

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

**SELF-CONCEPT IN LEARNING DISABLED CHILDREN:**  
**RELATIONSHIP TO PERCEIVED COMPETENCE, SOCIAL SUPPORT,**  
**AND TASK PERFORMANCE**

A thesis presented in partial fulfilment of the requirements for the degree of  
Master of Science at Massey University

Angela C. Person

1998

## **ABSTRACT**

Examined how some children with learning disabilities (LD) sustain higher levels of general self-worth despite academic difficulties. Global self-worth was examined for a relationship with academic self-concept, non-academic self-concept, and perceived social support. Self-concept was additionally examined for any relationships with task performance indicators. Data were collected from 41 students aged between 7 and 15 years using a multitrait-multimethod assessment methodology. Self-concept was assessed by the Self-Perception Profile for Children (Harter, 1985a), and perceived social support was assessed by the Social Support Scale for Children (Harter, 1985b). Task performance was assessed by a battery of academic and motor skill measures. Findings indicated that most LD children in this sample reported low levels of academically based self-concept. However, most also reported high levels of global self-worth. The study found students with high global self-concept perceived they were more competent/adequate in some non-academic domains (e.g., physical appearance and behavioural conduct), and perceived being socially supported, particularly by teachers. Perceptions of academic self-concept were not found to be as related to perceptions of global self-concept as non-academic domains. In regression analyses, perceptions of physical appearance followed by perceptions of athletic competence were found to be predictors of global self-worth. No predictors were found to be significant for academic self-concept. Classmate support predicted aspects of social self-concept (i.e., social acceptance). No pattern of significant relationships were found between task performance indicators and various domains of self-concept. Discussion includes using data to dispel myths some may have about the global self-worth of LD children as well as in intervention programmes. This study replicated and extended research in this area. Caveats and recommendations for future research are discussed.

## ACKNOWLEDGEMENTS

First and foremost, I would like to extend my sincere appreciation to my supervisor, Dr Kevin Ronan. It was his inspiration, enthusiasm, guidance, and support that kept me on target. I am grateful for having such a splendid supervisor.

I would like to thank SPELD Manawatu for their assistance, and the families who consented to be involved in this study. This study would not have been possible without their help.

I would like to dedicate this thesis to my family. It has been their faith and love that has always motivated me to strive just a little bit more.

Finally, I wish to thank Christopher for his patience and encouragement, Cynthia for her support, and Manawatu Women's Refuge for offering and providing me leave of absence to complete my thesis.

## TABLE OF CONTENTS

	PAGE
ABSTRACT .....	ii
ACKNOWLEDGEMENTS .....	iii
LIST OF TABLES .....	vii
LIST OF FIGURES .....	viii
CHAPTER 1 INTRODUCTION.....	1
1.1 Learning Disabilities.....	3
1.11 Common Characteristics Identified in Definitions of LD.....	4
1.12 Heterogeneity.....	7
1.13 Prevalence.....	8
1.14 A New Zealand Perspective.....	10
1.15 Concluding Comments.....	12
1.2 Self-Concept.....	13
1.21 Definition and Overview.....	13
1.22 Theory: Historical Development.....	13
1.23 Models and Assessment Methods.....	14
1.24 Research and LD Children.....	15
1.3 Perceived Competence.....	17
1.31 Theory.....	17
1.32 Research.....	19
1.33 Research with LD Children.....	21
1.4 Social Aspects of Self-Concept including Social Support.....	22
1.41 Definition & Historical Theory: What is Social Self-Concept.....	22
1.42 Empirical Research in LD Samples.....	23
1.5 Theory Guiding Current Research: Harter’s Model and Related Measurement.....	25

1.6 Research Guiding Current Study.....	27
1.7 The Current Study.....	30
CHAPTER 2           METHOD.....	35
2.1 Participants.....	35
2.11 Sample.....	35
2.12 Selection Procedure.....	36
2.2 Assessment.....	38
2.21 Measures.....	38
2.22 Self-Perception Profile for Children.....	38
2.23 Social Support Scale for Children.....	44
2.24 Task Performance Measures: The SPELD Test Battery.....	48
2.3 Procedure.....	52
2.4 Design and Plan of Analyses.....	54
2.41 Categorisation of Demographic Variables.....	56
2.42 Categorisation of Self-Report Measures.....	57
2.43 Categorisation of Task Performance Data.....	58
CHAPTER 3 RESULTS.....	59
3.1 Preliminary Analyses.....	59
3.11 Demographic Based Relationships.....	59
3.12 Correlations of Demographics with Perceived Competency/Adequacy.....	64
3.13 Relationship between Demographic & Social Support.....	66
3.14 Relationship between SPPC, SSS, & Task Performance.....	67
3.2 Main Analyses.....	70
3.21 Hypothesis 1: Proportions of Global Self-Worth and Scholastic Competence.....	70
3.22 Hypothesis 2: Global Self-Worth and Perceived Competency/Adequacy.....	71
3.23 Hypothesis 3: Global Self-Worth and Perceptions of Social Support.....	72
3.24 Hypothesis 4: Categorising Subgroups of Global Self-Worth/ Scholastic Competence.....	75

3.25	Hypothesis 5: Subgroups of Global Self-Worth/ Scholastic Competence & Non-Academic Domains.....	76
3.26	Hypothesis 6:Subgroups of Global Self-Worth/ Scholastic Competence & Social Support.....	77
3.27	Hypothesis 7: Subgroups of Global Self-Worth/ Scholastic Competence & Task Performance.....	80
3.28	Hypothesis 8: Predictors of Global Self-Worth.....	83
3.29	Hypothesis 9: Predictors of Scholastic Competence.....	84
3.30	Hypothesis 10: Predictors of Social Acceptance.....	85
CHAPTER 4 DISCUSSION.....		86
4.1	Summary of Major Findings.....	86
4.2	Specific Findings.....	89
4.21	Demographic Based & Norm Group Differences.....	89
4.22	Proportions: Global Self-Worth & Scholastic Competence..	91
4.23	Global Self-Worth, Scholastic Competence & Perceived Competency/Adequacy.....	92
4.24	Global Self-Worth & Perceptions of Social Support.....	94
4.25	Categorising Subgroups of Global Self-Worth/Scholastic Competence.....	96
4.26	Subgroups of Global Self-Worth/Scholastic Competence & Non-Academic Domains.....	96
4.27	Subgroups of Global Self-Worth/Scholastic Competence & Social Support.....	97
4.28	Self-Concept & Task Performance.....	98
4.29	Predictors of Global Self-Worth.....	98
4.30	Predictors of Academic Self-Concept.....	100
4.31	Social Acceptance.....	100
4.32	Limitations of the Study.....	100
4.33	Future Directions.....	103
REFERENCES.....		105

**LIST OF TABLES**

TABLE		PAGE
1.	Number of Mothers and Fathers Categorised into Socioeconomic Status Groups.....	36
2.	Subscale Means and Standard Deviations of the Self-perception Profile for Children: A Comparison between the Normative Sample and the LD sample.....	60
3.	Subscale Means and Standard Deviations of the Social Support Scale for Children: A Comparison between the Normative Sample and the LD Sample.....	62
4.	Means and Standard Deviations for Task Performance indicators for the LD sample.....	63
5.	ANOVA Means and Standard Deviations for the Self-Concept and Perceived Social Support for Students reporting High and Low Global Self-Worth.....	74
6.	ANOVA Means and Standard Deviations for Perceived Competency/Adequacy and Perceived Social Support for Global Self-Worth/Scholastic subgroups.....	78 & 79
7.	ANOVA Means and Standard Deviations for Task Performance for Students in each Global/Scholastic subgroup.....	81 & 82

**LIST OF FIGURES**

FIGUIRE	PAGE
1. Domains of the Self-Perception Profile for Children.....	39

## CHAPTER ONE

### INTRODUCTION

Learning disability was formally recognised 25 years ago as being characterised by academic achievement deficits (Kavale & Forness, 1996). Research over the years has highlighted that other important correlates may also coexist. For example, research indicates that some children with learning disabilities (LD) also have emotional and social problems (Bryan, 1986; Houck, 1984; Kavale & Forness, 1996; Peal, Donahue & Bryan, 1986; Poplin, 1984).

There is a concern that academic failure can have a potential impact on global perceptions of children with learning disabilities (Cooley & Ayres, 1988). Historically, an assumption has been made that children with learning disabilities experience a lower self-esteem than children who are more academically successful (Bear, Clever, & Proctor, 1991). In general, this hypothesis has been supported when academic self-concept measures have been utilised (Chapman, 1988b). However, when global self-concept measures have been used, findings have been inconsistent (Kistner, Haskett, White, & Robbins, 1987). Therefore, the presence of a learning disability may have a significant impact on students' academic self-concept, but this impact may not necessary generalise to their global self-concept (Rothman & Cosden, 1995). In fact, some researchers propose that a high level of global self-concept may be attained through a compensatory relationship, whereby academic failure is compensated for by strengths in other self-concept domains (Chapman, 1988b; Hagborg, 1996; Kloomok & Cosden, 1994; Silverman & Zigmond, 1983). In any case, research in this area is in need of clarification.

Researchers have additionally examined the social self-concept of students with learning disabilities (e.g., Forman, 1988; Kloomok & Cosden, 1994) and these results have also varied. For example, a recent meta analysis (Kavale & Forness,

1996) of 152 studies indicated that about 75% of learning disabled students can be differentiated from normal achieving students through measures of social competence. Approximately the same percentage of difference between these groups was found across different evaluators (teachers, peers, self) and across different dimensions of social competence, such as social interaction, social rejection, nonverbal communication ability, and social acceptance. Other studies, however, have conversely reported that students with learning disabilities perceived their social acceptance about as positively as normal achieving students (Clever, Bear, & Juvonen, 1992; Durrant, Cunningham, & Voelker, 1990). These results suggest low achievement in school does not necessarily affect the social self-concept of all students. One possible reason for this may be social support serving as a buffer (Harter, 1985b; Kloomok & Cosden, 1994).

Due to the inconsistency of research findings to date, the present study was designed to replicate and extend previous research in order to help clarify some of the ambiguity in the field. As little research has been devoted to studying individual differences among children with learning disabilities, the present study investigated differences in self-concept of children with learning difficulties. It focused on how an individual's global self-worth related to their self-concept in both academic and non-academic areas and to perceived social support. Due to the fact that LD students often experience task performance problems that can impact on their academic achievement, other sources of common problems were also assessed for correlations with academic self-concept and global self-worth. These variables included: academic tasks (spelling and reading), motor skills, and specific auditory and visual memory abilities. Attention was paid to how some children with academic disabilities can maintain a positive self-concept.

The exploration of these relationships may provide some insight as to how the problems that LD students experience may impact specific areas of self-concept, global self-concept, and perceived social support. Such information may prove valuable for developing intervention strategies in both the educational and psychological fields. For example, the characteristics associated with LD may be linked to aspects of their self-concept and perceptions of social support. Investigations into such relationships may provide pathways for better

understanding how the characteristics of these children may impact their self-perceptions. These 'pathways' possibly could then be implemented into intervention strategies to improve both academic achievement and self-concept.

The next sections provide the framework for the present study, beginning with a general discussion on (a) learning disabilities, and (b) self-concept. An elaboration on specific aspects of self-concept is then presented, focusing on the role of competency and social support. These provide a backdrop for the subsequent section, which is concerned with theory guiding the current study. The final section of the introduction discusses recent research guiding the current study and presents the hypotheses.

## **LEARNING DISABILITIES**

The term learning disabilities (LD) emerged from a need to identify students who regularly failed in school. There have been many definitions of LD proposed. However, these definitions and the classification of students with LD have been considerably debated (Algozzine & Ysseldyke, 1986; McLeskey, 1992). Lack of consensus surrounding an operational definition for LD has plagued this area for more than 25 years, and ultimately has had implications for the generalisation of research findings and empirically-based decision-making (Adelman, 1992; Adelman & Taylor, 1985).

One framework for examining the characteristics of LD was provided by the 1977 Federal Register / Individuals with Disabilities Education Act (IDEA) in the United States (Mercer, 1997). Primary characteristics of academic and language difficulties were identified that included problems with: oral expression, listening comprehension, written expression, basic reading skills, reading comprehension, mathematics calculation, and mathematics reasoning. Other associated characteristics have been commonly referred to in literature regarding learning disabilities. These characteristics include cognitive deficits, attention disorders, memory problems, motor problems, social, and behavioural problems.

Being aware that many different LD definitions exist, the following section identifies common characteristics and elements of many LD definitions (Hammill, 1990; Mercer, 1997).

### **COMMON CHARACTERISTICS IDENTIFIED IN DEFINITIONS OF LD**

Most definitions of LD include a 'discrepancy factor' (Hammill, 1990), whereby a discrepancy exists between estimated ability and academic performance. This discrepancy varies among students with LD. For example, a recent study found the severity of reading or maths deficits decreased with age (McLeskey, 1992).

In addition to the 'discrepancy factor', many prominent definitions of LD are similar in that they identify seven different deficits that may be indicative of LD (Mercer, 1997). These deficit areas are briefly identified below.

#### **ACADEMIC & LANGUAGE PROBLEMS**

One of the most widely accepted characteristics of LD is that of academic learning difficulties, with reading problems tending to be the most common (Mercer, 1997; McLeskey, 1992). Other academic deficits include written expression and mathematical calculation (Kaplan & Sadock, 1994). These specific learning disabilities can be identified by examining if a discrepancy between intelligence and academic achievement exists. Language problems, such as oral expression and listening comprehension, have also been found to be prominent among LD students (Gibbs & Cooper, 1989). For example, Gibbs and Cooper (1989) examined 242 children with LD and found that 90.5% had language deficits, many of which were in the mild to moderate range of severity (Gibbs & Cooper, 1989).

#### **PERCEPTUAL PROBLEMS**

Students with LD may experience perceptual problems, such as an inability to recognise, discriminate, or interpret sensations (Mercer, 1997). Research of

visual and auditory problems among students with LD has been popular in the past. For example, overall findings have indicated that spatial deficits may be a factor in learning mathematics for students with LD (Garnett, 1992). More recently, however, research in this area has declined (Mercer, 1997).

#### COGNITIVE / METACOGNITIVE PROBLEMS

Some students with LD have cognitive and metacognitive deficits, which impact on problem solving and academic success (Bos & Filip, 1984; Montague & Appelgate, 1993). For example, Wang, Haertel, and Walberg (1993/1994) found that the student's capacity to plan, monitor, and re-plan learning strategies (metacognitive processing) had a significant impact on learning. They also found that the student's general intelligence, prior knowledge, competency in reading and mathematics, and verbal knowledge (cognitive processing variables) greatly influenced learning (Wang et al., 1993/1994). Metacognitive and cognitive processing were found to be the second and third most influential factors on learning (teacher management of the classroom was the most influential) (Wang et al., 1993/1994). It has been suggested that students with LD may be delayed or have a deficit in using these strategies (Kulak, 1993). That is, students with LD may process information in a way that differs quantitatively (delayed) or qualitatively (deficit) from that of students without learning disabilities (Kulak, 1993). For example, one study found that students with learning disabilities did not use metacognitive strategies to solve difficult problems; however, their non-LD student peers did (Montague and Applegate, 1993)

#### SOCIAL, EMOTIONAL, & BEHAVIOURAL PROBLEMS

Students with LD may experience increased frustration related to their learning difficulties. Feelings of negative self-worth may also emerge in these children (Mercer, 1997). In fact, some researchers have found that students with LD have a low self-concept in academic domains in comparison to their non-LD peers; however, these groups may not differ in other self-concept domains such as social, affect, and family (e.g., Montgomery, 1994). More research in this area is reviewed in later sections.

Research has also found that behaviour problems are sometimes evident. For example, a recent study was conducted to provide current information about the characteristics of students with LD (McLeskey, 1992). 790 students with LD were examined. Based on multidisciplinary team reports, it was found that about 15% exhibited significant behavioural problems (McLeskey, 1992). More specifically, behavioural disorders such as attention deficit hyperactivity disorder (ADHD), conduct disorder, and oppositional disorder have been found to be more prevalent in children who have learning problems (e.g., Brier, 1989; Huessy, 1992). LD students may also experience social interaction problems with teachers, parents, peers, or strangers (e.g., Bryan, 1977; Gresham & Elliott, 1989). Furthermore, students with LD tend to be less socially competent than their peers (Toro, Weissberg, Guare, & Leibenstein, 1990), demonstrate social skills deficits (Kavale & Forness, 1996), and are more at risk for internalising disorders (Thompson & Kronenberger, 1990).

#### MEMORY PROBLEMS

Students with LD have been found to exhibit memory problems for auditory and visual stimuli (Hallahan & Kauffman, 1988). In fact, students with learning disabilities can be differentiated from children without learning problems using measurements of memory (Gettinger, 1991; Swanson, Cochran, Ewers, et al., 1990). For example, Gettinger (1991) found that students with LD are more likely to have working memory problems. Another study found that students with LD used different strategies to learn (Torgesen & Kail, 1980). That is, children without LD were found to learn a list of words by rehearsing the names or by classifying the words into groups, while children with LD failed to use such strategies spontaneously and remembered less (Torgesen & Kail, 1980).

#### MOTOR PROBLEMS

Some students with LD exhibit gross or fine motor skill deficits. For example, they may have trouble throwing or catching a ball, walk clumsily, and may have difficulty using scissors, buttoning, or zipping compared to children without LD

(Mercer 1997, Silver, 1996). In the past, there was an emphasis on researching motor abilities among children with LD (e.g., Ayres, 1972); however, currently little research has been focused on motor deficits of LD students (Cratty, 1996).

In summary, the identification of common characteristics present in prominent definitions of LD appears to be creating a movement toward some consensus operational definition (Hammill, 1990). However, overall consensus continues to remain elusive (Mercer, 1990). Difficulty reaching consensus is partially due to the heterogeneity of the LD group (Mercer, 1990). Given that common aspects of LD definitions have now been outlined, the following sections briefly describe the heterogeneous aspects of LD, the prevalence of LD, and provide a discussion on a New Zealand based perspective.

## **HETEROGENEITY**

It is widely accepted that students with LD make up a heterogeneous group (e.g., Hagborg, 1996). As mentioned earlier, many definitions of LD share common areas of deficits and a discrepancy factor. It is also commonly accepted that there are numerous different types of learning disabilities (Mercer, 1997). For example, a student may have a discrepancy between ability and achievement in any one of the pertinent areas described earlier, or may have discrepancies in all or various combinations of these.

To capture this complexity, one must consider the number of combinations possible. As previously mentioned, there a number of cognitive and social-emotional characteristics that are attributed to learning disabilities. For example, cognitive deficits in attention, perception, motor functioning, memory, problem solving, and metacognition are commonly associated. Social-emotional difficulties include problems such as hyperactivity, low self-concept, learned helplessness, social imperception, distractability, and disruptive behaviour. Interestingly, more than 500,000 combinations of these cognitive and or social-emotional problems are theoretically possible (Mercer, 1997). The numbers of possible characteristics are further increased when the severity of each problem is considered.

Accepting that individuals with LD are different, some researchers have investigated subtypes. Thus far, three subtype groups have emerged based on: (1) language deficits, (b) visual deficits, and (c) a behavioural impairment group (Bender & Golden, 1990). Other researchers have reported the existence of a fourth nonverbal learning disabilities subgroup (Harnadek & Rourke 1994; & Little, 1993), which appears to have some overlap with the visual deficit subgroup. Memory variables in relation to subgroups have also been investigated (Torgesen, 1988). For example, children with LD who have deficits in short term memory have been found to be deficient in coding the phonological features of language into short term memory (Torgesen, 1988). Such research investigating the subtypes of individuals with LD provides a meaningful contribution as it can lead to more accurate identification and treatment (Kavale & Forness, 1987).

## **PREVALENCE**

The incidence of learning disabilities is difficult to estimate due to the variations in definitions and assessment practices. However, estimations have been made. For example, the United States has a wealth of statistical data on the prevalence of LD. The Department of Education in the United States of America reported that 4.09% of U.S. children and youth aged 6 – 21 years were identified as having a learning disability during the school year of 1992-1993 (cited in Mercer, 1997). This statistic comprised a compilation of individual state percentages ranging from 2.34 % to 6.24%. The variation of percentages across states could possibly be due to factors, such as different identification criteria used, policies, and changes in state populations.

In contrast, New Zealand statistics are sparse. Of course, one reason is that the government of New Zealand maintains a non-categorical perspective regarding students with generic learning problems. That is, LD is not officially recognised here. As since no definition is recognised by schools, this obviously limits estimations of prevalence. Education policy makers in New Zealand currently prefer mainstreaming. Within such philosophy, policies have been developed to meet the needs of “particular learning needs” of “underachieving students” (Chapman, 1992). Despite this, limited prevalence estimations have been made.

Research suggests that between 7 to 15% of students in New Zealand have significant learning difficulties (Norman et. al., 1984; Roache & Hunt, 1988; Walsh, 1979).

Overall, learning problems appear to be more common among males than females (Smith, 1994). For example, the following ratios (males:females) were found on examination of several studies: seven studies reported a ratio of 2:1, five studies reported a 3:1 ratio, four studies reported a 4:1 ratio, and one study reported a 6:1 ratio (Smith, 1994). A local LD focused body also agrees that the prevalence of males exhibiting LD is greater than females (Manawatu SPELD, 1997). In terms of other sex differences, severity of academic achievement deficits appears to be greater for females compared to their male peers for maths and reading; however, males appear to have more problems in visual-motor abilities, spelling, and written language than females (Vogel, 1990). These sex differences may be attributed to medical, maturational, or sociological factors (Mercer, 1997). For example, males may be more at risk for brain injury during pre- and postnatal periods. Males also mature more slowly than females from birth to adolescence which may result in a lack of school readiness, and boys are more often referred for assessment of LD by teachers than girls, as teachers expect males to have more learning problems (Mercer, 1997).

The occurrence of learning disabilities has been identified across various cultures, and is reflected in the growing amount of research regarding LD in different cultural contexts. For example, language based learning disabilities have been detected in children using an alphabet based written language system (e.g., English) and Logographic (pictorial) written language system (e.g., Chinese) (Mercer, 1997).

In addition to the United States, research on various aspects of LD has emerged from Australia, Canada, Chile, Columbia, Denmark, Germany, Italy, Israel, New Zealand, the Netherlands, and the United Kingdom. Some of these countries differ from others in their actual recognition, identification, and treatment of LD. For example, the governments of Italy and New Zealand do not officially recognise the term “learning disabilities”. However, this does not prevent

relevant research being carried out and intervention offered (e.g. Specific Learning Disabilities Association of New Zealand - SPELD).

### **A NEW ZEALAND PERSPECTIVE**

In New Zealand, the government promotes mainstream education, and provides limited funding to meet the needs of students with special needs. Although the term LD is not recognised in New Zealand, reference is made to children who have “particular academic difficulties” (Department of Education, 1987), or “learning difficulties” (e.g., Roache & Hunt, 1988). Children who are extremely limited may access remedial assistance, be included in a reading recovery program, or be assisted under provisions made for “educationally retarded” students (Chapman, 1992). The Reading Recovery Program primarily aims to reduce the number of children who develop difficulties in reading and writing, through early identification and intervention. Despite claims of the program being successful (Clay, 1987a), the effectiveness of the program has been questioned (e.g., Chapman & Turner, 1991; Glynn, Crooks, Bethune, Ballard, & Smith, 1989).

An organisation called the New Zealand Federation of Specific Learning Disabilities Associations (SPELD) is a group that has attempted to raise the profile of LD in New Zealand. SPELD was first established in New Zealand in 1971, and later expanded when associations throughout New Zealand joined to form a corporate body in 1975 (Chapman, 1992).

The primary aim of SPELD was to have Specific Learning Disorder (SLD) accepted as a category of need in the education system of New Zealand (SPELD, 1985). SPELD requested that the New Zealand government train teachers in the specialised identification, assessment, and remedial methods required to assist students with LD (SPELD, 1985). These demands have been rejected by successive Ministers of Education. Historically, SPELD has adhered to a traditional neurological view of specific LD, which appears to have influenced these rejections from Ministers of Education (Chapman, 1992). For example, SPELD’s 1985 policy statement stated “first and foremost, specific learning

disability is a dysfunction in one or more of the underlying cerebral processes involved in understanding or in written or spoken language” (SPELD, 1985).

SPELD diagnoses LD in terms of specific process deficits. That is, the assessment includes the measurement of performance in reading, writing, spelling, and maths. The battery of tests also uses various instruments to assess process and functional deficits. These tests assess auditory and visual skill, spatial perception, and motor coordination.

SPELD has been criticised for an “outdated” view on the etiology, identification, and assessment, as it adheres to the traditional psychological process disorder perspective that was promoted in North America during the 1960s and 1970s (Chapman, 1992). SPELD has been criticised for promoting an organic etiology (Clay, 1987b). Both the theoretical and psychometric properties of tests used have also been criticised (e.g., Algozzine & Ysseldyke, 1986; Arter & Jenkins, 1979; Coles, 1978). For example, Coles (1978) found that the LD test battery fails to correlate with a diagnosis of LD.

In general, tests used for assessing perceptual or psychological processing abilities are also criticised for having low reliability and limited evidence of validity (Chalfant, 1989; Shepard, Smith, & Vojir, 1983), and being both inappropriate and technically inadequate (Ballard, 1987). However, recent research on the SPELD battery (Little, 1991) has found evidence supporting some tests in the battery.

As previously noted, most conceptual definitions of LD contain some reference to psychological processes of learning. Although the psychological process model has been criticised, some researchers emphasise the relevance of assessing information processing (Chalfant, 1989; Stanovich, 1991). In fact, some researchers have worked toward developing a theoretical base for a psychological-processing approach to LD. For example, Kolligian and Sternberg (1987) proposed a componential-deficit theory of LD, supported by empirical research. Moreover, Swanson (1987, 1991) informs that recent developments in cognitive psychology may contribute to a theory of LD. Research to date

certainly suggests that the inclusion of information processing in the criteria for diagnosing LD is both practical and theoretically viable (Shaw et al., 1995).

## **CONCLUDING COMMENTS**

In essence, while some consensus on the major components of LD appear to have developed in the past 20 years, the definitional debate continues (Mercer, 1997). Meshed within various perspectives are opinions on the function of categorisation and labelling. Some categorically dismiss a LD designation (e.g., Reynolds, Wang, & Walberg, 1987; Stainback & Stainback, 1984). Others argue that while special education service delivery is necessary, labelling contributes very little (e.g., Reschly, 1988). However, many others have a different opinion. For example, Chalfant (1989) states that identifying characteristics associated with LD in children can be used to assist in a number of areas, including: (a) facilitating efforts to study this population, (b) assisting in identifying appropriate instructional and intervention strategies, (c) helping identify the origins of the condition, and (d) assessing special education funding (Gallagher, 1986; Kauffman, 1989; Semmel, 1986).

Regardless of the perspective, the fact remains that despite efforts at consensus, disagreement about definition is still common in this area (Shaw, 1995). Further study on individuals experiencing LD may reveal important characteristics of this heterogeneous group and lead toward a more accurate and consensually based definition. Recently, research has been undertaken to identify characteristic features related to the self-concept of students with learning disabilities. The following section explores this construct. A definition and overview of self-concept is provided, along with its historical development, the models and assessment methods used, and pertinent research findings.

## SELF-CONCEPT

### DEFINITION AND OVERVIEW

The definitions of self-concept and related theories have varied widely since the construct was first introduced by William James (1890). James proposed the conscious self as being the ratio of an individual's successes to their own pretensions. Cooley (1902) further developed the construct by proposing that individuals internalise other people's reactions, devising the term the "looking-glass self".

Since the introduction of the 'self-concept', some theorists have suggested a cognitively based construct (Rogers, 1951); others, a more affectively based construct (Mead, 1934). Terms such as self-esteem have also been used to describe an individual's self-regard or feelings of self-worth (e.g., Rosenberg Self-Esteem Scale; Rosenberg, 1965). Another view proposed that self-concept consisted of attitudes and beliefs that a person brings with themselves when facing the world (e.g. Coopersmith, 1967). Currently, a dominant model appears to be cognitive-behavioural, a model that emphasises that cognitions influence behaviour and that behaviour can be changed by modifying cognitions (Merchenbaum, 1977). Regardless of the theoretical orientation, most theorists today agree that self-concept is multidimensional, and this is reflected in current assessment methods. This section will now look more in depth at this historical development.

### THEORY: HISTORICAL DEVELOPMENT

The work of James (1890), Cooley (1902), and Mead (1934) contributed historically in this area. James conceptualised the "I" and the "Me" as being aspects of the self. It was the Me that later evolved into what we more commonly refer to as the self-concept. James explained that the Me-self was composed of three constituents; the material self, the social self, and the spiritual self. These aspects hinted at later multidimensional models of the self. Later,

Cooley (1902) and Mead also (1934) extended the concept of the self to incorporate a social self. The term “global self-esteem” emerged gradually as theorists pondered the notion of “an average tone of self-feeling” (James, 1890) and “an overall sense of self-respect” (Cooley, 1902) that incorporated some of these feelings (Harter, 1993).

## **MODELS AND ASSESSMENT METHODS**

Early theorists generally proposed unidimensional models of the self-concept (e.g., Piers, 1977; Coopersmith, 1967). Such researchers attempted to assess this unidimensional construct by combining an individual’s self-evaluations across items measuring a range of content (e.g., Coopersmith, 1967). These items were assigned an equal weight, and were summed to obtain an indication of the individual’s sense of self-worth.

During the late 70’s, an alternative model was proposed (Rosenberg, 1979). Rosenberg (1979) acknowledged previous theories, in which self-concept was viewed as the result of a complex combination of separate judgements about the self (e.g., Coopersmith, 1967). However, he did not agree that a total score of items across various aspects of life was reflective of a global judgement about the self. Rosenberg (1979) claimed that the individual is not aware of how judgements about the self are processed, weighted, or combined. He suggested an alternative assessment, one in which global self-evaluation of one’s esteem could be measured more directly. That is, an individual is asked a set of questions directly measuring their overall judgement of self-worth. This contrasted from earlier models which were based on indirect measurements, whereby responses to items asking about a wide range of self-descriptions were summed for an overall self-evaluation (Coopersmith, 1967; Piers, 1977).

More recently, multidimensional models have emerged. The development of multidimensional models evolved from criticism about the earlier unidimensional models. The earlier models were criticised for summing across all items and for ignoring specific content of the domains tapped. That is, they masked potentially important evaluative distinctions that an individual makes about their competence

in different domains of their life (Harter, 1990). By contrast, the multidimensional models identify specific areas of self-evaluation, assessed separately (e.g. Harter, 1985c; Shavelson & Stanton, 1976). In addition, these models and the associated methods of assessment have continued to include the assessment of global aspects of self-esteem or self-worth. Pertinent to the current study, Harter's (1985a) measure includes a separate subscale to assess global judgements of self-regard in her multidimensional model of self-concept. Briefly, to anticipate later sections, Harter (1985a) includes six subscales in her multidimensional model: five scales designed to tap specific domains, and one scale designed to tap the individual's global perception of their worth or esteem as a person. More specifically, Harter's scale is composed of the following subscales: (a) Scholastic Competence, (b) Social Acceptance, (c) Athletic Competence, (d) Physical Appearance, (e) Behavioural Conduct, and (f) Global Self-Worth.

Despite the apparent overall agreement of current theorists that self-concept is multidimensional in nature, the specific structural aspects continue to be debated. For example, some theorists have suggested a hierarchal model, in which lower order features of the self-system are organised under higher order personal constructs (e.g., Shavelson & Standon, 1976). In contrast, the compensatory model views negative aspects of oneself as compensated for by viewing other aspects more positively (Hagborg, 1996; Winne & Marx, 1981).

## **RESEARCH AND LD CHILDREN**

Previous research findings have been inconsistent due to variability across studies and vaguely defined constructs. For example, there have been a variety of different approaches identified for measuring self-concept, and method of measurement obviously relates to results obtained and the conclusions reached (Rosenberg, 1979).

When unidimensional measures of self-concept have been used, it has been found that students without a learning disability are generally reported as having more positive self perceptions than their learning disabled peers (LD) (De Francesco &

Taylor, 1985; Rogers & Saklofske, 1985; Kistner & Gatlin, 1989). Forman (1988) cited 7 out of 10 studies using unidimensional measures of self-concept that reported significantly lower levels of self-esteem for LD children, while 3 studies reported no differences between students with and without LD.

A more complex picture emerges when multidimensional measures of self-concept have been used. For example, some studies have found no difference between LD and normal achieving students self-perceptions in non-academic domains, such as general self-worth, social competence, physical competence (Kistner et al., 1987; Lincoln & Chazan, 1979; Rogers & Saklofske, 1985), and in other areas such as penmanship and neatness (Chapman & Boersma, 1979). However, these same students were more likely to rate themselves lower in academic and / or cognitive competence than their NA peers (Chapman & Boersma, 1979; Kistner et al., 1987; Lincoln & Chazan, 1979; Rogers & Saklofske, 1985; Winne & Marx, 1982). As illustrated here, the multidimensional model can be useful in examining an individual's overall self-concept, and how it relates to specific self-concept across different domains. Thus, multidimensional models may offer a more comprehensive picture of self-concept.

The major point here is that inconsistent findings related to self-concept have emerged as a function of unidimensional versus multidimensional measurement. However, the bulk of results from studies examining self-worth among children with LD have supported the idea that self-concept in this group has multidimensional qualities (Mash & Gouvernet, 1989). In relation to this, research findings have been somewhat more consistent when self-concept is examined in multiple and specific domains. Having discussed general aspects related to the value of multidimensional models of self-concept, the next section will now begin to discuss the more specific aspects of these models, with a focus on perceived competence.

## PERCEIVED COMPETENCE

### THEORY

There are a variety of ways that perceived competence is viewed, each being influenced by a given researcher's orientation to a particular school of thought. There are four main theories that research has concentrated on, and these include intrinsic motivational, social, cognitive, and more integrative models.

### INTRINSIC MOTIVATIONAL THEORIES

Motivational theories view perceptions of competent behaviour in terms of intrinsic motivational urges or drives. A sense of competence is achieved through two types of goals: (a) mastery goals, in which individuals seek to increase their competence, to understand or master something new, and (b) performance goals, in which individuals seek to gain favourable judgements of their competence or avoid negative judgements of their competence (Dweck, 1986; Novick, Cauce, & Grove, 1996). For example, a mastery-oriented child would generally experience satisfaction about what they have learned, even if they failed to achieve their ultimate goal. By contrast, a performance-oriented child would be more concerned about avoiding failure. Studies have supported the concept that these two types of motivational goals exist and researchers have found that these two motivational processes affect (a) how well children use their existing skills and knowledge (Elliot & Dweck, 1988), and (b) how they acquire these new skills and knowledge (Ames, Ames, & Felker, 1977). For example, one study found that mastery-oriented children chose challenging tasks that fostered learning, whereas performance-oriented youth chose easy tasks on which success was likely, or excessively hard tasks on which failure did not indicate low ability (Elliot & Dweck, 1988). Researchers have also found that performance-oriented children tend to base their satisfaction on ability and outcomes, whereas mastery-oriented children base it on effort invested in pursuit of a goal (Ames et al., 1977).

## SOCIAL THEORIES

Social theories contrast from motivational theories, in that there is an emphasis on environmental factors instead of the individual. Cooley (1902) introduced the notion that our self-concepts are formed as we reflect on evaluations by others in our environment. Perceived competence here is seen as developing from social systems providing the impetus for the individual to carry and achieve personal goals or roles (Novick et al., 1996). A considerable amount of research has accumulated over the years which supports this theory: Perceptions of competency has been found to have been affected by (a) evaluations of others, and (b) perceptions of evaluations of others, and (c) social comparison (Grecas & Schwalbe, 1983; Quarantelli & Cooper, 1966; Renick & Harter, 1989). For example, in a study examining social comparisons, Renick and Harter (1989) found students with LD reported high levels of academic competency when they compared themselves to other students with LD, and lower levels of academic competency when they compared themselves to students without LD.

## COGNITIVE THEORIES

Attribution and social learning theories have largely influenced how competence is conceptualised from a cognitive point of view. Bandura (1977, 1978) proposes that individuals are not born with a sense of competency (or, in his terms, “self-efficacy”). Rather, he considers this sense to develop gradually as a result of assessing the efficacy of one’s behaviour. Behavioural enactment and evaluation of self-efficacy is also linked to affect, expectations, and motivation for future behaviour. The link between effective behaviour and self-efficacy has been supported by research. For example, researchers have found that perceptions of personal competence increase when individuals believe their achievements were due to their capability rather than situational factors (Bem, 1972; Weiner, 1972). Research also suggest that self-efficacy expectations are powerful predictors of behaviour, coping behaviour, performance achievement, and positive affect ( e.g., Bandura , 1977; Betz & Hackett, 1981). Furthermore, with continued success, people develop generalised beliefs about their ability to achieve future outcomes (Bandura, 1982; Weisz & Stipek, 1982).

## CONTEMPORARY THEORIES

A more modern conceptualisation of competence attempts to integrate the earlier theoretical perspectives, viewing competence as an interaction of social, cognitive, affective, behavioural, and motivational components. Researchers such as Kanfer (1975) and Frijda (1986) assume that affective reactions impact on an individual's motivation to behave in a specific manner and are significant in the process of initiating, maintaining, and terminating relations between individuals and the environment. Support for this theory comes from studies which have found that attributions individuals made about performance outcome strongly influenced their affect (Weiner & Graham, 1983). Research also suggests that motivation, behaviour and affect, social reinforcement, and cognitive appraisals are all involved in the competence self-evaluation process. For example, Campos and associates (1989) found sense of competence to be related to (a) the directing of effortful behaviour toward relevant goals, (b) whether the behaviour produced intrinsically positive or negative feelings, and (c) feedback from others (emotional/social reinforcement).

In summary, a sense of competence appears to involve the conversion of social and personal information into self-efficacy judgements in the presence of an affective stimulus. It also appears that the interaction between cognition, emotions, motivation, behaviour, and environmental input across development helps change or maintain competence.

## RESEARCH

### DEVELOPMENTAL ASPECTS

There has been debate among theorists regarding when individuals acquire a conception of being competent. Some theorists propose individuals are born with a sense of competence which becomes observable later in life (e.g., White, 1959), while other theorists maintain that individuals develop a sense of competence as they mature and interact with the environment (e.g., Harter, 1989; Smith, 1969; Stipek, 1984). Despite disagreements, research suggests that children as young

as four can make observable competence-related judgements if questions are asked about concrete observable behaviours (Stipek, 1984). Research has also found that children between the ages of four and seven are able to express attitudes about their physical competence, cognitive competence, and behavioural conduct, but they may not be able to differentiate these as well as older children (Harter, 1989).

## RELATIONSHIP BETWEEN PERCEIVED COMPETENCY AND SELF-ESTEEM

James (1890) was also one of the first to propose that perceived competence was linked to self-worth. He proposed that abilities in domains that the individual assigned importance were relevant to self-esteem. That is, self-esteem derived from how an individual weighed their competencies. For example, if an individual perceives that they are competent in domains that are important to them, then they are more likely to report high self-esteem (Markus & Nurius, 1986). Additionally, affect experienced appears to depend on the importance we assign the mastery efforts (Weiner & Graham, 1983), and the feelings associated with competence appears to generalise to the individual's overall sense of self-worth (Novick et al., 1996). In fact, generalised self-esteem has been found to be linked to increased perceptions of competence in a number of specific domains (Epstein, 1991; Harter & Marold, 1992).

James (1890) suggested that either increasing the level of an individual's sense of competence or lowering their aspirations could raise self-esteem. Despite empirical evidence suggesting that perceived competence is related to overall self-esteem, it appears that increasing self-esteem is not as simple as increasing a sense of competence. There are natural limits to the extent which one can increase ability (Harter, 1993). Additionally, self-perceptions of competence in important domains may be resistant to change (e.g., Epstein, 1991). One must also acknowledge that individuals may find it difficult to discount the importance of competencies in particular domains, such as scholastic and athletic competencies, when culture stresses their importance (Harter, 1993). In line with these ideas, research suggests an individual's self-esteem is related to

competence in areas that are both important to that individual, and important to other people in that individual's life (Harter & Marold, 1992).

#### OTHER IMPORTANT ASPECTS

Self-perceptions of competence - "I am effective" or "I can do it" - are critical to individual functioning throughout life (Bandura, 1986). Research suggests that perceptions of competence are both significant to children's development in a variety of domains (Harter, 1981; Leahy, 1985) and to the successful functioning and well being of adults and the elderly (Gurin & Brim, 1984; Kuypers & Bengston). Other studies have found that self-efficacy and perceptions of competence are key factors in staying physically healthy (Friedman & Booth-Kewley, 1987; Kobasa, 1979).

#### RESEARCH WITH LD CHILDREN

Most children with LD appear to value academic and behavioural competencies (Clever et al., 1992). Nevertheless, it is interesting to note that reduced perceptions of competence in these domains does not in all cases translate into low global self-worth (e.g., Cooley & Ayres, 1988, De Francesco & Taylor, 1985; Clever et. al., 1992; Coleman, 1983).

An early study (Kistner et al., 1987) found that students with LD held lower opinions of their cognitive and physical abilities than students without LD, but they did not report lower levels of overall dissatisfaction with themselves. However, further investigation (Kloomok & Cosden, 1994) found that LD students who reported high levels of global self-worth reported more competence in non-academic domains (and higher levels of social support) than those LD students who reported lower levels of global self-worth.

In a recent meta-analysis (Kavale & Forness, 1996), it was found that LD students across a variety of studies appear to perceive themselves as deficient in the academic domain. A prior meta-analytic review by Chapman (1988b) found that LD students generally perceived themselves as lacking in competence in the

academic domain. Furthermore, Renick and Harter (1989) found that LD student's perceptions of academic competence were more highly correlated with feelings of general self-worth than with their perceptions of social acceptance or athletic competence. They reported that LD students generally had reduced perceptions of academic competence, but conversely reported increased, and perhaps compensatory, perceptions of athletic competence, social acceptance, and global self-worth. Thus, the research of both Chapman (1988b), and Renick and Harter (1989) highlight the importance of measuring self-concept in multiple domains for LD students. Bearing this latter point in mind, the following section examines issues related to social factors impacting self-concept and perceived competence.

## **SOCIAL ASPECTS OF SELF-CONCEPT INCLUDING SOCIAL SUPPORT**

### **DEFINITION & HISTORICAL THEORY: WHAT IS SOCIAL SELF-CONCEPT?**

As previously discussed James (1890) and Cooley (1902) were the core founders of the construct "self-concept". The idea of the social aspects of self-concept was also introduced by James (1890) over a century ago. He wrote "A man's social self is the recognition, which he gets from his mates. We are not only gregarious animals, liking to be in sight of our fellows, but we have an innate propensity to get ourselves noticed, and noticed favourably, by our kind" (James, 1890, p.293).

Cooley (1902) further acknowledged that the social self and the recognition of support from others are intertwined. He phrased "Each to each a looking glass / Reflects the other that doth pass" and explained that we imagine what others may think of our appearance, aims, character, friends, and so on, and we are affected by this (Cooley, 1902).

Both James and Cooley referred to one's self-concept as related to people's perception of how many other people liked and admired them (Cooley, 1902; James, 1890), that is, perceptions of social acceptance. James (1890) additionally pointed out that perceptions of social acceptance from specific groups of people might be more significant than from others. These concepts have provided a theoretical foundation for other scholars researching this construct. More recently, the social self-concept has been defined by some as similar to earlier conceptualisations, while placing an additional emphasis on people's perceptions of their social competence or social skills (Berndt & Burgy, 1996).

Empirical research supports the hypotheses of James and Cooley and more recent theorists suggest that social self-concept in children is significantly related to aspects of peer reputation, actual social acceptance, and social competence (Berndt & Burgy, 1996). For example, perceived social acceptance has been found to be significantly related to actual peer acceptance for students in the sixth to eighth grade (Bohrsted & Felson, 1983; Cole, 1991). Children's perceptions of social acceptance has also been found to be influenced by their social behaviour; children who perceived a high level of social acceptance were rated by their peers as less aggressive, less isolated, less withdrawn (Hymel, Rubin, Rowden, & Le Mare, 1990), and more competent (Cauce, 1987).

## **EMPIRICAL RESEARCH IN LD SAMPLES**

### **GENERAL FINDINGS**

Researchers have studied children with LD in an attempt to identify characteristics that may impact aspects related to their social self-concept. In general, findings are mixed in terms of perceived social acceptance. For example, students with LD have reported negative perceptions of their social acceptance (La Greca & Stone, 1990), whereas other studies report positive perceptions of social acceptance (Clever et al., 1992). However, as discussed, other areas besides social acceptance appear to be related to social self-concept and social functioning for these children. A recent meta-analysis found that about 75% of students with LD were differentiated from students without LD

through measures of social competence; peers and teachers evaluated students with LD as having lower social status, greater rejection, interacting less, and lower social acceptance (Kavale & Forness, 1996). Kavale and Forness (1996) also reported that poor academic self-concept and lack of self-esteem also appeared to be a contributor to social skill deficits among students with LD.

#### IS SOCIAL SUPPORT IMPORTANT AND IF SO FROM WHOM?

The perception of social support has been identified as being important in a variety of areas including helping people cope with acute diseases (Schreurs & de Ridder, 1997). Similarly, social support may enable LD children and adolescents to avoid various forms of maladjustment (e.g., Rubin, 1971). For example, a vulnerable child who experiences a lack of social support from significant others is likely to manifest a substantial amount of emotional distress, while a child who is less vulnerable and / or has a supportive social network is much more likely to cope effectively with his or her disability (Forman, 1988).

Forman (1988) studied the effects of social support and school placement on the self-concept of LD students using self-report measures developed by Harter (1985b). The participating subjects were 51 LD children in grade 2 – 10, with a median grade of 6 (i.e., Form 1). The results showed that those LD students that perceived higher levels of social support also scored higher in general self-worth, athletic competence, scholastic competence, and behavioural conduct compared to their LD peers whom reported fewer social supports. Forman (1988) found that the best predictor of high levels of overall self-concept was support from classmates. Students who reported acceptance from their peers also perceived themselves more positively. Forman (1988) claimed that these results provided empirical evidence in support of an earlier hypothesis proposed by Rubin (1971) which stated that social support is an important factor in determining whether LD children's overall emotional adaptation is adversely affected by the stress of repeated under-achievement. The finding that social support also affected scholastic (academic) and non-academic (e.g., athletic and behaviour) self-concept appears to indicate the beneficial impact of social support on various areas of self-concept. Forman (1988) concluded that the social environment of

LD students contributes to how they perceive themselves in both general and specific domains.

### **THEORY GUIDING CURRENT RESEACH: HARTER'S MODEL AND RELATED MEASUREMENT**

The origin of Self-Perception Profile for Children (SPPC) (Harter, 1985a) and the Social Support Scale for Children (SSS) (Harter, 1985b) stemmed from the theories of James (1890) and Cooley (1902). James focused fundamentally from a cognitive approach, claiming that an individual's self-esteem is represented by the ratio of their successes to their pretensions. In contrast, Cooley favoured a social approach. Recognising the complexity of the self-concept, Harter (1985c) incorporated these key ideas to construct a multidimensional model.

Harter (1985c) acknowledged the idea that an individual will more likely have higher self-esteem if they perceive themselves as being competent in domains that are important to them (James, 1890). She further illustrated that an individual's self-esteem would not be adversely affected if they perceived a lack of competence in domains that they themselves deemed unimportant.

The model Harter proposed also incorporated Cooley's (1902) conception, which stressed the importance of other people's evaluations of the self. As discussed in earlier sections, Cooley postulated that an individual derives a self-concept from determining the opinions significant others have about them. Harter expanded this idea to include the proposition that an individual must weigh the collective opinions of others towards the self, regarding some of these more important than others (Mead, 1934).

Based on the formulations of James and Cooley, the Self-Perception Profile for Children (Harter, 1985a) was constructed for the purpose of assessing self-worth in different domains, which could additionally be related to a separate rating of global self-worth. Self-worth was operationally defined as the "degree to which one likes oneself as a person, likes the way one is leading one's life, is satisfied

with oneself, in general, is happy with the way one is” (Harter, 1985a). Harter conceptualised “self-esteem or self-worth” as being the level of overall regard that one has for one self as a person (Harter, 1985a, 1990).

The conceptualisation of this model was not based on the premise that an individual’s global self-worth is simply equivalent to the sum of self-worth in particular domains. Rather, Harter (1985a) constructed a scale that identified sets of items used to assess self-concept in specific domains as well as including a separate subscale to assess global self-worth. One of the assumptions of this model is that children differentiate between their domain specific self-concepts and their global self-concept. It is also assumed that children can vary in their perceptions of competence across domains.

The specific domains in the Self-Perception Profile for Children (Harter, 1985a) included: scholastic competence, athletic competence, social acceptance, physical appearance, and behavioural conduct. The final subscale is a measure of global self-worth.

The SPPC is particularly handy for examining perceived competence and self-concept with learning disabled children, as the model assumes that perceptions of competence and self-adequacy can vary across domains. The significance of this is that perceptions of scholastic competence are not assumed to be the same as perceptions of global or other areas of self-concept. Thus, it allows for the investigation of both specific self-concept and global self-worth.

The Social Support Scale for Children (Harter, 1985b) was essentially based on Cooley’s theory. The scale was designed to tap perceived support and regard manifested by significant others towards the self. Social support was defined as positive regard from others and consists of four sources of social support: (1) parents, (2) classmates, (3) teachers, and (4) close friends.

## RESEARCH GUIDING CURRENT STUDY

The previous sections have discussed self-concept and focused on how perceived competency and aspects of social functioning and related perceptions are intertwined in this construct. Throughout those sections, there has been reference to both academic and non-academic self-concept, and their relationship within the self-concept multidimensional system. To anticipate the current study, this section elaborates research that has focused on self-concept among students with LD, paying special attention to the examination of individual differences among these students.

Findings regarding differences between LD children and normal achieving children were reported in the previous sections (e.g., Chapman 1988b; Kavale & Forness, 1996). These studies were informative; however, children with LD are made up of a very heterogeneous group (Hagborg, 1996) and it is important for within group differences to be examined (Bryan, 1986). Only six studies could be found that examined such within group differences using multidimensional measurement.

The first study (Kistner et al., 1987) examined subgroups of LD students who held unrealistically positive or negative self-perceptions. The negative subgroup had higher teacher-rated reading and spelling skills, higher intelligence and test scores, spent less time in special education classes, and thus were found to be less academically disabled than the positive subgroup. The authors suggested that the positive subgroup had an impaired (i.e., inflated) self-perception, which may have protected them from feelings of failure and been indicative of additional social-emotional problems.

The second study (Kistner & Osborne, 1987) compared a group of LD students with negative global self-concept to another group consisting of the remaining students in their sample. Teachers' ratings of academic skills and school adjustment did not differ between groups. However, it was found that the LD students with negative global self-concept had significantly higher intelligence scores and came from a higher socioeconomic status. This study supported

previous research of an inverse relationship between global self-concept and socioeconomic status for students with LD (Coleman, 1985).

The third study used Harter's (1985) model to examine the effect of perceived social support on self-concept of 51 LD students in grades 2–10 (Forman, 1988). Perceived social support and self-concept were assessed. Self-concept was compared between students who reported high levels and low levels of social support. Students reporting higher levels of social support reported higher perceptions of athletic competence, scholastic competence, behavioural conduct, and global self-worth compared to students who reported lower levels of social support. Perceived support from classmates was found most predictive of global self-worth. Some of these students ( $n = 9$ ) were not receiving special educational services; however, their self-concept was not significantly different from those receiving special educational services. Forman (1988) concluded that self-perceptions of LD students were related to perceived social support, particularly from peers.

The fourth study investigated the impact of social comparisons on academic self-concept of 86 students in grades 3-8 (Renick & Harter, 1989). Overall, perceptions of social acceptance and athletic competence were also assessed. The majority (84%) of the students were found to spontaneously compare their academic performance to normal achieving peers in the regular classroom, even though they attended special education classes with other LD students. Perceptions of scholastic competence was found to be higher when these children compared themselves to their LD peers in the special education classroom, than when they compared themselves to normal achieving peers in the regular classroom. Perceptions of scholastic competence in the regular classroom were significantly correlated with global self-worth. Perceived social acceptance and athletic competence were also found significantly related to global self-worth, but to a lesser degree than scholastic competence. The authors concluded that the extent to which LD students like themselves as persons might be closely related to their perceptions of scholastic competence.

The fifth study divided students with LD into three groups based on their self-reported ratings on the Scholastic Competence subscale of Harter's Self-Perception Profile for Children (SPPC) (Hagborg, 1996). The authors found a distinction between adequate and inadequate levels of perceived scholastic competence. Students reporting high levels of scholastic competence had more internal locus of control for positive events, better school attitudes, and higher global self-worth, compared to students with lower levels of perceived scholastic competence. The subgroups did not differ in socioeconomic status, intelligence, achievement, grades, age at classification, or amount of special education received. Hagborg's (1996) research extended the two previous studies discussed by focusing on specific areas of self-concept (academic self-concept) in relation to school-related variables and non-academic variables. Hagborg (1996) concluded that high levels of perceived scholastic competence in students with LD might develop from a sense of high global self-worth and taking credit for their school accomplishments.

The sixth study used Harter's model to investigate the relationship between global self-concept and perceived competence (Kloomok & Cosden, 1994). Seventy-two elementary-school students with learning disabilities (grades three through six) were divided into four groups based on their self-ratings of global self-worth and academic self-concept; however, their analyses were based on three groups as the fourth (low global/high academic group) had only one participant. The comparison groups were (high global/high academic self-concept, high global/ low academic, low global/low academic). Most of the students were found to have high levels of global self-concept (67%) and low levels of academic self-concept (85%). The distribution of the groups were as follows: 53% high global/low academic, 32% low global/low academic, 14% high global/high academic. These three groups were not found to be significantly different based on IQ scores, grade, gender, or ethnicity. Students in the high global/high academic and high global/low academic groups had significantly higher reading achievement scores than students in the low global/low academic group. However, students in the high global/high academic group did not differ on achievement scores from students in the high global/low academic group. Students in the high global/high academic group reported higher perceptions of

intellectual ability than students in the high global/low academic group. Students with high global and high academic self-concept reported the highest level of competence in most of the non-academic domains, followed by students reporting high global and low academic self-concept. In contrast, students reporting low global and low academic self-concept perceived the lowest levels of adequacy in non-academic domains. Perceptions of social support were also examined. In general, students reporting low global/low academic self-concept were found to report the least support while students reporting high global/high academic self-concept reported receiving the most support. Additionally, students reporting high global/low academic self-concept reported receiving more support from their parents than students reporting low global/low academic self-concept. However, they reported receiving less support from their close friends than students reporting high global /high academic self-concept. In terms of the prediction of global self-worth, perceptions of physical appearance, parent support, and social acceptance were found to account for 63% of the variance. The authors concluded that perceptions of social support and areas of non-academic self-concept were the crucial variables that contributed to different levels of global and academic self-concept. Interestingly, the authors concluded this without assessing specific predictors of academic self-concept scores (in regression analyses); additionally, the regression they did carry out (i.e., for global self-worth) did not include demographic factors as potential predictors.

The last study provided the impetus for the current study. Given that only six studies looking at within group differences have used a multidimensional model, and owing to the inconsistent findings, the current study was designed to replicate and extend aspects of Kloomok and Cosden's (1994) study using a New Zealand sample of children with LD.

### **THE CURRENT STUDY**

As discussed, very little research has been undertaken to examine individual differences in self-concept among children with learning difficulties. Acknowledging that children with learning disabilities make up a heterogeneous group, it is important to study these individual differences. To date, no published

studies were found that examined these aspects with New Zealand children. The present study was designed to replicate and extend a recent study (Kloomok & Cosden, 1996) in order to investigate individual differences of self-concept among New Zealand children who have learning difficulties.

The general theme of this current investigation sought to explore individual differences among children with learning difficulties who vary in their global and academically-based self-concept. More specifically, the present study examined how children with learning difficulties who had a positive global self-concept differed from those who had a negative global self-concept. Furthermore, the relationship between global self-concept, perceived social support, and other non-academic domains were analysed. As discussed previously, children with LD often experience other academically-based and motor problems, such as coordination problems, motor skill deficits, language problems, auditory and visual memory problems. Therefore, it was also of interest to include task performance data. The hypotheses for the present study are as follows:

#### HYPOTHESIS 1

Students with LD would differ in their individual perceptions of global self-worth and scholastic (academic) competence. Based on previous findings (Kloomok & Cosden, 1994), it was expected that a higher proportion of students would report (a) high Global Self-Worth scores, and a higher proportion would report (b) low Scholastic Competence scores.

#### HYPOTHESIS 2

Students reporting high Global Self-Worth scores would report higher SPPC subscale scores (Scholastic Competence, Social Acceptance, Physical Appearance, Behavioural Conduct, and Athletic Competence) than students reporting low Global Self-Worth scores.

### HYPOTHESIS 3

Students reporting high Global Self-Worth scores would report higher SSS scores indicating increased social support (Parent Support, Teacher Support, Classmate Support, and Close Friend Support) than would students reporting low Global Self-Worth scores.

### HYPOTHESIS 4

Students would be reliably categorised into groups according to reports of scores for the Global Self-Worth subscale and the Scholastic Competence subscale. These subgroups include: (a) low global/high scholastic, (b) low global/low scholastic, (c) high global/high scholastic, and (d) high global/low scholastic self-concept.

Based on Kloomok and Cosden's (1994) findings, it was also expected that the largest proportion of students would be categorised as falling into the high global/low scholastic subgroup. The next largest subgroup was expected to be low global/low scholastic, followed by a smaller number of students falling into the high global/high scholastic subgroup. The low global/high scholastic subgroup was expected to contain the least amount of students, if any.

### HYPOTHESIS 5

Students reporting (a) high Global Self-Worth scores and low Scholastic Competence scores, or (b) high Global Self-Worth scores and high Scholastic Competence scores would also report higher scores on non-academic subscales of the SPPC scale, when compared to students with (c) low Global Self-Worth scores and low Scholastic Competence scores, or (d) low Global Self-Worth and high Scholastic Competence. Additionally, those classified in the high global/high scholastic subgroup would report higher scores on these scales than all other groups. The non-academic subscales of the SPPC scale include: Athletic Competence, Physical Appearance, Behavioural Conduct, and Social Acceptance.

#### HYPOTHESIS 6

Students reporting (a) high Global Self-Worth scores and high Scholastic Competence scores, or (b) high Global Self-Worth scores and low Scholastic Competence scores would also have higher scores for social support subscales than students with (c) low Global Self-Worth scores and low Scholastic Competence scores, or (d) low Global Self-Worth and high Scholastic Competence scores. Additionally, those classified in the high global/high scholastic subgroup would report higher scores on these scales than all other groups. The social support subscales include: Parent Support, Teacher Support, Classmate Support, and Close Friend Support.

#### HYPOTHESIS 7

Students reporting (a) high global self worth and low scholastic competence, or (b) low global self-worth and low scholastic competence would have significantly lower task performance scores than students reporting (c) high global self-worth and high scholastic competence, or (d) low global self-worth and high scholastic competence. Additionally, those classified in the high global/high scholastic subgroup would report higher scores on these scales than all other groups. Task performance included: auditory memory (for digits, and sentences), visual memory (for numbers, words, and shapes), motor skills (fine and gross), spelling, and reading (oral and comprehension).

#### HYPOTHESIS 8

Using regression analyses, scores for Global Self-Worth would be predicted by (a) SSS subscale scores (Parents Support, Teacher Support, Classmate Support, and Close Friend Support), particularly Parent Support, and (b) SPPC subscale scores in non-academic domains (Physical Appearance, Behavioural Conduct, Athletic Competence, and Social Acceptance), particularly Physical Appearance and Social Acceptance. It was also hypothesised that Scholastic Competence and task performance scores (academic skills/strategies, motor skills, auditory and visual memory skills) would be not be predictive of Global Self-Worth scores, based on previous research findings (Kloomok & Cosden, 1994). Additionally, no hypotheses were proffered for demographic variables.

#### HYPOTHESIS 9

Scores for Scholastic Competence would be predicted by (a) SSS subscale scores (Parents Support, Teacher Support, Classmate Support, and Close Friend Support), and (b) SPPC subscale scores (Global Self-Worth, Physical Appearance, Behavioural Conduct, Athletic Competence, and Social Acceptance). Task performance scores (academic skills/strategies, motor skills, auditory and visual memory skills) would also be predictive of Scholastic Competence scores. ). Additionally, no hypotheses were proffered for demographic variables.

#### HYPOTHESIS 10

A greater number of students would report lower levels of social acceptance rather than higher levels of social acceptance. Furthermore, perceived social acceptance would be predicted by perceived social support.

## CHAPTER TWO

### METHOD

#### PARTICIPANTS

##### SAMPLE

##### DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

The sample composed of 41 students, ages ranging from 7 years, 1 month through to 15 years, 0 months. The average age of the entire sample was 9 years and 7.6 months ( $SD = 2.33$  years). Of the 41 participants, 30 were boys, and 11 were girls. The students lived in the Manawatu district and were enrolled with Specific Learning Disabilities Association of New Zealand (SPELD), an organisation concerned with assisting individuals who have 'Specific Learning Disabilities'.

According to SPELD's records, the ethnicity of the sample was composed of 95.12 % ( $n = 39$ ) pakeha, and 4.88% ( $n = 2$ ) "other".

The occupations of the participant's parents were obtained from existing records. This information was used to categorise the socioeconomic status of each parent, according to the revised Socioeconomic Indices for New Zealand (Johnson, 1983). A separate rating is provided for each parent as the scale does not provide criteria for a combined classification. The categories were created to coincide with the International Standard Classification of Occupations, and were based on the theoretical model of socioeconomic status postulated by Elley and Irving (1976). The categories ranged from 1 to 6, where 1 represented the highest socioeconomic rating. The parents were classified into the socioeconomic ratings, as presented in Table 1.

Table 1:

Number of Mothers and Fathers Categorised into Socioeconomic Status Groups.

<b>Categorisation Group</b>	<b>No. of Fathers</b>	<b>No. of Mothers</b>
<b>Group 1</b>	0.0	0.0
<b>Group 2</b>	6.0	11.0
<b>Group 3</b>	10.0	8.0
<b>Group 4</b>	7.0	6.0
<b>Group 5</b>	7.0	1.0
<b>Group 6</b>	0.0	2.0
<b>Not employed</b>	1.0	10.0
<b>Not reported</b>	10.0	3.0

## **SELECTION PROCEDURE**

### **SPELD'S SELECTION PROCEDURE**

The students referred to SPELD are generally of adequate intelligence, exhibiting deficits in their ability to read, spell, write, or calculate. Referrals are sourced from school teachers, medical practitioners, psychologists, therapists, community organisations, and parents. Prior to enrolment, students must undergo pre-qualification, to assess if the student has a specific learning disability. This process entails the accumulation of information from a number of sources, such as educational psychologists, audiologists, optometrists, school and medical reports, and case history informed by the parent(s). A personal interview between the student and SPELD tester is also carried out. The purpose of this

interview is to assess if the student has difficulties in particular domains, on the presumption that difficulties in these areas may contribute to academic failure. These target areas assessed include: auditory memory (for sentences and digits), visual memory (for words, numbers, and shapes), coordination, motor skills (gross and fine), reading skills, reading comprehension skills, spelling, and written expression. The student is eligible for enrolment upon meeting SPELD's definitional requirements, which states:

“Children with Specific Learning Disabilities means 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 disorder may manifest itself in imperfect ability to listen, think, speak, read, write, spell or do mathematical calculations. Such disorders include such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Such term does not include children who have learning problems which are primarily the result of visual, learning or motor handicaps, of mental retardation, of emotional disturbance or environmental, cultural or economic disadvantage”. (SPELD Constitution, 1983).

This definition of ‘specific learning disability’ is universally adopted by the associations for specific learning disabilities worldwide (Seabrook, 1987). SPELD's constitutions quote the definition contained in the United States Congress Public Law 94-142, Section 602 - The Education for All Handicapped Children Act 1975 (cited in Seabrook, 1987).

#### SELECTION PROCEDURE FOR THIS STUDY

The subjects were selected from those enrolled with SPELD, each being classified with a specific learning disability (LD). These students were selected on the criteria that they had either received special education lessons from SPELD for no more than three sessions, or were on the waiting list to receive lessons. Students were also required to be at least 7 years old and no older than 16 years. Tests were administered to those students for whom permission to

participate was given ( $n = 42$ ). One participant withdrew consent, and this occurred upon commencement of the first questionnaire. Thus, all of the data collected for this study was analysed for the rest of the participants ( $n = 41$ ).

## ASSESSMENT

### MEASURES

Multi-trait and multi-method assessment was used to measure self-concept, perceived social support, psychomotor skills, auditory and visual skills, spelling and reading skills.

#### **SELF-PERCEPTION PROFILE FOR CHILDREN (HARTER, 1985a)**

The Self-Perception Profile for Children – SPPC (Harter, 1985a) is based on James (1890) theoretical conceptualisation of the self. The scale is a revised version of the original Perceived Competence Scale for Children – PCSC (Harter, 1982), which was designed to assess children’s perceived competence in domain-specific areas, and assess their perceived global worth or esteem as a person. The revised SPPC measure was modified to include two new subscales to represent various forms of self-adequacy. Harter (1985a) recommends the scale be administered to children about the age of 8 years and older, as younger children may report inaccurately high perceptions of competency/adequacy and may not be able to discriminate discrete domains of the self-concept (Harter, 1982). This self-concept measure has been used extensively by researchers in America, Australia, China, and Ireland (Granleese & Joseph, 1993). The title of the questionnaire that is given to the child is entitled WHAT I AM LIKE.<sup>1</sup>

---

<sup>1</sup> Owing to copyright issues, a copy was not placed in appendix, though a copy is available for inspection from the author or supervisor.

## SCALE STRUCTURE

In total, the SPPC contains six separate subscales; one global self worth subscale and five domain specific subscales, as illustrated in Figure 1. The scholastic and athletic subscales involve competence, global self-worth refers to general happiness and liking of oneself, and the remaining subscales refer to self-adequacy in those domains.

### **Specific Domains**

1. Scholastic Competence
2. Social Acceptance
3. Athletic Competence
4. Physical Appearance
5. Behavioural Conduct
6. Global Self-Worth

Figure 1. Domains of the Self-Perception Profile for Children.

## CONTENT OF EACH DOMAIN

Each of the six subscales contains six items, totalling thirty-six items in all.

### 1. *Scholastic Competence.*

The Scholastic Competence subscale is designed to assess the child's perception of their ability or competence in school performance. The items are school-related.

### 2. *Social Acceptance*

The items of the Social Acceptance subscale assess the degree to which the child is accepted by peers or feels popular.

### 3. *Athletic Competence*

The Athletic Competence subscale contains items to indicate perceived competence in sports or outdoor games.

### 4. *Physical Appearance*

The Physical Appearance subscale is designed to measure the degree to which the child is happy with the way they look, likes their weight, height, body, face, hair, and feels that they are good looking.

### 5. *Behavioural Conduct*

The Behavioural Conduct subscale is designed to assess the degree to which the child likes the way they behave, do the right thing, act the way they are supposed to, avoid getting into trouble, and do the things they are supposed to.

### 6. *Global Self-Worth*

The Global Self-Worth subscale is designed to assess the extent to which the child likes themselves as a person, is happy with the way they are leading their life, and is generally happy with the way they are. This subscale represents a global judgment of one's worth as a person.

## QUESTION FORMAT

The SPPC is presented in a "structure alternative format" to help reduce participants responding in a socially desirable manner (Harter, 1985a). The subscales are counterbalanced, so that the most adequate statement is presented three items on the left, followed by three items on the right. The items within the subscales are also counterbalanced. This was achieved by alternating sentences, beginning with a phrase that implies a high level of competence, followed by a phrase that implies a low level of competence. The following illustration is an example of the 'alternative format' used.

Really	Sort of			Sort of	Really
True	True			True	True
for me	for me			for me	for me

<input type="checkbox"/>	<input type="checkbox"/>	Some kids often		Other kids	<input type="checkbox"/>	<input type="checkbox"/>
		forget what they	<b>BUT</b>	can remember		
		learn		things easily		

Participants are required to select one of two presented statements that best describes themselves and then indicate whether that statement is “really true” or “sort of true” for them. Responses are scored on a four-point scale, ranging from the least competent (1) to the most competent (4). The scores are summed and averaged for each subscale to represent the child’s profile.

The psychometric properties of the SPPC are described below. These include reliability and validity data from both previous research and the present study. It is noted that Harter reported the psychometric properties of the SPPC based on a sample of children from Colorado ( $n = 1543$ ), who were approximately 90% Caucasian, grade three (Standard 1) through to grade eight (Form 2), ranging from lower middle class to upper middle class (Harter, 1985a). These children were divided into four samples and norms were presented for each.

#### MEANS AND STANDARD DEVIATIONS

Harter (1985a) reported that the subscale means varied around the value of 3.0 for all four samples, which is slightly above the midpoint of the scale. Variations among individuals were apparent, as most of the standard deviations ranged between .50 and .85. Gender and grade level (middle school children and elementary school children) differences emerged for some subscales. For example, boys perceived themselves as significantly more athletically competent than girls. The girls perceived themselves as better behaved than boys. For middle school children, it was found that boys considered themselves to be better looking and like themselves as a person more so than girls. Granleese, Trew, and

Turner (1988) also supported gender differences, using the earlier PSCS. Sixth graders (Standard 4) had significantly higher Scholastic Competence and slightly higher Global Self-Worth scores than the 7<sup>th</sup> graders.

Most of the means and standard deviations for the present sample were within the ranges stated above; Social Acceptance (boys  $M = 2.93$ ,  $SD = .64$ ) (girls  $M = 2.82$ ,  $SD = .96$ ), Athletic Competence (boys  $M = 3.28$ ,  $SD = .61$ ) (girls  $M = 3.12$ ,  $SD = .88$ ), Physical Appearance (boys  $M = 3.10$ ,  $SD = .64$ ) (girls  $M = 2.98$ ,  $SD = .94$ ), Behavioural Conduct (boys  $M = 2.87$ ,  $SD = .66$ ) (girls  $M = 3.50$ ,  $SD = .51$ ), Global Self-Worth (boys  $M = 3.08$ ,  $SD = .62$ ) (girls  $M = 3.18$ ,  $SD = .79$ ), and Scholastic Competence (boys  $M = 2.33$ ,  $SD = .53$ ) (girls  $M = 2.56$ ,  $SD = .084$ ). These means and standard deviations are compared to those of Harter's (1985a) normative sample in the Results section.

## RELIABILITY

Harter (1985a) did not provide separate reliability data for boys and girls; however, she did report reliability data for different ages (grades 3 to 8) which indicated adequate reliability. Reliabilities were provided for each subscale. The internal consistencies ranged from .71 (Behavioural Conduct) to .86 (Athletic Competence). More specifically, the alpha reliability of the individual subscales ranged as follows: Scholastic Competence .80 - .85, Social Acceptance .75 - .80, Athletic Competence .80 - .86, Physical Appearance .76 - .82, Behavioural Conduct .71 - .77, and Global Self-Worth .78 - .84. Harter (1985a) did not provide any test-retest data.

Reliability coefficients were obtained for each of the SPPC subscales for the present study using Cronbach's alpha. The reliability of the individual subscales are as follows: Scholastic Competence .69, Social Acceptance .74, Athletic Competence .78, Physical Appearance .80, Behavioural Conduct .82, and Global Self-Worth .74.

## VALIDITY

The SPPC manual describes how factor analysis revealed that each of the domain specific subscales (Scholastic Competence, Social Acceptance, Athletic Competence, Physical Appearance, and Behavioural Conduct) defined distinct factors (Harter, 1985a). Each subscale had substantial factor loadings, and the average cross-loadings ranged between .04 and .08. This factor pattern was consistent over four different samples.

The intercorrelations between the six subscales were also investigated (Harter, 1985a). It was reported that Scholastic Competence appeared to be related to Behavioural Conduct ( $r = .29$  to  $.58$ ). This indicated that those who felt they were good at their schoolwork also felt they were better behaved, while those children who felt they were not good at schoolwork reported more behaviour problems. A cluster was evident with significant correlations between Social Acceptance, Athletic Competence, and Physical Appearance ( $r$ 's ranging from  $.29$  to  $.53$ ), indicating that these three subscales are related to one another. Harter (1985a) suggested that physical attractiveness and athletic competency might lead to greater acceptance or popularity. Social Acceptance was related to Scholastic Competence more so for the younger students, indicating that doing well in school may become less relevant as one approaches adolescence. Although the Global Self-Worth subscale was related to Physical Appearance at a moderately high level ( $r$ 's between  $.62$  and  $.73$ ), the remaining subscales correlated to a lesser degree ( $r$ 's between  $.30$  and  $.64$ ).

The scale's validity is supported by significant relationships between SPPC responses and the ratings by physical education teachers (Athletic Competence subscale), socioeconomic standing (Social Acceptance Subscale), and standardised achievement scores (Scholastic Competence Subscale) (Harter, 1985a).

Convergent, discriminate, and criterion-related validities of the scale have been supported (Marsh & MacDonald Holmes, 1990). The factor analysis revealed that the target loadings were consistently adequate ( $.71$  to  $.80$ ; median =  $.54$ ) in

comparison to the non-target loadings (-.28 to .41; median = .09). A mean reliability coefficient of .83 was found using a mono-method analysis. The mono-trait method of analysis revealed a mean coefficient of .61.

Subscale correlations for the present study depicted the same pattern that Harter (1985a) reported for her normative data. The following significant intercorrelations were found for the present study: Global Self-Concept correlated with Athletic Competence ( $r = .4771, p = .001$ ), Behavioural Competence ( $r = .4225, p = .003$ ), Physical Appearance ( $r = .6188, p = .001$ ), Scholastic Competence ( $r = .2957, p = .030$ ). Scholastic Competence correlated with Physical Appearance ( $r = .3041, p = .027$ ), and Behavioural Conduct ( $r = .3005, p = .028$ ). Athletic Competence correlated with Physical Appearance ( $r = .2758, p = .040$ ), and Social Acceptance ( $r = .3968, p = .005$ ).

In summary, the psychometric properties of the Self-Perception Profile appear to be adequate for the purposes of the present study.

### **SOCIAL SUPPORT SCALE FOR CHILDREN (HARTER, 1985b)**

The Social Support Scale for Children (SSS) is based on Cooley's (1902) theoretical conceptualisation of the self as a social construction. The SSS measures the extent to which students perceive support and positive regard from significant others (Harter, 1985b). It is a widely used measure that determines an individual's profile, based on perceived social support from four separate sources. The title of the questionnaire that is given to the child is entitled PEOPLE IN MY LIFE.<sup>2</sup>

---

<sup>2</sup> Owing to copyright issues, a copy was not placed in appendix, though a copy is available for inspection from the author or supervisor.

## SCALE STRUCTURE

The SSS contains twenty-four items divided into four subscales, each representing different sources of perceived support: Parents, Teachers, Classmates, and Close Friends.

## QUESTION FORMAT

Items on the SSS are presented in the same format as the Self-Perception Profile for Children (Harter, 1985b) to overcome the tendency for social desirability responding. Students are first asked to decide which kind of kid is most like him or her and then indicate whether the chosen statement is “sort of true” for them or “really true”. An example of this “structure alternative format” (Harter, 1985b) is illustrated as follows.

Really True for me	Sort of True for me		Sort of True for me	Really True for me
--------------------------	---------------------------	--	---------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	Some kids have parents who treat their child like a person who really matters	<b>BUT</b>	Other kids have parents who <i>don't</i> usually treat their child like a person who really matters	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	---	------------	---	--------------------------	--------------------------

Students responses are scored on a four point scale, where 4 represents the highest level of support (e.g., really true that my parents treat me like a person) and 1 represents the lowest level of support (e.g., really true that my parents don't treat me like a person). A mean score is derived for each of the four social support subscales.

The psychometric properties of the SSS are described below, including reliability and validity data from both previous research and the present study. Harter (1985b) reported psychometric properties of this scale based on four samples of

children; two samples of grades three through to six, and two samples of grades six through to eight. All children were from Colorado, ranging from lower to upper middle class, and were approximately 90% Caucasian.

## MEANS AND STANDARD DEVIATIONS

Harter (1985b) provided means and standard deviations for each subscale, and reported three consistent findings. These consistencies were: (1) that parent and teacher support scores were higher than classmate and close friend support scores, (2) teacher support scores declined with an increase in age (i.e., grade level), and (3) girls reported higher levels of support from close friends than did boys.

The following means and standard deviations of the SSS subscales were obtained for the present study; Parent Support (boys  $M = 3.45$ ,  $SD = .39$ ) (girls  $M = 3.74$ ,  $SD = .38$ ), Teacher Support (boys  $M = 3.07$ ,  $SD = .68$ ) (girls  $M = 3.82$ ,  $SD = .37$ ), Friend Support (boys  $M = 3.03$ ,  $SD = .78$ ) (girls  $M = 3.44$ ,  $SD = .91$ ), and Classmate Support (boys  $M = 3.02$ ,  $SD = .59$ ) (girls  $M = 3.33$ ,  $SD = .65$ ). These means and standard deviations are compared to those of Harter's (1985b) normative sample in the Results section.

## RELIABILITY

Harter (1985b) did not provide separate reliability data for boys and girls; however, she did report reliability data for different ages, using Cronbach's alpha. The Parent and Teacher subscale reliabilities were higher ( $r$ 's between .78 and .88) than the two peer subscales ( $r$ 's between .72 and .83).

Reliability coefficients were obtained for the subscales of the SSS scale, based on Cronbach's alpha. The reliabilities were Parent Support ( $r = .52$ ), Classmate Support ( $r = .71$ ), Teacher Support ( $r = .83$ ), and Close Friend Support ( $r = .91$ ).

## VALIDITY

Harter (1985b) found that factor patterns were evident. Among elementary school groups, the classmate and friend subscales combined to form a factor. However, these subscales emerged as separate factors for middle school children. Low to moderate correlations existed between the subscales for elementary and middle school students. The patterns were similar for all of these students; however, the correlation between classmate support and friend support was higher for the elementary school children compared to the middle school students. Harter (1985b) explained that younger children might not be able to differentiate between peer relationships, whereas adolescents may view classmates quite differently from close friends. Additionally, Parent Support was found to correlate with Teacher Support, Classmate Support, and Friend Support.

Harter (1985b) investigated a correlation between the four subscales of the SSS and global self worth from the SPPC. She found correlations between social support and global self-worth ranged from .35 and .48 for elementary-school children and .28 to .49 for middle school children. More specifically, with respect to elementary school children, Teacher Support had the weakest correlation with Global Self-Worth ( $r = .35$ ), followed by Close Friend Support ( $r = .38$ ), followed by Parental Support ( $r = .43$ ), while Classmate Support had the highest correlation with Global Self-Worth ( $r = .48$ ). For middle school children, Teacher Support also had the lowest correlation with Global Self-Worth ( $r = .28$ ), followed by Classmate Support ( $r = .42$ ), followed by Parental Support ( $r = .46$ ), while Close Friend Support had the highest correlation with Global Self-Worth ( $r = .49$ ).

Supplementary validity data was provided for the individual subscales (Harter, 1985b). Classmate Support correlated with the Social Acceptance subscale of the SPPC ( $r = .62$  for elementary school children and  $r = .69$  for middle school children). This means those children's perceptions of social support from their classmates related to reports of feeling more accepted or popular. To investigate the validity of the parent support subscale, Harter (1985b) asked children how important they felt it was to succeed in the five domains of the SPPC (scholastic

& athletic competence, social acceptance, physical appearance, and behavioural conduct). These children were then asked to rate how important it was to their parents that they succeed in these domains. This discrepancy score was found to predict perceived parental support ( $r = .48$ ), indicating that those children whose values were more compatible with their parents were also more likely to report more parental support.

Similar significant intercorrelations to Harter's (1985b) were found for the present study. The significant correlations found were: Parent Support correlated with Teacher Support ( $r = .3289, p = .018$ ), and Classmate Support ( $r = .2624, p = .049$ ). Classmate Support correlated with Close Friend Support ( $r = .5328, p = .001$ ). Other correlations were not significantly correlated. Correlations between SSS and the SPPC subscales are presented in the Results (preliminary analyses) section.

In summary, the psychometric properties of the Social Support Scale for Children appear to be adequate for the purposes of the present study, with the possible exception of the Parent Support subscale (alpha reliability  $r = .52$ ). The Parent Support subscale reliability coefficient was less than the recommended alpha of .70 (DeVillis, 1991), which indicates that caution should be taken when interpreting the results of this subscale in this particular study.

### **TASK PERFORMANCE MEASURES: THE SPELD TEST BATTERY**

Dr. Seabrook, who was concerned with assessing the "whole person", first compiled the SPELD battery during the 1970's. The main purpose of the battery is to identify areas of weakness which interfere with academic performance, and use the information gathered to design and implement intervention. No formal standardisation of the battery has been completed. The administration of the entire SPELD battery takes about one hour and a half.

## SCALE STRUCTURE.

The SPELD battery contains eight separate components, some of which are sourced from other published and standardised tests. The following illustrates the components of the battery pertinent to the present study.

### *Pertinent SPELD battery components:*

- *Psychomotor skills:* Assesses gross and fine motor skills.
- *Auditory skills:* Assesses auditory memory of sentences and numbers (using Stanford-Binet, 1960). It also assesses auditory discrimination of words (Wepman, 1973).
- *Visual skills:* Assesses delayed recall of words/shapes/numbers (Slingerland, 1970), visual discrimination of letters/numbers/words (Slingerland, 1970), discrimination of letters/sounds (Neale, 1988), and time coping different words.
- *Spelling skills:* Utilises the spelling test devised by Schonell (1955) to assess spelling skills.
- *Reading skills:* Assesses oral reading accuracy (Neal, 1988), oral reading comprehension (Neale, 1988), and listening comprehension (Neal, 1988).

## PSYCHOMETRIC PROPERTIES

The psychometric properties pertinent to the present study are as follows.

### ▪ *Psychomotor skills*

This subtest was devised by SPELD, and at present there are no psychometric properties available for it. Nevertheless, perceptual motor skill testing have been criticised in the past, primarily because motor skills have been difficult to define (Salvia and Ysseldyke, 1988). The items include hopping, skipping, tandem walk, placing fingers to thumb, and placing a finger to the nose.

- *Auditory skills*

The items contained in the SPELD battery to assess auditory memory of sentences/digit span are sourced from the Stanford-Binet, (3<sup>rd</sup> revision, 1960). Some of the items were changed slightly, and other items have been added. The original instructions have also been modified slightly. Norms have been supplied in the battery which have been taken from the original test (Stanford-Binet, 1960). Although these norms are adequately reliable and valid, they must be applied with caution as their original form has been modified slightly.

- *Visual skills*

The items compiled to assess delayed recall of words/shapes/numbers are sourced from other tests (Slingerland, 1970). Reliability and validity data were not initially available upon publication of the original version (Slingerland Screening Tests for Identifying Children with Specific Language Disability, 1970). They were, however, later presented, and were deemed adequate for the purpose of a screening instrument for academic problems (The Ninth Mental Measurements Yearbook, 1985).

- *Spelling skills*

The Schonell Graded Word Spelling Test (Schonell, 1955) is used widely overseas; however, no comprehensive reliability or validity data is available (Vincent et al., 1983). However, at the same time, spelling is a straightforward ability to assess.

- *Reading skills*

Parts of the Neale Analysis of Reading Ability - Revised (1988) is included in the SPELD battery to assess oral reading accuracy and oral reading comprehension. Administration and scoring instructions are also taken from the original source. The earlier version of the Neale test (Neale, 1958) is commonly used in New South Wales - Australia (Matthey, 1990). Reliability data is supplied (Neale, 1988). Internal consistency, based on Kuder-Richardson (KR20) coefficients, for oral reading accuracy ranged from .71 to .85, while reading comprehension ranged from .87 to .96. Both the subscales for oral reading accuracy and reading

comprehension were also found to be highly stable (Salvia & Ysseldyke, 1988). The SEM for oral reading accuracy ranged between 3.5 to 3.8, the SEM for reading comprehension ranged between 1.5 to 1.25 for different age groups (Neale, 1988).

Correlation coefficients between responses from two sets of subjects of different ages are reported (ranging from .91 to .97 for oral reading accuracy and .86 to .92 for reading comprehension). Evidence supporting three types of validity data are also provided: content validity, criterion validity, and construct validity (Neale, 1988). For example, correlations between oral reading accuracy and other widely used standardised tests ranged from .75 to .95 and between .61 to .84 for reading comprehension and these tests. The test was initially standardised on a large sample (1760) of British children; however normative data based on an Australian student sample is also available.

To conclude, the Neal Analysis of Reading Ability – Revised (1988) has adequate reliability, and evidence of validity (The Eleventh Mental Measurements Yearbook, 1992).

▪ *Summary*

In summary, the components of the battery pertinent to the present study have received some support, as discussed. Little (1991) has further reported data supporting these tests to be adequate; however, she recommended that the psychomotor tests and spelling test be replaced with more up-to-date tests. She recommended this because these two tests were designed some years ago, and other tests are now available which come complete with reliability and validity data (Little, 1991). However, as these have not yet been up-dated, data on these skills were obtained using these tests. For these tests, caution must be applied when interpreting results.

## PROCEDURE

The initial step involved the researcher seeking consent and approval from SPELD to invite their pupils to participate in the present study. This process incurred several meetings between the SPELD committee members and the researcher, to ensure that the organisation was clear about the nature and procedure of the present study.

An agreement was made between SPELD and the researcher to include a notification of the current research in SPELD's newsletter, which was regularly distributed, to all of their clients. This notification advised SPELD's clientele of the researcher's invitation to participate in the current study, and gave them an idea of the inclusionary criteria to enquire about further information regarding the study. The parents that indicated interest in participating were provided with two information sheets about the study and two consent forms, one each for the child and themselves. This information sheet explained the nature and procedure of the present study. A time was arranged for the administration of the measures upon the confirmation of both parental and student consent.

The researcher was informed by SPELD that some of their pupils might feel uncomfortable with a 'stranger' testing them, as they reported that some of their students had emotional problems. Taking this into consideration, and acknowledging that many of these teachers had already built a rapport with their students, the researcher provided SPELD teachers with information and consent forms on the present study. Those teachers that wished to administer the measures to their own pupils were also asked to provide informed consent. These teachers were then trained how to administer the measures. That is, they were instructed by the researcher on how to administer the measures according to the instructions provided in the manual of the measures (Harter, 1985a, 1985b). To aid the teachers' adherence to the procedure, the teachers were additionally provided with a copy of the manuals' administration instructions.

In general, the SPELD teachers administered the measures to their own pupils individually, while allowing the child to answer confidentially. Those students

that had no SPELD teacher available to do this, such as students who had not yet been assigned to a SPELD teacher, were administered the measures by the researcher either in small groups (three or fewer) or individually.

All students were administered the measures in an environment that was familiar to them (i.e., SPELD premises or where they received their SPELD lessons). Although each student had received an information sheet and had given consent to participate, an additional step was included to ensure each student understood their rights. It was explained to them that their participation in the present study was voluntary and that they had the option of withdrawing from the study at any time. Each student was given a verbal description of the nature of the study and given the opportunity to ask questions at any time throughout the study. The students were informed that the measures were surveys for which there were no right or wrong answers. Confidentiality was again explained and the children were encouraged to answer the questions as honestly as possible. As mentioned earlier, at this point one student withdrew consent.

Both of the self-report measures were administered verbally. The items were read out loud by the administrator while the students read along and marked their answer sheets. Total testing time for the two measures ranged from 20 to 30 minutes. A short break of 5 to 10 minutes was given if the students appeared restless after the completion of the first measure. During the break, some students chose to sit and talk, while others preferred to get up and stretch. To obtain valid responses, the test administrators provided assistance to subjects that showed difficulty understanding an item by repeating the item or, when necessary, rephrasing the item using a synonym. For example, the word “recess” was rephrased using “playtime” or “lunchtime”.

Throughout the study, the researcher was available to answer any questions or concerns. The researcher provided a debriefing of the study, an opportunity for participant feedback, and the answering of any further questions.

Task performance data was assessed for the following variables: psychomotor skills (gross and fine), reading (oral accuracy and reading comprehension),

spelling, auditory memory (for sentences and digits), and visual memory (for words, numbers, and shapes). The data had previously been gathered through the administration of the SPELD battery.

## DESIGN AND PLAN OF ANALYSES

A cross-sectional and correlational design was used in the present study. The cross-sectional design permitted the comparison of different students of different ages at a single point in time, while the correlational method allowed the examination of the relationship between variables. This correlational design differed from alternative experimental designs, in that it did not entail the direct manipulation of variables.

The first step in the analyses was aimed at assessing demographic relationships. This entailed the calculation of gender means and standard deviations for each of the subscales (SPPC and SSS) and SPELD data. The means and standard deviations for the self-report measures were also compared to the normative data supplied in the manuals. Correlational analyses were also used to determine if there were any demographically based relationships. Confirmation of demographic relationships between these variables was then further investigated, using one-way analysis of variance (ANOVA).

Correlational analyses were also used to determine the presence of significant relationships between major variables (SPPC, SSS, SPELD battery). With regard to the SPELD battery, intercorrelations between tests in the battery were also carried out to address issues related to reliability and validity of these tests. Prior to testing hypotheses, the raw data (from the SPPC/SSS subscale data and SPELD data) was categorised into two groups comprising of high and low scorers. This preparation allowed for the comparison of students who scored high and low on each of the measures. Categorisation of these and other variables, in preparation for analyses, is described in the next section.

Following the categorisation of high and low scorers, a t-test was performed to confirm that high Global Self-Worth scores were significantly different low Global Self-Worth scores. The same procedure was used to confirm a significant difference between high/low reports of Scholastic Competence. Chi-square tests were additionally performed to confirm any significant differences in frequencies.

A series of one-way ANOVAs were performed between high/low Global Self-Worth and the subscales of the SPPC scale to determine of students who report high Global Self-Worth scores also report high competency/adequacy scores.

A series of one-way ANOVA were also performed between high/low Global Self-Worth scores and the social support subscales to ascertain if students reporting high Global Self-Worth were significantly different from students reporting low Global Self-Worth when their scores of social support were examined.

Students were additionally categorised into subgroups of high and low global self-worth/scholastic competence (high global/high scholastic, low global/high scholastic, high global/low scholastic, low global/low scholastic). Chi-square tests were performed to determine if the frequencies in these groups were significantly different.

One-way ANOVAs were also performed between the global/scholastic subgroups and the non-academic subscales of the SPPC (Athletic Competence, Behavioural Conduct, Physical Appearance, and Social Acceptance subscales). These analyses were performed to determine if a significant difference between subgroups existed for reports in non-academic domains.

One way ANOVAs were also performed between the global/scholastic subgroups and the social support subscales of the SSS (Parent, Teacher, Classmate, and Close Friend). This analysis was performed to determine if a significant difference existed between subgroups for social support.

A series of one-way ANOVAs were performed between the global/scholastic subgroups and task performance scores to determine if significant differences existed between groups for task performance. Task performance included: auditory memory (for digits and sentences), visual memory (for numbers, shapes and words), motor skills (fine and gross), spelling, reading (oral and comprehension).

Multiple regression (using stepwise regression followed by simultaneous regression) was performed to determine prediction of global self-worth and scholastic competence. In following Klooomok and Cosden's (1994) methodology, exploratory stepwise regression was followed by more conservative simultaneous regression to predict global self-worth and scholastic competence scores. Finally, frequencies of students reporting high versus low levels of social acceptance were obtained followed by a chi-square analysis. Multiple regression also examined predictors of social acceptance.

Finally, every sample data entry was manually checked against the raw data by the researcher to ensure that it had been entered correctly. Three errors were found and corrected.

## **CATEGORISATION OF DEMOGRAPHIC VARIABLES**

For the purpose of analysis, some variables were categorised into groups. Age was not categorised for correlational analysis; however, it was categorised for univariate analysis for the reasons outlined in the methodology section. More specifically, two separate age variables were created for univariate analysis. One age group was sorted according to the age of the student with respect to the mean age of the entire sample (i.e., older versus younger). The second age group was sorted, for reasons discussed in the methodology section (see SPPC section), whereby students were categorised according to their age in respect to whether they were younger than 8 years old, or 8 years and over to see if differences emerged in subscales profiles.

The sample population comprised of 39 students identified as “Pakeha” and 2 subjects as “other”. Due to the small number of subjects in the “other” group, ethnicity was removed from analysis.

Gender, SES, solo/dual parents, and residency, were each categorised into groups. Gender was sorted into two groups: girls and boys. Residency was sorted into two groups: rural and urban. Those students who had solo parents were categorised into one group, while students who were been raised by two parents constituted another group. The mother’s SES was sorted into two groups. First of all, a group mean was obtained for the entire group of all mothers’ SES. Then, two groups were formulated, with respect to this group mean. For example, one group was composed of those mothers who had a SES score below the mothers’ SES mean, while the other group represented all mothers who had a SES equal to or above that mean. The father’s SES was grouped similarly, using the group mean for all of the fathers SES as the criterion to categorise the two groups.

## **CATEGORISATION OF SELF-REPORT MEASURES**

The scores, of both What I Am Like scale (SPPC) and the People in My Life (SSS) scale, ranged from 1 to 4. A score of 3 or above indicates that the student selected positive items as either “sort of true for me” or “really true for me”. A score of less than 3 indicates that the student selected negative items as either “sort of true for me” or “really true for me”. That is, a score of 3 or more represents a more positive self-description than a score of less than 3. For example, a mean score of 3 or above on the Global Self-Worth subscale is interpreted to represent a high level of Global Self-Worth, whereas a mean score of less than 3 on this subscale would be interpreted as a low level of Global Self-Worth (see also Kloomok & Cosden, 1994). The same rationale is applied to the social support subscales. For example, a mean score of 3 or above on the Teacher Support subscale is interpreted as representing a high perception of social support from the teacher.

## **CATEGORISATION OF TASK PERFORMANCE DATA**

Data was obtained from SPELD's records. Of the 41 subjects, 40 had been assessed by SPELD in the following domains: motor skills (gross and fine), auditory memory (for digits and sentences), reading (oral and comprehension), spelling, and visual memory (for numbers, shapes, and words). The raw data obtained for each student was converted to a metric that ranged between a score of 1 (poor performance) to 5 (excellent performance). A value of 3 or above indicated an average or above average attainment in that domain for their age, while a value of less than 3 indicated an attainment of below average.

## **CHAPTER THREE**

### **RESULTS**

This chapter provides the results of the current study in written and table format. Data preparation is presented in the first section. The preliminary analysis addresses demographic relationships and other correlational relationships. The remaining sections address the hypotheses.

#### **PRELIMINARY ANALYSIS**

##### **DEMOGRAPHIC BASED RELATIONSHIPS**

This section presents results from demographic based analyses, commencing with the comparison of current means to normative data. The next section then illustrates the significant demographic relationships found within the data collected.

##### **NORMATIVE DATA**

Means and standard deviations on the six subscales of the SPPC for the students who participated in this study ("LD sample") are presented in Table 2 along with those of the normative group of normal achieving children (Harter, 1985a).

Table 2:

Subscale Means and Standard Deviations of the Self-Perception Profile for Children: A Comparison between the Normative Sample and the LD Sample.

Self-Concept	BOYS				GIRLS			
	LD Group (n = 30)		Norm Group (n = 24)		LD Group (n = 11)		Norm Group (n = 36)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
<b>Scholastic</b>	2.33	0.53	2.87	0.80	2.56	0.84	2.80	0.86
<b>Social</b>	2.93	0.64	2.87	0.73	2.82	0.96	2.80	0.84
<b>Athletic</b>	3.28	0.61	3.21	0.54	3.12	0.88	2.84	0.79
<b>Physical</b>	3.10	0.64	3.16	0.67	2.98	0.94	2.99	0.94
<b>Behaviour</b>	2.87	0.66	3.14	0.63	3.50	0.51	3.16	0.58
<b>Global</b>	3.08	0.62	3.14	0.70	3.18	0.79	3.01	0.85

Separate age groups were not examined, as there were insufficient numbers to constitute valid analyses in this manner. All of the means and standard deviations obtained for the LD sample were within the range of the scores for the normative groups, with the exception of two. A significant difference was found between participating boys in this study and the norm group on both the Scholastic Competence subscale ( $t(30) = -5.50, p = .001$ ), and the Behavioural Conduct subscale ( $t(30) = -2.27, p = .031$ ).

These results indicate that the New Zealand boys in this study had a significantly lower mean for their Scholastic Competence scores ( $M = 2.33, SD = .53$ ) than the

Colorado normative group ( $M = 2.87, SD = .80$ ). Furthermore, the boys in this study also had significantly lower scores for Behavioural Conduct subscale ( $M = 2.87, SD = .659$ ) than the normative group ( $M = 3.14, SD = .70$ ).

The means and standard deviations on the six subscales of the SSS for the students who participated in this study ("LD sample") are presented in Table 3. The normative data provided by Harter (1985b) are also shown. Once again, separate age groups could not be examined, as there were insufficient numbers to constitute valid analyses in this manner. All of the means and standard deviations obtained for the LD sample were within the range of the scores for the normative groups, with the exception of two. A significant difference was found on the Teacher Support subscale for both the boys ( $t(30) = -2.43, p = .021$ ) and the girls ( $t(11) = 4.12, p = .002$ ). These results indicate that the boys in this study had significantly lower scores for the Teacher Support subscale ( $M = 3.07, SD = .63$ ) compared to the normative group ( $M = 3.37, SD = .65$ ). By contrast, girls in this study had significantly higher scores for the Teacher Support subscale ( $M = 3.82, SD = .37$ ) compared to the normative group ( $M = 3.36, SD = .61$ ).

Table 3:

Subscale Means and Standard Deviations of the Social Support Scale for Children: A Comparison between the Normative Sample and the LD Sample.

Perceived Social Support	BOYS				GIRLS			
	LD Group (n = 30)		Norm Group (n = 51)		LD Group (n = 11)		Norm Group (n = 44)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Parent	3.45	0.39	3.37	0.72	3.74	0.38	3.50	0.45
Classmate	3.02	0.59	3.06	0.67	3.33	0.65	3.25	0.68
Teacher	3.07	0.68	3.37	0.65	3.82	0.37	3.36	0.61
Friend	3.03	0.78	3.01	0.73	3.44	0.91	3.15	0.68

The means and standard deviations for task performance (SPELD data) are presented in Table 4. No normative data was provided for in the SPELD battery, and therefore could not be presented.

Table 4:

Means and Standard Deviations for Task Performance indicators for the LD sample.

Task Performance	BOYS LD Group ( <i>n</i> = 29)		GIRLS LD Group ( <i>n</i> = 11)	
	Mean	SD	Mean	SD
Visual memory for numbers	1.31	0.60	1.45	0.82
Visual memory for shapes	1.93	0.96	1.55	0.69
Visual memory for words	1.69	1.04	1.45	0.82
Reading Comprehension	2.21	1.26	2.36	1.21
Oral reading	1.90	1.05	1.82	0.98
Auditory memory for digits	2.28	1.22	2.00	1.00
Auditory memory for sentences	2.38	1.45	2.27	1.42
Spelling	1.57	0.88	1.45	0.52
Fine motor Skills	2.93	0.80	3.18	0.98
Gross Motor skills	2.72	0.53	3.00	0.00

The Pearson product-moment correlation coefficient was used to ascertain if there were any correlations between demographic variables and (a) the competency/ adequacy subscale scores of the SPPC, (b) the social support subscale scores of the SSS, and (c) task performance scores.

### **CORRELATIONS OF DEMOGRAPHICS WITH PERCEIVED COMPETENCY/ADEQUACY**

Age significantly correlated with scores from the Behavioural Conduct subscale ( $r = -.3024, p = .027$ ), and the Scholastic Competence subscale ( $r = -.3019, p = .028$ ). These correlations indicate that younger students in this sample perceived themselves to have more adequate behavioural conduct and scholastic competence compared to older students. The remaining SPPC subscales were not significantly related to age. Finally, ANOVA indicated no significant differences between children 8 and older and those younger than 8 on any SPPC subscales ( $p$ 's  $> .10$ ).

Gender was found to be correlated with scores from the Behavioural Conduct subscale ( $r = -.4193, p = .003$ ). A one-way ANOVA confirmed a significant difference ( $F(1,39) = 8.3200, p = .0064$ ). These results indicated that girls ( $M = 3.5000, SD = .5055$ ) in this study perceived themselves to have more adequate behavioural conduct compared to the boys ( $M = 2.8667, SD = .6586$ ) in this sample. The remaining SPPC subscales were not significantly related to gender.

Father's SES correlated with scores from the Athletic Competence subscale of the SPPC ( $r = .3235, p = .043$ ). A one-way ANOVA confirmed this significant difference ( $F(1,27) = 5.1687, p = .0312$ ). These results indicate that the students in this sample who had fathers with high SES perceived themselves to be more athletically competent ( $M = 3.5556, SD = .4700$ ) than students who had fathers from a low SES ( $M = 3.0238, SD = .7648$ ). The remaining SPPC subscales were not significantly related to father's SES.

Mother's SES correlated with scores from the Athletic Competence subscale ( $r = .3357, p = .040$ ), and the Social Acceptance subscale ( $r = .3518, p = .033$ ). These correlations indicate that the students in the sample who had mothers from a higher SES perceived themselves to be more athletically competent and be more socially accepted. Furthermore, the relationship between scores from the Athletic Competence subscale and mother's SES was confirmed when a one-way ANOVA was performed ( $F(1,26) = 5.0787, p = .0329$ ) (high SES;  $M = 3.5526, SD = .5272$ ) (low SES;  $M = 3.0556, SD = .5833$ ). However, a one-way ANOVA involving mother's SES and Social Acceptance was not significant ( $p > .10$ ). The remaining SPPC subscales were not significantly related to mother's SES.

Parental status significantly correlated with scores from the Global Self-Worth subscale ( $r = .3002, p = .028$ ), and the Physical Appearance subscale ( $r = .3637, p = .010$ ). The results indicate that students in the sample who had solo parents had lower scores on the Global Self-Worth subscale than students raised by two parents. One-way ANOVA provided further confirmation of a significant difference between parental status and scores on the Physical Appearance subscale ( $F(1,39) = 5.9438, p = .0194$ ); however, ANOVA failed to detect a significant difference on Global Self-Worth ( $p > .10$ ). For Physical Appearance scores, the ANOVA indicates that students in the sample who had solo parents ( $M = 2.6667, SD = .7247$ ) had significantly reduced perceptions of their physical appearance compared to students raised by two parents ( $M = 3.2356, SD = .6615$ ). No other relationships were found between SPPC subscales and parent status.

No other significant correlations in this sample were found between remaining demographic variables (i.e., location of residency, parental status, parent's SES, gender, and age) and the student's self-perceptions of their competency/adequacy.

## RELATIONSHIP BETWEEN DEMOGRAPHICS AND SOCIAL SUPPORT

Gender correlated with scores from the Parental Support subscale ( $r = -.3214, p = .020$ ), and the Teacher Support subscale ( $r = -.4836, p = .001$ ). One-way ANOVA confirmed these significant differences (Parental Support subscale;  $F(1,39) = 4.4940, p = .0404$ ) (Teacher Support subscale;  $F(1,39) = 11.9047, p = .0014$ ). These results indicate that the girls in this sample perceived themselves to have more support from their parents ( $M = 3.7424, SD = .3827$ ) and teachers ( $M = 3.8182, SD = .3686$ ) than did boys ( $M = 3.4500, SD = .3943$  for Parental Support, and  $M = 3.0667, SD = .6831$  for Teacher Support).

Father's SES correlated with Teacher Support ( $r = .3812, p = .021$ ). This was further confirmed by a one-way ANOVA ( $F(1,27) = 4.2293, p = .0495$ ). This result indicates that students in the sample who had a father from a higher SES perceived themselves to have more support from their teacher ( $M = 3.5333, SD = .5950$ ) than students with a father from a lower SES ( $M = 3.0595, SD = .6459$ ).

Location of residency (urban/rural) correlated with scores from the Teacher Support subscale ( $r = -.2760, p = .042$ ). This correlation indicates that urban students in this sample perceived more social support from their teacher than did rural students.

Parent status correlated significantly with the Close Friend Support subscale ( $r = .2861, p = .035$ ), which indicates that students in this sample who had a solo parent perceived less peer support than the students with two parents.

No other significant correlations were found between SSS subscales and other remaining demographic factors (i.e., location of residency, parental status, parent's SES, gender, and age).

## RELATIONSHIPS BETWEEN SPPC, SSS, AND TASK PERFORMANCE

The previous section addressed relationships between demographic variables and the data collected for this study. This section now presents the results based on correlations between primary variables. Pearson product-moment correlations were performed on combinations of the SSS subscales, SPPC subscales, and task performance scores.

### GLOBAL SELF-CONCEPT CORRELATES

Global Self-Worth scores correlated with Athletic Competence ( $r = .4771, p = .001$ ), Behavioural Conduct ( $r = .4225, p = .003$ ), Physical Appearance ( $r = .6188, p = .001$ ), Scholastic Competence ( $r = .2957, p = .030$ ), Teacher Support ( $r = .3178, p = .021$ ) subscale scores, and auditory memory for sentences ( $r = .3111, p = .025$ ). As a result, students who reported lower levels of Global Self-Worth were inclined to perceive themselves as having lower levels of Behavioural Conduct, Physical Appearance, Scholastic Competence, and Teacher Support, and also has lower auditory memory for sentences than those students reporting higher levels of Global Self-Worth. No other correlations were found to be significant.

### SCHOLASTIC COMPETENCE CORRELATES

In addition to Scholastic Competence being correlated with Global Self-Worth (as reported in the previous section), Scholastic Competence also correlated with Physical Appearance ( $r = .3041, p = .027$ ), Behavioural Conduct ( $r = .3005, p = .028$ ), and spelling scores ( $r = .2979, p = .033$ ). These correlations indicate that the students in this sample who perceived themselves as lower in Scholastic Competence not only tended to report lower levels of Global Self-Worth, but also had reduced perceptions of their Physical Appearance and Behavioural Conduct, and had lower spelling scores. No other correlations were found to be significant.

## CORRELATES OF OTHER SPPC AND SSS SUBSCALES

Behavioural Conduct was found to be correlated with Teacher Support ( $r = .4022, p = .005$ ). This indicates that students who reported lower Behavioural Conduct scores perceived themselves to have less support from their teachers than students who reported higher scores for the Behavioural Conduct subscale.

Athletic Competence correlated with Physical Appearance ( $r = .2758, p = .040$ ), Social Acceptance ( $r = .3968, p = .005$ ), and Parental Support ( $r = .4450, p = .002$ ). These correlations indicate that those students in the study who perceived themselves lower in Athletic Competence also perceived themselves as having lower levels of Physical Appearance, Social Acceptance, and Parental Support.

Social Acceptance correlated with Close Friend Support ( $r = .4650, p = .001$ ) and Classmate Support ( $r = .7089, p = .001$ ). These correlations indicate that students in this sample who perceived lower levels of Social Acceptance also perceived lower levels of support from their friends and classmates. The relationship appears particularly strong between Social Acceptance and Classmate Support, as indicated by the value of the coefficient  $r$ .

Parental Support correlated with Teacher Support ( $r = .3289, p = .018$ ), Teacher Support correlated with Classmate Support ( $r = .2624, p = .049$ ), and Classmate Support correlated with Close Friend Support ( $r = .5328, p = .001$ ). These correlations indicate that those students in this sample who perceived lower levels of support from parents also perceived lower levels of support from their teachers. Furthermore, the students in this sample who perceived lower levels of support from their teachers also perceived lower levels of support from their classmates, and finally, those who perceived lower levels of support from their classmates also perceived lower levels of support from their friends. No other correlations were found to be significant.

## CORRELATIONS WITHIN TASK PERFORMANCE SCORES (SPELD BATTERY)

Auditory memory for digits correlated with auditory memory for sentences ( $r = .5002, p = .001$ ), reading comprehension ( $r = .3271, p = .021$ ), oral reading ( $r = .3913, p = .006$ ), spelling ( $r = .3320, p = .019$ ), visual memory for numbers ( $r = .3408, p = .016$ ) shapes ( $r = .5490, p = .001$ ) and words ( $r = .5197, p = .001$ ). These correlations indicate that the students in this sample who had lower auditory memory for sentence scores also has lower scores for reading comprehension, oral reading, spelling, and visual memory for numbers, shapes, and words.

Auditory memory for sentences correlated with reading comprehension ( $r = .4527, p = .002$ ), oral reading ( $r = .3141, p = .024$ ), and visual memory for shapes ( $r = .5475, p = .0001$ ). These correlations indicate that the students in this sample who had lower auditory memory for sentence scores had lower scores for reading comprehension, oral reading, and visual memory for shapes.

A significant correlation was found between gross motor skills and fine motor skills ( $r = .4564, p = .002$ ). This correlation indicate that the students in this sample who had lower scores for gross motor skills also had lower scores for fine motor skills.

Reading comprehension correlated with oral reading ( $r = .7345, p = .001$ ), spelling ( $r = .6620, p = .001$ ), visual memory for shapes ( $r = .4402, p = .003$ ), and words ( $r = .5336, p = .001$ ). These correlations indicate those students who had lower reading comprehension scores also had lower scores for oral reading, spelling, and visual memory for both shapes and numbers.

Spelling correlated with visual memory for numbers ( $r = .3222, p = .023$ ), and words ( $r = .5926, p = .001$ ). These correlations indicate that those students who had lower spelling scores also had lower scores for visual memory for numbers and words. A statistical trend was observed between spelling and visual memory shapes ( $r = .2665, p = .051$ ), indicating that those students who were below

average in spelling also tended to have a visual memory for shapes that was below average.

Visual memory for words correlated with visual memory for numbers ( $r = .4846$ ,  $p = .001$ ), visual memory for shapes ( $r = .4171$ ,  $p = .004$ ), and fine motor skills ( $r = .3091$ ,  $p = .026$ ). These correlations indicate that the students in this sample who had lower visual memory scores also had lower scores for visual memory for numbers and shapes and fine motor skills. No other correlations were found to be significant.

The statistics presented thus far provides an overall picture of the demographic and correlational relationships. Having completed the preliminary analyses, the following sections will now address the hypotheses.

## MAIN ANALYSES

### **HYPOTHESIS 1: PROPORTIONS OF GLOBAL SELF-WORTH AND SCHOLASTIC COMPETENCE**

The first hypothesis predicted that students with LD would differ in their individual perceptions of their global self-worth and scholastic (academic) competence. It was expected that a higher proportion of students would report high Global Self-Worth scores, and a higher proportion of students would report low Scholastic Competence scores. This expectation was based on previous findings (Kloomok & Cosden, 1994).

The distribution of students was as expected. A total of 13 students were placed in the low Global Self-Worth group, 28 in the high Global Self-Worth group ( $\chi^2 = 5.4878$ ,  $p < .05$ ), while a total of 33 students were placed in the low Scholastic Competence group, and 8 students in the high Scholastic Competence group ( $\chi^2 = 15.2439$ ,  $p < .05$ ). A significant difference between the means of

these groups on Global Self-Worth was confirmed,  $t(41) = 18.80, p < .05$ . A significant difference between means of the Scholastic Competence groups was also confirmed,  $t(41) = 12.68, p < .05$ . These findings supported the first hypothesis.

## **HYPOTHESIS 2: GLOBAL SELF-WORTH AND PERCEIVED COMPETENCY/ADEQUACY**

The second hypothesis predicted that students reporting high Global Self-Worth scores would report higher SPPC subscale scores than students reporting low Global Self-Worth scores. The SPPC subscales included : Scholastic Competence, Social Acceptance, Physical Appearance, Behavioural Conduct, and Athletic Competence.

In order to detect if there were any patterns of perceived competency/adequacy in relation to global self-worth, a number of one-way ANOVAs were performed between high/low global self-worth and the different domains of competency/adequacy specified in the SPPC scale (see also Preliminary Analyses for presentation of related correlational analyses).

A significant difference was found between high and low global self-worth on the Physical Appearance subscale ( $F(1, 39) = 13.5600, p = .0007$ ) and Behavioural Conduct subscale ( $F(1, 39) = 5.9412, p = .0195$ ). Students in the low global self-worth group had a significantly lower mean score for the Physical Appearance subscale ( $M = 2.5385, SD = .6911$ ) than did students in the high global self-worth group ( $M = 3.3155, SD = .5989$ ). Likewise, students in the low global self-worth group also had a significantly lower mean score for the Behavioural Conduct subscale ( $M = 2.6795, SD = .5202$ ) than did the students in the high global self-worth group ( $M = 3.2024, SD = .6855$ ). These results indicate that students in this study who reported low global self-worth perceived themselves to have lower levels of physical appearance and behavioural conduct than students who reported high global self-worth.

A statistical trend was found between high and low global self-worth for the Athletic Competence ( $F(1, 39) = 2.9405, p = .0943$ ) subscale. The results indicate that students who reported low global self-worth ( $M = 2.9744, SD = 2.9744$ ) tended to perceive themselves as less competent in athletics than the students who reported high global self-worth ( $M = 3.3571, SD = .6297$ ). No other significant results were found.

The results partially support the second hypothesis, whereby students who reported high global self-worth reported significantly higher competency/adequacy scores in the domains of physical appearance and behavioural conduct than did their peers who reported low global self-worth. Students reporting high global self-worth were not found to have significantly higher competency/adequacy scores for Scholastic Competence, Athletic Competence, or Social Acceptance domains when compared to their peers who reported low global self-worth. Hypothesis 2 was partially supported as a consequence of these results.

### **HYPOTHESIS 3: GLOBAL SELF-WORTH AND PERCEPTIONS OF SOCIAL SUPPORT**

The third hypothesis predicted that students reporting high Global Self-Worth scores would report higher scores on social support subscales than would students reporting low Global Self-Worth scores. The social support subscales included : Parent Support, Teacher Support, Classmate Support, and Close Friend Support.

Global Self-Worth scores were categorised as either high or low, as described in the preliminary analysis, and analyses were preformed to detect any relationship between global self-worth (high and low) and the subscale scores from the SSS scale. The dependent variables included the Close Friend Support subscale, the Parental Support subscale, the Teacher Support subscale, and the Classmate Support subscale. One-way ANOVAs were performed using these variables.

A significant F-ratio was found for the Teacher Support subscale ( $F(1, 39) = 4.3341, p = .0440$ ), but not for the other social support subscales. The mean score for the Teacher Support subscale for students who reported low global self-worth was 2.9487 ( $SD = .7710$ ), whilst students reporting high scores for Global Self-Worth had a mean score of 3.4167 ( $SD = .6195$ ). In other words, students who reported low global self-worth had significantly lower perceptions of support received from their teachers than those students who reported high global self-worth. Results partially supported this hypothesis.

Table 5:

ANOVA Means and Standard Deviations for Self-Concept and Perceived Social Support for Students reporting High and Low Global Self-Worth.

<b>Self-Concept and Perceived Social Support</b>	<b>High Global (<i>n</i> = 28)</b>		<b>Low Global (<i>n</i> = 13)</b>	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
<b>Scholastic</b>	2.4881	0.6317	2.1923	0.5887
<b>Social</b>	2.9940	0.7529	2.7051	0.6425
<b>Athletic</b>	3.3571	0.6297	2.9744	0.7386
<b>Behavioural</b>	3.2024	0.6855	2.6795	0.5202
<b>Physical</b>	3.3155	0.5989	2.5385	0.6911
<b>Parent</b>	3.5595	0.4138	3.4615	0.4034
<b>Classmate</b>	3.1131	0.6910	3.0897	0.4336
<b>Teacher</b>	3.4167	0.6195	2.9487	0.7710
<b>Friend</b>	3.2500	0.8790	2.9103	0.6859

Note. Social, Athletic, Behavioural, and Physical represent the competency/adequacy SPPC subscales. The social support subscales of the SSS are represented by Parent, Classmate, Teacher, and Friend.

Table 5 presents the summary of ANOVA means and standard deviations obtained for SPPC and SSS subscales for students reporting high and low Global Self-Worth scores. Significant results have already been discussed in Hypotheses 2 and 3.

#### **HYPOTHESIS 4: CATEGORISING SUBGROUPS OF GLOBAL SELF-WORTH / SCHOLASTIC COMPETENCE**

The fourth hypothesis predicted students could be reliably categorised into groups according to the reports of scores for the Global Self-Worth subscale and the Scholastic Competence subscale: (a) low global/high scholastic, (b) low global/low scholastic, (c) high global/high scholastic, and (d) high global/low scholastic self-concept. This expectation was based on previous findings (Kloomok & Cosden, 1994). Based on Kloomok and Cosden's (1994) findings, it was also expected that the largest proportion of students would be categorised as falling into the high global/low scholastic subgroup. The next largest subgroup was expected to be low global/low scholastic, followed by a smaller number of students falling into the high global/high scholastic subgroup. Finally, it was expected that the low global/high scholastic subgroup would contain the least number of students, if any.

Students were classified according to their global and scholastic subscale scores. As expected, the majority of students fell into the high global/low scholastic group ( $n = 21$ ), or the low global/low scholastic group ( $n = 12$ ). The remaining students fell into the high global/high scholastic group ( $n = 7$ ) and low global/high scholastic group ( $n = 1$ ). Chi-square confirmed these differences ( $\chi^2 = 20.9512, p < .05$ ). The student that fell into the low global/high scholastic group was by necessity omitted (i.e., no standard deviation/variance for one subject) from further related analysis. As anticipated by Hypothesis 4, subgroups of Global Self-Worth/Scholastic Competence emerged in predicted proportions and directions.

### **HYPOTHESIS 5: SUBGROUPS OF GLOBAL SELF-WORTH/ SCHOLASTIC COMPETENCE AND NON-ACADEMIC DOMAINS**

The fifth hypothesis predicted that students with LD reporting high Global Self-Worth scores and low Scholastic Competence scores or high Global Self-Worth scores and high Scholastic Competence scores would also report higher scores on non-academic subscales of the SPPC scale, when compared to students with low Global Self-Worth scores and low Scholastic Competence scores or low Global Self-Worth and high Scholastic Competence. It was additionally expected that students classified in the high global/high scholastic subgroup would report higher scores on these scales than all other groups. The non-academic subscales of the SPPC scale included: Athletic Competence, Physical Appearance, Behavioural Conduct, and Social Acceptance.

One-way ANOVAs were performed with scores from the global/scholastic subgroups and non-academic subscales of the SPPC. The subgroups included low global/low scholastic, high global/low scholastic, and high global/high scholastic. As mentioned earlier, low global/high scholastic could not be included in the analysis, due to the fact that only one subject fell into that category. The dependent variables (non-academic subscales) included Athletic Competence, Behavioural Conduct, Physical Appearance, and Social Acceptance.

A significant F-ratio was found for subgroups on the Physical Appearance subscale ( $F(3,37) = 4.470, p = .0089$ ). Having obtained a significant result, a post-hoc analysis was performed to determine the source of the significance. The Newman-Keuls post-hoc analysis revealed that differences were significant between the (a) low global/low scholastic and high global/low scholastic subgroups, and between the (b) low global/low scholastic and high global/high scholastic subgroups on the Physical Appearance subscale.

These results indicate that students in this study who reported low global self-worth and low scholastic competence also reported significantly lower scores for Physical Appearance ( $M = 2.5139, SD = .7158$ ), when compared to students with

high global/low scholastic ( $M = 3.2857, SD = .6059$ ) and those in the high global/high scholastic group ( $M = 3.4048, SD = .6151$ ). These latter two groups' mean scores were not significantly different.

No significant differences were found between the subgroups and remaining non-academic subscales (Athletic Competence, Behavioural Conduct, or Social Acceptance). A statistical trend, however, was noted for Behavioural Conduct ( $F(3, 37) = 2.5567, p = .0700$ ). Students in the low global/low scholastic group tended to report lower scores for Behavioural Conduct ( $M = 2.6667, SD = .5412$ ) than students in the high global/high scholastic subgroup ( $M = 3.4762, SD = .5131$ ). No difference or trend was between the high global/low scholastic score ( $M = 3.1111, SD = .7214$ ) and other subgroup scores.

The results partially supported the fifth hypothesis for Physical Appearance only. While there were differences between high global/high scholastic and high global/low scholastic versus low global/low scholastic, there were no differences between high global/high scholastic and high global/low scholastic competence.

#### **HYPOTHESIS 6: SUBGROUPS OF GLOBAL SELF-WORTH / SCHOLASTIC COMPETENCE AND SOCIAL SUPPORT**

The sixth hypothesis predicted that students reporting (a) high Global Self-Worth scores and high Scholastic Competence scores, and (b) high Global Self-Worth scores and low Scholastic Competence scores would also report higher scores for social support subscales than students with (c) low Global Self-Worth scores and low Scholastic Competence scores, or (d) low Global Self-Worth and high Scholastic Competence scores. It was additionally expected that students classified in the high global/high scholastic subgroup would report higher scores on these scales than all other groups. The social support subscales included: Parent Support, Teacher Support, Classmate Support, and Close Friend Support.

Again, the low global/high scholastic group was not included in the analysis, due to the fact that only one subject fell into that category. One way ANOVAs were performed using scores from the global/scholastic subgroups and the SSS

subscales. No significant differences were found, although it appeared that the Teacher Support subscale may have been indicative of a statistical trend if the subject population had been larger ( $F(3, 37) = 2.1032, p = .1164$ ). However, the F-probability found in this study is larger than .1, and such a trend cannot be assumed. As a result, no significant differences were found. As a consequence, the sixth hypothesis was not supported.

Table 6:

ANOVA Means and Standard Deviations for Perceived Competency/Adequacy and Perceived Social Support for Global Self-Worth/ Scholastic subgroups.

Self-Concept and Perceived Social Support	Low Global/ Low Scholastic (n = 12)		High Global/ Low Scholastic (n = 21)	
	Mean	SD	Mean	SD
Social	2.6667	0.6552	2.9444	0.7534
Athletic	2.9583	0.7691	3.2937	0.7010
Behavioural	2.6667	0.5412	3.1111	0.7214
Physical	2.5139	0.7158	3.2857	0.6059
Parent	3.4583	0.4212	3.5238	0.4126
Classmate	3.0556	0.4342	3.0238	0.6776
Teacher	3.0000	0.7817	3.3413	0.6444
Friend	2.8611	0.6921	3.2460	0.8426

<b>Self-Concept and Perceived Social Support</b>	<b>High Global/ High Scholastic (n = 7)</b>	
	<b>Mean</b>	<b>SD</b>
<b>Social</b>	3.1429	0.7902
<b>Athletic</b>	3.5476	0.2999
<b>Behavioural</b>	3.4762	0.5131
<b>Physical</b>	3.4048	0.6151
<b>Parent</b>	3.6667	0.4303
<b>Classmate</b>	3.3810	0.7118
<b>Teacher</b>	3.6429	0.5131
<b>Friend</b>	3.2619	1.0535

Note. Table 6 continued from previous page.

Table 6 summarises the ANOVA means and standard deviations obtained when global/scholastic subgroups were examined for differences based on reports of perceived competency/adequacy and perceived social support (Social Acceptance, Athletic Competence, Behavioural Conduct, Physical Appearance, Parent Support, Classmate Support, Teacher Support, and Close Friend Support). Significant results have already been discussed in Hypothesis 5 and 6.

### **HYPOTHESIS 7: SUBGROUPS OF GLOBAL SELF-WORTH/ SCHOLASTIC COMPETENCE AND TASK PERFORMANCE**

The seventh hypothesis predicted that students reporting (a) high global self worth and low scholastic competence, or (b) low global self-worth and low scholastic competence would have significantly lower task performance scores compared to students who reported (c) high global self-worth and high scholastic competence, or (d) low global self-worth and high scholastic competence. It was additionally predicted that students classified in the high global/high scholastic subgroup would report higher scores on these scales than all other subgroups.

A series of one-way ANOVA were carried out using global/scholastic subgroups and task performance scores. The ANOVA means and standard deviations obtained are presented in Table 7. No significant differences were found ( $p$ 's > .10). Additional analyses again found no significant differences when looking at task performance as a function of level of global self-worth (high versus low scores) or perceived scholastic competence ( $p$ 's > .10). As a result, the seventh hypothesis was not supported.

Table 7:  
ANOVA Means and Standard Deviations for Task Performance for Students in each Global/Scholastic subgroup.

Task Performance	Low Global/ Low Scholastic (n = 12)		High Global/ Low Scholastic (n = 21)	
	Mean	SD	Mean	SD
<b>AM Digits</b>	2.0833	1.2401	2.2381	1.0443
<b>AM Sentences</b>	2.1667	1.2673	2.3333	1.4259
<b>VM Shapes</b>	1.9167	1.0836	1.7143	0.7838
<b>VM Numbers</b>	1.5000	0.6742	1.2857	0.6437
<b>VM Words</b>	1.3333	0.6513	1.7619	1.0443
<b>Comprehension</b>	2.0833	0.9003	2.2500	1.2927
<b>Oral Reading</b>	1.5833	0.7930	2.0000	1.1402
<b>Spelling</b>	1.5000	0.7977	1.4762	0.8136
<b>Gross Motor Skills</b>	2.5833	0.5149	2.8571	0.4781
<b>Fine Motor Skills</b>	2.8333	0.7177	3.0000	0.8944

Task Performance	High Global/ High Scholastic (n = 7)	
	Mean	SD
AM Digits	2.3333	1.6330
AM Sentences	3.0000	1.7889
VM Shapes	2.1667	0.9832
VM Numbers	1.3333	0.8165
VM Words	1.8333	1.3292
Comprehension	2.8333	1.6021
Oral Reading	2.1667	0.9832
Spelling	1.8333	0.7528
Gross Motor Skills	3.0000	0.0000
Fine Motor Skills	3.3333	1.0328

Note. Table 7 continued from previous page. AM Digits = auditory memory for digits; AM Sentences = auditory memory for sentences; VM Shapes = visual memory for shapes; VM Numbers = visual memory for numbers; VM Words = visual memory for words; Comprehension = reading comprehension.

Finally, multiple regression was performed to determine which factors best-predicted Global Self-Worth, Scholastic Competence, and Social Acceptance. In following Kloomok and Cosden (1994), a series of stepwise regression analyses was then followed by a simultaneous least squares regression to reveal the factors that best predicted Global Self-Worth, Scholastic Competence, and Social Acceptance. These results are now described.

## **HYPOTHESIS 8: PREDICTORS OF GLOBAL SELF-WORTH**

The eighth hypothesis expected that (a) SSS subscale scores (Parents Support, Teacher Support, Classmate Support, and Close Friend Support), particularly Parent Support, and (b) SPPC subscale scores in non-academic domains (Physical Appearance, Behavioural Conduct, Athletic Competence, and Social Acceptance), particularly Physical Appearance and Social Acceptance, would predict Global Self-Worth scores. It was further predicted that Scholastic Competence and task performance (academic skills/strategies, motor skills, auditory and visual memory skills) would be not be predictive of Global Self-Worth scores, based on previous research findings (Kloomok & Cosden, 1994). Hypotheses were not proffered for demographic variables. As indicated below, results partially supported this hypothesis.

To predict Global Self-Worth, a series of stepwise regressions were performed to using Global Self-Worth scores as the criterion variable. The predictor variables were (a) task performance scores (for motor skills, visual/auditory memory, spelling, and reading skills), (b) SSS subscale scores (Parents Support, Teacher Support, Classmate Support, and Close Friend Support), and (c) SPPC subscale scores (Scholastic Competence, Physical Appearance, Behavioural Conduct, Athletic Competence, and Social Acceptance), and (d) demographic variables (age, gender, parental status, parent SES, and location of residency).

Four significant variables emerged as a result of the stepwise regression for Global Self-Worth. The significant variables were Athletic Competence ( $t = 2.9150$ ,  $p = .0121$ ,  $Beta = .2670$ ), Physical Appearance ( $t = 3.9550$ ,  $p = .0016$ ,  $Beta = .3779$ ), Solo Parent ( $t = 5.8000$ ,  $p = .0001$ ,  $Beta = .5621$ ), and Teacher Support ( $t = 2.8010$ ,  $p = .0150$ ,  $Beta = .2537$ ). No other variables were found significant.

These variables were then entered into a more conservative simultaneous least squares regression. A total of 52.65 % of the variance in Global Self-Worth was accounted for by these four factors. Physical Appearance and Athletic Competence were found to be significant predictors of Global Self-Worth:

Physical Appearance (Beta = .4749,  $p = .0007$ ), Athletic Competence (Beta = .3147,  $p = .0125$ ). A significant trend was found for Teacher Support (Beta = .1978,  $p = .0986$ ). Parental status was not a significant predictor.

These results indicate that students in this study who reported increased perceptions of their physical appearance and athletic competence, and to a lesser degree, perceptions support from their classroom teachers, also reported high global self-worth in comparison to children reporting low perceptions in these domains. Furthermore, perceptions of physical appearance had more predictive power than perceptions of athletic competence.

### **HYPOTHESIS 9: PREDICTORS OF SCHOLASTIC COMPETENCE**

The ninth hypothesis predicted that (a) SSS subscale scores (Parents Support, Teacher Support, Classmate Support, and Close Friend Support), and (b) SPPC subscale scores (Global Self-Worth, Physical Appearance, Behavioural Conduct, Athletic Competence, and Social Acceptance) would predict Scholastic Competence scores. It was further predicted that task performance scores (academic skills/strategies, motor skills, auditory and visual memory skills) would also be predictive of Scholastic Competence scores, based on previous research findings (Kloomok & Cosden, 1994). Hypotheses were not proffered for demographic variables.

Multiple regression was used to predict Scholastic Competence using the following predictor variables: (a) SSS subscale scores (Parents Support, Teacher Support, Classmate Support, and Close Friend Support), (b) SPPC subscale scores (Global Self-Worth, Physical Appearance, Behavioural Conduct, Athletic Competence, and Social Acceptance), (c) task performance scores (academic skills/strategies, motor skills, auditory and visual memory skills), and (d) demographic variables (age, gender, parental status, parent SES, and location of residency). The criterion variable was Scholastic Competence.

A series of stepwise regressions were performed, only Close Friend Support was found to be significant ( $t = 2.5180$ ,  $p = .0228$ , Beta = .5328). A simultaneous

regression was then performed using the scores for Close Friend Support. This final analysis was not significant ( $p = .2806$ ). These results indicate that no variable predicted Scholastic Competence scores. Hypothesis 9 was not supported as a consequence of these results.

#### **HYPOTHESIS 10: PREDICTORS OF SOCIAL ACCEPTANCE**

The tenth hypothesis predicted that more students would report lower levels of social acceptance rather than higher levels of social acceptance, and perceived social acceptance would be predicted by perceived social support.

A total of 24 students were found to report high levels of social acceptance (score of 3 or above), and only 17 students reported lower levels of social acceptance (score of less than 3). A significant difference was not detected between the two groups (high and low social acceptance) when a chi-square test was performed ( $\chi^2 = 1.1951, p > .05$ ). Multiple regression was used to predict Social Acceptance using the following predictor variables: (1) SSS subscale scores (Parents Support, Teacher Support, Classmate Support, and Close Friend Support), (2) SPPC subscale scores (Global Self-Worth, Physical Appearance, Behavioural Conduct, Athletic Competence, and Scholastic Competence), (3) task performance scores (academic skills/strategies, motor skills, auditory and visual memory skills), and (4) demographic variables (age, gender, parental status, parent SES, and location of residency). The criterion variable was Social Acceptance.

A series of stepwise regression were performed and only Spelling ( $t = 2.485, p = .0230, \text{Beta} = .3318$ ) and Classmate Support ( $t = 5.608, p = .0001, \text{Beta} = .7489$ ) were significant. A simultaneous regression was then performed with the scores for Spelling and Classmate Support. This regression accounted for 46% of the variance. Only Classmate Support was found significant ( $t = 5.485, p = .0001, \text{Beta} = .6748$ ). These results indicate that Classmate Support scores predicted Scholastic Competence scores, which partially supported hypothesis ten.

## CHAPTER FOUR

### DISCUSSION

#### SUMMARY OF MAJOR FINDINGS

The results of the present study found that students with LD have different perceptions of their academic versus global self-concept. Most students (33 out of 41) reported low levels of scholastic competence; however, the majority (n = 28) also reported high levels of global self-worth. More specifically, the current study found that the majority (51%) of participants reported both a low level of scholastic competence and a high level of global self-worth. These New Zealand based results are consistent with other overseas research (Forman, 1988; Kloomok & Cosden, 1994; Rothman & Cosden, 1995) and indicate that although students with learning difficulties may have poor perceptions of their academic competency, many report feeling good about themselves in general.

The second major finding revealed that perceptions of competence or adequacy in some non-academic domains had stronger relationships with global self-worth compared to perceptions of competence in the academic domain. This general pattern is supported by other research using LD samples (Kistner & Osborne, 1987; Kloomok & Cosden, 1994). More specifically, the present study found that students who reported higher levels of global self-concept reported significantly higher Physical Appearance and Behavioural Conduct scores compared to students who reported low levels of global self-worth. This pattern was also indicated for Athletic Competence scores but was limited to a statistical trend. The results also showed that students categorised as both low in global self-worth and low in perceived scholastic competence reported significantly lower Physical Appearance scores in comparison to students reporting (a) higher levels of global self-worth and higher perceptions of scholastic competence, and (b) higher levels of global self-worth and lower perceptions of scholastic competence. Finally, regression analyses confirmed that the most significant predictor of global self-worth was perceived physical appearance. Taken

together, research consistently has found perceptions of physical appearance to be significantly related to reports of global self-concept in LD children (Heath & Wiener, 1996; Kloomok & Cosden, 1994; Renick & Harter, 1988; Smith & Nagle, 1995). However, research findings are more mixed as to which other perceptions of competency or adequacy are significantly related to global self-worth (Heath & Wiener, 1996; Kloomok & Cosden, 1994; Smith & Nagle, 1995).

In terms of the relationship between global self-concept and social support, the results of the present study found that students categorised as higher in global self-worth reported higher levels of social support from their teacher in comparison to students lower in global self-worth. This finding is consistent with claims that a student's sense of self-esteem is contributed to, and fostered by, the frequency and quality of teacher interactions with that student (Bear et al., 1998; Wang et al., 1994). However, teacher support was the only significant source of support identified in this study whereas other research has identified various other sources as related to global self-worth (e.g. Bear & Minke, 1996; Bear et al., 1998; Forman, 1988).

This study failed to find any significant differences in levels of social support as a function of global/academic self-concept whereas Kloomok and Cosden (1994) did. Kloomok and Cosden (1994) found significant differences between global/academic subgroups on the Parent and Close Friend subscales. Students with a high global/high academic self-concept perceived themselves as receiving the most support from friends and parents, students with low global/low academic self-concept perceived themselves receiving the least support, and those with high global/low academic were somewhere in between. While the same pattern was noted in the current study on three out of four scales (i.e., high global/ high scholastic > high global/low scholastic > low global/ low scholastic), differences between groups were not significant, perhaps due to the size of the sample. That possibility aside, further research needs to clarify relationships between specific sources of support and aspects of self-concept in LD children.

The third major finding of this study revealed no significant differences between groups who varied in their levels of global/scholastic self-concept on task performance indicators. In contrast, Kloomok and Cosden (1994) found students with low global/low academic self-concept scored significantly lower in reading achievement than students reporting high global/low academic or high global/high academic self-concept. Though no significant differences were found between groups here, the pattern of scores again showed that generally, the high global/high scholastic group had the highest task performance scores, and the low global /low scholastic group had the lowest scores. Future research using larger samples are needed to explore the relationship between self-concept and task performance.

More students were found to report higher levels of social acceptance ( $n = 24$ ) rather than lower levels of social acceptance ( $n = 17$ ); however these group's frequencies were not significantly different. Results in this area are mixed: Some have found more LD students report high levels of social acceptance (Clever et al., 1992), while others do not (La Greca & Stone, 1990). The use of multiple regression showed perceptions of classmate support to be the only significant predictor of perceived social acceptance.

On the other hand, no significant predictors were found for academic self-concept in this study. In particular, the failure to detect academically oriented task performance (spelling and reading scores) as predictive was surprising, as some research has found academic achievement to be predictive of academic self-concept (Chapman, 1988a). By contrast, the results from the present study did find 52.65% of variance in global self-worth was accounted for by perceptions of physical appearance, athletic competence, teacher support, and parent status (dual versus solo). Within this group of variables, perceptions of physical appearance and athletic competence were significant. Academic self-concept was found not to be a significant predictor of global self-worth. Similar findings have been reported by other researchers (e.g., Kloomok & Cosden, 1994). However, unlike current findings, other studies have found that perceptions of social acceptance and parent support (Kloomok & Cosden, 1994) and classmate support (Forman, 1988) have predicted global self-concept. What

does appear to be a consistent finding across various studies is that perceptions of physical appearance are not only predictive of global self-worth, but this variable also emerges as the largest contributor to the variance in global self-worth (Harter, 1990; Kloomok & Cosden, 1994; Smith & Nagle, 1995).

Taken together, these results present a complex picture of self-concept in students with learning disabilities. However, a general pattern that emerges indicates many students with learning difficulties appear to be able to maintain a high sense of general self-worth, even though they may perceive and actually experience a lack of academic competency. It does appear that most children in the current sample are able to achieve a high sense of self-worth that is related to perceptions competency or adequacy in non-academic areas of their life (particularly physical appearance, and to a lesser extent, athletic competence and behavioural conduct), and through perceptions of social support from significant others in their life, particularly teachers.

Attention will now be paid to the specific findings of this study, how these findings fit in terms of other information known about children with LD, and the implications of these findings.

## **SPECIFIC FINDINGS**

### **DEMOGRAPHIC BASED AND NORM GROUP DIFFERENCES**

#### **NORM DIFFERENCES**

Girls in the present study reported more support from their teachers than girls in the normative groups, and boys reported lower levels of perceived scholastic competence, behavioural conduct, and teacher support than did boys in the normative group. These results are not surprising as the normative group consisted of normal achieving students, and research has shown similar results between normal achieving students and students with LD (e.g., Clever et al., 1992).

## DIFFERENCES IN SELF-CONCEPT AND SOCIAL SUPPORT BASED ON DEMOGRAPHIC FACTORS

Girls in the present study perceived more adequate levels of behavioural conduct, parent support, and teacher support in comparison to boys. This is not surprising, given that LD is also associated with behavioural disorders, which are more prevalent among boys than girls (Kaplan & Sadock, 1994). Furthermore, such 'misbehaviour' may alienate sources of support; for example, parents and teachers who have regular exposure to a child's defiant behaviour may lead to decreased levels of support directed toward them. Alternatively, girls may not only elicit more support, but they may also tend to seek support from others more often (Bush & Simmons, 1987).

In terms of self-concept, findings reported in the literature on gender differences in LD samples are mixed. For example, perceptions of scholastic competence for girls has been found to be both lower than boys (Hagborg, 1996) and higher than boys (Chapman, 1988a). Girls have previously been found to have levels of perceived athletic competence (Hagborg, 1996; Heath & Wiener, 1996; Granleese et al., 1988), physical competence, and global self-worth (Granleese et al., 1988; Hagborg, 1996). In contrast, Bear and Minke (1996) found no significant differences between genders. These results suggest that further research is required to determine whether any more definitive gender patterns emerge.

Only two significant differences were found in the present study, which indicated the younger children reported less adequate levels of behavioural conduct and lower levels of perceived scholastic competence compared to older children. In contrast, Kloomok and Cosden (1994) found no significant differences as a function of age, while Kistner and associates (1987) found older children reported more support from peer relationships compared to younger children.

Results from the present study found students who had a mother from a high SES perceived higher levels of social acceptance and athletic competence when compared to students who had mothers from a lower SES. Students who had

fathers from a higher SES were found to perceive higher athletic competence and more support from their teachers than students with a father from a lower SES. No other similar studies could be found which examined these variables with respect to SES. It appears that SES level of parents may impact on children's perceptions in a similar way that SES has been shown to relate to childhood problem behaviours (Kazdin et al., 1997).

No other similar studies were found that reported differences in the variables assessed in this study. Three differences were found in this study as a function of parent status. Students in the study who had solo parents reported lower levels of global self-worth, physical appearance, and friend support. Other risk factor research has indicated solo parent status to be a risk factor for a variety of childhood problems (Kazdin et al., 1997).

Urban students reported more support from their teachers than rural students. In all, the findings presented here suggest demographic factors may impact self-concept. For example, the current study found perceptions of athletic competence were high for boys, and for those children who had parents from a higher SES. Thus, the combination of these demographic factors would increase the probability a child in this study would report higher levels of perceived athletic competence. This illustrates how the interaction of a number of demographic factors may influence specific self-concept. It therefore seems vital that such factors are studied and reported in future research, in order to obtain a more concise understanding of the role these factors play in the development of the self-concept in learning disabled children. As this study suggests, particular demographic factors may put children at increased risk whereas others may provide a protective role (see also Kazdin et al., 1997).

### **PROPORTIONS: GLOBAL SELF-WORTH AND SCHOLASTIC COMPETENCE**

Results supported the first hypothesis: Most students with LD reported different levels of perception of their global self-worth compared to their scholastic (academic) competence. A high proportion of students reported both high Global

Self-Worth scores and low Scholastic Competence scores. This distribution was remarkably similar to the distribution reported by Kloomok and Cosden (1994). For example, 68% of students in the present study reported high global self-worth, while 67% reported this level in Kloomok and Cosden's (1994) study. The present study found 80.5% reporting perceptions of low scholastic competence, while Kloomok and Cosden (1994) reported 85%.

A strength of the current study was use of a multidimensional measurement, which permitted the examination of specific areas of self-concept. The results of the current study support previous research using multidimensional assessment (Forman, 1988; Kloomok & Cosden, 1994; Rothman & Cosden, 1995), and provide evidence to reject a popular notion that children and adolescents with LD generally have a low global self-concept. These findings also support the idea that self-concept has multidimensional qualities (Mash & Gouvernet, 1989). Such findings have relevance in both academic and clinical settings. When self-concept issues are mentioned in educational and psychological referrals, multidimensional assessment can help the professional attain a comprehensive assessment of self-concept to base intervention plans upon. Findings here also support that studies such as the current one are worthwhile if for nothing else, to provide data to dispel myths that teachers and parents might have about LD children's levels of global self-esteem.

### **GLOBAL SELF-WORTH, SCHOLASTIC COMPETENCE AND PERCEIVED COMPETENCY /ADEQUACY**

The current study found significant relationships between a high level of global self-concept and perceptions of competency/adequacy in some non-academic domains (i.e., physical appearance and behavioural conduct). No significant difference was found between those high versus low in Global Self-Worth and perceptions of scholastic competence. In general, these results are consistent with previous findings. Other researchers have reported similar findings regarding the relationship between perceptions of scholastic competence and global self-worth (Chapman & Boersma, 1979; Grolnick & Ryan, 1990; Kistner & Osborne, 1987; Kloomok & Cosden, 1994; Lincoln & Chazan, 1979), and

significant relationships between self-worth and perceptions of competency/adequacy in non-academic domains (Heath & Wiener, 1996; Kloomok & Cosden, 1994; Poplin, 1984; Rothman & Cosden, 1995).

Although the general findings of this study are consistent with other research, there are some specific variations between studies. More explicitly, this study found students who reported feelings of high global self-worth also reported significantly higher levels of perceived behavioural conduct and physical appearance, and tended to have higher levels of perceived athletic competence (in comparison to students reporting low levels of global self-worth). Other research has confirmed some, and not other, of these specific findings. For example, findings have been consistent that perceptions of physical appearance are significantly related to reports of general self-concept (Heath & Wiener, 1996; Kloomok & Cosden, 1994; Renick & Harter, 1988; Smith & Nagle, 1995). Furthermore, Harter (1990) has repeatedly found perceptions of physical appearance to be significantly related to global self-worth across developmental stages (children, adolescents, college students, and adults) and across populations (normal achieving, intellectually gifted, or learning disabled). Studies investigating LD samples also tend to report perceptions of behavioural conduct being significantly related to general self-worth (Heath & Wiener, 1996; Kloomok & Cosden, 1994; Smith & Nagle, 1995). On the other hand, not all studies consistently report the same constellation of competencies as significantly related to global self-worth. For example, unlike the present study, Kloomok and Cosden (1994) did not find any relationship/trend between perceptions of athletic competence and global self-worth; however, they did find differences in perceptions of social acceptance as a function of high versus low global self-worth. Such inconsistencies are not unique to LD samples. For example, perceptions of social acceptance have been found significantly related to global self-worth in one study of gifted students (Byrne & Schneider, 1988) but not in another (Hoge & McSheffrey, 1991).

Inconsistent findings could be due to a number of different characteristic or differences between the studies. To illustrate, participants in the studies discussed here come from different cultural backgrounds (Caucasian, African

American, Hispanic, and Asian American) which may, for example, explain why some studies report perceptions of athletic competence as being significantly related to global self-worth while others do not. Some cultures (like New Zealand) particularly emphasise the importance of sport as well as appropriate deportment in the school setting, so it is not surprising that perceptions of athletic competence and behavioural conduct were found to be related to global self-worth. In the same vein, many societies emphasise the importance of physical attractiveness, which could explain why studies across various cultures consistently report perceptions of physical appearance as being significantly related to global self-worth (Harter, 1990). Bandura (1990) argues the validity of the relationship between global self-worth and perceptions of physical appearance, claiming that increasing one's global self-concept is not as easy as improving one's looks. That issue notwithstanding, the issue of the relationship between perceived physical appearance and global self-worth is worth future consideration. For example, self-esteem interventions might provide some focus on helping children feel more comfortable with their appearance (e.g., addressing cognitive self-talk).

### **GLOBAL SELF-WORTH AND PERCEPTIONS OF SOCIAL SUPPORT**

The general finding of the present study confirmed previous research which has consistently reported that students with high global self-worth reported higher levels of social support than students with low global self-worth (Bear & Minke, 1996; Bear et al., 1998; Forman, 1988; Kloomok & Cosden, 1994).

More specifically, the results of the present study found student's perceptions of support from their teacher were significantly related to their perceptions of general self-worth. This suggests that teachers may have an influence on how students feel about themselves in general. This result is supported by other research which found LD student's global self-worth decreased when teacher feedback was more negative (Bear et al., 1988). The current findings are also consistent with claims that a student's sense of self-esteem is contributed to, and fostered by, the frequency and quality of teacher interactions with that student (Wang et al., 1994). Together, these findings have implications for the way that

teachers interact with their students. That is, teachers may benefit from being more aware and sensitive to the supportive need of these students, such as providing more encouragement and positive feedback. Although it is possible that the students in this study reported inaccurate levels of teacher support, what seems important here is that teachers appear to play an important role in the lives of LD students in this sample.

While previous studies have all found aspects of social support contribute to global self-worth, there are some inconsistencies as to which source of social support is more important. For example, one study reported that perceptions of support from parent(s) and close friends were most important (Kloomok & Cosden, 1994), while another study found that it was perceptions of classmate support (Forman, 1988).

The disagreement between studies regarding which sources of social support are significant to feelings of global self-worth could be due to demographic differences across studies. For example, Kloomok and Cosden's (1994) sample had 47% Latino participants, while the present study had 95% Pakeha participants, which may indicate individual-focused versus family-focused cultural differences. Developmental differences may also account for different sources of support being significant (Erickson, 1963). For example, children in Forman's (1988) study were younger than those in Kloomok and Cosden's (1994) and the present study.

Due to inconsistent research results, findings do not yet permit definitive conclusions concerning which sources of perceived social support are most related to global self-concept among students with LD. However, these contrasting findings do suggest perceptions of different sources of support are significantly related to feelings of global self-worth for different students or samples, and that these differences may be due to other factors such as age or value systems. Thus, intervention based on empirical findings needs to be balanced against comprehensive assessment of the individual child.

## **CATEGORISING SUBGROUPS OF GLOBAL SELF-WORTH / SCHOLASTIC COMPETENCE**

Results supported the fourth hypothesis. The distribution of students that fell into each global/scholastic subgroup was remarkably similar to the distribution that Kloomok and Cosden (1994) reported (which was the only other study that has thus far categorised student's perceptions in this manner). The present study found 51% of students reported high global self-worth despite reporting low perceptions of their competency in the academic domain - while Kloomok and Cosden (1994) found 53%. The present study found 29% of students were categorised into the low global/low scholastic subgroup, Kloomok and Cosden (1994) reported 32%. The present study found 17% were categorised into the high global/high scholastic subgroup, Kloomok and Cosden (1994) reported 14%. Both studies found only one student categorised into the low global/high scholastic subgroup.

This result confirmed that a large proportion of students reported high levels of global self-worth and low levels of perceived scholastic competence. These findings provided additional support for the earlier findings in this study (Hypotheses 1 and 2), which together suggest that although many students with LD perceive they have academic problems, they are still able to maintain a high sense of global self-worth. These findings also appear to provide some support for a compensatory model of self-concept (Hagborg, 1996; Winne & Marx, 1981).

## **SUBGROUPS OF GLOBAL SELF-WORTH / SCHOLASTIC COMPETENCE AND NON-ACADEMIC DOMAINS**

Results from the present study partially supported the fifth hypothesis. Results in this and Kloomok and Cosden's (1994) study agreed that students categorised as low in global self-worth and low in levels of perceived scholastic competence had significantly lower perceptions of their physical appearance in comparison to students classified as high in global self-worth and high in perceived scholastic competence. Results from both studies also agreed that low global/low scholastic

students reported significantly lower levels of perceived physical appearance compared to high global/low scholastic students. Additionally, both studies found no differences in Physical Appearance scores between high global/high scholastic and high global/low scholastic self-concept groups. The present study did not find any significant differences in perceptions of competency/adequacy in other non-academic perceptions between the subgroups, although a trend was indicated for Behavioural Conduct. In contrast, Kloomok and Cosden (1994) reported additional significant differences for perceptions of behavioural conduct, social acceptance, and athletic competence between various subgroups.

As previously discussed, demographic and other variables may influence how these children perceive/evaluate themselves, which may account for some of the inconsistencies observed. However, it is also the case that Kloomok and Cosden's (1994) study had more statistical power based on a larger sample of 72 children. As seen in the results, while differences between subgroups were in the expected directions in most cases, the sample was not large enough to detect differences.

#### **SUBGROUPS OF GLOBAL SELF-WORTH / SCHOLASTIC COMPETENCE AND SOCIAL SUPPORT**

The results from the present study did not support the sixth hypothesis, as no significant differences were found in levels of social support (parent, teacher, close friend, or classmate support) as a function of global/scholastic subgroups. Only one other study (Kloomok & Cosden, 1994) could be located that examined student's perceptions in this way. The results from the present study differed from those of Kloomok and Cosden (1994), as they found students with high global/high scholastic self-concept had higher reports of support from parent(s) and friends than students reporting high global/low scholastic or low global/low scholastic self-concept.

## **SELF-CONCEPT AND TASK PERFORMANCE**

The seventh hypothesis was not supported, as no significant differences in task performance were found between any global/scholastic subgroups (or between those high and low in global self-worth, or between those high and low in scholastic competence).

These results were surprising, as a previous study has found academic achievement was significantly related to academic self-concept (Chapman, 1988a). At a minimum, it was expected that reports of scholastic competence would have been significantly related to the student's performance in the spelling and reading tests. While no significant findings were noted in group comparison analyses, a correlation did indicate a significant and positive relationship between spelling and Scholastic Competence. Possibly, insignificant findings are due to the small sample combined with a restricted range of academic skills assessed in this study, as reading and spelling are not the only domains students with LD experience problems. For example, some LD children experience problems in mathematics (Kaplan & Sadock, 1994).

## **PREDICTORS OF GLOBAL SELF-WORTH**

The results from the present study partially supported the eighth hypothesis. The present study found scores from the Physical Appearance subscale and the Athletic Competence subscales were significantly predictive of the Global Self-Worth subscale scores. The students in the study who reported higher levels of perceived physical appearance and athletic competence were significantly more likely to report higher levels of global self-worth. Furthermore, scores from the Physical Appearance subscale were found to have more predictive power than scores from the Athletic Competence subscale. Global Self-Worth scores were not found to be predicted by demographic variables (age, gender, parent status, parent SES, or location of residency), task performance (motor skills, auditory and visual memory, spelling, and reading), Scholastic Competence scores, Behavioural Conduct or Social Acceptance scores, or scores from the Social

Support subscale (Parent, Teacher, Classmate, and Close friend). However, a trend was indicated for Teacher Support.

Consistencies emerge when the results from this study are compared to others. Like the present study, Klooomok and Cosden (1994) did not find perceptions of scholastic competence or achievement predictive of global self-worth. As previously discussed, studies consistently have found perceptions of physical appearance to be significantly related to global self-worth (Heath & Wiener, 1996; Klooomok & Cosden, 1994; Smith & Nagle, 1995). Similarly, in regression analysis, when predictors of global self-worth are examined, perceptions of physical appearance have also been found to be the most predictive of global self-worth (Harter, 1990; Klooomok & Cosden, 1994).

Despite these consistencies between studies, some discrepancies exist when comparing other findings. Klooomok and Cosden (1994) found perceptions of social acceptance and parent support predictive of global self-worth while the present study did not. Instead, the present study found perceptions of athletic competence predicted global self-concept, and detected a statistical trend for perceptions of teacher support. A recent study found perceptions of teacher feedback has been found to be a significant predictor of global self-worth (Bear et al., 1998) while another found classmate support most predictive of global self-worth (Forman, 1988). As mentioned previously, findings may differ between studies due to different sample characteristics (such as participant age or culture).

In summary, studies in this area have consistently found that perceptions of physical appearance predict global self-worth. However, there are mixed findings as to the role of other perceived competencies and social support variables.

## **PREDICTORS OF ACADEMIC SELF-CONCEPT**

Results from the stepwise regression indicated scores from the Close Friend Support subscale were related to Scholastic Competence scores, but no significant result was found following a simultaneous regression, which led to the rejection of the ninth hypothesis. These results indicated that no variables assessed in this study (demographic variables, spelling, reading oral/comprehension, visual and auditory memory, motor skills, perceptions of self-concept or social support) predicted scores for Scholastic Competence. As mentioned before when discussing earlier findings, this result was surprising as academic self-concept has been found in some previous studies to be predictive of academic achievement (Chapman, 1988a).

## **SOCIAL ACCEPTANCE**

The majority of the students reported higher levels of social acceptance ( $n = 24$ ) rather than lower levels of social acceptance ( $n = 17$ ). However, this difference between frequencies was not significant. The present study also found perceptions of classmate support were predictive of perceptions of social acceptance. Given the mean age of 9, it is not surprising that classmate support was predictive here. With an older sample, close friend support might have emerged as a more salient predictor (see also Harter, 1996; Rosenberg, 1979).

## **LIMITATIONS OF THE STUDY**

The results of this study should be considered in light of its limitations. First of all, generalisations of these findings need to take into account that subjects were predominantly pakeha and middle class. Furthermore, a total of 17% of the students in the present study were aged between 7 and 8 years old – an age during which reliance on social comparisons and objective criteria for self-evaluation is just emerging (Bear & Minke, 1996). However, no differences were found between responses of this age group and the group of other (older) participants on any of the self-concept subscales in this study (nor was this study concerned with the accuracy of perceptions per se).

One should also heed the results relating to parental social status, as the classification used may be inaccurate by today's standards. Although the latest edition of New Zealand Socioeconomic Status Index (1983) was used in the present study, there may have been changes that affect the classification, such as increases in pay rates and education levels. Furthermore, the index did not provide a method of combining family socioeconomic status. Thus, parents were classified according to respective male and female SES indices.

Methodological issues should also be considered. All of the tests used in this study were designed for overseas populations, and lacked local New Zealand normative data. However, in general, scores on the self-concept and social support measures were comparable to those of the norm group. Additionally, these self-report measures (SPPC and SSS) did appear to have face validity for this sample. That aside, more norm based data are required using a variety of New Zealand samples.

Caution is advised when interpreting results relating to (a) the spelling test - as it was standardised some time ago and the norms may have changed, (b) the visual skill test - as it has been criticised for its psychometric properties (Vincent, et al., 1983), and (c) the auditory skills test - which was modified slightly, so the norms may not be that reliable. Additional care should be taken with generalising the conclusions based on SPELD data (motor skills, auditory/visual memory, spelling, and reading - oral and comprehension) because different people assessed these children and the inter-rater reliability is not known.

Another limitation of this study entailed the restricted assessment of academic self-concept and social support. The subscale measuring academic competence was limited to how the children perceived they are at schoolwork in general. Given that children have specific learning difficulties, such as reading problems, mathematics problems, or problems with written expression, it would have been desirable to assess perceptions in each of these academic domains. Furthermore, only a few non-academic domains from a child's life were actually assessed. While domains assessed represent important areas in many children's lives (Harter, 1985a) other domains not assessed in the present study may additionally

impact a child's global self-worth (e.g., competency in music). Additionally, care should be taken when interpreting the social support results. New Zealand is a multi-cultural society in which children/mokopuna may have access to more sources of support than identified in the scale (parent, teacher, classmate, and close friend). For example, children may access to extended family/whanu, hapu or iwi, which may provide high levels of support. Such sources were not assessed in the present study.

This study lacked power, due to the small sample size, which may mean that the influence of some variables that may have been important could not be detected. Caution is particularly advised against generalising findings regarding girls, as only 11 girls participated in this study. Furthermore, of the few students meeting the inclusionary criteria for the present study, even fewer students yet had parent consent to participate. Although other notable studies in this area have had similar sample sizes (Forman, 1988; Smith & Nagle, 1995), it would have been preferable had there been more participants.

The issue of direct versus indirect assessment of self-concept and perceptions of competency is worth highlighting. A recent study found scales that do not directly assess perceptions of difficulty result in elevated scores (Chapman & Tunmer, 1995). The scale items in the present study required the students to chose 'which type of kid is most like him or her' (e.g., 'some kids often forget what they learn', but 'other kids can remember things easily' (Harter, 1985a)). Further research may yield more accurate results from directly assessing self-concept, such as 'Do you often forget what you learn?' Similarly, more informative assessments of specific self-concept may be achieved by asking children directly what it is they like or dislike about themselves in a specific domain.

The present study was limited to cross-sectional and correlational analyses. A longitudinal study would have been preferable; however, time was restricted due to completing this study for the purpose of a master's thesis. Such a study may be more suitable at the Ph.D. level. Although the results of the present study presented evidence that students with LD have a self-concept that is

multidimensional, the limitations of the present study does not permit statements to be made about the etiology of global or academic (scholastic) self-concept, perceived competencies in non-academic domains, or perceived social support. It cannot be claimed that high global self-concept is a result of perceived competencies in non-academic domains, nor can it be stated that high self-concept creates a sense of competencies in these domains. A longitudinal study may provide such insight into such issues.

## **FUTURE DIRECTIONS**

The present study provides evidence that many students with learning difficulties do feel adequate, or even good, about themselves in a general sense, despite most perceiving academic difficulties. Furthermore, evidence from this study suggests those students with LD who feel good about themselves in general also perceive themselves to have competency or adequacy in other domains of their life. Another important finding indicated that support from significant others (particularly teachers) potentially play an important role in these children's lives. This correlational research method did not permit the manipulation of variables and therefore it is not possible to suggest a cause-and-effect relationship between the variables. Nevertheless, the associations between the variables provided some potentially valuable insight that can be shared with parents and others, perhaps to dispel myths. Future research aimed at further exploring observed relationships could be helpful. Due to the presenting heterogeneity of self-concept among children with LD, future research may benefit from continued exploration of individual differences in self-concept, utilising multidimensional assessment methods to capture this diversity while trying to classify LD children in terms of specified typologies.

More specifically, research aimed at identifying patterns of how perceived social support impacts global self-concept in different social contexts (such as different cultures) is recommended. In countries where there is cultural diversity, such as New Zealand, it is recommended that additional sources of support be assessed in order to capture the social network the child has access to. For example, the inclusion of extended family (hapu/iwi) would be relevant in New Zealand, as

would the inclusion of participants from diverse cultural backgrounds. Special attention can then be better paid on which specific aspects of support provide the most potent impact on self-concept for children in New Zealand. For example, when a child with LD assesses their academic competence, he or she may not take much notice of their academic grades, but may place more emphasis on positive comments the teacher, the extended family, or others make toward them regarding the effort they put forward in their schoolwork. This information can then be used when designing and evaluating interventions aimed at improving specific self-concept. For example, studies of teachers or extended family providing more encouraging comments would be one of a number of variables of interest.

Research directed at assessing self-concept of children with LD who have emotional and behavioural disorders would be useful, given that children with LD often have other emotional and behavioural problems (Bender, 1987). Such investigations may provide information as to how the presence of identified problems (such as ADHD) impacts self-perceptions of LD children. Research of this kind, particularly that which is prospective, may provide information that can be useful for intervention planning.

Finally, the results of the present study suggest self-concept is not only multidimensional in students with LD, but it may also be affected by a number of different demographic factors. Due to the lack of investigation on the role of demographic factors, it is recommended that future research include a focus on the relationship between demographic variables and self-concept. Additionally, other factors may be important, including parenting style, family factors, and specific child factors (e.g., coping style). Finally, longitudinal research is needed that includes assessing the influence of multiple factors, including intervention, on the self-concept of LD children over time (e.g., Hoge, Smit, & Hanson, 1990).

## REFERENCES

Adelman, H. S. (1992). DD: The next 25 years. *Journal of Learning Disabilities, 25*, 17-22.

Adelman, H., & Taylor, L. (1985). Fundamental concerns facing the learning disabilities field: A survey looking to the future. *Journal of Learning Disabilities, 18*, 423-427.

Algozzine, B., Ysseldyke, J. E. (1986). The future of the LD field: Screening and diagnosis. *Journal of Learning Disabilities, 19*, 394-398.

Ames, C., Ames., R. & Felker, D. W. (1977). Effects of competitive reward structure and valence of outcome of children's achievement attributions. *Journal of Educational Psychology, 69*, 1-8.

Anderson, J. C., Williams, S., McGee, R., Silva, P.A. (1987). DSM-III disorders in preadolescent children. *Archives of General Psychology, 44*, 60-76.

Arter, J. A., & Jenkins, J. R. (1979). Differential-diagnosis-perspective teaching: A critical appraisal. *Review of Educational Research, 49*, 517-555.

Ayres, A. J. (1972). Types of sensory integration dysfunction among learning disabled learners. *American Journal of Occupational Therapy, 26*, 13-18.

Ballard, K. (1987). Assessment: Its role in the education of exceptional children. In D. Mitchell & N. Singh (Eds), *Exceptional Children in New Zealand* (pp. 177-187). Palmerston North, New Zealand: Dunmore Press.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191-215.

- Bandura, A. (1978). The self-system in reciprocal determinism. *American Psychologist*, 33, 122-147.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37, 122-147.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1990). Conclusion: Reflections on nonability determinants of competence. In R.L. Sternberg, & J. Kolligian (Eds.), *Competence Considered* (pp. 315-362). New Haven: Yale University Press.
- Barrett, K., & Campos, J. (1987). Perspectives on emotional development: II. A functionalist approach to emotions. In J. Osofsky (Ed.), *Handbook of infant development* (2<sup>nd</sup> ed., pp. 555-578). New York: Wiley.
- Bear, G. G., & Clever, A., & Proctor, W. A. (1991). Self-perception of nonhandicapped children and children with learning disabilities in integrated classes. *Journal of Special Education*, 24, 410-426.
- Bear, G. G., & Minke, K. M. (1996). Positive bias in maintenance of self-worth among children with LD. *Learning Disability Quarterly*, 19, 23-32.
- Bear, G. G., Minke, K. M., Griffin, S. M., & Deemer, S. A. (1998). Achievement-related perceptions of children with learning disabilities and normal achievement: Group and developmental differences. *Journal of Learning Disabilities*, 31, 91-104.
- Bender, W. N. (1987). Secondary personality and behavioural problems in adolescents with learning disabilities. *Journal of Learning Disabilities*, 20, 301-305.

Bender, W. N., & Golden, L. B. (1990). Subtypes of students with learning disabilities as derived from cognitive, academic, behavioral, and self-concept measures. *Learning Disability Quarterly, 13*, 183-194.

Berndt, T., & Burgy, L. (1996). Social self-concept. In B. A. Bracken (Eds.), *Handbook of self-concept; Developmental, social, and clinical considerations* (pp. 171-209). USA: John Wiley & Sons.

Betz, N. E., & Hackett, G. (1981). The relationship of career-related self-efficacy expectations to perceived career options in college woman and men. *Journal of Counselling Psychology, 28*, 399-410.

Bos, C., & Filip, D. (1984). Comprehension monitoring in learning disabled and average students. *Journal of Learning Disabilities, 17*, 229-233.

Bracken, B. A. (1996). *Handbook of self-concept; Developmental, social, and clinical considerations*. USA: John Wiley & Sons.

Brier, N. (1989). The relationship between learning disability and delinquency: A review and reappraisal. *Journal of Learning Disabilities, 22*, 546-553.

Bryan, T. (1977). Learning disabled children's comprehension of nonverbal communication. *Journal of Learning Disabilities, 10*, 501-506.

Bryan, T. H. (1986). Personality and situational factors in learning disabilities. In G.T. Pavlidis & D.D. Fisher (Eds.), *Dyslexia: Its neuropsychology and treatment* (pp. 215-230). Chichester, England: Wiley.

Buros, O (1985). *The ninth mental measurements yearbook*. Lincoln, NE: Buros Institute of Mental Measurements.

Buros, O (1992). *The eleventh mental measurements yearbook*. Lincoln, NE: Buros Institute of Mental Measurements.

Bush, D. M., & Simmons, R. (1987). Gender and coping with the entry into adolescence. In R. C. Barnett, L. Biener, & B. K. Barunch (Eds.), *Gender and stress* (pp. 185-219). New York: Free Press.

Byrne, B. M., & Schneider, B. H. (1988). Perceived competence scale for testing children: Testing for factorial validity and invariance across age and ability. *Applied Measurements in Education, 1*, 171-187.

Campos, J. J., Campos, R. G., & Barrett, K. C. (1989). Emergent themes in the study of emotional development and emotional regulation. *Developmental Psychology, 25*, 394-402.

Cantwell, D. P., & Baker, L. (1991). Association between attention deficit hyperactivity disorder and learning disorders. *Journal of Learning Disabilities, 24* (2), 88-95.

Chalfant, J. C. (1989). Diagnostic criteria for entry and exist from service: A national problem. In L. B. Silver (Ed.), *The assessment of learning disabilities: Preschool through adulthood* (pp. 1-25). Austin, TX: PRO-ED.

Chapman, J. W. (1988a). Cognitive-motivational characteristics and academic achievement of learning disabled children: A longitudinal study. *Journal of Educational Psychology, 80* (3), 357-365.

Chapman, J. W. (1988b). Learning disabled children's self-concepts. *Review of Educational Research, 58*, 347-371.

Chapman, J. W. (1992). Learning disabilities in New Zealand where kiwis and kids with LD can't fly. *Journal of Learning Disabilities, 25*(6), 362-370.

Chapman, J. W., & Boersma, F. J. (1979). Learning disabilities, locus of control, and mother attitudes. *Journal of Educational Psychology, 71*, 250-258.

Chapman, J. W., & Tunmer, W. E. (1991). Recovering reading recovery. *Australia and New Zealand Journal of Developmental Disabilities, 17*, 59-71.

Chapman, J. W., & Tunmer, W. E. (1995). Development of young children's reading self-concepts: An examination of emerging subcomponents and their relationship with reading achievement. *Journal of Educational Psychology, 87*, 154-167.

Clay, M. M. (1987a). Implementing reading recover: Systematic adaptations to an educational innovation. *New Zealand Journal of Educational Studies, 22*, 25-58.

Clay, M. M. (1987b). Learning to be learning disabled. *New Zealand Journal of Educational Studies, 22*, 155-173.

Clever, A., Bear, G.G., & Juvonen, J. (1992). Discrepancies between competence and importance in self-perceptions of children in integrated classes. *Journal of Special Education, 26*, 125-138.

Coleman, J. M. (1983). Self-concept and the mildly handicapped: The role of social comparisons. *The Journal of Special Education, 17*, 37-45.

Coles, G. S. (1978). The learning disabilities test battery: Empirical and social issues. *Harvard Educational Review, 48*, 313-340.

Cooley, C. H. (1902). *Human nature and the social order*. New York: Scribner's.

Cooley, E.J., & Ayres, J. (1988). Self-concept and success-failure attributions of nonhandicapped students with learning disabilities. *Journal of Learning Disabilities, 21*, 174-178.

Coopersmith, S. (1967). *The Antecedents of Self-Esteem*. Palo Alto, CA: Consulting Psychologists Press, Inc.

Cratty, B. J. (1996). Coordination problems among learning disabled children: Meanings and implications. In B. J., Cratty, & R. L. Goldman (Eds), *Learning Disabilities; Contemporary viewpoints* (pp. 141-186). Amsterdam: Harwood Academic Publishers.

De Francesco, J. J., & Taylor, J. (1985). Dimensions of self-concept in primary and middle school learning disabled and nondisabled students. *Child Study Journal*, 15, 99-105.

Department of Education. (1987). *Education statistics of New Zealand 1988*. Wellington, New Zealand: Chapman.

De Villis, R. (1991). *Scale development: Theory and applications* (Applied Social Research Methods Series, Volume 26). Newberry Park, NJ: Sage Publications.

Durrant, J. E., Cunningham, C.E., & Voelker, S. (1990). Academic, social and general self-concepts of behavioral subgroups of learning disabled children. *Journal of Educational Psychology*, 82, 657-663.

Dweck, C. (1986). Motivational processes affecting learning. *American Psychologist*, 41, 1040-1048.

Elley, W. B., & Irving, J. C. (1976). Revised socio-economic index for New Zealand. *New Zealand Journal of Educational Studies*, 7, 155-167.

Elliot, E., & Dweck, C. S. (1988). Goals: An approach to motivation and achievement. *Journal of Personality and Social Psychology*, 54, 5-12.

Epstein, S. (1991). Cognitive-experimental self theory. Implications for developmental psychology. In M. R. Gunnar & L. A. Sroufe (Eds.), *Self*

*processes and development: The Minnesota Symposium on Child Development* (Vol. 23., pp 79-124). Hillsdale, NJ: Erlbaum.

Erikson, E. (1963). *Childhood and society*. New York: Norton.

Forman, E.A. (1988). The effects of social placement on the self-concept of LD students. *Learning Disability Quarterly*, 11, 115-124.

Friedman, H. S., & Booth-Kewley, S. (1987). The “disease-prone personality”: A meta-analytic view of the construct. *American Psychologist*, 42 (6), 539-555.

Frijda, N. (1986). *The emotions*. New York: Cambridge University Press.

Gallagher, J. J. (1986). Learning disabilities and special education: A critique. *Journal of Learning Disabilities*, 19, 595-601.

Garnett, K. (1992). Developing fluency with basic number facts: Intervention for students with learning disabilities. *Learning Disabilities Research & Practice*, 7, 210-216.

Gettinger, M. (1991). Learning time and retention difference between nondisabled students and students with learning disabilities. *Learning Disability Quarterly*, 14, 179-189.

Gibbs, D. P., & Cooper, E. B. (1989). Prevalence of communication disorders in students with learning disabilities. *Journal of Learning Disabilities*, 22, 60-63.

Granleese, J., & Joseph, S. (1993). Factor analysis of the Self-Perception Profile for Children. *Personality and Individual Differences*, 15, 343-345.

Granleese, J., Trew, K., & Turner, I. (1988). Sex differences in perceived competence. *British Journal of Social Psychology, 27*, 181-184.

Grecas, V., & Schwalbe, M. L. (1983). Beyond the looking-glass self: Social structure and efficacy-based self-esteem. *Social Psychology Quarterly, 46*, 77-78.

Gresham, F. M. (1992). Social skills and learning disabilities: Causal concomitant or correctional. *School Psychology Review, 21*, 348-360.

Gresham, F. M., & Elliott, S. N. (1989). Social skills deficits as a primary learning disability. *Journal of Learning Disabilities, 22*, 120-124.

Gresham, F. M., & Reschly, D. J. (1986). Social skill deficits and low peer acceptance of mainstreamed learning disabled children. *Learning Disability Quarterly, 9*, 23-32.

Grolnick, W. S., & Ryan, R. M. (1990). Self-perceptions, motivation, and adjustment in children with learning disabilities: A multiple group comparison study. *Journal of Learning Disabilities, 23*, 177-184.

Gurin, P., & Brim, O. G., Jr. (1984). Changer of the self in adulthood: The example of sense of control. In P. B. Baltes & O. G. Brim, Jr. (Eds.), *Life span development and behavior* (Vol. 6, pp. 281-334). New York: Academic Press.

Hagborg, W. J. (1996). Self-concept and middle school students with learning disabilities: A comparison of scholastic competence subgroups. *Learning Disabilities Quarterly, 19*, 117-126.

Hallahan, D. P., & Kauffman, J. M. (1988). *Exceptional children: Introduction to special education* (4<sup>th</sup> ed.). Upper Saddle River, NJ: Prentice Hall.

Hammill, D. D. (1990). On defining learning disabilities: An emerging consensus. *Journal of Learning Disabilities*, 23, 74-84.

Harter, S. (1981). A model of mastery motivation in children: Individual differences and developmental change. In W. A. Collins (Ed.), *The Minnesota symposia on child psychology* (Vol. 14, pp. 215-255). Hillsdale, NJ: Erlbaum.

Harter, S. (1982). The perceived competence scale for children. *Child Development*, 53, 87-97.

Harter, S. (1985a). *Manual: The self-perception profile for children: Revision of the perceived competence scale for children*. University of Denver.

Harter, S. (1985b). *Manual for the Social Support Scale for Children*. Denver: University of Denver.

Harter, S. (1985c). Competence as a dimension of self-evaluation: Toward a comprehensive model of self-worth. In R. Leahy (Ed.), *The development of the self* (pp. 55-118). New York: Academic Press.

Harter, S. (1990). Causes, correlates, and the functional role of global self-worth: A life-span perspective. In J. Kolligan & R. Sternberg (Eds.), *Competence considered* (pp.67-97). New Haven: Yale University Press.

Harter, S. (1993). Causes and consequences of low self-esteem in children and adolescents. In R. F. Baumeister (Ed.), *Self-esteem: The puzzle of low self-regard* (pp 87-116). New York: Plenum.

Harter, S., & Marold, D. B. (1992). The directionality of the link between self-esteem and affect: Beyond causal modelling. In D. Cicchetti & S. L. Toth (Eds.), *The self and its disorders: Rochester Symposium on Developmental Psychopathology*. Rochester, NY: University of Rochester.

Harter, S. (1996). Historical roots of contemporary issues involving self-concept. In B. A. Bracken (Ed.), *Handbook of self-concept: Developmental, social, and clinical considerations* (pp.1-78). New York: John Wiley & Sons Inc.

Heath, N. L., & Wiener, J. (1996). Depression and nonacademic self-perceptions in children with and without learning disabilities. *Learning Disability Quarterly, 19*, 34-44.

Hoge, D. R., & McSheffrey, R. (Dec/Jan., 1991). An investigation of self-concept in gifted children. *Exceptional Children, 238-245*.

Hoge, D. R., Smit, E. K., & Hanson, S. L. (1990). School experiences predicting changes in self-esteem of sixth- and seventh-grade students. *Journal of Educational Psychology, 82* (1), 117-127.

Houck, C.K. (1984). *Learning disabilities: Understanding concepts, characteristics, and issues*. Englewood Cliffs, NJ: Prentice-Hall.

Huessy, H. R. (1992). Comorbidity of attention deficit hyperactivity disorder and other disorders (letter). *American Journal of Psychiatry, 149*(1), 148-149.

Hymel, S., Rubin, K. H., Rowden, L., & LeMare, L. (1990). Children's peer relationships: Longitudinal prediction of internalizing and externalising problems from middle to late childhood. *Child Development, 61*, 2004-2021.

James, W. (1890). *The principals of psychology*. New York: Henry Holt & Co.

Johnson, R. (1983). *A revision of socio-economic indices for New Zealand*. Wellington: New Zealand Council for Educational Research.

Kanfer, F. H. (1975). Self-management methods. In F. H. Kanfer & A. P. Goldstein (Eds.), *Helping people change* (pp 309-356). New York: Pergamon.

Kaplan, H. I., & Sadock, B. J. (1994). *Synopsis of psychiatry; Behavioural sciences, clinical psychiatry* (7<sup>th</sup> ed.). Maryland, USA: Williams & Wilkins.

Kauffman, J. M. (1989). The Regular Education Initiative as Reagan-Bush education policy: A trickle-down theory of education to the hard to teach. *The Journal of Special Education*, 23, 256-278.

Kavale, K. A., & Forness, S. R. (1987). The far side of heterogeneity: A critical analysis of empirical subtyping research in learning disabilities. *Journal of Learning Disabilities*, 20, 374-382.

Kavale, K.A., & Forness, S.R. (1996). Social skill deficits and learning disabilities: A meta-analysis. *Journal of Learning Disabilities*, 29 (3), 226-237.

Kazdin, A. E., Kraemer, H. C., Kessler, R. C., Kupfer, D. J., Offord, D. R. (1997). Contributions of risk-factor research to developmental psychopathology. *Clinical Psychology Review*, 17 (4), 375-406.

Kistner, J. A., & Gatlin, D. (1989). Correlates of peer rejection among children with learning disabilities. *Learning Disability Quarterly*, 12, 133-140.

Kistner, J., Haskett, M., White, K., & Robbins, F. (1987). Perceived competence and self-worth of LD and normally achieving students. *Learning Disability Quarterly*, 10, 37-44.

Kistner, J. A., & Osborne, M. (1987). A longitudinal study of LD children's self-evaluations. *Learning Disability Quarterly*, 10, 258-266.

Kloomok, S., & Cosden, M. (1994). Self-concept in children with learning disabilities: The relationship between global self-concept, academic

“discounting”, nonacademic self-concept, and perceived social support. *Learning Disability Quarterly*, 17, 140-153.

Kobasa, S. C. (1979). Stressful life events, personality, and health: An inquiry into hardiness. *Journal of Personality and Social Psychology*, 37, 1-11.

Kolligian, J., & Sternberg, R. R. (1987). Intelligence, information processing, and specific learning disabilities: A triarchic synthesis. *Journal of Learning Disabilities*, 20, 8-17.

Kulak, A. G. (1993). Parallels between math and reading disability: Common issues and approaches. *Journal of Learning Disabilities*, 26, 666-673.

Kuypers, J. A., & Bengston, V. L. (1973). Social breakdown and competence. *Human Development*, 16, 181-201.

La Greca, A. M., & Stone, W. L. (1990). LD status and achievement: Confounding variables in the study of children's social status, self-esteem, and behavioral functioning. *Journal of Learning Disabilities*, 23, 483-490.

Leahy, R. L. (1985). *The development of the self*. New York: Academic Press.

Lincoln, A., & Chazan, S. (Fall, 1979). Perceived competence and intrinsic motivation in learning disabled children. *Journal of Clinical and Child Psychology*, 213-216.

Little, M. B. (1991). *Assessment and remediation of reading difficulties: An evaluation of the SPELD approach*. Unpublished thesis. Massey University.

Little, S. S. (1993). Nonverbal learning disabilities and socio-emotional functioning: A review of recent literature. *Journal of Learning Disabilities*, 26, 653-665.

McLeskey, J. (1992). Students with learning disabilities at primary, intermediate, and secondary grade levels: Identification and characteristics. *Learning Disability Quarterly, 15*, 13-19.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist, 41*, 954-969.

Marsh, H. W., & Gouvenet, P. J. (1989). Multidimensional self-concepts and perceptions of control: Construct validation of responses by children. *Journal of Educational Psychology, 81*, 57-69.

Marsh, H. W., & MacDonald Holmes, I. W. (1990). Multidimensional self-concept: Validation of responses by children. *American Educational Research Journal, 27*, 89-117.

Matthey, S. (1990). Errors inherent in the use of age-normative data in assessing reading ability. *Psychological Test Bulletin, 3*, 13-17.

Mead, G. H. (1934). *Mind, self, and society*. Chicago: University of Chicago Press.

Mercer, Cecil, D. (1997). *Students with Learning Disabilities* (5<sup>th</sup> Ed.). New Jersey: Prentice-Hall, Inc.

Merchenbaum, D. (1977). *Cognitive-behavior modification*. New York: Plenum Press.

Montague, M., & Applegate, B. (1993). Middle school students' mathematical problem solving: An analysis of think-aloud protocols. *Learning Disabilities Quarterly, 16*, 19-30.

Montgomery, M. S. (1994). Self-concept and children with learning disabilities: Observer-child concordance across six context-dependent domains. *Journal of Learning Disabilities, 27*, 254-262.

Neal, M. D. (1958). *Neale Analysis of Reading Ability Manual*. London: Macmillan.

Neal, M. D. (1988). *Neale Analysis of Reading Ability – Revised*. Hawthorn, Vic: Australian Council for Educational Research.

Nicholls, J. G., Licht, B. G., & Pearl, R. A. (1982). Some dangers of using personality questionnaires to study personality. *Psychological Bulletin*, 92, 572-580.

Norman, H., Sritheran, E., & Ridding, C. (1984). *Teacher's perceptions of children with special needs: A national survey of primary school teachers concerning children with special needs in regular classes*. Wellington, New Zealand: Department of Education.

Novick, N., Cauce, A., & Grove, K. (1996). *Handbook of Self-concept: Developmental, Social and Clinical considerations*. USA: John Wiley & Sons.

Pearl, R., Donahue, M., & Bryan, T. (1986). Social relationships of learning-disabled children. In J. K. Torgesen & B. Y. L. Wong (Eds.), *Psychological and educational perspectives on learning disabilities* (pp. 193-221). Orlando, FL: Academic Press.

Piers, E. V. (1977). *The Piers-Harris children's self-concept scale*. Nashville, TN: Counselor Recordings and Tests.

Polatajko, H. J., Law, M., Miller, Janice, Schaffer, R., et al. (1991). The effect of a sensory integration program on academic achievement, motor performance, and self-esteem in children identified as learning disabled: Results of a clinical trial. *Occupational Therapy Journal of Research*, 11(3), 155-176.

Poplin, M. (1984). Summary rationalisations, apologies, and farewell: What we don't know about the learning disabled. *Learning Disability Quarterly*, 7, 130-134.

Prout, H. T., & Prout, S. M. (1996). Global self-concept and its relationship to stressful life conditions. In B. A. Bracken (Ed.), *Handbook of self-concept: Developmental, social, and clinical considerations* (pp.259-286). New York: John Wiley & Sons Inc.

Quarantelli, E. L., and Cooper, J. (1966). Self-conceptions and others: A further test of the Meadian hypotheses. *Sociological Quarterly*, 7, 281-297.

Renick, M. J., & Harter, S. (1989). Impact of social comparisons on the developing self-perceptions of learning disabled students. *Journal of Educational Psychology*, 81 (4), 631-638.

Reschly, D. J. (1988). Special education reform: School psychology revolution. *School Psychology Review*, 17, 459-475.

Reynolds, M. C., Wang, M. C., & Walberg, H. J. (1987). The necessary restructuring of special and regular education. *Exceptional Children*, 53, 391-398.

Roache, L. E., & Hunt, B. R. (1988). *Palmerston North schools research project into learning difficulty in reading*. Final research report to the Director of Research and Statistics, Department of Education, Wellington, New Zealand. Contract No. 41-17-159. Palmerston North, New Zealand: Department of Education Psychological Service.

Rogers, H., & Saklofske, D. H. (1985). Self-concepts, locus of control and performance of LD children. *Journal of Learning Disabilities*, 18, 273-278.

Rosenberg, M (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Rosenberg, M. (1979). *Conceiving the self*. New York: Basic.

Rothman, H.R., & Cosden, M. (1995). The relationship between self-perceptions of a learning disability and achievement, self-concept and social support. *Learning Disability Quarterly*, 18, 203-212.

Rubin, E.Z. (1971). Cognitive dysfunction and emotional disorders. In H.R. Myklebust (Ed.), *Progress in learning disabilities* (Vol. 2, pp 179-195). New York: Grune & Stratton.

Salvia, J., & Ysseldyke, J. E. (1988). *Assessment in special and remedial education* (4<sup>th</sup> ed.). Boston: Houghton Mifflin.

Schonell, F. J. (1955). *Schonell Graded Word Reading Tests*. Edinburgh: Oliver & Boyd.

Schreurs, K. M. G., & de Ridder, D. T. D. (1997). Integration of coping and social support perspectives: implications for the study of adaptation to chronic diseases. *Clinical Psychology Review*, 17 (1), 89-112.

Seabrook, J. A. (1987). *An examination of a group of poor readers and their siblings*. N.Z. Centre Monograph Series (1), Christchurch, New Zealand: SPELD N.Z. centre.

Semmel, M. I. (1986). *Special education in the year 2000 and beyond: A proposed action agenda for addressing selected issues*. Proceedings of the CEC Invitation Symposium on the Future of Special Education, Council for Exceptional Children, Reston, VA.

Serfontein, D. J. (1990). *The hidden handicap*. Australia: Simon Schuster.

Shavelson, R. J., & Standon, G. C. (1976). Self-concept: Validation of construct interpretations. *Research Review of Educational Research, 46*, 407-441.

Shaw, S. F., Joseph, P. C., McGuire, J. M., & Brinckerhoff, L. C. (1995). Operationalizing a Definition of Learning Disabilities. *Journal of Learning Disabilities, 28* (9), 586-597.

Shepard, L. A., Smith, M. L., & Vojir, C. P. (1983). Characteristics of pupils identified as learning disabled. *American Educational Research Journal, 20*, 309-331.

Silver, L. (1996). The role of the family in helping the child or adolescent with learning disabilities. In B. J., Cratty, & R. L. Goldman (Eds), *Learning Disabilities; Contemporary viewpoints* (pp. 1-26). Amsterdam: Harwood Academic Publishers.

Silver, L. B. (1990). Attention deficit-hyperactivity disorder: Is it a learning disability or a related disorder? *Journal of Learning Disabilities, 23*, 394-397.

Silverman, R., & Zigmond, N. (1983). Self-concept in learning disabled adolescents. *Journal of Learning Disabilities, 16*, 478-482.

Slingerland, B. (1970). *Slingerland screening tests for identifying children with specific language disabilities*. High Wycombe, England: Test Agency.

Smith, C. R. (1994). *Learning Disabilities: The interaction of learner, task, and setting* (3<sup>rd</sup> ed.). Boston: Allyn & Bacon.

Smith, D. S., & Nagle, R. J. (1995). Self-perceptions and social comparisons among children with LD. *Journal of Learning Disabilities, 28*, 364-371.

SPELD (1983). *SPELD constitution*. Manawatu: SPELD New Zealand.

SPELD. (1985). *Statement on education for children with specific learning disabilities*. Christchurch: SPELD New Zealand.

Stainback, W., & Stainback, S. (1984). A rationale for the merger of special and regular education. *Exceptional Children*, 51, 102-111.

Stanovich, K. E. (1991). Conceptual and empirical problems with discrepancy definitions or reading disability. *Learning Disability Quarterly*, 14, 269-280.

Stipek, D. J. (1984). Young children's performance expectations: Logical, analysis, or wishful thinking? In J. Nichollas (Ed.), *The development of achievement motivation* (pp. 33-56), CT: JAI Press.

Swanson, H. L. (1987). Information processing and learning disabilities: An overview. *Journal of Learning Disabilities*, 20, 3-7.

Swanson, H. L. (1991). Operational definitions and learning disabilities: An overview. *Learning Disability Quarterly*, 14, 242-254.

Swanson, H. L. Cochran, K. F., & Ewers, C. A. (1990). Can learning disabilities be determined from working memory performance? *Journal of Learning Disabilities*, 23, 59-67.

Terman, L. M., & Merrill, M. A. (1960). *Stanford-Binet Intelligence Scale*. (Third revision) Boston: Houghton Mifflin.

Thompson, R., J., & Kronenberger, W. (1990). Behavior problems in children with learning problems. In H. L. Swanson, & B. Keogh (Eds), *Learning disabilities: Theoretical & research issues*. Hillsdale, N. J.: Erlbaum.

Torgesen, J. K. (1988). Studies of children with learning disabilities who perform poorly on memory span tasks. *Journal of Learning Disabilities, 21*, 605-612.

Torgesen, J. K., & Kail, R.V. (1980). Memory processes in exceptional children. In L. L. Keogh (Ed.), *Advances in special education: Vol. 1. Basic constructs and theoretical orientations*. Greenwich, CT: J.A.I. Press.

Toro, P. A., Weissberg, R. P., Guare., & Leibenstein, N. L. (1990). A comparison of children with and without learning disabilities on social-cognitive-problem solving skills, social behaviour, and family background. *Journal of Learning Disabilities, 23*, 115-120.

Vincent, D., Green, L., Francis, J., & Powney, J. (1983). *A review of reading tests*. Windsor: NFER-Nelson.

Vogel, S. A. (1990). Gender differences in intelligence, language abilities, and academic achievement in students with learning disabilities: A review of the literature. *Journal of Learning Disabilities, 23*, 44-52.

Walsh, D.F. (1979). *Project Child: A report on the incidence of specific learning disabilities in Form I pupils in New Zealand primary and intermediate schools*. Wellington: New Zealand Council for Educational Research.

Wang, M. C., Haertel, G. D., & Walberg, H. J. (1993/1994). What helps students learn? *Educational Leadership, 51*(4), 74-79.

Weiner, B. (1972). *Theories of motivation*. Chicago: Markham.

Weiner, B., & Graham, S. (1983). An attributional approach to emotional development. In C. Izard, J. Kagan, & R. Zajonc (Eds.), *Emotion, cognition and behavior*. Hillsdale, NJ: Erlbaum.

Weiz, J. R., & Stipek, D. J. (1982). Competence, contingency, and the development of perceived control. *Human Development, 25*, 250-281.

Wepman, J. M. (1973). *Auditory discrimination test* (Revised ed.). Chicago: Language Research Associates.

White, R. W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review, 66*, 297-333.

Winne, P. H., & Marx, R. W. (1981). Convergent and discriminant validity in self-concept measurement. *Review of Educational Research, 46*, 407-441.

Winne, P. H., Woodlands, M. J., & Wong, B. Y. L. (1982). Comparability of self-concept among learning disabled, normal, and gifted students. *Journal of Learning Disabilities, 15*, 470-475.