance of gearing the curriculum to the strengths, not the weaknesses of gifted/LD students and recommended that a variety of strategies, adaptations and accommodations be provided to help them succeed.

A dually differentiated curriculum, developed during Project High Hopes (Baum, Cooper & Neu, 2001), creates a “balance between nurturing strengths and compensating for learning deficits” (p.481). Baum and colleagues developed a number of strategies to compensate for weaknesses in reading and math, spelling and handwriting, verbal communication, organization, attention and focus, social interaction, and low self-efficacy and esteem. The accommodations included: providing alternate means to access information and to express ideas; providing visual and kinaesthetic experiences; providing visual organization schemes; using interest-based curriculum; providing opportunities to develop group identity; and recognizing accomplishments.

McCoach and colleagues (2001) noted that, in some cases, gifted/LD students may be best served by grade acceleration in one academic area and remediation in another area and that they should be allowed to work at an appropriate level in each subject area, “even if this results in grade level asynchronies with the student’s educational program” (p.409). McCoach and colleagues also pointed out that it may not be appropriate to place gifted students with learning disabilities into special classes or traditional instructional programs for students with learning disabilities because of the qualitative differences between these two groups; the gifted/LD students may be achieving only slightly below their grade level, due to their intellectual ability, whereas the non-gifted LD student may be achieving well below grade level.
A number of strategies were described by Winebrenner (2003), that provide a framework for addressing the specific learning needs of twice-exceptional learners. Winebrenner suggested that educators should teach all students to appreciate individual differences; provide a variety of physical areas within the classroom to accommodate different sensory challenges; teach concepts first and details second, making sure that students see the big picture; teach students to set realistic short-term goals and take credit for reaching those goals; tie past learning to new content; use multi-sensory teaching strategies; specifically teach organizational techniques; and use technology to improve productivity.

Bisland (2004) advocated using learning-strategies instruction to help these students compensate for many of their common learning weaknesses. Bisland outlined an eight-step process, advocated by Schumaker and Deschler (1995): (1) Pre-test; (2) Introduce a new strategy through verbal description; (3) Model the strategy; (4) Guide the student through verbal rehearsal; (5) Allow time for controlled practise and feedback; (6) Allow advanced practise and feedback; (7) Assess if the student has acquired the strategy; (8) Focus on generalization of the strategy by the student.

Three key principles of learning, which educators can apply to support gifted students with learning disabilities, were identified by Coleman (2005): 1) activate the students’ prior knowledge; 2) help them build conceptual frameworks that organize fragmented ideas into meaningful wholes; and 3) help them to develop self-regulatory, intentional approaches to learning. Coleman also described a framework of four variables that can help students succeed: time, structure, support and complexity. Coleman emphasized that “many students can succeed even if we are vague, disorganized, fragmented and hurried; however, student with learning disabilities will not” (p.34).

Nielsen and Higgins (2005) stressed the need for a specialized set of interventions for these students which establishes and supports “a deep sense of empathy for the incongruent messages that twice-exceptional students hear both from within and from without” (p.11). They recommended a global focus on four components: 1) develop competence by helping students discover their gifts and talents; 2) allow students to make choices so that they feel empowered to control their successes; 3) provide opportunities for these students to connect with each other; and 4) exhibit compassion for the unique difficulties these students encounter. Services and programs for twice-exceptional students must include four key elements: 1) an overarching program model which provides a continuum of services; 2) interdisciplinary curricula to provide high-level, challenging learning opportunities; 3) intensive support for social, emotional, and behavioural needs; and 4) strategies advocated for gifted populations but also interventions appropriate for learning disabilities.
Addressing the Social and Emotional Difficulties of Gifted/LD Students

The literature recommends a variety of strategies for supporting the social and emotional growth of gifted/LD students. Some of the areas addressed in the literature include: helping these students to develop an understanding of their complex mixture of strengths and weaknesses; teaching them coping skills to deal with their frustration and stress; assisting them to develop and maintain social relationships; and providing counselling and mentoring support to help them deal with issues of self-esteem and self-efficacy.

Suter and Wolf (1987) noted that “these children need help with adaptive behaviour skills and self-esteem” and that a “strong counselling component should address the nature of the child’s talents and areas of difficulty, social skills with peers, goal setting and self-concept”, further noting that “families are an important source of academic and emotional support” (p.234).

A study of the social/emotional characteristics of gifted/LD children (Vespi & Yewchuk, 1992) identified several implications for intervention. Vespi and Yewchuck felt that programs must include the teaching of coping strategies to help students deal with stress, and should include a counselling component to help the students deal with their emotions. The students’ disabilities must be explained and they should be taught to set realistic goals and to accept their limitations. Vespi and Yewchuck also felt that fostering competency in social relationships was an important goal to enable these students to develop and maintain positive peer relationships.

Brody and Mills (1997), in reviewing the research on the social/emotional difficulties of gifted/LD students, found that researchers recommended counselling, both group and individual, to help these students deal with the frustration, anger and resentment that they often feel when trying to cope with their dual disabilities.

Dole (2000), in a study of the implications of risk and resilience for gifted students with learning disabilities, stated that early identification of the learning disabilities as well as of the giftedness is crucial, and that early programming is needed, focussing not only on diminishing the risk factors in the lives of the children and their families but also promoting development of protective factors, such as family support, to enhance self-esteem and self-efficacy.

A study by McEachem and Bornot (2001) examined the interventions that counsellors can provide for gifted students with learning disabilities. They suggested that individual or group counselling can help students improve classroom behaviour, increase self-
esteem, and develop positive interpersonal relationships. Including these students in peer facilitation programs can encourage peer interaction and help foster social acceptance and self-confidence, and counsellors can advocate on their behalf in order to promote awareness and understanding of their unique needs.

Stormont and colleagues (2001) stressed the need for gifted/LD students to develop a clear understanding of their disability as well as their strengths in order to promote self-understanding and self-acceptance. They also noted that these students need to be taught coping strategies to use when they are frustrated; to develop commitment to persist with challenging tasks; to be provided with opportunities for peer interaction; and to be supported in developing appropriate social skills.

A review of the research on the needs of gifted/LD students by Baum (2004a) found that researchers emphasized the importance of focusing on the students’ gifts in order to build self-efficacy, self-regulation and a positive sense of self, and to provide a creative outlet to cope with the emotional stress of being doubly different. Baum also noted that counselling should be provided to help gifted/LD students develop strategies to overcome or cope with their issues.

Siegle and McCoach (2005), in an examination of factors that motivate gifted students who are not achieving, suggested that students should be supported and encouraged to pursue their interests and passions, and that teachers can help students to set realistic expectations for themselves, and help them to believe that they have the skills to perform well.
CHAPTER 3

ANALYSIS, INTERPRETATION AND DISCUSSION

Paradoxical Characteristics of Twice-Exceptional Students

The literature describes gifted/learning disabled students as those who have intellectual strengths similar to gifted individuals without learning disabilities, but also academic difficulties that are characteristic of individuals with learning disabilities. Three subgroups of gifted/LD students are recognized in the literature: those identified as gifted, those identified as learning disabled, and those unidentified for either exceptionality. The interaction of abilities and disabilities in these students results in positive characteristics and challenging characteristics, and the conflict between these two sets of characteristics may lead to social and emotional problems.

One group of twice-exceptional students are those exhibiting the characteristics of gifted students, such as high levels of creativity, verbal abilities, reasoning and problem-solving skills, a well-developed sense of humour, and interest in a wide variety of topics. However, they may have subtle learning disabilities which cause them to have difficulty achieving at grade level when reading and writing expectations increase. They may find it difficult to accept that they are not able to perform at consistently high levels in all areas, and as Olenchak (1994, p.43) pointed out, “the ultimate result is a group of students who feel as though they are living a lie, but they do not understand why”.

A second group of gifted / LD students are those who are identified as learning disabled, and have more extreme problems with reading, writing and organization. Although they may excel in a wide variety of activities outside of school, their abilities are usually not recognized in school. Typical remedial programs provide no opportunity for these students to exhibit their strengths and talents. Focussing on their weaknesses and ignoring their strengths can have devastating effects on their self-esteem; as Olenchak (1994) noted these students “may be at the greatest risk” for social and emotional difficulties (p.43).

The third group of gifted/LD students are those who are able to use their abilities to compensate for their disabilities and whose disabilities mask their strengths. They achieve at an average level, thus preventing them from being considered for either gifted or LD programs. Their high potential may only become apparent in specific content areas or areas of creative outlet. Although these students may not develop the same overt
social/emotional problems as the other two groups, the lack of services for either their potentialities or their disabilities leads to the “underdevelopment of the student” (Olenchak, 1994, p.41).

The dilemma faced by twice-exceptional students is that their areas of strengths and needs often interact, “making academic success a hit-or-miss affair”; sometimes they shine and sometimes they struggle (Coleman, 2005, p.29). Nielsen and Higgins (2005) also noted that these students’ areas of particular strength do not include basic academic and interpersonal skills, and the challenges and difficulties faced by these students are often the “antithesis of what is necessary for school success” (p.9).

This paradoxical mix of abilities and disabilities puts these students at risk for social/emotional difficulties. Coleman (2001) noted that gifted/LD students not only face the challenge of having a disability, but may also experience increased frustration due to the heightened expectations and higher standards for achievement that go along with being gifted. They may have repeated experiences of failure, which can result in fear of failure and anxiety toward academic tasks (Vespi & Yewchuk, 1992). These students often have poor self-concept, high levels of self-criticism, poor peer relations and may exhibit either withdrawal or aggressive behaviours (Suter & Wolf, 1987). Case studies of gifted/LD students who were successful at university, revealed that all of these students recalled “negative, and in many cases painful, memories of situations that had occurred specifically because of the combination of their high abilities and their learning disabilities during their elementary and secondary school years” (Reis, Neu & McGuire (1997, p.467).

**Best Practice for Identification of Twice-Exceptional Students**

Researchers have expressed concern that many gifted/learning disabled students are identified for only one of their exceptionalities and many are not identified for either. Early research focused on attempting to identify a typical profile for gifted/LD students, but current research supports the use of a multi-dimensional approach to identify both the abilities and disabilities of students with dual exceptionalities.

The identification of gifted/LD students is often hampered by a lack of consensus on definitions in both the gifted field and the learning disabilities field, and rigid eligibility criteria often exclude gifted/LD students from special programs (Brody & Mills, 1997; McCoach et al, 2001). Baum (1990) noted that if educators continue to believe that giftedness is equated with outstanding achievement across all subject areas and that
achievement below grade level is a prerequisite to a diagnosis of a learning disability, then extremely bright students who are struggling to stay on grade level, will slip through the cracks of available service because they are not failing.

Researchers first investigated patterns of scores on intelligence tests as a means of identifying a typical profile for gifted/LD students; some studies found that these students showed greater discrepancies between Verbal and Performance scores on the WISC-R than students who were LD or gifted, and some studies found that these students showed particular patterns of strengths and weaknesses in subtests of the WISC-R (Barton & Starnes, 1989; Schiff et al, 1981; Silverman, 1989; Waldron & Saphire, 1990). Current researchers criticize the use of profile analysis to identify gifted/LD students (McCoy et al., 2001; Reis et al., 1997). However, a discrepancy between ability and achievement is considered by a number of researchers to be important in the identification of these students (Nielsen & Higgins, 2005). They may function at or near grade level due to the masking of their high ability by their learning disabilities; therefore unless a discrepancy between their ability and their achievement is identified, they may not be considered to be either gifted or learning disabled (Ruban & Reis, 2005).

The identification of both high abilities and areas of disability of twice-exceptional students requires a multi-dimensional approach. An initial screening portfolio (Dix & Schafer, 1996) provides a useful framework to help teachers identify behaviours and discrepancies that might indicate dual exceptionality. This portfolio presents criteria in three areas: Academic Behaviours (written output, oral expression, spelling, reading, math and specific academic aptitude); Cognitive Behaviours (creative and abstract reasoning, problem solving abilities, generation of complex relationships, rote memory, visual/motor integration, organization, sequencing, and visualization); and Social/Emotional Behaviours (aggression, self-concept, passive behaviour, impulsivity, and sense of humour). If the teacher identifies 11 or more of the 19 characteristics as being applicable to a student, the teacher then gathers supplemental information, as indicated for each characteristic (such as work samples, anecdotal records, and observations), to forward to a diagnostician who conducts further evaluation of the student.

The evaluation process should include an individual intelligence test, an achievement battery, indicators of cognitive processing, and behavioural observations (Brody & Mills, 1997). McCoach and colleagues (2001) also recommended observing student achievement longitudinally; since scores for gifted/LD students may decline over time as academic requirements increase, larger than expected declines in achievement over time could indicate a learning disability. Baum (2004a) also noted that discrepancies in performance, such as requiring more time or support to complete work, can indicate
possible learning disabilities. In order to recognize potential for gifted behaviour in students who are learning disabled, information from an IQ test should not be the sole determinant; “the IQ cut point should not be set so high that other information becomes irrelevant, nor should the diagnostician become fixated on IQ information” (Baum & Owen, 2004). Additional evidence of special talents or abilities can be gathered through the use of creativity tests, behavioural observations and structured interviews (Brody & Mills, 1997; Grimm, 1998).

**Recommended Service Delivery Models**

Gifted/LD students do not fit into gifted programs because of their disabilities, and they do not fit into resource programs because of their giftedness (Little, 2001). As noted by Nielsen (2002, p.101, in Reis & Ruban, 2005, p.152): “the vastly different types and levels of disability of twice-exceptional learners, especially when combined with their giftedness, require that a variety of services and interventions be available to them”. In order to offer these students the best chance for success, they must be placed in the least restrictive supportive environment physically, intellectually and socially/emotionally (Baum & Owen, 2004).

The regular classroom setting is considered appropriate for twice-exceptional students if the general classroom teacher accommodates individual differences and if compensatory strategies are used in order to enable the gifted/LD student to perform at an optimal level (Brody & Mills, 1997). However, the regular classroom curriculum must be supplemented by support through both gifted programs and programs for students with learning disabilities.

Remedial instruction in areas of weakness can be provided through part-time resource room support. It must be noted, however, that traditional programs designed for students with LD may be inappropriate, since gifted/LD students may require different instructional strategies from other students with learning disabilities (Brody & Mills, 1997). Studies have shown that gifted/LD students do not respond favourably to traditional remedial approaches such as repetition of basic skills (Reis & Ruban, 2004); they do not perceive traditional remedial activities as challenging enough for them, therefore they do not gain a sense of self-efficacy from these experiences (Baum, 1988 in Baum, 2004a).

Academic challenge in areas of strength and talent, and opportunities to interact with other students of similar interests and talents, can be provided through programs for
students who are gifted. Some options for providing challenge include participation in
honours classes, enrichment programs, AP classes and online learning. However, Baum
and Owen (2004) noted that having a gifted/LD student participate in an existing program
for gifted students may be inappropriate and lead to negative results, since the program
may not accommodate individual strengths and interests, may place heavy emphasis on
reading and writing and may lack sufficient structure and guidance for these students.

Many researchers recommend that gifted/LD students receive instruction as a special
group for at least part of the day, with peers who share their dual exceptionalities. This
instruction can be through a part time resource room program or in a self-contained
program. Special programs may be the best option for those gifted/LD students whose
behaviour or severe learning difficulties prevent them from fitting successfully into other
programs. However McEachem and Bornot (2001) noted that “while it is clear that such
integrated, holistic and challenging programs are needed, the usefulness of these
programs are often hindered by costs, which are likely to be prohibitive for nearly all
school districts” (p.37).

**Recommended Intervention Strategies and Accommodations**

Researchers agree that instruction for these students must focus on their strengths rather
than on their weaknesses. When gifted/LD students are provided with programs that
develop their individual gifts and talents, it has been found that they gain confidence and
exhibit behaviour that is more like gifted students without disabilities than like non-gifted
students with learning disabilities (Baum & Owen, 2004). However, they also need to be
taught strategies to compensate for their academic weaknesses.

A complex, interdisciplinary curriculum is particularly successful with these learners
since they are interested in the “big picture”, have an unrelenting sense of curiosity, and
penetrating insights into complex issues (Nielsen & Higgins, 2005). A curriculum which
includes project learning, problem-based learning, lively discussions, and simulations
best meets their needs (Baum & Owen, 2004). Weinfeld and colleagues (2005) noted that
researchers agree that “the most important component in the education of G/LD students
is providing gifted and talented instruction in the student’s areas of strength” (p.49).

Programming for gifted/LD students must provide support in the student’s areas of
weakness. A variety of adaptations, strategies and accommodations are needed to
compensate for academic and social difficulties. As noted by Baum and Owen (2004,
p.222), learning disabilities “tend to be relatively durable through life” and teaching
compensation strategies to these students will increase their ability to be successful academically. The accommodations developed during Project High Hopes (Baum et al., 2001), addressed both the learning difficulties and the learning needs of gifted/LD students. The curriculum encouraged inquiry, experimentation and discovery, while compensating for reading, writing, organizational and social/emotional difficulties. The intervention strategies implemented in Project High Hopes, which can be used with gifted/LD students in a variety of settings, are presented in Appendix B.

**Supporting the Social and Emotional Development of Gifted/LD Students**

King (2005, p.16) stated that recognizing and supporting the social and emotional needs of twice-exceptional students are “just as important as addressing their academic needs”. These students need to be taught coping strategies to help them deal with the frustration of their dual exceptionalities. They need support in developing appropriate social behaviour and building social relationships. A social support network of counsellors, parents and mentors can be crucial to the emotional well-being of gifted/LD students.

Twice-exceptional students show a heightened sense of frustration because they are bright enough to realize their potential but struggle with achieving to that level. Research shows that gifted/LD students have some characteristics which may assist them in coping with school frustration, such as persistence in the face of difficulties, ability to recognize and use appropriate problem solving skills, advanced vocabulary and strong comprehension skills but they also have some characteristics which may inhibit their ability to cope, such as poor organizational skills, perfectionistic tendencies and oversensitivity (Coleman, 1992). Coleman recommended that gifted/LD students be systematically and directly taught coping strategies to maximize their strengths and minimize their weaknesses.

Social interaction difficulties develop as a result of both the gifted characteristics of these students and the learning disabilities (Stormont et al., 2001). Stormont and colleagues noted that gifted students often have interests which are quite different from their age peers, which can lead to social isolation; learning disabled students lack socialization skills, and often have difficulty generating solutions to social problems and reading social cues. Classroom teachers can encourage gifted/LD students to establish and maintain social relationships by providing opportunities for peer interaction in the classroom, opportunities for these students to assume leadership roles in areas in which they excel, and opportunities to interact with other gifted or gifted/LD students who share their interests and strengths.
Researchers have emphasized the importance of counselling for these students in order to help them to cope with their frustrations and to understand their unique gifts and needs (McEachem & Bornot, 2001). Olenchak (1994) noted that these students need more affective attention than other students and that a consistent counselling program should “serve to complement efforts in the classroom by allowing gifted/LD students a haven for analyzing and discussing problems on a personal level” (p. 47). Counsellors can help provide an outlet for these students to discuss their feelings, and can also help teachers and parents to understand and address the social and emotional needs of these students (Reis & Colbert, 2004; Reis & Ruban, 2005).

Parents are important advocates for students who are gifted/LD (Fetzer, 2000). As Olenchak (1994) noted, these students have often experienced many years of frustration resulting in low self-esteem and lack of self-efficacy in expressing their own needs; parents can encourage and assist these students to express themselves confidently. In a study of successful college students who were gifted/LD (Reis et al., 1997), the students reported that their talents and interests were recognized and often nurtured by parents and the researchers noted that “many of the parents of participants in this study actively sought out opportunities for their children to excel in order to compensate for their poor performance in school” (p.473).

Mentors can also play an important role in helping gifted/LD students develop positive self-concepts (Baum, 1990; Little, 2001). Working with an expert in an area of common interest can increase feelings of self-worth (Baum & Owen, 2004). A mentoring program, established to support gifted/LD students, found that the unique one-on-one attention that a mentor has to offer is “critical to those who are at risk of failing and, yet, possess such great potential” (Shevitz et al., 2003).
CHAPTER 4

CONCLUSION

The literature on students who are gifted/learning disabled was reviewed in order to discover the characteristics that distinguish twice-exceptional students; to establish the recommended practice for identification of these students; and to examine various models of service delivery and types of intervention strategies recommended by experts in the field.

Twice-exceptional students present a puzzling combination of strengths and deficits. They are often highly creative, have excellent abstract thinking skills and problem-solving abilities, and have keen interests. However, they frequently have problems in reading, writing, mathematics, memory, organization or attention. Some twice-exceptional students are recognized as gifted, others are identified as having learning disabilities, but many remain unidentified because their abilities and disabilities mask each other. Gifted/LD students may become frustrated and anxious, and develop low self-esteem, depression, a poor sense of self-efficacy and behaviour problems.

To identify both the abilities and disabilities of these students, a multi-dimensional approach is recommended. An individual intelligence test and a battery of achievement tests can identify a discrepancy between a student’s ability and achievement; without evidence of this discrepancy a student may not be considered to be either gifted or learning disabled. The IQ test scores should not be the sole determinant of ability; further evidence of talents should be gathered through observations, measures of creativity, and interviews. Discrepancies in the time and effort needed to accomplish work compared to intellectual peers, or declines in achievement over a period of time, should be investigated to determine if a learning disability is present.

Gifted/LD students require a continuum of placement options, from regular classes with support from both gifted programs and programs for learning disabled students, to self-contained gifted/LD programs. Typical gifted programs or remedial programs, however, must be adapted to meet these students’ needs. Separate gifted/LD programs, while appropriate for those with more severe learning and behaviour problems, are prohibitively costly for many school districts.

The curriculum for gifted/LD students must focus on their strengths rather than their weaknesses. Research shows that a program that emphasises remediation, while ignoring
strengths and talents, can have devastating effects on the self-concepts and feelings of self-efficacy of twice-exceptional students. A variety of strategies must be used that allow these students to compensate for their weaknesses and simultaneously provide opportunities for them to access challenging curriculum. A social support network of teachers, counsellors, parents and mentors is needed to help gifted/LD students develop coping strategies to deal with the frustrations caused by their dual exceptionalities.

A number of issues raised in the literature require continued attention and study. Few gifted/learning disabled students are being identified and provided services for both of their areas of exceptionality. Researchers and practitioners from both the gifted field and the learning disabilities field must work together to develop definitions and identification procedures that will enable gifted/LD students to access multiple services.

Many teachers still focus their teaching practices on one or the other disability, not both. If the student has a disability, the teacher may not see the areas in which the student is gifted; if the student is gifted, the teacher may expect him or her to do well in everything. Focussing on remediation of weaknesses rather than on development of talents denies these students the opportunity they deserve to maximize their potential. Educators must have opportunities to obtain training in identifying and providing appropriate programming for gifted/LD students.

Gifted/learning disabled students continue to be underserved in our educational system. The social and emotional consequences for these students, if they do not receive appropriate services, can be devastating and long-lasting. Teachers and parents must act as strong advocates for this unique group of students, to enable them to thrive in our schools and become confident and successful adults.
REFERENCES


### Contradictory Traits of Gifted/Learning Disabled Students

<table>
<thead>
<tr>
<th>Characteristics of Gifted Students</th>
<th>Problems Associated With Special-Needs Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propensity for advanced-level content to accommodate the gift or talent</td>
<td>Limited skills in reading and math</td>
</tr>
<tr>
<td>Producers of new knowledge through authentic products</td>
<td>Difficulty with spelling and hand-writing</td>
</tr>
<tr>
<td>Facility with and enjoyment of abstract concepts</td>
<td>Language deficits in verbal communication and conceptualization</td>
</tr>
<tr>
<td>Nonlinear learning styles</td>
<td>Poor organization</td>
</tr>
<tr>
<td>Need for intellectual challenges based on individual talents and interests</td>
<td>Problems with sustaining attention and focus</td>
</tr>
<tr>
<td>Need to identify with others of similar talents and interests</td>
<td>Inappropriate social interactions</td>
</tr>
<tr>
<td>Heightened sensitivity to failure</td>
<td>Low self-efficacy and esteem</td>
</tr>
</tbody>
</table>

(Baum, Cooper & Neu, 2001)
## APPENDIX B

### Recommendations for Intervention Strategies

<table>
<thead>
<tr>
<th>Area of Disability</th>
<th>Accommodation Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited skills in reading and math</td>
<td>Alternate means to access information: e.g. Field trips, interviews, photographs, films, computer software, lectures, books on tape, experimentation, guided hands-on activities</td>
</tr>
<tr>
<td>Difficulty with spelling and handwriting</td>
<td>Alternate ways to express ideas and create products: e.g. Use of technology – computers, word processors, spell checkers, calculators Models, speeches, video productions</td>
</tr>
<tr>
<td>Language deficits in verbal communication and conceptualization</td>
<td>Visual and kinaesthetic experiences to convey abstract ideas concretely: e.g. More time to process verbal communication Create 3 dimensional models Graphics and visuals</td>
</tr>
<tr>
<td>Poor organization</td>
<td>Visual organization schemes: e.g. Time lines, flow charts, webbing, Venn diagrams, computer software programs, outlines, study guides, mnemonics, visualization techniques</td>
</tr>
<tr>
<td>Problems with sustaining attention and focus</td>
<td>Interest-based, authentic curriculum: e.g. Real-world inquiry, focus on areas of strength and interest</td>
</tr>
<tr>
<td>Inappropriate social interaction</td>
<td>Group identity based on talent or ability: e.g. Working together with peers of similar strengths and interests Mutually decided goals Contributions based on individual gifts and talents</td>
</tr>
<tr>
<td>Low self-efficacy and esteem</td>
<td>Recognition for accomplishments: e.g. Solve authentic problems that impact real audiences Set goals and work on relevant issues</td>
</tr>
</tbody>
</table>

(Baum, Cooper & Neu, 2001)