Self-Concepts of Preadolescents with Mild Intellectual Disability: Multidimensionality, Measurement, and Support for the Big Fish Little Pond Effect

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Statement of Authentication

The work presented in this thesis is, to the best of my knowledge and belief, original, except as acknowledged in the text. I hereby declare that I have not submitted this material, either in whole or in part, for a degree at this or any other institution.

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(Signature)
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Injustice arises as much from treating unequals equally as from treating equals unequally

- Aristotle
ABSTRACT

A major concern facing special education researchers, policy makers, and practitioners is how best to educate students with mild intellectual disability. Debate has raged as to whether regular classes or special classes are the ideal educational placement for these students. Fundamental to this debate are the anticipated effects of placement on students’ self-concepts with opposing rationales being advocated based upon two competing self-concept theories. The big fish little pond effect (BFLPE) based on social comparison theory predicts that students with mild intellectual disability will have higher academic self-concepts when in a special class with other students with similar disability. In contrast, labeling theory predicts that placing students with mild intellectual disability in special classes will lower their self-concepts. Research has not resolved the validity of these disparate theories due to methodological problems inherent in this field of investigation.

The purpose of this study was to address some of these issues by capitalising on and extending recent advances in self-concept theory and research to preadolescents with mild intellectual disability by: a) identifying a psychometrically sound, multidimensional self-concept measurement instrument for this population; b) critically examining the structure and nature of self-concepts for this population; c) fully investigating the effects of regular class placement and special class placement upon students’ self-concepts, social comparison processes, academic achievement, and stigmatisation in the context of a sophisticated research design; and d) evaluating the legitimacy of the competing theories of the BFLPE and labeling theory.

Studies 1 and 2 were based on the self-concept responses of 211 students with mild intellectual disability in Years 2–6 (7 to 13 years of age). Study 1 evaluated the psychometric properties of the Self Description Questionnaire I – Individual Administration (SDQI-IA) and examined the structure and nature of self-concepts for this population. Study 2 tested the competing theories of the BFLPE and labeling theory by comparing the self-concepts of students with mild intellectual disability placed in regular classes (n=98) with those placed in special classes (n=113). For Study 3, the self-concepts, social comparison processes, and academic achievement of 39 students with mild intellectual disability were measured on three occasions as they
experienced change in educational placement. Study 3 provided a further test of the BFLPE and labeling theory in the context of a strong longitudinal design.

The results of Study 1 demonstrated that the SDQI-IA was a valid and reliable multidimensional self-concept measure for preadolescents with mild intellectual disability. Results of Study 2 provided support for the BFLPE in that students placed in special classes reported significantly higher Reading, Mathematics, General-School, Peer Relationships, and General self-concept compared to their counterparts placed in regular classes. Results of Study 3 revealed that students moved to special classes reported higher academic self-concepts and more favourable social comparisons than their counterparts in regular classes.

These findings have important educational implications in that whilst the inclusion of students with disabilities in regular classes continues to gain international momentum, the results of the current study question the appropriateness of this movement and demonstrate that placing preadolescents with mild intellectual disability in regular classes is detrimental to their academic self-concept.
CHAPTER 1

INTRODUCTION

One of the most controversial educational debates in the international arena in the past decade is the ideal educational placement for students with disabilities. Heated debate has ensued with ardent supporters of the inclusion movement arguing that students with disabilities be placed in regular classes with peers without disabilities, while critics contend that placement in a special class with other students with similar disabilities may be more appropriate. A significant portion of this divisive debate has centred around students with mild intellectual disability because this population comprises a large portion of students with disability and such students are viewed as likely candidates for inclusion in the regular classroom. The practice of placing students with disabilities in regular classes continues to gain momentum across Australia and throughout the world. Some authors, however, have contended that this policy of inclusion is founded upon philosophical views and presumed social justice benefits rather than empirical investigations demonstrating clear benefits of inclusion for students with disabilities (e.g. Idol, 1997; Jenkinson & Gow, 1989; MacMillan, Gresham, & Forness, 1996).

Positive self-concept is widely valued internationally as a vital outcome of schooling. This is embodied in the second agreement between the Australian Commonwealth Government and its State/Territory governments regarding goals for students to achieve before they exit school, called 'The Adelaide Declaration on National Goals for Schooling in the Twenty-first Century’ (Ministerial Council on Education, Employment, Training, and Youth Affairs (MCEETYA), 1999). The second of eighteen goals in this recent agreement specified that students should "have qualities of self-confidence, optimism, high self-esteem, and a commitment to personal excellence as a basis for their potential life roles as family, community and workforce members" (MCEETYA, 1999, p. 3). The development of a positive self-concept is considered to be critical to maximise children’s personal and social adjustment (e.g. Branden, 1994; Harter, 1990). In addition, evidence suggests that a positive self-concept facilitates other desirable educational outcomes, such as
increased motivation, expectations for success, and academic achievement (Chapman, 1988a; Marsh, Byrne, & Yeung, 1999).

Arguments for and against the formation of special classes for students with mild intellectual disability are often based on their anticipated effects on self-concept. The big fish little pond effect (Marsh, 1984a) and labeling theory (Goffman, 1963) both make predictions about the impact of various educational placements upon the self-concept of students. However, predictions based on these two theoretical perspectives are contradictory and in direct opposition to each other. The big fish little pond effect, based on social comparison theory, predicts that students with mild intellectual disability will have higher academic self-concepts when in a special class with other students with mild intellectual disability. The big fish little pond effect proposes that when forming one’s self-concept, individuals compare themselves with others around them. It follows then, that if students with mild intellectual disability are placed in regular classes with peers without disability who perform better academically, then the self-evaluations of students with mild intellectual disability will be damaged and their academic self-concept reduced (Marsh, 1984a). As the frames of reference induced by regular and special classes differ primarily in terms of the intellectual domain, it follows that the negative effects of regular classes will be limited primarily to academic components of self-concept and will be substantially smaller for nonacademic (e.g. social, physical) components of self-concept. In contrast, labeling theory predicts that students with mild intellectual disability placed in special classes with other students with mild intellectual disability will have lower self-concepts. Labeling theory argues that the identification, isolation and segregation of these students produces stigmatisation and a sense of deviance, and thereby fosters a negative self-concept (Goffman, 1963). Implicit in this theoretical model is the prediction that the negative effects of placement in a special class will occur primarily with general self-concept and are likely to generalise to both academic and nonacademic components of self-concept. Proponents of the inclusion movement have cited labeling theory as justification for placing students with disability in regular classes with peers without disability (e.g. Dunn, 1968; Stainback & Stainback, 1992).
Given the importance placed upon fostering students’ self-concepts in the debate surrounding the inclusion movement, and the role of self-concept in facilitating other desirable outcomes, it is vital that the effects of segregating students with mild intellectual disability into special classes or placing them in regular classes upon students’ self-concepts is clearly understood. As the inclusion movement accelerates on an international scale it is even more imperative that the impact of differential educational placement is investigated.

Fueling the controversy in this area is the equivocal nature of research findings. Some studies have found that placement in regular classes enhances the self-concept of students with mild intellectual disability (e.g. Calhoun & Elliott, 1977; Crockett, 1977; Tapasak & Walther-Thomas, 1999), while other studies have concluded that placing students with mild intellectual disability into special classes increases the self-concepts of these students (e.g. Boersma, Chapman, & Battle, 1979; Crabtree & Meredith, 2000; Schurr, Towne, & Joiner, 1972; Strang, Smith, & Rogers, 1978). Furthermore, other studies have found that placement in either regular classes or special classes does not significantly impact upon the self-concepts of students with mild intellectual disability (e.g. Begley, 1999; Silon & Harter, 1985). These paradoxical results seem to be largely attributed to methodological problems plaguing this area of research.

Research with special populations, such as students with disabilities, inevitably experiences the difficulties of small sample sizes and potentially weak experimental designs. Ethical considerations, as well as inadequate research design, have meant that many studies have not incorporated a comparison group, or have simply compared two highly nonequivalent intact groups (e.g. Battle, 1979; Tapasak & Walther-Thomas, 1999). Such limitations weaken the validity and generalisability of research findings. In an attempt to boost participant numbers some researchers have included students with a diverse range of disabilities into their studies and improperly made conclusions about the group as a whole (e.g. Battle & Blowers, 1982; Calhoun & Elliott, 1977; Crabtree & Rutland, in press; Tapasak & Walther-Thomas, 1999).
A major methodological concern is that substantive issues seem to have been addressed before problems of definition and measurement of the self-concepts of preadolescents with mild intellectual disability have been resolved. The structure and nature of the self-concepts of preadolescents with mild intellectual disability is poorly understood. Underpinning this deficiency is the paucity of psychometrically sound self-concept measurement tools for use with preadolescents with mild intellectual disability (Byrne, 1996). Silon and Harter (1985) were one of the first groups of researchers to address this issue, however, their results failed to identify the hypothesised multiple self-concept facets for this population. Instead, they concluded that “retarded children do not make distinctions about specific competence domains but rather simply make judgements about one’s competence at activities in general, regardless of their nature” (p. 223). As a result of the lack of credible self-concept measurement tools for this population past studies have largely used: a) self-concept measures that have been developed for the general population (e.g. Begley, 1999; Jahoda, Markova, & Cattermole, 1988); or b) ad hoc self-concept measurement tools that have little or no psychometric support for their reliability, validity, or factor structure for any groups of students (e.g. Meyerowitz, 1962; Kendall, 1977). The results of such studies should be examined with caution as there is no evidence that either the format or self-concept structure imbedded in such measurement tools is suitable for preadolescents with mild intellectual disability.

Historically, self-concept has been viewed as a unidimensional construct in which ones’ self-concept is measured by one general score (e.g. Calhoun & Elliott, 1977; Coleman, 1983). The examination of multidimensional facets of self-concepts, however, is of paramount importance for testing theoretical predictions regarding the educational placement of students with disabilities. Labeling theory proposes that students placed in special classes will experience enhanced stigmatisation that will result in a depressed general self-concept, generalising to both academic and nonacademic self-concept. The big fish little pond effect, on the other hand, predicts that the placement of students with mild intellectual disability in special classes will increase students’ academic self-concepts but have little or no impact on students’ nonacademic self-concepts. Measuring change in one’s general self-concept does not accurately distinguish between academic and nonacademic facets of self-concept and thus obscures the detection of the big fish little pond effect at work. Thus, the virtues
of these competing theories can only be understood when multidimensional self-concept is examined.

Recent studies conducted with adolescents with mild intellectual disability have successfully identified multiple self-concepts facets for these students (e.g. Little, Widaman, Farren, MacMillan, Hemsley, & MacMillan, 1990). Despite these advances, a crucial void in the measurement and understanding of the self-concepts of preadolescents with mild intellectual disability remains. In a major review of self-concept instruments Byrne (1996) noted that there was a complete dearth of appropriate instrumentation to effectively measure the self-concepts of preadolescents with mild intellectual disability. Without such instrumentation, the structure and level of self-concepts of preadolescents with mild intellectual disability remains unknown.

New developments in self-concept theory (Marsh, Byrne, & Shavelson, 1988) and the development of a multidimensional self-concept instrument for use with young children (Marsh, Craven, & Debus, 1991; 1998) present promising new directions for research with preadolescents with mild intellectual disability. Byrne (1996) concluded that "there is absolutely no doubt that the SDQ-I is clearly the most validated self-concept instrument available for use with preadolescent children" (p. 117). In 1991, Marsh, Craven, and Debus adapted the SDQI to successfully assess the multiple dimensions of self-concept for children younger than eight years. Byrne recognised the effectiveness of the Marsh et al. (1991) study in adapting the SDQI for use with very young children, highlighting that the psychometric properties based on this single study were stronger than those based on any of the instruments specifically designed for very young children. The unique individual-interview process and the double-binary response format were essential to this success. These recent developments yield exciting possibilities for the current study to utilise this unique administration procedure (SDQI-IA) in order to gain a better insight into the self-concepts of preadolescents with mild intellectual disability. Establishing a sound measurement instrument for this population also facilitates the empirical investigation of important substantive issues concerned with the impact of educational placement upon students’ self-concepts.
The present investigation extends current understanding by capitalising on recent advances in self-concept theory and research to: a) evaluate whether the SDQI-IA has sound reliability and construct validity when used to measure the self-concepts of students aged 7 to 13 years with mild intellectual disability; b) identify the structure and nature of multidimensional facets of self-concepts of male and female students aged 7 to 13 years diagnosed with mild intellectual disability; c) evaluate the impact of educational placement in regular classes and special classes upon the self-concepts, social comparison processes, academic achievement and stigmatisation of preadolescents with mild intellectual disability; d) critically evaluate and test the competing predictions of social comparison theory based upon the big fish little pond effect and labeling theory; e) extend the external validity of the big fish little pond effect to this particular special population group; and f) address issues of paramount educational significance in the international arena for students with disabilities.

Major methodological limitations that have pervaded previous research were avoided by: a) utilising a multidimensional self-concept instrument to account for recent advances in self-concept theory and research; b) critically evaluating the psychometric properties of the self-concept instrumentation for the population of students with disability considered in this thesis; c) empirically testing the differential predictions of the big fish little pond effect and labeling theory by scrutinising the impact of educational placement upon multidimensional facets of academic and nonacademic self-concepts; d) employing a strong longitudinal, quasi-experimental design to investigate the effects of educational placement; e) utilising a large number of participants relative to the special population studied; f) including participants diagnosed with one primary disability rather than a mixed group encompassing students with a broad range of disabilities; and g) conducting sophisticated statistical analyses in the context of a strong, methodologically sound research design.

In summary, this study’s research design has capitalised on recent developments in theory and research to appropriately address key deficits that have occurred in previous research. This study was designed to contribute to both research and educational practice by: a) identifying a sound multidimensional self-concept measurement instrument for use with preadolescents with mild intellectual disability; b) revealing the structure and nature of self-concept for this population; c) elucidating
the impact of educational placement for preadolescents with mild intellectual
disability; d) extending the application of the big fish little pond effect to
preadolescents with mild intellectual disability; and e) illuminating the big fish little
pond effect versus labeling theory debate.
CHAPTER 2
EDUCATING STUDENTS WITH DISABILITIES: AN HISTORICAL OVERVIEW OF PHILOSOPHY, POLICY AND PRACTICE

Introduction

Throughout the last two decades there has been considerable change in the philosophies and policies regarding the education of students with disabilities. The education of students with disabilities has been, and continues to be, fraught with controversy and passionate debate. This chapter provides an overview of the historical trends in educational policy and philosophy from international, national (Australian), and local (New South Wales) perspectives.

The present study is concerned with the impact of educational placement upon the self-concepts of preadolescents with mild intellectual disability. As such, the second purpose of this chapter is to clarify the nature of mild intellectual disability by examining past and current definitions, and discussing the prevalence of, etiology, and prognosis for students with this disability. Lastly, this chapter describes the current educational placement options available to students with mild intellectual disability in New South Wales, the setting of the current study.

The History of Policy and Philosophy Regarding the Education of Students with Disabilities

The last two decades have witnessed a significant shift in both the philosophies and policies regarding the education of students with disabilities throughout the world. Historically, a steady trend is apparent moving away from rigid exclusion to progressive inclusion (Centre, 1987). The following section provides an historical overview of this trend.
Early Policies of Exclusion

Prior to the 1960s, the majority of students considered to be learners with special needs were simply excluded from regular schooling. During the nineteenth and much of the twentieth centuries, there was a lengthy period of institutionalised segregated education for people with disabilities (Karagiannis, Stainback, & Stainback, 1996a). Residential institutions and special schools remained the norm for educating students who had sensory or physical disabilities. Students with significant developmental disability were generally denied educational services of any type and resided primarily in the back wards of large state institutions. The role of early residential institutions was to provide palliative care and supervision rather than education (McRae, 1996). According to Sigmon (1983), “almost all children who were wheel-chair bound, not toilet trained, or considered ineducable were excluded because of the problems that schooling them would entail” (p. 3).

The advent of compulsory school attendance, however, resulted in the establishment of special schools and special classes which provided services to these students outside of the regular classroom (Dunn, 1968). During the 1950s and 1960s, students with disabilities were increasingly assigned to special classes. One argument for special class placement was that the academic needs of these students could be better met in smaller classes with specially trained teachers and specially designed curriculum materials. Further, it was believed that special class placement improved the social development and self-concept of students with disabilities. Johnson (1950) documented the frequent rejection of these students by their peers, and argued that the climate of the regular class was detrimental to their self-concept. These and similar findings (see below) had a major impact on educators’ thinking regarding special education, and throughout the 1950s and 1960s the portion of students in special classes grew steadily (Madden & Slavin, 1983).

Questioning of Segregated Environments

Social justice. Since the 1960s there has been a change in emphasis from a welfare perspective to one of social justice with regard to the education of students with disabilities (Freeman, 1992). The premise of social justice is founded in the
ideas of human rights, equity and fairness and was reflected in the civil rights movement of the 1960s which questioned ‘separate but equal’ class assignment for all students, and in particular focused attention on the disproportionate assignment of minority students to special classes (Christopolis & Renz, 1969; Dunn, 1968). It was also argued that students with disabilities have just as much right to access educational services as other students. Importantly, the argument away from segregated settings was partly based on the assumption that identifying children as special and isolating them from their peers without disability resulted in a decrease in self-concept because of the stigmatising effect of being labeled as having a disability (Budoff & Gottlieb, 1976; Coleman, 1983; Dunn, 1968; Wang & Birch, 1984).

Prompted by these philosophical shifts, the 1960s and 1970s witnessed a deinstitutionalisation movement whereby large numbers of people with disabilities were released from institutions. Interestingly, similar social justice views have since been reflected in more recent federal (e.g. Department of Health, Housing and Community Services, 1991), and state government policies in Australia (e.g. New South Wales Department of School Education, 1993) and throughout the world (e.g. Education Act (1981) in the United Kingdom).

The efficacy studies. In 1968 two influential pieces of educational research were published (Dunn, 1968; Rosenthal & Jacobson, 1968) which questioned the role of special education and its excessive use of segregated learning environments for students with disabilities. Dunn argued that special education for students with mild intellectual disability is unjustifiable. He proposed that these students learn more when in classrooms with peers without disabilities, and that labeling and grouping students into special classes is damaging to their self-concept. Dunn considered the educational placement of students with mild intellectual disability and concluded that:

Separating a child from other children in his neighborhood – or removing him from the regular classroom for therapy or special class placement – probably has a serious debilitating effect upon his self image... Removing a handicapped child from the regular grades for special education probably contributes significantly to his feelings of inferiority and problems of acceptance (p. 9).
Dunn (1968) recommended that many disability labels be abolished and students with mild intellectual disability be maintained in regular classes with special educators serving them within this environment. As such, he called for a moratorium on the continuance of self-contained special classes for students with mild intellectual disability.

Rosenthal and Jacobson’s (1968) study findings resulted in similar calls questioning special class placement for students with mild intellectual disability. They reported on an experiment in which 20% of students were chosen at random and reported to teachers as showing unusual potential for intellectual growth. Eight months later these students showed significantly greater gains in intelligence than did other students. They concluded that a change in teacher expectation of intellectual performance resulted in an actual change in intellectual performance. Thus, Rosenthal and Jacobson (1968) opposed the labeling and special class placement of students with disabilities and argued that such practice results in a self-fulfilling prophecy in which students will exhibit the intellectual capacity that they are labeled as having.

At this time, a series of research articles coined the ‘efficacy studies’ were published to determine the merits of regular class placement versus special class placement in terms of the academic, social and personal growth of students with disabilities (e.g. Carroll, 1967; Hoelke, 1966; Kirk, 1964). In 1950, Johnson’s research indicated that students with mild intellectual disability who were in regular classrooms experienced social rejection by their classmates without disability. This study resulted in a number of replications which tended to support the findings (e.g. Thurstone, 1959). Johnson (1962) denounced segregated placements arguing that students with mild intellectual disability make as much academic progress in regular classes as they do in segregated placements stating that:

It is indeed paradoxical that mentally handicapped children having teachers especially trained, having more money (per capita) spent on their education, and being designed to provide for their unique needs, should be accomplishing the objectives of their education at the same or at a lower level than similarly mentally handicapped children who
have not had these advantages and have been forced to remain in the regular grades (p. 66).

The results of the ‘efficacy studies’ were used by both researchers and educators to support the premise of Dunn (1968) that it was time to re-evaluate current special education practices. Since that time, however, the validity of these studies has been questioned with regard to the appropriateness of instruments employed, the degree of experimental control and the inability to replicate results (e.g. Elashoff & Snow, 1971; Gottlieb, 1981; Kaufman, Agard, & Semmel, 1985).

**Emergence of Normalisation and Integration Policies**

Normalisation involves making the circumstances of life for people with disabilities the same, or close to, those experienced by all people (Wolfensberger, 1972). The normalisation principle originated in Scandinavian countries, and is defined by Thurman and Fiorelli (1979) as the “physical and social inclusion of developmentally delayed individuals into the mainstream of community” (p. 340). Wolfensberg (1972) re-named it ‘social role valorisation’ and argued that schools should create an environment in which students with disabilities are seen as valued members of the school community.

The Least Restrictive Environment Clause of the United States Education of All Handicapped Children Act (1975) (also known as Public Law 94-142) and subsequent amendments to that Act (now known as the Individuals with Disability Education Act of 1990, IDEA) extended the right to a free public education to all children, regardless of disability, in the least restrictive environment possible. IDEA mandated that a continuum of alternative placements be available for students with disability, and that the appropriate educational placement be determined on an individual basis. Educational environments such as special schools or special classes can be seen as being restrictive because they may limit the student’s opportunity to access the experiences available in a regular school or regular class (Foreman, 2000).

In 1986, the US Department of Education Office of Special Education and Rehabilitative Services issued the Regular Education Initiative (Will, 1986) as a
result of the normalisation principle. Proponents of the Regular Education Initiative argued that there was no place for segregated settings, particularly for students with mild disabilities, and that these students had a right to be educated not just in a regular school, but in a regular class with other students. Students were assessed on the basis of their needs and supported as far as possible in the regular classroom. This support was supplemented by itinerant teachers as necessary. The purpose of the Regular Education Initiative was to develop ways to serve students with disabilities in general classrooms by encouraging special education programs to develop partnerships with general education. The philosophy of the Regular Education Initiative is embodied in the practice of integration in which two separate school systems exist (that is, special education and regular education) and students with disabilities are enrolled in the special education system and integrated into the regular education system as much as possible.

**Recent Inclusion Policies**

Since the late 1980s, special educators, academics, and advocacy groups have argued that the concept of integration, the Least Restrictive Environment and the Regular Education Initiative do not go far enough and that a fully inclusive educational approach is required (Lipsky & Gartner, 1987; Stainback, Stainback, & Forest, 1989). They claim that to continue to maintain some students in special schools and special classes is discriminatory and inequitable. They argue for a full-inclusion initiative. The term ‘inclusion’ connotes a range of meanings utilised in the literature, however, for the purpose of this research, its definition in the full-inclusion initiative is adopted (Council for Exceptional Children, 1993). Inclusion is based upon 100% placement in regular education, whereas integration placement involves educating students with special education needs to the maximum extent possible in the regular education system. Integration implies two parallel school systems, regular and special education, and there is an underlying assumption of inequality between the two. In contrast, inclusion implies the existence of only one unified educational system that encompasses all students (Sage, 1993).

Full inclusion is based on the premise that educating students in physically separate environments is inherently discriminatory and unequal (Lipsky & Gartner,
1987; Stainback & Stainback, 1984). They argue that the most important equity issue is the site of educational instruction, for if students with disabilities are educated alongside their peers without disability, then and only then can they be receiving an equal educational opportunity (Kauffman, 1995). As such, full inclusion makes placement the prepotent issue in special education, and argues that the placement of students with disabilities in the regular school and classroom is the only appropriate placement (Kauffman & Hallahan, 1995). Under such an education system, segregated placements are eliminated and instruction for all students is adapted to fit the context of the regular classroom. Some criticise such a proposal (e.g. Kauffman, 1995) and argue that such a concept is consistent with the conservative agenda for economic and social reform resulting in a cost-driven agenda whereby costs are lowered by the elimination of special education services.

The inclusive schooling policy was given increased momentum with the publication of the recommendations made at the World Conference on Special Education: Access and Quality held in Salamanca in 1994 (UNESCO, 1994). What has become known as the Salamanca Statement is now a powerful document guiding policy-making on the placement of students with disabilities. The primary aim of the statement is to make the regular class the only option for the placement of students with disabilities, regardless of the students’ level of need or educational history (UNESCO, 1994). The wide acceptance of this statement demonstrates that despite inclusion being a very contentious issue, it became the accepted ideology of the mid 1990s, with administrators, teachers and academics in danger of finding themselves regarded as politically incorrect if they raised any queries regarding the plausibility of inclusion for some students (Westwood, 1997).

**International legislation for educating students with disabilities.** The movement to include students with disabilities in regular classrooms has been based largely on constitutional grounds and ethical considerations which require that provisions are made for students with disabilities to be educated with peers without disability. For example, the United States Public Law 94-142 (1975) requires that students with disabilities are educated with students without disabilities “to the maximum extent possible” (Section 121a.550 [b] [1]). The Education Act (1981) in the United Kingdom serves a similar purpose in that it requires that a child needing
special education should participate “in the activities of the school together with children who do not have special education needs” (2(7)). In New Zealand, the Education Act (1989) also ensures that students with disabilities receive educational services, however, the nature of these services are not mandated - as they are in the United States.

**Australian legislation for educating students with disabilities.** Inclusive educational practices in Australia have developed from international legislation which is based on ensuring the rights of all students to receive an equitable education. The Disability Services Act (Australian Commonwealth Government, 1986) and The Disability Discrimination Act (Australian Commonwealth Government, 1992) are federal legislation that indirectly cover the area of education and ensure that educational services are provided to students with disabilities. The Disability Services Act (1986) was designed to ensure that the services provided “further the integration of persons with disability in the community and complement services available generally to persons in the community” (p. 2).

None of this legislation, however, mandates the way in which this education should be provided, as occurs in the United States. The Australian Federal Government retains limited central power over the education of students with disabilities. Although these Acts effectively guarantee the provision of educational services to all students, they do not specify the way in which these services should be delivered. Instead, all Australian states and territories create and implement their own educational policy for students with disabilities. These services are provided at the discretion of these states and territories (Foreman, 2000). Although all agree that students should be placed in the least restrictive environment, not surprisingly, the interpretation of what constitutes the least restrictive environment varies (Forlin, 1998). Many states in Australia have legislation that indirectly relates to the education of students with special needs. For example, there is the New South Wales Anti Discrimination Act (New South Wales Government, 1993), the Western Australian Disability Services Act (Western Australian Ministry of Education, 1993), and the Queensland Anti-Discrimination Act (Queensland Government, 1991).
Special education policy in New South Wales. In New South Wales the education of students with disabilities is governed by the Special Education Policy (1993). This policy is based on the principle of normalisation and recognises that every child has a right to attend their neighbourhood school but for some students their needs will best be met in special education placements. This policy states that every “child with a disability, learning difficulty, or behaviour disorder has the right to attend the regular neighbourhood school where this is possible and practicable and in the best interest of the child” (New South Wales Department of School Education, 1993, p. 4). Under schedule 1 of the New South Wales Disability Services Act 1993 “c) persons with disability have the right to realise their individual capacities for physical, social, emotional and intellectual development” (New South Wales Government, 1993, p. 16-17).

Acknowledging the importance of inclusion as part of the New South Wales Department of Education and Training system, David McRae (1996) completed a study commissioned by the State Minister for Schools to investigate the costs and benefits of further inclusion of students with disabilities, both in financial terms and outcomes for students. McRae (1996) visited more than fifty schools in New South Wales and interviewed school administrators, teachers, parents, and students to determine what was happening in schools in relation to inclusion, what worked, what the advantages and disadvantages of inclusion were, and the associated costs. He concluded that current anti-discrimination law and education policy were not being upheld under the current policies and practices and recommended a total review of the present practices in relation to the way students with disabilities are enrolled and supported in schools. He also recommended that the system of enrolment for students with disabilities should be the same as for any other student rather than a special enrolment procedure, and funding received should be attached to each child regardless of educational placement. These recommendations, however, are yet to be adopted by the State Government.

The New South Wales Department of Education and Training has expressed commitment to the concept of inclusive education. In a statement on inclusion, the Department reports that “it has been moving and will continue to move from the provision of predominantly segregated educational settings to the provision of
services in the regular neighbourhood school for students with disability” (New South Wales Department of School Education, 1992, p. 4). However, the Department has also declared a commitment to an “equitable and flexible continuum of special education services…to allow for appropriate education choices which cater for the needs of each student” (New South Wales Department of School Education, 1993, p. 2).

**Including Students with Disabilities in Regular Classes: The Ongoing Debate**

The movement towards the inclusion of students with disabilities in regular classrooms is a contentious issue that has generated much debate. It would seem that few topics in the field elicit such a broad range of emotions and opinions. Proponents of inclusive education suggest that regular and special education should be moved into one general system (Giangreco, Dennis, Cloninger, & Edelman, 1993; Stainback, Stainback, & Forest, 1989; UNESCO, 1994; Wedell, 1995). They argue that providing education services to all students in the same placement is fair, just, equitable and a moral imperative. Opponents propose that inclusion should be viewed as one placement alternative within a continuum of services required to cater for the needs of all students (e.g. Fuchs & Fuchs, 1994; Council for Exceptional Children, 1993; Vaughn & Schumm, 1995). Critics of the inclusive movement doubt that effective support can be provided in the same educational placement for all students (e.g. Kauffman & Hallahan, 1995) and argue that including all children with disabilities, regardless of the severity and nature of their difficulties, may be merely replacing one injustice with another (Shanker, 1995).

**The Perceptions of Inclusion Held by Key Stakeholders**

Recent research conducted in Australia to gauge the major stakeholders’ beliefs about the feasibility of including students with disabilities into regular classrooms underscore the clear division that exists. Bailey and Plessis (1997) asked 190 Australian school principals to choose a position that reflected their feelings about inclusion. Responses revealed that 51 were ‘opposed’ or ‘strongly opposed’ to the notion of inclusion, while 139 were ‘supportive’ or ‘strongly supportive’. Wright and Sigaffos (1998) surveyed the views of 81 parents of children without disability in
an Australian school. The results were mixed in that 44.4% ‘disagreed’ or ‘strongly disagreed’ that all students have a right to be in regular classroom whilst 33.3% ‘disagreed’ or ‘strongly disagreed’ that inclusion benefits all students.

In an attempt to establish how a range of professionals perceived the inclusion movement, Ward, Centre, and Bochner (1994) mailed an attitudinal questionnaire to a total of 5,111 professionals (including school principals, regular class teachers, resource teachers, school counsellors and preschool directors). When asked specifically about including students with mild intellectual disability, Australian preschool directors and school principals were generally positive while school psychologists, teachers and resources teachers remained uncertain. A survey of 273 Western Australian educators revealed that only 25% believed that a student with mild intellectual disability should be fully included in the regular classroom, although they were more accepting of the part-time inclusion of students with mild intellectual disability (Forlin, Douglas, & Hattie, 1996). It appears that parents of students with disability are also apprehensive about the concept of inclusion. In a study conducted by Palmer, Borthwick-Duffy, and Widaman (1998), 460 parents of students with intellectual disability in special classes were positive regarding the possible social benefits of inclusion but apprehensive regarding the quality of educational services their child would receive.

Taken together the results of these studies suggest that inclusion, while perceived positively from a philosophical perspective is perceived from a practical perspective as a highly controversial practice (Gannon, 1991). Although the debate continues, the reality is that the education system in New South Wales, Australia is moving towards the placement of students with disabilities into regular classrooms.

Lack of Empirical Investigation of the Effectiveness of Inclusion for Students with Disabilities

The inclusion movement has received criticism as being merely a philosophical issue discussed by academics and professionals removed from the classroom, and based on limited empirical research. Several authors have argued that there is a tendency for education policy rationales to be based on philosophical ideals
rather than on well-established research findings, and for research to follow rather than precede policy (Idol, 1997; Jenkinson & Gow, 1989; MacMillan, Gresham, & Forness 1996; Sale & Carey, 1995). There is concern that the inclusive policies adopted are based neither on research nor educational experience (Gottlieb, 1981; Scholom, Schiff, Swerdlik, & Knight, 1981) and that the practice exceeds its research support.

Proponents of full inclusion characterise inclusive programming as a moral imperative that does not require research support. For example, Stainback and Stainback (1992) maintain “We simply believe inclusion is a better way to live. It is the opposite of segregation and apartheid… Whether we include everyone is not a question for science or research. Inclusion is a value judgement” (p. xv). Perhaps the lack of investigation into student outcomes is due to the fact that the impetus for the movement to include students with disabilities in regular classes was grounded in human rights and ethical considerations rather than in theories of learning or research on effective teaching (Manset & Semmel, 1997).

A synthesis of research evaluating the impact of inclusion reveals paradoxical results (see Chapter 4). Despite the equivocal nature of research on the effectiveness of inclusion, the call for the inclusion of all students into regular classrooms continues. Furthermore, despite the lack of empirical evidence to establish that full inclusion is the only effective placement option for all students, more and more parents are selecting inclusive educational placements (MacMillan, Gresham, & Forness, 1996). Zigler (1977) argued that while striving to ensure the equal treatment of persons with disabilities is a worthwhile objective in itself, the ultimate criterion upon which educational policies should be based is the optimal development of students with disabilities for whom these practices are designed.

**Students with Mild Intellectual Disability**

The greatest impact in terms of numbers of students affected by the inclusion movement has been upon the education of students with mild intellectual disability (Madden & Slavin, 1983). Students with mild intellectual disability make up the great majority of students who have traditionally been taught in separate special
education classes but are considered good candidates for inclusion in the regular classroom. Students with mild intellectual disability also appear to be particularly sensitive to changes in the classroom environment (Hocutt, 1996). Kauffman, Agard, and Semmel (1985) conducted a correlational study to investigate the impact of student, teacher and classroom environment factors upon the academic and social competence of students with mild intellectual disability and students without disability. Results demonstrated that the academic and social competencies of students with mild intellectual disability were particularly affected by classroom environment variables such as: classroom composition, social-emotional climate, and instructional conditions. As such, students with mild intellectual disability are at the centre of the inclusion debate, and are the population of concern for this current research. Given the importance of this population to the present thesis the next section provides an overview of mild intellectual disability.

The Identification of Students With Mild Intellectual Disability

**Past and Current Definition**

Throughout the past several decades the concept of intellectual disability has been debated amongst educators and researchers alike. Intellectual disability derives its meaning from societal norms and expectations. As our knowledge, philosophy, and current thinking about social issues associated with intellectual disability changes so does its definition (Morrison & Polloway, 1995). For example, the criterion for intellectual disability published by the American Association on Mental Deficiency has witnessed five amendments between 1959 to 1992. In 1973 the intelligence quotient (IQ) criterion was reduced from IQ ≤ 85 to IQ ≤ 70 (Grossman, 1983), thus substantially reducing the number of people diagnosed as having an intellectual disability. In 1992 the levels of intellectual disability based on cognitive functioning (mild, moderate, severe and profound) were eliminated and replaced by levels of support required. In addition, the IQ cut off shifted from 70 to 75 (Luckasson, 1992). Gottlieb, Alter, Gottlieb, and Wishner (1994) explain that there is also an increasing number of students who traditionally would have been diagnosed as having a mild intellectual disability but instead are being diagnosed and treated as having a learning disability. A learning disability is characterised by academic
functioning that is substantially below that expected given the person’s chronological age, intelligence and education. Unlike students with intellectual disability, students with learning disability have an average IQ but experience significant difficulty in academic functioning (American Psychiatric Association, 1994). Differentiating between students with mild intellectual disability and those with learning disabilities has been difficult as these students exhibit similar behavioural symptoms in the school environment, however, cognitive difficulties of students with a learning disability seem to be specific while students with mild intellectual disability experience more generalised difficulties (MacMillan, Siperstein, & Gresham, 1996).

Until the early 1960s intellectual disability was usually defined solely in terms of an IQ score at or less than a given level below the average IQ for the population. In the past two decades, however, the use of an intelligence test score as a means to identify intellectual disability has been challenged (Jenkinson, 1996). Some theorists have questioned the underlying value of an IQ score and proposed that an IQ score is only a small sample of an individual’s cognitive ability (e.g. Gardner, 1983). Others (e.g. Helms, 1992) have opposed the use of such tests based on the argument that minority cultures are disadvantaged because intelligence tests measure culture-specific knowledge. For example, Mercer (1973) found that minority children who had been identified as having an intellectual disability were represented in higher proportions than in the population at large, even though they were not considered to have a disability in their home and neighbourhood environment.

Today, we recognise that IQ tests are far from perfect and that they are but one indication of a person’s ability to function. As such, the current conception of intellectual disability has been broadened to include the concept of adaptive behaviour. Currently the most widely accepted definition of intellectual disability is that proposed by the American Association on Mental Retardation (AAMR, 1992):
Intellectual Disability\(^1\) refers to substantial limitation in present functioning. It is characterized by significantly subaverage intellectual functioning, existing concurrently with related limitations in 2 or more of the following applicable adaptive skill areas: communication, self-care, home living, social skills, community use, self-direction, health and safety, functional academics, leisure and work. Intellectual Disability manifests before age 18 (AAMR Ad Hoc Committee on Terminology and Classification, 1992, p. 5).

As such the AAMR lists the fundamental features of intellectual disability as: a) a significantly subaverage general intellectual functioning; that is accompanied by b) significant limitations in adaptive abilities; and c) the onset of intellectual disability must occur before age 18 years.

**a) Subaverage intellectual functioning.** General intellectual functioning is determined by performance on an individually administered standardised intelligence test (e.g., Wechsler, 1992; Thorndike, Hagen, & Sattler, 1986) (American Psychiatric Association, 1994). Based on the properties of a normal distribution curve, an individual’s performance is compared to a specified mean level of intellectual functioning evident in the general population. Two standard deviations on either side of the mean incorporates 95% of the population and approximately defines the range of normal. By definition, the average intelligence quotient is 100, and the standard deviation of most IQ tests is 15 points. Although the IQ criterion for diagnosis has changed over time, today, a person scoring more than 2 standard deviations below the mean, or below 70, is considered to have an intellectual disability (Grossman, 1983). However, statisticians point out that there is a measurement error of approximately 5 points in assessing IQ by most psychometric tests (e.g., a Wechsler IQ of 70 is considered to represent a range of 65-75). In other words, repeated testing of the same individual will produce scores that vary by as much as 5 points (American Psychiatric Association, 1994).

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\(^1\) The American Psychiatric Association and American Association on Mental Retardation refer to intellectual disability as mental retardation and mild intellectual disability as mild mental retardation. In Australia, the terms intellectual disability and mild intellectual disability are used and thus will be adopted throughout this thesis.
The current AAMR definition sanctions a cut-off of 70-75. They established a 5 point spread of 70 to 75 to reinforce the notion that an IQ score should not be regarded as a precise measurement and asserted that clinical judgement is required. Thus, it has been proposed that the margin of intellectual disability be changed from an IQ score of 70 to a range of 65-75. Within this “borderline” range, the presence or absence of significant impairments in adaptive skills would be used to make the diagnosis (Batshaw & Shapiro, 1997).

Although the AMMR (Luckasson, 1992) no longer uses the levels of intellectual disability based on cognitive functioning, the American Psychiatric Association (APA) (1994, p. 40) continues to identify four degrees of severity of intellectual disability reflecting the level of intellectual impairment:

- **Mild Intellectual Disability**: IQ level 50-55 to 70-75
- **Moderate Intellectual Disability**: IQ level 35-40 to 50-55
- **Severe Intellectual Disability**: IQ level 20-25 to 35-40
- **Profound Intellectual Disability**: IQ level below 20 or 25

**b) Impairments in adaptive behaviour.** To be identified as having an intellectual disability, individuals must not only have limitations in their intellectual abilities but also must be impaired in adaptive functioning. Adaptive functioning refers to one’s ability to manage common life demands and meet the standards of personal independence expected of someone in their particular age group, sociocultural background, and community setting. An individual with intellectual disability must have significant limitations in adaptive functioning in at least two of the following skill areas: communication, self-care, home living, social/interpersonal skills, use of community resources, self-direction, functional academic skills, work, leisure, health, and safety (American Psychiatric Association, 1994).

**c) Manifestation during the developmental period.** The final requirement for a diagnosis of intellectual disability is that the onset of the impairment occurs during childhood, prior to 18 years of age. An individual is considered to have an intellectual disability only if the impairment is acquired during their developmental
brain growth years. If the impairment is acquired after the age of 18 years, they are said to have sustained a traumatic brain injury (Batshaw & Shapiro, 1997).

**New South Wales Department of Education and Training Definition of Mild Intellectual Disability**

The New South Wales Department of Education and Training (1998) define a student with mild intellectual disability as a student achieving an IQ score within the range of 56-75 (inclusive of a 5 point standard error) on a standardised, individually administered test of intelligence; accompanied by impairments in adaptive functioning and school achievement. The New South Wales Department of Education and Training refer to students with mild intellectual disability as IM students.

**Prevalence, Etiology and Prognosis of Mild Intellectual Disability**

The prevalence rate of intellectual disability has been estimated at approximately 1%, with 85% of this population in the range of mild, by the American Psychiatric Association (1994). Different sources, however, report different rates depending on definitions used, methods of ascertainment, and populations studied. Estimates of the prevalence of mild intellectual disability in Australia vary considerably due to the lack of national prevalence studies (Foreman, Dempsey, Robinson, & Conway, 1996). Measuring the prevalence of mild intellectual disability is problematic as many students whom, if tested would satisfy the requirements for classification of mild intellectual disability, may never be tested or identified due to factors such as parental wishes or lack of additional educational services available (such as local professionals to conduct testing).

Andrews, Elkins, Berry, and Burge (1979) reported a prevalence rate for mild intellectual disability of 1.39% of the school population. In 1988, Ashby, Robinson, and Taylor collected data from a number of different sources and subsequently estimated that approximately 3% of the total school age population had mild intellectual disability. The Australian Bureau of Statistics’ 1998 data suggests that approximately 2% of Australian children aged 0-14 years have an intellectual
disability (Australian Bureau of Statistics, 2000). In Australia, for children aged 0-14 years, intellectual disability is more common among males, with a male-to-female ratio of approximately 2.3:1 (Australian Bureau of Statistics, 2000).

In most cases of intellectual disability, determining the cause is an uncertain process. In approximately 50% of individuals, no clear etiology can be determined despite extensive evaluation efforts (Morrison & Polloway, 1995). According to the Australian Bureau of Statistics (2000), data collected in Australia in 1998 suggests that the cause of 22% of cases of intellectual disability is unknown, and for 30% the intellectual disability was present at birth.

According to the American Psychiatric Association (1994), early alterations of embryonic development account for approximately 30% of cases of intellectual disability while pregnancy and perinatal problems explain approximately 10% of cases. Environmental influences and other mental disorders explain approximately 15%-20% of cases while general medical conditions acquired in infancy or childhood explain approximately 5% of cases. It is also proposed that heredity only explains approximately 5% of cases.

In general, people with mild intellectual disability are often not distinguishable from children without intellectual disability during their preschool years. They typically develop social and communication skills and have minimal impairment in sensorimotor areas at this early developmental stage. The majority of children with mild intellectual disability are identified once they enter school and fail to meet expectations for academic achievement. By their late teens, they can acquire academic skills up to approximately the sixth-grade level. During their adult years, they usually achieve social and vocational skills adequate for minimum self-support, but many need supervision, guidance, and assistance. With appropriate supports, individuals with mild intellectual disability can usually live successfully in the community, either independently or in supervised settings. Problems in adaptive behaviour are more likely to improve with intervention than is their level of intelligence, which tends to remain more stable (American Psychiatric Association, 1994).
Current Educational Placement Options Available to Students with Mild Intellectual Disability in New South Wales

The range of placement options in New South Wales schools for primary students diagnosed with mild intellectual disability include: regular class, early school support program, IM (mild intellectual disability) support unit, and schools for specific purposes. The decision on where to enrol a student with a disability depends on factors such as: the expressed desires of parents and carers, the learning support needs of the student, and the capacity of the system to provide the level of support services required (New South Wales Department of Education and Training, 1998).

**Regular Class Placement**

Students with mild intellectual disability may be enrolled in a regular class with peers of various abilities. These students receive funding from the New South Wales Department of Education and Training to help support them in the regular class. This funding may be used to provide support services to the student either within the regular class or while withdrawn from the class. The actual number of students with mild intellectual disability in Australian regular classes remains unknown (McRae, 1996), and estimates vary. Foreman, Dempsey, Robinson, and Conway (1996) found that at least 60% of students with mild intellectual disability in their study were in regular classes. The Australian Bureau of Statistics (2000) estimate that approximately 28% of students with intellectual disability are placed in regular classes, however, it is predicted that this portion would be higher for students within the mild range of intellectual disability. Foreman, Dempsey, Robinson, and Conway (1996) suggest that the proportion of students with mild intellectual disability in regular classes has not changed markedly since 1982, despite the active inclusion policy pursued by the New South Wales Department of Education and Training. More recent figures collected from 1999 to 2001, however, demonstrate that in New South Wales the number of students with intellectual disability enrolled in regular classes with funding support has steadily increased (New South Wales Department of Education and Training, 2001a).
**Early School Support Program**

The Early School Support Program supports students identified as having mild intellectual disability enrolled in Kindergarten, Year 1 and Year 2 classes. All students placed in the Early School Support Program remain enrolled in and class members of their regular class. The early school support teacher works with an identified group of up to 15 students (across one, two or more than two schools). The early school support teacher assists class teachers to develop and implement individualised learning programs. These programs address the student’s identified area of need and help maintain the student’s place in the regular class. At times, individual students or small groups may be withdrawn for short intensive sessions. The decision to withdraw students from the class is based upon individual needs and is not seen as a regular feature of this program (New South Wales Department of Education and Training, 1998).

**IM Support Unit**

An IM Support Unit is a special education class for students with mild intellectual disability located within a regular school. These units provide for a maximum enrolment of 18 students, within an expected band of 15-18. A teacher’s aide is supplied on the ratio of one for every three classes. A school with two classes receives no aide support. In New South Wales the minimum age for admission to an IM Support Unit is eight years, or approximately at the commencement of Year 3. IM Support Units provide intensive, individualised educational programs within a regular school (New South Wales Department of Education and Training, 1998). In 1999, 2,779 primary students diagnosed with mild intellectual disability were enrolled in IM Support Units (1,788 boys, 991 girls) (New South Wales Department of Education and Training, 2001b). Research conducted by Dempsey and Foreman in 1997 suggested that the portion of students with mild intellectual disability enrolled in IM Support Units has remained relatively stable over the past 15 years. More recent figures collected from 1999 to 2001, however, show that while in 1999 the number of enrolments in regular classes and support classes were similar, by 2001 placements in regular classes substantially outnumbered the number of students with disability in support classes (New South Wales Department of Education and Training, 2001a).
Schools for Specific Purposes

Schools for specific purposes provide support for a small number of students with severe levels of disability, those with multiple disability, and those with potentially dangerous behaviour (Giorcelli & Quilty, 1996). Schools for specific purposes provide intensive, individualised educational programs in a setting separate to the regular school. The ratio of teacher to students is 1:12. There have been large decreases in the proportion of students with mild intellectual disability enrolled in schools for specific purposes. In 1986 there were 764 students diagnosed with mild intellectual disability enrolled in these settings (Dempsey & Foreman, 1997), while in 1999 there were only 201 (142 boys, 59 girls) (New South Wales Department of Education and Training, 2001b).

Summary

This chapter has provided an historical overview of the altering philosophy and legislation regarding the education of students with disabilities witnessed across the world and in Australia. Currently, many researchers and administrators advocate the full inclusion of students with disabilities into the regular education system and the dismantling of the special education system. Although a widely held belief, controversy continues over the suitability and effectiveness of inclusion in practice. This chapter has illustrated that the opinions of key stakeholders vary considerably.

Students with mild intellectual disability are viewed as good candidates for inclusion and as such are a population featured in the inclusion debate and are of primary concern in the present investigation. This chapter has provided the reader with an insight into how students with mild intellectual disability are identified. Currently, in the Australian state of New South Wales, the site of the current study, there are several educational placements available to these students: Regular Class, Early School Support Program, IM Support Unit, and the School for Specific Purposes. The nature of each placement has been described in this chapter, thus placing the setting of the current study into context for the reader.
CHAPTER 3
THE MULTIDIMENSIONAL STRUCTURE OF SELF-CONCEPT AND ITS MEASUREMENT

Introduction

The primary intent of this chapter is to provide a definition of self-concept and substantiate the multidimensional nature of self-concept. It is established that a positive self-concept is a desirable outcome of education, especially for students with disabilities, and thus worthy of investigation. Past and current theoretical models that purport that self-concept is multidimensional are discussed, with particular focus on the Shavelson, Hubner, and Stanton (1976), and Marsh and Shavelson (1985) models. The sound psychometric properties of the SDQI instrument in measuring multidimensional facets of self-concept for preadolescents is well-recognised. Recent adaptations to this measure (SDQI-IA) are described which has enabled the measurement of the self-concepts of young children. A review of the literature demonstrates the failure of existing tools to adequately measure the self-concept of preadolescents with mild intellectual disability. This in turn leads to a poor understanding of the nature and structure of self-concept for this population, as well as an accurate measure of these students’ self-concepts. The recent success of the SDQI-IA is documented and a clear rationale for its implementation in the current study is presented.

Self-Concept as an Important Outcome and Mediating Variable

Self-Concept as an Important Outcome in Itself

The enhancement of self-concept is widely valued as a desirable educational goal, and is frequently posited as a mediating variable that facilitates the attainment of other desired outcomes such as academic achievement. Nathaniel Branden (1994, p. xv), an eminent philosopher and psychologist, proclaims the far reaching and substantial ramifications of an individual’s self-concept/self-esteem, stating that:
I cannot think of a single psychological problem - from anxiety to depression, to under-achievement at school or at work, to fear of intimacy, happiness or success, to alcohol or drug abuse, to spouse battering or child molestation, to co-dependency and sexual disorders, to passivity and chronic aimlessness, to suicide and crimes of violence - that is not traceable, at least in part, to the problem of deficient self-esteem.

The substantial importance placed on the enhancement of self-concept is usually based on the premise that high self-concept is associated with feelings of self-worth and self-acceptance. Hence, enhancing self-concept is considered to be a desirable educational goal in itself. Early researchers such as Maslow (1954) and Coopersmith (1967) also recognised that the formation of a positive self-concept is critical to one's personal and social adjustment. Overall, people who view themselves positively tend to be happier than those who do not (Swann, 1996). As such, practitioners have come to appreciate the fact that a positive self-concept is central to the adaptive functioning and everyday happiness of the individual (Harter, 1990).

Educational policy declarations throughout the world cite the development of a positive self-concept as one of the central goals of education. Recently, in the second agreement between the Australian Commonwealth and its States/Territories regarding goals for students to achieve before they exit school, 'The Adelaide Declaration on National Goals for Schooling in the Twenty-first Century', the second of 18 goals specified on leaving school students should "have qualities of self-confidence, optimism, high self-esteem, and a commitment to personal excellence as a basis for their potential life roles as family, community and workforce members" (Ministerial Council on Education, Employment, Training and Youth Affairs, 1999: p. 3). This goal has since been reflected in syllabus documents from the States and Territories. For example in the New South Wales ‘Human Society and Its Environment: K-6 Syllabus and Support Document Formal Consultation Draft’ (Board of Studies New South Wales, 1994, p. 5) it is noted that learning experiences in this area will assist in “developing confidence, optimism, high self esteem, respect for others and personal excellence”.
For children and adolescents, school represents the most critical context for the development of self-concept outside the family (Purkey, 1970). Given the value of a positive self-concept and the central role played by the school environment, it is essential that the effects of the school environment upon self-concept are clearly understood.

This focus on developing and maintaining a positive self-concept has been particularly evident in educational programs catering for students with disabilities (Hepburn, 1993). Indeed, many arguments for and against the establishment of special classes of relatively homogenous students with disabilities are often based on their assumed impact on self-concept. Special classes were initially formed to avoid the effects of failure and ridicule encountered by students with disabilities in the regular class. Similarly, the more recent shift back to including students with disabilities in regular classes is a consequence of the supposed detrimental effect of labeling upon students’ self-concept (Gresham & MacMillan, 1997). Given the vital role that the school environment plays in forming students’ self-concepts, particularly their academic self-concept, students with disabilities are assumed to be especially in danger of poor self-concept and the adverse consequences that follow from this poor self-concept. The strong relationship between a students’ self-concept, level of functioning, and school success, suggests that one criterion for choosing appropriate educational placements for students with disabilities should be the impact of placement upon self-concept (Dixon & Marsh, 1997).

Self-Concept as Facilitating Other Desirable Outcomes

A positive self-concept is considered not only a valued state for its own sake, but evidence suggests that it promotes the acquisition of other desirable psychological and behavioural outcomes. Theorists such as Bloom (1976) consider a positive self-concept of ability as essential for academic success. A students’ self-perceptions of academic ability can affect their school performance (Marsh, 1990a; Marsh & Yeung, 1997; 1998), motivation for academic tasks (Bandura, 1986; McInerney, Roche, McInerny, & Marsh, 1997), career orientation (McInernery, Roche, McInerney, & Marsh, 1997), expectations for future success (Boersma & Chapman, 1991), and the processes of metacognition (Borkowski, Day, Saenz,
Dietmeyer, Estrada, & Groteluschen, 1992). Children with negative self-perceptions are expected to feel relatively worthless and ineffectual, to reduce their effort, or to give up in the face of difficulty (Chapman, 1988a). Thus, Marsh and Yeung (1997) conclude that the research clearly “supports the usefulness of … self-concept not only as an important outcome variable in its own right but also as a mediating variable that facilitates the attainment of other desirable outcomes” (p. 50; see also Chapman, 1988a).

The Multidimensionality of Self-Concept

Shavelson, Hubner, and Stanton (1976) described self-concept as a person’s perceptions of self formed through experience with one’s environment, influenced by interactions with significant others, and attributions of one’s own behaviour. Within the self-concept literature, terms such as global self-concept, general self-concept and self-esteem are applied, however, there is no apparent agreement about either their definition or distinctiveness. The theoretical model which underpins this thesis does not distinguish between these terms (see Marsh, 1993; Marsh & Craven, 1997). Thus, for the purpose of the current research the term general self-concept will be adopted.

The concept of self has been scrutinised for over one hundred years. Whereas its popularity as a major area of examination has fluctuated over time, the last twenty-five years has witnessed an increased emphasis on discovering the nature of the self (Hepburn, 1993).

Previous Models of Self-Concept

Despite early theoretical accounts recognising the multidimensionality of self-concept (e.g. James, 1963), historically, self-concept has been examined as a unidimensional construct comprising a general or overall self-concept. For example, after failing to identify predicted factors with a self-concept instrument, Coopersmith (1967, p. 6) concluded that “children make little distinction about their worthiness in different areas of experience or, if such distinctions are made, they are made within the context of the overall, general appraisal of worthiness that the children have
already made”. Over a decade later Marx and Winne (1978, p. 900) also concluded that “self-concept seems more of a unitary concept than one broken into distinct sub-parts or facets.” Research utilising a unidimensional model of self-concept typically represents self-concept as a single score based on a mean or total score of items tapping self-concept across a range of general contexts, presumed to reflect an individual’s sense of self across the various areas of his or her life.

The validity of the unidimensional model has been seriously challenged and criticised by researchers who advocate that self-concept is a multidimensional construct. Over the past decade a substantial amount of construct validity research, led by Marsh and his colleagues (see Marsh and Hattie 1996), has demonstrated that self-concept is a multidimensional construct (Byrne, 1984; Marsh & Gouvernet, 1989). Self-concept theorists have argued that a general score masks important distinctions that individuals make about their adequacy in different domains of their lives (Harter, 1990). “This agglomerate use of general self-concept is particularly dubious and probably led to many of the contradictory findings which abound in self-concept research” (Marsh, 1988, p. 40).

Proponents of a multidimensional model argue that self-concept should be assessed using instruments that measure each hypothesised domain. In this self-concept model, general self-concept is included, however, it is not simply a sum of all self-concept items. Rather, general self-concept is a separate domain that integrates how one feels about oneself in general (Harter, 1990). A number of models have been constructed to conceptualise self-concept as multidimensional. For example, some researchers suggest that the multiple aspects of self-concept are independent of one another, or at the most, only weakly correlated (Soares & Soares, 1980; Tesser & Campbell, 1983). Others propose a theoretical structure that allows the multiple domain-specific self-concepts to be correlated both among themselves and with a separate facet of general self-concept (Harter, 1985). Winne and Marx (1981) proposed a compensatory model whereby negatively viewed aspects of oneself will be compensated for by viewing other aspects of oneself more positively. The taxonomic model, inspired by Guilford’s (1969) structure of the intellect model, states that the components reflect the intersection of two or more facets, each having
at least two levels. (See Marsh and Hattie (1996) for an overview of alternative models of the structure of self-concept.)

The Shavelson, Hubner, and Stanton (1976) Model of Self-Concept

Shavelson, Hubner, and Stanton (1976) reviewed theoretical and empirical research, and identified significant deficiencies in self-concept research, concluding that:

It appears that self-concept research has addressed itself to substantive problems before problems of definition, measurement, and interpretation have been resolved. Until these problems have been dealt with in a manner made possible by advances in construct validation methodology, the generalizability of self-concept findings will be severely limited, and data on students’ self-concepts will continue to be ambiguous (p. 410).

In an attempt to remedy some of these deficiencies, Shavelson et al. (1976) developed a multifaceted, hierarchical model of self-concept. Shavelson et al. (1976) construed self-concept as:

a) organised or structured;
b) multifaceted;
c) hierarchically arranged: with inferences of one’s behaviour featured at the base, then inferences about the self in specific areas, and inferences about the self in general at the apex of the model;
d) increasingly situation specific and thus less stable: the hierarchical general self-concept – the apex of the model - is stable, but as one descends the hierarchy, self-concept becomes increasingly situation specific and thus less stable;
e) increasingly differentiated with age;
f) both evaluative and descriptive; and
g) differentiable from other constructs.
Shavelson et al. (1976) provided a diagrammatic representation of this model whereby General appeared at the apex and was divided into academic and nonacademic self-concepts at the next level. Academic self-concept was further divided into self-concepts in specific subject areas (e.g. Mathematics, Reading). Nonacademic self-concept was divided into three areas: Social self-concept which was further subdivided into relationships with peers and relationships with significant others; Emotional self-concept; and Physical self-concept which was subdivided into physical ability and physical appearance. Further levels of subdivision were hypothesised for each of these specific self-concepts so that at the base of the hierarchy self-concepts are more closely related to specific behaviour. Shavelson et al. (1976) found only modest support for their hypothesised domains based on existing instruments. None of the five existing instruments reviewed were able to differentiate among even the broad academic, social, emotional and physical self-concept facets.

**The Self Description Questionnaires (SDQ)**

In order to address this deficiency in measurement, Marsh developed the SDQ instruments for preadolescent primary students (SDQI), adolescent high school students (SDQII), and late adolescents and young adults (SDQIII) (see Marsh, 1988). The SDQ instruments were originally developed to measure the different areas of self-concept that were derived largely from the Shavelson et al. model. The SDQ instruments have been developed through an interplay between theory and empirical research (Byrne, 1996), providing particularly strong tests of the Shavelson et al. (1976) model (Marsh & Craven, 1997).

Numerous factor analyses from diverse populations have consistently supported the multidimensionality of self-concept and the distinct facets proposed by the Shavelson et al. model. The extensive construct validation, chiefly completed by Marsh, has resulted in the Shavelson et al. model being “the most extensively validated model of self-concept to date” (Byrne, 1996, p. 23). As such, the development of the SDQ addressed many early theoretical and methodological concerns. In addition, these instruments have been evaluated to be among the best available multidimensional instruments in terms of psychometric properties and
The SDQ instruments are widely used as is evidenced by their translation into six different languages (Chinese, French, Spanish, Portuguese, German, Norwegian). The SDQ instruments have extended the ability to measure self-concept and thus served as a basis from which to extend theoretical knowledge of the structure and nature of self-concept.

The Marsh/Shavelson (1985) Model of Self-Concept

Although responses derived from the SDQ provided strong support for the Shavelson et al. (1976) model and the multidimensionality of self-concept, they also presented some dilemmas. In the Shavelson et al. (1976) model, Mathematics and Reading self-concepts were characterised in terms of a single higher-order academic self-concept because they were substantially correlated. A large body of research with SDQ responses, however, recorded correlations between mathematics and reading self-concept that were near zero, making it difficult to advocate that they could be incorporated into a general academic self-concept as previously proposed by Shavelson et al. (1976) (e.g. Marsh 1986a; Marsh & Hocevar, 1985; Marsh & Parker, 1984; Marsh & Shavelson, 1985; Marsh, Byrne, & Shavelson, 1988).

To explain this apparent contradiction, Marsh (1986a) proposed: a) a revised theoretical model which redefined the structure of academic self-concepts, which has since become known as the Marsh/Shavelson model (Marsh & Shavelson, 1985); and b) formulated the Internal/External frame of reference model (the I/E model). According to the I/E model (Marsh, 1986a), the formation of students’ perceptions of their own academic competence is based on two comparison processes or frames of reference. The first process, termed internal frame of reference, occurs when students compare their own ability in one school subject to their own abilities in other school subjects. The second process, termed external frame of reference (or social comparison), occurs when students compare their self-perceived abilities in particular school subjects with the perceived abilities of other students in the same school subject and other objective indicators of actual achievement (Marsh & Yeung, 2001). A high academic self-concept results when students perceive themselves to be able in comparison to other students and objective indicators of achievement.
The external frame of reference should result in positive correlations between math and verbal self-concepts because math and verbal achievements are highly positively correlated. The internal frame of reference, however, should result in a negative correlation between math and verbal self-concepts because an increase in any one score must result in the counterbalancing decrease in the average of the remaining scores (Marsh & Yeung, 2001).

Importantly, both the internal and external comparison processes affect self-concept responses. Hence, the collective effect of these processes, depending on the relative weight given to each process, is consistent with the near-zero correlation between math and verbal self-concepts that led to the development of the I/E model and the Marsh/Shavelson revision of the original Shavelson et al. (1976) model (Marsh & Yeung, 2001).

The Marsh/Shavelson Model of self-concept predicts that correlations among the four nonacademic SDQI scales (physical ability, physical appearance, peer relationships and parent relationships) will be higher than correlations between these nonacademic scales and the three SDQI academic scales (mathematics, reading, and general-school). The reading and mathematics scales will be nearly uncorrelated with each other but substantially correlated with the general-school scale. These predictions have been validated through numerous research studies with the SDQI (Marsh, 1989) for preadolescent (and older) students without disabilities, and in research based on responses to different self-concept instruments (see Marsh & Craven, 1997). The primary difference between the Marsh/Shavelson model and the earlier Shavelson et al. (1976) model is the dramatic separation of mathematics and reading self-concepts such that different components of academic self-concept cannot be incorporated into a single higher-order academic self-concept.

**The Reciprocal Relationship Between Academic Self-concept and Academic Achievement**

In education, one of the most interesting and important relationships is the positive and reciprocal association between a positive academic self-concept and
academic achievement. This relationship has major implications for the importance placed on academic self-concept as an agency conducive to other desirable outcomes as well as being an important outcome variable.

Calsyn and Kenny (1977) explored self-enhancement and skill-development models of the self-concept/achievement relationship. The self-enhancement model casts self-concept as a primary determinant of academic achievement. Byrne (1984, 1996) noted that academic self-concept impacts upon one’s motivation which then leads to changes in subsequent academic achievement. In contrast, the skill development model implies that academic self-concept emerges as a consequence of academic achievement (Calsyn & Kenny, 1977). Wigfield and Karpathian (1991) proposed that this relationship is evident by the middle years of childhood, however, Chapman and Tunmer (1997) found that a clear causal relationship between achievement-related self-perceptions and academic performance emerges within the first two and a half years of schooling.

Marsh (1990a) tested the causal ordering of academic self-concept and academic achievement with four waves of data (including the last three years of high school and one year after graduation) based on standardised test scores, school grades, and academic self-concept. He found support for reciprocal effects in which the largest paths were from prior academic self-concept to subsequent school grades. Similarly, Marsh and Yeung (1997) found that higher academic self-concepts in particular school subjects led to an increased likelihood of students taking more advanced coursework in those subjects which led to increased academic achievement.

Such research is important in that it has provided support for a reciprocal effects model, whereby changes in academic self-concept impact on academic achievement and vice versa. Hence, not only is self-concept an important outcome variable in itself, it also plays a central role in mediating other desirable educational outcomes. These findings not only have significant implications for international educational policy and practice, but also verify the significance of measuring multiple dimensions of self-concept, including academic and nonacademic self-
concept. Therefore, there is a clear need to separate academic and nonacademic self-concept facets and measure self-concept as a multidimensional construct.

The direction of causality between academic self-concept and achievement has substantial practical implications for educators. If one’s academic self-concept led directly to one’s achievement (the self-enhancement model), then it follows that teachers should focus on enhancing students’ self-concepts rather than fostering achievement. On the other hand, if one’s level of achievement led directly to one’s academic self-concept (the skill development model), then it follows that teachers should focus on improving students’ academic skills in order to improve students’ academic self-concepts. The reciprocal model, however, dictates that enhanced academic self-concepts will lead to better achievement and increased achievement will lead to higher academic self-concepts. Hence, according to the reciprocal effects model, teachers should endeavor to improve both academic self-concept and achievement simultaneously.

**The Continual Misuse of General Self-Concept**

Although most theoretical accounts emphasise the multidimensionality of self-concept, until recently, this multidimensionality was not well represented in the most widely used self-concept measuring instruments. Thus, often contemporary researchers continue to measure self-concept as a unitary construct (e.g. Fink, 2000; Katzko, Steverink, Dittmann-Kohli, & Herrera, 1998; Klein & Zehms, 1996). Byrne (1996) attributes this ongoing misconception of self-concept to previous absence of highly sophisticated statistical procedures such as confirmatory factor analysis to test multidimensionality of constructs, and to the historical predominance of general self-concept. Bear, Minke, and Manning (in press) also propose that newer multidimensional self-concept instruments take longer to administer and are thus less appealing to field-based researchers. Poor measurement has persisted as the weakest link connecting theory, empirical research, and practice within the self-concept domain (Marsh & Holmes, 1990).
Despite a plethora of research, reviews of the self-concept literature have revealed vastly inconsistent findings (Byrne, 1984; Wylie, 1974, 1989). The widespread use of theoretically and psychometrically inferior instrumentation has repeatedly been cited as a major contributing factor to the inconsistencies in previous reported findings (Byrne, 1984; Wylie, 1974, 1989). To adequately understand the self-concept, a multidimensional approach must be taken. Conclusions drawn by studies conceiving self-concept as a unidimensional model are rendered dubious as they do not adequately gauge the multifaceted nature of self-concept (Marsh & Hattie 1996).

**Measuring the Self-Concepts of Children**

**SDQI Research**

The SDQI (Marsh, 1988) was designed to measure multiple dimensions of self-concept for preadolescent students, based on the Shavelson et al. (1976) model. The SDQI (Marsh, 1988) assesses three areas of academic self-concept (Reading, Mathematics, and General-School self-concept scales), four areas of nonacademic self-concept (Physical Ability, Physical Appearance, Peer Relationships, and Parent Relationships self-concept scales), and a General self-concept scale. Three total scores can also be measured on the basis of these scales: Academic self-concept (the average of Reading, Mathematics, and General-School self-concept scales), Nonacademic self-concept (the average of Physical Ability, Physical Appearance, Peer Relationships, and Parent Relationships self-concept scales), and Total self-concept (the average of all eight self-concept scales). Each of the eight SDQI scales are defined by responses to eight positively worded items. On the standard SDQI there are an additional 12 negatively worded items. However, because research has shown that children have trouble responding appropriately to negatively worded items (Benson & Hocevar, 1985; Benson & Rentsch, 1988; Marsh, 1986b; Marsh & Holmes, 1990), they are not included in the scores derived from the SDQI.

More than 30 published factor analyses have identified the factors that each SDQ instrument is designed to measure (for reviews see Marsh, 1990b; Marsh & Craven, 1997). Research has shown that: a) The reliability of each scale is generally
0.80 or higher, whereas correlations among the factors are quite small (median correlations are less than 0.20); b) The self-concept responses are substantially correlated with self-concepts in matching areas inferred by significant others; c) Self-concept factors are systematically and logically related to a variety of other constructs including age, gender, academic achievement, locus of control, self-attributions for the causes of academic successes and failures, physical fitness and participation in sports, and interventions intended to enhance self-concept. This research provides strong support for the construct validity of responses to the SDQ instruments for children as young as 8 years.

Based on her review of self-concept instruments, Byrne (1996; also see Hattie, 1992; Wylie, 1989) concluded that:

There is absolutely no doubt that the SDQ-I is clearly the most validated self-concept measure available for use with preadolescent children. For more than a decade, it has been the target of a well-planned research strategy to firmly establish its construct validity, as well as its other psychometric properties. In using the SDQ-I, researchers, clinicians, counselors, and others interested in the welfare of preadolescent children can feel confident in the validity of interpretations based on responses to its multidimensionally sensitive items (p. 117).

**A New Adaptive Interview Procedure: Self Description Questionnaire I - Individual Administration (SDQI-IA)**

In response to the paucity of measurement instruments and lack of theoretical understanding of the structure and nature of young children’s self-concept, Marsh, Craven, and Debus (1991) adapted the SDQI to assess the multiple dimensions of self-concept for children younger than 8 years. Marsh et al. (1991) adapted the instrument format and item structure of the SDQI to address the developmental needs of young children. Although somewhat critical of self-concept instruments developed for young children, Byrne (1996) indicates that given the dearth of suitable measurement tools, the SDQI-IA is a promising tool for use with young children.
The group administration format was replaced with an individual interview format. Marsh et al. (1991) compared the new assessment procedure with the standard group administration procedure in which the same SDQI items were read aloud to students. Kindergarten students were not able to complete this group-administered task. For students in Years 1 and 2, the psychometric properties of group administration responses were substantially poorer than those based on the individual interview responses. Marsh et al. (1991) demonstrated that the individual interview approach was more effective than standard group administration procedures, even when the items were read aloud to students, and thus an important feature in measuring the self-concepts of young children.

Another essential adaptation of the SDQI-IA was the altered response scale. Rather than presenting the child with a choice of five response options based on a traditional likert-type response scale, as in the SDQI, the SDQI-IA utilises a double-binary response format. That is, the child provides their response in two steps: Firstly stating “yes” or “no” to indicate whether the statement is a true or false description of themselves, and secondly, whether they meant yes/no “sometimes” or “always”. This response format resulted in a five point scale in which the midpoint represented a neutral response. This administration procedure accommodates the cognitive development of young children, as a good measure should (Byrne, 1996).

On the standard SDQI there are an additional 12 negatively worded items. As previous research has shown that children have trouble responding appropriately to the negatively worded items, they are not included in the scores derived from the SDQI (Marsh, 1988). For purposes of the individually administered SDQI-IA used with young children, the negatively worded items were excluded altogether. Although many test developers have chosen to reverse the wording of some items to minimise the incidence of response sets (see e.g. Moskowitz, 1986), Marsh (1986b) found that the use of negatively worded items was inappropriate with young children as they experience trouble responding to such complex items.

On the basis of a sample of children in Kindergarten, Year 1 and Year 2, Marsh et al. (1991) found that the SDQI-IA was very effective in assessing multidimensional self-concepts for these young children aged 5 to 8 years.
Confirmatory factor analyses clearly identified all eight SDQI scales. These results have been further validated in more recent studies by Marsh, Craven, and Debus (1998). These studies showed that children can reliably differentiate between multiple dimensions of self-concept at an earlier age than previously assumed and has been recognised elsewhere (Byrne, 1996; Crain, 1996). For example, Harter and Pike (1984) questioned the ability of young children below age 8 to differentiate among multiple dimensions of self-concept. They concluded that children at this age level could identify only two broad components of self (competence and social acceptance). Such findings have been further debunked by a recent study which successfully applied the SDQI-IA to measure the self-concept of children aged 5 to 6 years (Craven, McInerney, & Marsh, 2000).

In sum, although the SDQI was originally designed for use with students in Years 4 through 6, recent adaptation to its administrative format (SDQI-IA) have shown its additional suitability for use with children as young as 5 years of age. Because the administrative procedure of the SDQI-IA is so central to the present investigation, its development is described in some detail. (For a comprehensive description of the structure and procedures for administering the SDQI-IA, see Chapter 6.)

**Measuring the Self-Concepts of Preadolescents with Mild Intellectual Disability**

**The Lack of Valid and Reliable Measurement Tools**

Currently, there is a dearth of information about the structure and nature of the self-concepts of preadolescents with mild intellectual disability as well as a deficiency in psychometrically sound measurement tools for this population. The paucity of research on the structure of self-concepts of preadolescents with mild intellectual disability and the lack of consistent findings across studies (see Chapter 4) derives, at least in part, from serious problems in instrumentation. Byrne (1996) conducted a comprehensive review of self-concept measurement instruments and lamented that:
I had hoped to provide information bearing on the selection of instruments for appropriate use with at least two (educable and trainable) mentally retarded populations… My aspiration arose in this regard from my observation, over the years, that in measuring self-concepts for these various special populations, most researchers used assessment scales that were normed on normal populations. Unfortunately, my search of the literature revealed such instrumentation to be disappointingly sparse and serves to highlight this critical void in the availability of self-concept measures for special populations (p. 221).

A notable amount of research has been conducted which endeavours to assess the self-concepts of students with mild intellectual disability. Typically, researchers have been concerned with comparing and contrasting mean differences between the self-concepts of students with mild intellectual disability and the self-concepts of their peers without disability. Some researchers have also investigated how the self-concepts of students with mild intellectual disability vary as a function of the students’ gender, age, and educational placement. However, before one can confidently interpret self-concept scores in special populations, there is a more basic issue to be considered, namely whether such scores are even meaningful or reliable for such specific populations (Harter, 1990). Silon and Harter (1985) argue that “the issue of assessment is paramount; if our measuring instruments are not sensitive to the self-evaluations of pupils with deficits, then questions involving the impact of mainstreaming cannot be meaningfully addressed” (p. 217). Furthermore, if the same self-concept instruments are measuring fundamentally different constructs for students with and without mild intellectual disability, then all previous research comparing the self-concepts for these two groups of students is invalid. Hence, this problem has enormous implications, potentially calling into question much of the previous self-concept research conducted with preadolescents with mild intellectual disability.

Past attempts to determine a suitable measurement tool. There has been a persistent concern over the plight of students with mild intellectual disability in the realm of personal adjustment. The apparent degree of concern, however, has not been
matched by efforts to develop and perfect instruments and procedures for measuring these realms (Gresham & MacMillan, 1997).

In 1985, Silon and Harter administered the Perceived Competence Scale for Children (Harter, 1985) to 126 students with IQs between 55-85 who were aged 9 to 12 years to determine its suitability for this population. Analyses revealed that the a priori four-factor solution evident in the normal population was not obtained. Instead, only two factors were formed, including only 17 of the 28 items: Competence (12 items, reliability 0.78) and Popularity (5 items, reliability 0.64). Silon and Harter (1985) concluded that “it appears that retarded children do not make distinctions about specific competence domains but rather simply make judgements about one’s competence at activities in general, regardless of their nature. Thus they think one is either competent or not” (p. 223). They concluded that the structure of self-concept is different for students with mild intellectual disability, whereby it is organised in a less cognitively complex fashion, possibly as a result of either their cognitive-developmental level or the unique environment such students experience. Silon and Harter (1985) proposed that self-concept is a cognitive construction, and thus its structure should be related more highly to mental age than to chronological age. These findings support their position as the two-factor solution obtained for these students was similar to results obtained for children aged 4 to 7 years on the Pictorial Scale of Perceived Competence and Social Acceptance for Young Children (Harter & Pike, 1984). Direct comparisons between the factor structure obtained for the self-concepts of each group, however, can not be confidently made as two different measurement instruments were utilised.

In Silon and Harter’s (1985) study, the general self-worth factor did not emerge as a separate factor, and its reliability was poor. Thus, these authors concluded that the general worth conceived by preadolescent students with mild intellectual disability could not be gauged through self-report assessment procedures. Silon and Harter (1985) concluded that the Perceived Competence Scale for Children (Harter, 1985) was inappropriate for use with preadolescents with mild intellectual disability and discontinued this line of research.
The 1985 study by Silon and Harter was important as it was the first to attempt to address the issue of structure and measurement of self-concepts for this population, however, it included several weaknesses which limit the usefulness of the findings. Firstly, the measurement tool was administered via standard group administration procedures. This may have been an inappropriate administration mode for this population. Secondly, the data was analysed utilising exploratory factor analysis (EFA) which provides a weak basis of inference about the structure of self-concept as, unlike confirmatory factor analysis, EFA does not permit the researcher to specify the model to be tested and make comparisons with alternative structures (e.g. Marsh & Hocevar, 1985). Lastly, the authors did not report reliability estimates for their general scale nor correlations between this scale and other scales. These omissions limited the evaluation of the tests’ psychometric properties and the depiction of the structure of self-concept for this population. Hence the lack of differentiation found by Silon and Harter (1985) may reflect problems with existing measurement instruments and suggest that the use of more appropriate procedures is needed.

Recently a few attempts have been made to evaluate the construct validity of self-concept measures for adolescent students with mild intellectual disability. For example, Little, Widaman, Farren, MacMillan, Hemsley, and MacMillan (1990) investigated the psychometric properties of the SDQII for 1,140 adolescent students in Year 8 - 242 of which were described as ‘learning handicapped’ (that is, students with mild intellectual disability, learning disabilities, behaviour disorders, and neurological impairments.). For these 242 students, coefficient alpha’s for the SDQII scales ranged from 0.749 to 0.877 which was slightly lower than the norm, but still within acceptable levels of reliability for many purposes. The hypothesised factor structure of the SDQII was supported for this special group, confirming the multidimensional structure of self-concept for adolescents with ‘learning handicaps’. Begley (1999) administered the Pictorial Scale of Perceived Competence and Acceptance (Harter & Pike, 1984) to 64 students with Down Syndrome aged 8 to 16. The Pictorial Scale of Perceived Competence and Acceptance (Harter & Pike, 1984) was administered to these students even though it was designed for much younger children. The reliability coefficients for the three domains were: 0.80 for academic self-concept, 0.72 for physical self-concept, and 0.84 for social self-concept.
However, further evaluative analysis, for instance, an investigation of the construct validity via confirmatory factor analysis, was not conducted, probably due to the small number of participants.

In addition, more recently, Crabtree and Rutland (in press) in the United Kingdom, administered the Self-Perception Profile for Children (Harter, 1985) to a group of 145 adolescents (aged 11 to 16 years) identified as having moderate learning difficulties. The measure was completed in a group classroom setting in which questions were read aloud to the students. Reliabilities for the measure for this population were modest with reliability coefficients of: Scholastic 0.56, social 0.65, athletic 0.69, physical 0.78, behavioural 0.57, and general 0.73. The paper provided no evaluation of the construct validity of the measure and included students with a range of difficulties, including mild autistic tendencies, specific language and numeracy problems, and various mild behavioural and emotional difficulties. Although Crabtree and Rutland (in press) emphasised that their “study measures self-evaluation through the use of the Harter (1985) ‘Self-Perception Profile for Children’ (SPPC), which has proved an extremely reliable scale but has never before been used with learning disabled individuals” (p. 5). However, Crabtree and Rutland did not determine whether the measure was indeed valid for this population before making comparisons with the responses of peers without disabilities. This inability to demonstrate construct validity for the self-concept measure undermines the strength of any comparisons made.

**Using measures with psychometric support based on the normal population, or measures that have little psychometric support at all.** The lack of suitable self-concept assessment tools for preadolescents with mild intellectual disability has made few options available to researchers interested in measuring the self-perceptions of these students. As a direct result, most of the research concerned with the study of the self-concepts of individuals with mild intellectual disability has used self-concept tests which have been psychometrically evaluated for the general population without testing their appropriateness for this special population (e.g. Begley, 1999; Crockett, 1977; Jahoda, Markova, & Cattermole, 1988, Tapasak & Walther-Thomas, 1999). For example, Begley (1999) administered the Pictorial Scale of Perceived Competence and Acceptance (Harter & Pike, 1984), designed for
children aged 4 to 7 years to students with Down Syndrome aged 8 to 16 years. The author justified this use because “it contains items likely to be relevant to school-aged pupils with Down syndrome” (p. 518).

A persistent difficulty in self-concept research with special populations is the clear misuse of established measuring instruments (Wylie, 1974; 1979). Wylie noted that although measures were developed and psychometrically sound for one population, they are often used with other populations. Such use of a measuring instrument assumes, possibly incorrectly, that the interpretation of all questionnaire items and the conceptual structure of the underlying constructs are equivalent for the two populations. Byrne (1996) argues that it is essential that researchers test for the construct validity of a measuring instrument for groups that were not used in the instrument development process. Silon and Harter (1985) summarise this predicament succinctly:

Unfortunately, studies that have sought to examine self-concept variables among the retarded have simply used measures standardized on groups of normal-IQ children, assuming that these instruments would be appropriate. This assumption may be unwarranted… As a result, any interpretation of the existing findings for retarded populations is murky at best, given the general inadequacies in assessment strategy (p. 217).

The SDQI-IA: A Promising Tool for Measuring the Self-Concepts of Preadolescents with Mild Intellectual Disability

As discussed previously, the SDQI has been evaluated as the most validated self-concept measure available for use with preadolescent students (Byrne, 1996) and recent adaptations of this instrument have resulted in successfully measuring multidimensional self-concepts for children as young as five (SDQI-IA, Marsh et al. 1991). Therefore, it is plausible to suggest that the SDQI-IA may indeed be suitable for preadolescents with mild intellectual disability, as the self-concept dimensions are applicable to preadolescents and importantly the unique administration format makes it accessible for students with less developed cognitive capabilities.
The Nature of Self-Concepts of Preadolescents with Mild Intellectual Disability

Age Differences

A persistent theme in self-concept research and theory has been the change in the structure and level of self-concept as students grow older and develop. In her classic review, Wylie (1979) reported that age differences in overall or total self-concept were small and inconsistent. Marsh (1989) however found a reasonably consistent pattern of self-concept declining from a young age through to adolescence, leveling out, and then increasing at least through early adulthood. SDQI research (see Marsh, 1989; Marsh, Barnes, Cairns, & Tidman, 1984) has consistently found that mean responses for most SDQI scales decline with age, with parent relationships self-concept being a possible exception. Overall, evidence suggests that mean levels of self-concept decline through elementary school years (Wigfield, Eccles, Yoon, Harold, Arberton, Freedman-Doan, & Blumenfeld, 1997). More recent research with younger students (aged 5-8 years), found a significant negative linear effect in which age was related to only three self-concept facets: Physical appearance, peer relationships, and general-school self-concept (Marsh, Craven, & Debus 1998).

Research evaluating possible age trends in the self-concepts of students with mild intellectual disability is sparse. In Chapman’s (1988b) meta-analysis of 27 studies evaluating the self-concepts of students with learning disabilities, no differences were found as a function of grade in school. Begley (1999) found that students with Down Syndrome aged 14 to 16 had higher self-concept scores in comparison to an 8 to 10 age group. The 11 to 13 age group had the lowest academic and social self-perception scores and the highest physical self-perception score. The findings from this study are suggestive that the self-concepts of students with low IQs may follow the same developmental trend as students without disability. In contrast to these findings, it is often widely speculated that the self-concepts of students with mild intellectual disability may decline over time with age as a result of repeated failure, growing demands on performance and the development of the capacity for social comparison (Beane & Lipka, 1984; Burns, 1982; Raviv & Stone, 1991; Rosenholtz & Simpson, 1984). Such speculations, however, have not been examined
via empirical evidence, and thus developmental trends in the self-concepts of preadolescents with mild intellectual disability remain unknown.

**Gender Differences**

Another enduring question in self-concept research and theory has been the difference in the self-concepts of males and females. A substantial amount of this research has investigated gender differences for students without disability, while the differences between males and females with mild intellectual disability has received little attention.

Historically, studies of gender differences in self-concept have focused primarily on general scores. Wylie (1979) concluded that there are no systematic gender differences in overall self-concept at any age. However, research using a multidimensional measure of self-concept has revealed some interesting differences. SDQI research (Marsh 1989; Marsh, Barnes, Cairns, & Tidman, 1984) reports that there is a consistent pattern of counterbalancing gender differences that is consistent with gender stereotypes. Marsh’s (1989) analysis of the normative archive SDQI data suggests that males report a higher physical ability, physical appearance and mathematics self-concept, whereas females report a higher reading self-concept. Marsh (1989) also found that age-by-gender interactions were typically small, suggesting these gender effects are relatively stable over age. Marsh, Craven, and Debus (1998), using a multi-cohort-multi-occasion design with young students aged 5-8 years, found similar gender patterns in which females reported significantly lower physical ability self-concepts, and modestly higher physical appearance and reading self-concepts than males.

In a multi-cohort, longitudinal study of children without disability in Years 1, 2 and 4, Wigfield et al. (1997) found that males evidenced a higher self-concept in mathematics and sport, whereas females evidenced a higher self-concept in music and reading. In 1999, Wilgenbusch and Merrell conducted a meta-analysis of 22 studies investigating the self-concept of children and adolescents without disability. For students in Years 1-6, males reported higher levels of self-concept in general, academic, mathematics, relationships with parents, and athletic scales. Females
reported higher levels of self-concept in verbal, musical, and some components of athletic scales. Hence, for students without disability, there is little evidence for gender differences in the structure of self-concept or the level of overall self-concept, but there do seem to be differences in specific components of self-concept that are consistent with gender stereotypes (Marsh, Barnes, Cairns, & Tidman, 1984).

Patterns of gender differences in the structure and level of self-concept of students with mild intellectual disability is unknown, due to the limited number of studies exploring these issues. Towne and Joiner (1966) studied 62 students with mild intellectual disability with a mean age of 11.6 years via a time series design. They concluded that general self-concept scores did not vary as a function of gender. The self-concepts of 90 students with mild intellectual disability aged 10-14 years were assessed via the SDQI (Burton, 1988). Results revealed that males scored significantly higher than females on physical ability, physical appearance, and general self-concept. In contrast, Begley (1999) found that the self-concept of students with Down Syndrome aged 8 to 16 years, as measured by the Pictorial Scale of Perceived Competence and Acceptance, did not significantly vary according to the students’ gender.

In summary, there is insufficient research with preadolescents with mild intellectual disability to determine whether results based on general populations of students in terms of the impact of age and gender upon self-concepts can be generalised to this special population.

**The Importance of Specific Self-Concept Components in Determining the General Self-Concept of Preadolescents with Mild Intellectual Disability**

The relationship between general self-concept and specific components of self-concept is widely used as one index of the importance of the specific self-concept scales in the formation of one’s general self-concept. Past research with preadolescents without disability has endeavoured to determine which aspect of self-concept is most associated with one’s general self worth. Research findings with students without disability suggests that at various age levels, and regardless of gender, nonacademic self-concept facets (in particular, physical appearance) is most
highly correlated with general self-concept (e.g. Little et al., 1990; Marsh, 1989; Marsh & Ayotte, 2002; Marsh, Craven, & Debus, 1998).

Of the limited research that has been conducted with students with mild intellectual disability, or those with learning disability, results are equivocal. For example, feelings of general self-worth have been found to be more highly related to perceptions of intellectual self-concept for adolescents with learning disability (Renick, 1987; Harter, 1990). Harter (1990) discovered that general self-worth bears a larger relationship to general intellectual ability for students with learning disability compared to students without disability, suggesting that one’s self-worth is more intimately linked to one’s intellectual capabilities among students with learning disability. Harter explained that the saliency of intellectual ability for students with learning disability is not surprising given their history of educational difficulties and identification.

In contrast to these findings, Harter, Whitesell, and Junkin (1998) administered the Self-Perception Profile for Adolescents (Harter, 1988a) to 118 students with learning disability, 70 with behavioural disorders and 235 normally achieving high school students. As a general pattern across all three groups, including those with learning disability, indices of physical appearance were highly correlated with general self-worth. For students with learning disability, physical appearance had a correlation of 0.67 with general self-worth. More recently, Crabtree and Rutland (in press) have found that among adolescents with a range of mild disabilities, each self-concept subscale of the Self-Perception Profile for Learning Disabled Students (Renick & Harter, 1988) significantly predicted the student’s general self worth. The one exception was for the scholastic self-concept subscale which was not significantly related to general self worth. Physical appearance self-concept was found to account for the most variance in general self-worth. Crabtree and Rutland (in press) concluded that students with mild disabilities placed significantly less importance on scholastic areas than their peers without disability. They proposed that students with mild disabilities place less importance on areas of their lives in which they typically have problems as a strategy to maintain a positive self-concept. Similarly, Little et al. (1990) found that for 242 adolescents described as ‘learning handicapped’ (including students with mild intellectual disability, learning disabilities, behaviour disorders,
and neurological impairments) general self-concept was most highly correlated with emotion, followed by same sex relationships and physical appearance self-concepts. Hence, previous research provides no clear indication about whether the relative size of relations between general and specific domains of self-concept based on responses by students with mild intellectual disabilities is similar to the results found in the general population.

**Summary**

This chapter has established a clear foundation and rationale for the current investigation. The significance of a positive self-concept as both an outcome in itself and as facilitating other important outcomes has been substantiated. The critical importance of conceiving self-concept as a multidimensional construct, embodying both academic and nonacademic facets, has been clearly argued. The SDQ instruments have been affirmed as superior multidimensional self-concept measurement instruments, while a new adaptive version of the SDQI (the SDQI-IA), given its emerging success with young children, has been introduced as a plausible measure for use with preadolescents with mild intellectual disability. The current chapter demonstrated the lack of sufficient measurement tools for preadolescents with mild intellectual disability, and the inevitable use of poor measures, which have substantially weakened past research. Previous attempts to remedy this deficit have not been adequate for preadolescents with mild intellectual disability. As a result, in part, of the failure of past measurement tools, our understanding of the nature of the self-concepts of preadolescents with mild intellectual disability, and age and gender differences is sparse.
CHAPTER 4
THE IMPACT OF EDUCATIONAL PLACEMENT UPON
THE SELF-CONCEPTS, SOCIAL COMPARISONS,
STIGMA AND ACADEMIC ACHIEVEMENT OF
STUDENTS WITH MILD INTELLECTUAL DISABILITY

Introduction

This chapter establishes the saliency of educational placement in determining
the self-concepts of students with mild intellectual disability. Firstly the chapter
focuses on discussing two competing theories (labeling theory and social comparison
theory as emphasised in the big fish little pond effect) that make opposing
predictions about the impact of regular class and special class educational placements
on the self-concepts of students with mild intellectual disability. For each theory the
underlying rationale, hypothesised effects of educational placement on self-concept,
and the research evidence are outlined. Secondly, the chapter discusses some of the
methodological limitations of previous research that have hampered efforts to utilise
the available research literature to test the predictions of these competing theories.
These limitations include the use of: Measurement tools which rely on an inaccurate
unidimensional model of self-concept (see Chapter 3) and therefore conceive self-
concept as a general construct; and non-equivalent group, posttest only designs.
Thirdly, methodologically strong primary studies that overcome past limitations are
discussed and the findings of recent reviews of the literature pertaining to the impact
of educational placement upon self-concepts are outlined. Finally implications of this
literature review for the present investigation are identified.

Paucity of Research Investigating the Impact of Educational Placement Upon
the Self-Concepts of Students with Mild Intellectual Disability

Given the importance of self-concept as both an outcome and mediating
variable, and the centrality of self-concept in the inclusion philosophical debate, self-
concept has received surprisingly scant empirical attention in the field of intellectual
disability (Zigler & Burack, 1989). Although between 1.4% and 3.0% of students are classified as having mild intellectual disability in Australia, the area is relatively under researched (Foreman, Dempsey, Robinson, & Conway, 1996).

The literature debating whether inclusion is the best option for students with mild intellectual disability has tended to focus on the possible benefits or harm to the students’ academic performance, behaviour or social status (e.g. Eshel, Katz, Gilat, & Nagler, 1994; Karagiannis, Stainback, & Stainback, 1996b; Marwell, 1990; Santich & Kavanagh, 1997). For example, a ministerial report assessing the feasibility of the inclusion of students with disabilities in regular classes, discussed only possible academic and social outcomes (McRae, 1996). In sum, few researchers have focused on how inclusion into the regular education classroom influences the development of a positive self-concept among students with disabilities (Stainback, Stainback, East, & Sapon-Shevin, 1994). As the inclusion movement appears to accelerate and given the importance of optimising self-concept, understanding the effects of inclusion upon self-concept becomes essential.

**Theoretical Orientations Underlying the Impact of Educational Placement Upon the Self-Concepts of Preadolescents with Mild Intellectual Disability**

Theories of self-concept argue that self-concept is mainly formed through interactions with significant others (Shavelson, et al., 1976; Wylie, 1974). The school environment plays an especially important role in the formation of self-concept. It is during middle childhood that some of the most powerful and enduring self-perceptions are shaped (Markus, 1980), and these perceptions are dependent on one’s experiences in primary school. Erikson (1950) argued that for latency-age children (age 7 to adolescence), school frequently represents the first occasion in which they act on their own and measure themselves against others. Erikson (1950) stated that during this period children’s positive self-concepts are either established by experiences of success and pride in themselves or shaken by a lack of success in learning situations which leads to a sense of inferiority and feelings of unworthiness.

Social construction theory proposes that one’s self-concept is largely determined by the ways in which one is treated by significant others and that an
individual becomes an object to himself or herself in the social environment in which he or she is involved (Mead, 1934). Inferences from social construction theory propose that the environment in which students with mild intellectual disability receive education would impact upon their perception and evaluation of themselves. An ongoing debate in special education centres around the educational environment in which services are delivered (MacMillan, Semmel, & Gerber, 1994). Recently, it has been argued that it is not where services are provided but what types of services (e.g. quality of education programs) are provided which should be the primary concern (e.g. Hocutt, 1996). The latter is a valid point, however, investigating the impact of educational placement is paramount as two influential theories (labeling theory and the big fish little pond effect based upon social comparison theory) predict that educational placement impacts upon the academic self-concepts of students with disabilities. The predictions made by labeling theory and the big fish little pond effect in terms of the impact of educational placement upon students’ self-concepts, however, are strictly opposed.

**Labeling Theory and Stigmatisation**

Since the 1950s and 1960s civil rights movement, there have been attempts to reconsider our understanding of intellectual disability by incorporating it into larger sociological perspectives (Weiner & Davis, 1995). Labeling theory, or the interactionist approach, is one such approach. However, rather than a unified approach, labeling theory is a term describing a cluster of ideas that may state many different things. The major conceptualisations of this perspective are based on the writings of Lemert (1951 and 1972) over thirty years ago, although similar ideas have been expressed, and contributed to, by others (e.g. Becker, 1973; Goffman, 1963; Schultz, 1967).

The basic premise of labeling theory is that people become deviant because certain labels are attached to their behaviour by the majority population and authorities in society. The labeling process is a process of stigmatisation in which those who do not comply with accepted behaviours are marked out for avoidance and ostracism. Labeling theory conceives deviance as a social construction rather than an objective quality intrinsic to any particular act. Deviance is a “consequence of the
application by others of rules and sanctions to an ‘offender’. The deviant is one to whom the label has successfully been applied; deviant behavior is behavior that people label” (Becker, 1973, p. 9). Mercer (1965) demonstrated the socially constructed nature of the label of intellectual disability by showing that many Mexican-American children were improperly defined as having an intellectual disability and placed in special education because they could not meet the school’s expectations for their behaviour. Outside the school context, however, these same children were able to care for siblings, wash their clothes, do errands and even take leadership positions in peer groups. She called these children ‘the six-hour mentally-retarded’ – that is, they only received the label of having an intellectual disability in a given socially constructed context.

Once a particular label has been assigned to an individual, others expect particular behaviours from the individual; and on the basis of these expectations act toward individuals in an altered way. In turn, individuals categorise themselves as others have and act in ways appropriate to their expectations (Stryker, 1959). A deviant career is thought to ensue in which society treats the individual differently and creates through a ‘self-fulfilling prophecy’ the very behaviour it considers undesirable.

Labeling theory and the social deviance model is the dominant paradigm through which sociologists have studied disability since the publication of Erving Goffman’s (1963) classic, “Stigma: Notes on the Management of Spoiled Identity” (Susman, 1994). Goffman’s contribution was to combine the concepts of deviance and stigma. Stigma refers to any persistent trait of an individual or group that evokes negative or punitive responses. Goffman (1963) argued that stigma is best explained by reference to the notion of deviance, that is, deviation from prevalent or valued norms. Devalued groups are blamed for their flaws and viewed by society as culprits in their condition. Goffman’s theory is, in summary, that society’s negative responses to people with disabilities, unfavourable images of them, and their own negative self-evaluations are explained by negative differences (deviance).

The upsurge of labeling theory partly fueled the turn against special classes for students with disabilities in the 1960s. It has been argued that people labeled as
having an intellectual disability and, in particular, those who have been segregated in special environments, must have developed a view of themselves as essentially different from those who live in ordinary, i.e. unsegregated social environments (Jahoda, Markova, & Cattermole, 1988; Szivos-Bach, 1993). The most common outcome hypothesised to result from labeling is a change in self-concept. MacMillan, Jones, and Aloia (1974) hypothesised two mechanisms through which labels of disability influence children’s perceptions of themselves: a) The direct effects of the label on the child, that is, the individual who is given a deviant label may experience a reduced self-concept because they come to perceive themselves as worthless; and b) The indirect effects of the label, that is, others in their environment come to behave differently toward them as a result of their label and the individual accepts their suggested evaluation of their worth. Labeling theory predicts that deviant labels also result in an associated stigma (Goffman, 1963). Stigma is hypothesised to occur when there is a negatively valued discrepancy between one’s actual identity and one’s virtual identity (how one is expected to be by society) (Goffman, 1963).

In the field of special education, labeling and stigmatisation are seen to occur most evidently when students are placed in special classes as a result of their disability diagnosis (Stobart, 1986). This claim is supported by the work of Smith (1980) and his colleagues (e.g. Rogers, Smith, & Coleman, 1978; Strang, Smith, & Rogers, 1978) who studied the self-concepts of students with mild intellectual disability across a range of educational placements and concluded that special class placements have a more powerful influence on students’ self-concepts than labels of disability. An overview of this research is presented later in this chapter.

Dunn’s seminal work published in 1968 was the first to call attention to the detrimental effects of labeling upon the self-concepts of those labeled. Dunn’s (1968) influential critique of special education and advocacy of inclusion rested largely on claims of the negative effects of a label such as intellectual disability, which becomes a “destructive, self-fulfilling prophecy” (p. 8). A major impetus for the revolt against segregation was the contention that applying labels to children and segregating them from the general school population resulted in stigmatisation and a concomitant reduction in self-concept (Burbach, 1981; Cole, 1991; Guskin, Bartel, & MacMillan, 1975; Kendall, 1977; Thomas, 1997).
The premise that labels of disability and special class placements negatively influence children’s self-concepts is one of the most firmly held but poorly justified tenants within the literature on special education. A search of the literature for evidence, reveals few studies testing labeling theory, and of the data available the results are inconclusive (MacMillan, Jones, & Aloia, 1974). Despite this lack of empirical evidence, Dunn’s (1968) contention that the social stigma attached to labels of disability and special educational placements inevitably impairs students’ self-concepts, continues to receive support. Currently, however, new theoretical and empirical information of self-concept formation is presenting an increasingly different picture of the impact of special educational placement on the self-concepts of students with mild intellectual disability (Coleman, 1985).

**Social Comparison Theory**

In recent years, social comparison theory has emerged as a highly regarded theory on self-concept formation. The origin of research interest in social comparison processes is typically attributed to Festinger (1954), who noted that there seems to be a strong motivation in most individuals to evaluate their opinions and abilities. When unambiguous objective criteria are not available, people look to others in the environment as the basis for forming subjective estimates of ability levels and self-worth. Festinger maintained that individuals need to compare themselves to others in order to define the self, and then pass judgement on that definition. Festinger (1954) speculated that individuals use others in their immediate environment as the basis for making subjective judgments of self worth. Further, the likelihood of one person comparing his or her own capability to that of a particular other is governed by the perceived similarity between the two individuals. When faced with a choice between relatively similar and dissimilar others, people usually select similar others as a basis of social comparison. It is thought that social comparison processes are affected by the particular reference group the individual is employing.

The social environment is believed to play an active role in determining comparison choices and thus self-concept. For instance, Hay, Ashman, and Van Kraayenoord (1997) found that as students’ academic scores rose above their class mean their self-concepts increased, and as students’ academic scores fell below their
class mean their self-concept decreased. Veroff and Veroff (1980) suggested that the school environment emphasizes social comparison. It would appear that from the very start of their school career, students experience some form of evaluation with reference to the ability of other students that surround them. This is initiated through practices such as the grading of students, ability-level class grouping and the various forms of praise that are given to students. According to Veroff and Veroff (1980) the 5-6 year old child can master some ideas of one person being better than another at a given type of specified skill.

In a seminal theoretical chapter, Veroff (1969) suggested that young children do not automatically use social comparison information under conditions of ambiguity, as Festinger’s theory would suggest, until after the early years of school. Ruble and colleagues (e.g. Ruble, Boggiano, Feldman, & Loebl, 1980) found that self-evaluations of children at different age levels showed essentially no use of social comparison feedback until at least 7 years of age. Researchers tend to agree that preschool children do not use social comparison for self-appraisal because they find it difficult (e.g. Ruble, 1983; Veroff 1969). Other studies, however, suggested that capacity for and interest in social comparison emerge earlier than often assumed. For instance, Butler (1998) found that children as young as 4 and 5 years of age can use social comparison appropriately for evaluating themselves. The social comparison theory proposal that one’s self-concept can dramatically differ depending upon the standards of comparison employed has been embodied by Marsh and his colleagues in the big fish little pond effect.

**The big fish little pond effect.** In order to understand the formation of academic self-concept the role of external frames of reference must be examined. That is, similar objective characteristics and achievements can result in quite different self-concepts depending on the frame of reference or standards of comparison that individuals use to evaluate their academic capabilities (Marsh & Craven, 2000). In an educational context, Marsh (1984a; 1991; Marsh & Parker, 1984) proposed a frame of reference model called the big fish little pond effect to encapsulate frame of reference effects posited in social comparison theory.
In the theoretical model underlying the big pond little fish effect, Marsh (1984a) hypothesised that students compare their own academic ability with the academic abilities of their peers and use this social comparison as one basis for forming their own academic self-concept. A negative big fish little pond effect occurs when equally able students have lower academic self-concepts when they compare themselves to more able students, and higher academic self-concepts when they compare themselves with less able students. The external frame of reference model hypothesises that students compare their own academic ability, more or less accurately perceived, with the perceptions of the academic ability of other students in their reference group. For example, consider average ability students who attend a high-ability school (i.e., a school where the average ability level of other students is high). Because students’ academic skills are below the average of other students in their school, it is predicted that this will lead to academic self-concepts that are below average. Conversely if these students attended a low ability school, then their abilities would be above average in that school. This would lead to academic self-concepts that are above average. Thus, levels of academic self-concepts depend not only on one’s academic achievements but also the achievements of peers in the school environment.

In a recent study conducted in Hong Kong, Marsh, Kong, and Hau (2000) demonstrated that the observed big fish little pond effect is the net result of two counter-balancing processes - contrast effects and assimilation effects. Contrast effects (or negative big fish little pond effects) occur when higher school-average achievement levels (the context) lead to lower individual student academic self-concepts. Assimilation effects (or positive social comparison, reflected glory effects) occur when higher school-average achievement leads to higher academic self-concepts (Marsh, 1984b). Although implicit in previous explanations of the big fish little pond effect, the concept of the reflected glory effect has not been previously operationalised.

To empirically demonstrate these effects Marsh, Kong and Hau (2000) conducted a four-year longitudinal study, which evaluated the relationship between assimilation and contrast effects for 7,997 students from 44 high schools in Hong
Kong. The results of this study indicate that attending an academically selective school where school-average achievement is high, simultaneously results in: A more demanding basis of comparison for students within the school to compare their own accomplishments (that is, a negative contrast effect), and a source of pride for students within the school (that is, a positive reflected glory, assimilation effect). As the negative contrast effect was substantially stronger than the counter-balancing assimilation effect, the net effect was negative and consistent with other studies of the big fish little pond effect.

**Research support for the big fish little pond effect.** Empirical support for the big fish little pond effect comes from numerous studies (e.g. Marsh, 1994; Marsh & Craven, 1994; 1997). For example, an early study conducted by Marsh and Parker (1984) examined the path model relationships among achievement, school-average ability and the self-concept responses of Year 6 students. Results revealed that the direct effect of school-average ability upon academic self-concept was negative after individual achievement was controlled for. In contrast, the effects of individual and school-averaged achievement were not statistically significant for nonacademic self-concept. Hence, there was clear support for the big fish little pond effect, but only for academic self-concept.

In an American study based on 87 high schools, Marsh (1987) found that the effects of school-average ability on academic self-concepts were negative whereas the effects of school-average socio-economic status on academic self-concepts were inconsequential. In further analysis of this same data, Marsh and Rowe (1996) replicated the findings using a multilevel modeling approach and demonstrated that the big fish little pond effect generalised across all levels of student ability level including the very brightest students.

Schwarzer, Jerusalem, and Lange (1983) measured the self-concepts of West German students who moved from heterogeneous primary schools to secondary schools that were streamed according to students’ ability. At the time of transition, students who were selected to enter the high ability schools reported significantly higher academic self-concepts than students entering the low ability schools. By the
end of the first year in their new schools, however, the academic self-concepts of the two groups did not significantly differ. Path analyses indicated that the direct effect of school type on academic self-concept was negative. The most able students in low ability schools were, in fact, less able, however, they had much higher academic self-concepts than the least able students in the high ability schools. The results of these combined studies provide consistent endorsement of the big fish little pond effect and importantly its distinctiveness to academic facets of self-concept.

**Special classes and schools for gifted and talented students.** While research studies of the big fish little pond effect have focused primarily on ability grouping at the school level, a large body of research has also considered the big fish little pond effect at the classroom level or at the level of homogenous classes of gifted and talented students. Studies have revealed that the type of reference group available for comparison can dramatically alter the level of self-concept of students that are gifted and talented. Big fish little pond effect studies have also considered the impact of placing gifted and talented students in segregated educational environments with other students of similar ability. Studies have supported the predictions of the big fish little pond effect in that the placement of gifted and talented students in high ability selective classes or schools will lead to declines in academic self-concept. (Coleman & Fults, 1985; Craven & Marsh, 1997; Hoge & Renzulli, 1993; Marsh, 1987; 1991; 1993; Marsh & Parker, 1984; Reuman, 1989).

Marsh, Chessor, Craven, and Roche (1995; also see Craven, Marsh & Print, 2000) designed two studies to test the big fish little pond effect predictions about the effects of participation in full-time “gifted and talented” primary school classes. In both studies, students from gifted and talented programs were matched to students of equal ability from mixed-ability classes. In both studies, students in the gifted and talented program experienced significant declines in three domains of academic self-concept over time and in relation to matched comparison students. In both studies this general pattern of results was reasonably consistent across gender, age, and initial ability. A critical feature of these studies was a multidimensional perspective of self-concept, as the big fish little pond effect predicts that one’s educational placement will have a dramatic impact upon academic self-concept but little impact upon nonacademic self-concept. Consistent with a priori predictions based on theory
and previous research, participation in gifted and talented programs had a negative effect on academic self-concept and little or no effect on nonacademic self-concept.

Zeidner and Schleyer (1999) tested the big fish little pond effect in a large-scale study based on a nationally representative sample ($n=1020$) of Israeli gifted students enrolled in either special homogenous classes for the gifted or regular mixed ability classes. Path analyses indicated that gifted students in mixed ability classes reported significantly higher academic self-concepts, lower anxiety and higher school grades than gifted students in special homogenous classes. In sum, research with gifted and talented students suggest that, although, they may experience reflected glory effects through their placement in a selective educational placement, when these students form their self-concept through comparison with students in their immediate environment, their social comparison are less favourable than their counterparts in regular classes, and thus they experience a deflated academic self-concept.

In a recent study, Marsh, Koeller, and Baumert (in press) evaluated the big fish little pond effect in relation to East and West German students at the time of the fall of the Berlin Wall. Importantly, the former East German students had not been grouped into schools or classes according to their achievement levels whereas the former West German students had attended schools based largely on their achievement levels for the two years prior to the reunification. Hence, it was predicted that the big fish little pond effect should be initially larger for the West Germans at the start of the first year after the reunification, but that this difference should be much smaller by the end of the first school year following reunification. The sample consisted of large representative samples of students (2,778 students, 161 classrooms) from the former East and West German education systems who completed surveys on three occasions in the first year after the reunification of the German school system following the fall of the Berlin Wall. Three waves of math self-concept responses were collected at the start of 7th grade (T1, the first month of the newly reunified school system), at the middle of 7th grade (T2), and at the end of 7th grade (T3). Consistent with predictions, individual student achievement had a positive effect on academic self-concept whereas class-average achievement was
negative. Also consistent with a priori predictions, the big fish little pond effect at the start of the first year after the reunification was more negative for West German students than for East German students. The results are also important in that they provide strong support for the external validity of the big fish little pond effect. Importantly for the current study, these results demonstrate how system-wide educational policy can impact on the academic self-concepts of individual students.

Recent research evidence suggests that the big fish little pond effect may take place gradually over time. This contention is supported by the finding that in most of the longitudinal big fish little pond effect studies with three or more data points, there tends to be new effects at the last point in time beyond those experienced at earlier points in time (e.g. Marsh, Chessor, Craven, and Roche, 1995; Marsh, Koeller, and Baumert, in press; and Marsh, Kong, and Hau, 2000). These studies have focused upon older adolescent children attending academically selective schools for gifted students.

**Special classes and schools for students with learning disabilities.** Marsh and Johnston (1993) hypothesised that moving students with learning disabilities from special classes into regular, mixed-ability classes was likely to result in lower academic self-concepts consistent with the predictions based upon social comparison theory and the negative big fish little pond effect. In this context, it is predicted that the contrast and assimilation effects evidenced for gifted and talented students will work in the opposite direction whereby contrast effects will be positive when students with learning disabilities are placed in special homogenous classes in that the social comparisons students make in the special classes will be favourable to their academic self-concept (Marsh & Craven, 2000). Past research has applied social comparison theory to students with learning disabilities, however, there is little empirical research evaluating the big fish little pond effect upon the self-concepts of these students.

Rogers, Smith, and Coleman (1978) demonstrated that the effects of placement on the self-concept of students with learning disability may be explained in terms of the peer reference group used by these students. Academic self-concept was shown to be much more strongly related to within-classroom comparisons of
relative academic standing than comparisons made across classrooms. The application of social comparison theory to students with learning disability has revealed that the placement of students with learning disability in special classes or schools has led to increases in self-concepts as social comparison processes produce more favourable self-evaluations than in regular classes (see subsequent literature review).

Children who experience difficulty learning must contend with repeated academic failures and unfavourable social comparisons. It seems inevitable that given the salience of the school environment that their self-concept is particularly at risk (Heyman, 1990). Given the importance of enhancing self-concept in itself and the mediating role of self-concept on other desirable outcomes, it is imperative that researchers and practitioners consider the self-concepts of students with special needs. Research investigating the existence of a negative big fish little pond effect have centred upon students with learning disability as opposed to students with mild intellectual disability, possibly due to their significant prevalence. For the purposes of this review, studies involving students with learning disabilities are included, as it is plausible that although this student group is distinct from students with mild intellectual disability - which is the participant group of interest to this thesis - the theory and predictions are similar for both populations.

**Competing Theoretical Predictions**

Both labeling theory and the big fish little pond effect make predictions about the assumed impact of special classes of relatively homogenous students upon students’ self-concepts. These predictions however are directly opposed. For purposes of the thesis, these predictions will be discussed in terms of students with mild intellectual disability – the population of concern.

Labeling theory suggests that assigning students with mild intellectual disability to a special class or school for students of low-ability will create a stigmatisation leading to a lower general self-concept. It is also argued that including students with mild intellectual disability in regular classes will improve their general self-concept because in this context they will receive positive reflected appraisals as
to their ‘normality’ and will not be stigmatised. Conversely, the big fish little pond effect, predicts that students with mild intellectual disability will have higher academic self-concepts when grouped with other children with similar difficulties. It is argued that placement in a regular class will reduce their academic self-concept because the social comparisons which individuals make with non-disabled reference groups are unfavourable. Children are likely to feel less academically able in comparison with non-disabled children in regular classrooms than with other children with disability in special classes.

In sum, labeling theory predicts that placing students with mild intellectual disability in special, homogenous educational placements will result in a decreased general self-concept, whereas the big fish little pond effect argues that this same placement will result in an increased academic self-concept.

**Failure to Empirically Resolve the Labeling Theory Versus the Big Fish Little Pond Effect Debate**

Unfortunately, early research casts little light on the competing theoretical predictions. Many early studies were theoretically and methodologically flawed due to various methodological problems that historically plagued previous self-concept research – such as the measurement of self-concept as a unidimensional construct (see Chapter 3). There have been a number of studies that have compared the self-concepts of students with mild intellectual disability in different educational placements but the results in this area are equivocal (Chapman, 1988b; Madden & Slavin, 1983). Some studies have suggested that placing students with mild intellectual disability into special classes leads to poorer self-concepts, some have suggested that this very same placement leads to increased self-concepts, and some studies have found no difference in self-concepts based on placement. However, most of these studies are of dubious quality and are therefore of questionable relevance because of limitations in the research methodology employed.
Limitations of Past Research

Measuring Self-Concept as a Unidimensional Construct

Typically, early approaches to the study of self-concept assumed it to be a unidimensional construct, thereby failing to consider its differentiation among specific domains. Although most theoretical accounts emphasise the multidimensionality of the construct, until recently, this multidimensionality was not well represented in the most widely used self-concept measuring instruments (Marsh & Holmes, 1990). In the field of self-concept there have been numerous advances in measurement, however, these gains have not been incorporated in research with students with mild intellectual disability. Much of the research has measured self-concept as a general, unidimensional construct (See Chapter 3).

Research conducted by Carroll (1967), Carvajal (1972); Myers (1976); Crockett (1977), Calhoun and Elliott (1977), Yauman (1980), Coleman (1983), and Beltempo and Achille (1990) endeavoured to examine the impact of educational placement on students with mild intellectual disability. Self-concept, however, was measured as a single-score thus such research designs failed to accurately test the differential predictions of labeling theory versus the big fish little pond effect. For example, Beltempo and Achille (1990) applied a strong design in which students with learning disability with no previous history of special education placement were assigned to differential educational placements and their self-concept was measured one and eight months after this placement. Unfortunately, they only reported general self-concept via the Piers-Harris Children’s Self-Concept Scale (Piers, 1984) and concluded that special class placement had no significant impact upon general self-concept. This result does not support labeling theory in that special class placement did not result in a significantly lower general self-concept. However, because multiple facets of self-concept were not considered, this study (and many others like it) cannot contribute to the evaluation of the big fish little pond effect which makes predictions that are specific to academic self-concept.

Among the early studies which only measured the general self-concept of students, many of these measurement tools may be questioned as appropriate
measures of self-concept (e.g. Illinois Index of Self-Derogation (Myerowitz, 1962) used by Carroll, 1967; Kendall, 1977; and Meyerowitz, 1962; Canadian Self-esteem Inventory for Children (Battle, 1976) used by Battle, 1979; and Battle and Blowers, 1982; Piers-Harris Children’s Self-Concept Scales (Piers, 1984) used by Beltempo & Achille, 1990; Calhoun & Elliott, 1977). In a highly regarded review of self-concept measures for preadolescents conducted by Byrne (1996), of the above mentioned measurement tools - only the Piers-Harris Children’s Self-Concept Scale (Piers, 1984) was considered worthy for inclusion. Around the time of its conception, the Piers-Harris Children’s Self-Concept Scale (Piers, 1984) was probably among the best self-concept measures available given that the instrument allowed for the development of separate self-concept scales. By current standards, however, it is relatively weak and it has been critised for being inconsistent with modern-day theories of self-concept (Harter, 1999; Keith & Bracken, 1996; Marsh & Holmes, 1990). Specifically, its development was based on an outdated, unidimensional model of self-concept in which general self-concept is calculated as a summative score derived from 80 items. It was only later in its development that the separate domains were formed from items in the original scale.

Widespread use of theoretically and psychometrically inferior instrumentation has been cited as a major contributing factor to the inconsistencies in previously reported findings. As noted by Wylie (1974), many early self-concept instruments were, in fact, entirely lacking of any evidence of reliability and/or validity. Moreover, early self-concept research often addressed itself to substantive problems before problems of definition, measurement, and interpretation had been resolved (Shavelson, Hubner, & Stanton, 1976). The inconsistency in findings may stem from a failure to consider self-concept as a multidimensional concept and also from the inherent weaknesses of the self-concept instruments.

**Comparing Non-Equivalent Groups, and Post-Test Differences Only**

Numerous studies have investigated the effects of placement in regular classes versus special classes upon students’ self-concepts. However, most of these studies employed cross-sectional comparisons (e.g. Begley, 1999; Burton, 1988; Coleman, 1983; Crabtree & Meredith, 2000; Eshel, Katz, Gilat & Nagler, 1994; Hay,
1984; Leondari, 1993; Myers, 1976; Schroeder, Walker & Bailey, 1994; and Silon & Harter, 1985) in which two intact, non-equivalent groups were compared. That is, students in special education classes are compared to a sample of students in regular classes. Such studies have limited usefulness, because there are always systematic reasons (e.g. achievement level, IQ, behavioural problems) that one student is put into a special class while another is maintained in the regular class (Madden & Slavin, 1983). Studies comparing the academic achievement and outcomes related to academic achievement of the two groups are especially problematic as academic achievement is certainly one of the criteria which decides educational placement. Few earlier studies randomly assigned students to their educational placement which makes for a much stronger design (e.g. Calhoun & Elliott, 1977; see subsequent discussion) but current ethical concerns would preclude the implementation of such a design.

Other studies, such as those by Crockett (1977) and Battle (1979), did not employ a comparison group at all, but merely measured change for one particular group over time. Particularly when there was no change in placement status during the time period considered, there is little basis for concluding that any changes are attributable to a particular educational placement. Others have improved upon this design by assessing the change experienced by a group as they move educational placement (e.g. Schurr, Towne, & Joiner, 1972; Tapasak & Walther-Thomas, 1999). For example, Tapasak and Walther-Thomas (1999) followed 12 students with a range of mild disabilities who were in Kindergarten to Grade 2 and 18 students with mild disabilities in Year 3 to 5 for a period of 7 months. Students experienced a significant increase in cognitive competence self-concept from pre-test scores (when in special classes) to post-test scores (when in regular classes) as measured by The Pictorial Scale of Perceived Competence (Harter & Pike, 1984) and The Perceived Competence Scale for Children (Harter, 1982). These results, however, were only compared with the relatively stable pre-post test scores of students without disabilities in regular classes. Hence, there was not an appropriate comparison group of students with disabilities who did not move to regular classes that could be used to evaluate the differences in self-concept of students who did move to regular classes.
These longitudinal designs, without a comparison group, are weak in terms of attributing change experienced by students to the change in educational placement. A sophisticated time-series design with many time points that established a stable baseline prior to the change in placement, a sudden shift at the time of new placement, followed by stable results after the change in placement would provide a strong quasi-experimental research design. Such time-series designs, however, are rare in this area of research. As such, there is a need for further research to consider utilising longitudinal designs to assess the long-term effects of educating students with disabilities in integrated and segregated educational placements (Jenkinson & Gow, 1989).

**Changing Nature of Definition of Mild Intellectual Disability**

As with all educational research, studies work within the constraints of the environment, as MacMillan, Keogh, and Jones (1986) put it succinctly “schools are in the business of supplying services – not in delineating clean research populations for behavioral scientists” (p. 690). Conducting research with students with mild intellectual disability is even more problematic given the changing definitions for this population, relatively small population, and the very nature of the population.

For example, a serious difficulty in synthesising studies on the impact of differential educational placement for students with mild intellectual disability lies in the definition of the students involved in studies. The use of definitions has dramatically changed over time and varies from place to place (Madden & Slavin, 1983). For example, the classification system for intellectual disability (published by the American Association on Mental Deficiency) has undergone five revisions between 1959 and 1992. Over time there has also been a blurring of distinct groups (for example students with learning disability and students with mild intellectual disability have been considered as one population group, Gresham & MacMillan, 1997). These shifting criteria and diagnoses have significant implications for evaluating research conducted with this population over time and makes much of the research difficult to interpret. Even more problematic are studies that combine students with very different types of disabilities (e.g. physical and intellectual) into a single group, typically in an attempt to obtain acceptable sample sizes (see below).
**Small Participant Numbers or a Mixture of Disability Groups**

Research in the field of special education is consistently characterised by small participant numbers given the small percentage of the population comprising this group, and the difficulty accessing and interviewing this population. Much of the research deals with very small populations (e.g. Begley, 1999; Carroll, 1967; & Schroeder, Walker, & Bailey, 1994). Small participant numbers: Limits the generalisability of results, does not permit the evaluation of measurement tools, and limits the sophistication of statistical analysis that can be employed. In addition, it is more difficult to achieve statistical significance with small participant numbers, so there is a tendency to over interpret chance results.

To address this issue, in part, some studies include students with a range of disabilities. For example, Lessa (1976), and Calhoun and Elliott (1977) included students with mild intellectual disability and emotional disturbances, Battle and Blowers (1982) included students with learning disability and mild intellectual disability. Tapasak and Walther-Thomas’ (1999) sample of 30 students comprised students with learning disability, hearing impairments, mild intellectual disability, health impairments, and emotional disturbances. Similarly, Crabtree and Rutland (in press) included students with mild autistic tendencies, specific language and numeracy problems, and various mild behavioural and emotional difficulties. Particularly studies that combine students with intellectual and nonintellectual disabilities are problematic in that, although a group of students are never truly homogenous, the confounding of participants with different types of disabilities ensures such samples are substantially less homogenous. Given the inclusion of a broad cross-section of disabilities, the authors of these studies are unable to test predictions for specific groups of students.
The Impact of Educational Placement Upon the Self-Concepts of Preadolescents with Mild Intellectual Disability

Research Evidence

A review of primary studies evaluating the impact of educational placement upon the self-concepts of preadolescents with mild intellectual disability revealed a modest amount of research, however, unfortunately a substantial amount of this research was undermined by significant methodological flaws (as discussed previously). The studies selected for discussion below were considered the strongest available studies in the area. Although the research methodology employed in these selected studies may not have avoided all of the discussed limitations, in general, the research designs on which these studies were based were relatively stronger than most of the available literature and the results worthy of discussion.

Towne and Joiner (1966) studied the effects of special class placement on the academic self-concept of ability of 62 students with mild intellectual disability (mean age of 11.6 years). A time series design was utilised which assessed self-concept prior to special class placement and over their first year in this placement. Scores on the General Self-Concept of Ability Scale (Brookover, 1962) increased upon placement in special classes and continued to rise six months later at which time there was a modest decline over the next three months. The results of this study are particularly noteworthy as a strong time series design was implemented and the General Self-Concept of Ability Scale (Brookover, 1962) was one of a few strong – perhaps the only – measures of academic self-concept available at this time (Shavelson et al., 1976; Byrne, 1996). The results of this study suggest that early evaluations of the impact of special placement on academic self-concepts support the predictions of the big fish little pond effect on students’ academic self-concept.

A follow-up study conducted by Schurr and Brookover (1967) found a further upward trend in General Self-concept of Ability scores for 51 participants who remained in special classes for a second year and a downward trend for 14 participants who returned to regular classes. Schurr and Brookover (1967) concluded that changes in the academic self-concept of students with mild intellectual disability
in special classes is primarily a product of comparisons with special class peers, and these results support the predictions of the big fish little pond effect.

Schurr, Towne, and Joiner (1972) employed a time-series experiment in which the General Self-Concept of Ability Scale (Brookover, 1962) was administered verbally to 62 students with mild intellectual disability on two occasions prior to special class placement, and four times during their first year in special classes. In total, 22 students were present at each testing occasion. Academic self-concept scores evidenced a significant linear increase over the first year of special class assignment. Over the second year of observation, academic self-concept scores continued to increase with a significant linear component. Finally, seven of these students were returned to regular classes. These students experienced a decrease in academic self-concept when tested one year later. Results of this study suggested that placing students with mild intellectual disability in special classes can be expected to have a positive effect on self-concept of academic ability. This time-series design with two points of class re-assignment provides strong support for the predictions of the big fish little pond effect in relation to contrast effects.

Boersma, Chapman, and Battle (1979) administered the Student’s Perception of Ability Scale (Boersma & Chapman, 1984) to 68 students (50 with learning disability and 18 with mild intellectual disability) who were enrolled full-time in special placement classes, and 83 regular class students without disabilities aged 8-12 years. The students without disabilities were selected on a random-stratified basis, and were matched with the special class students in terms of age, gender, and socioeconomic status. Data were collected twice over a 12 month period – prior to placement and twelve months later. Results revealed a significant main effect of placement, with students without disabilities in regular classes obtaining significantly higher overall mean self-concept scores than the other two groups. Pre to post testing revealed a significant increase in academic self-concepts for students with learning disability and mild intellectual disability in special classes, but no change for students in regular classes. On post-testing the academic self-concepts of students with mild intellectual disability did not differ significantly from the academic self-concepts of students without disability in regular classes (even though students in regular classes were more academically able). Overall, these results suggest that
increases in academic self-concept occur as a function of full-time special class placement, with gains being slightly more noticeable for students with mild intellectual disability. Gains were particularly notable for the combined academic self-concept scale, and for reading/spelling and confidence subscales. Although the results lend support to the big fish little pond effect, the comparison of the self-concepts of students with learning disabilities and mild intellectual disability with non-disabled peers needs to be interpreted with caution.

Strang, Smith, and Rogers (1978) conducted two experiments to investigate the impact of placement upon the self-concept of students with learning disabilities. These experiments are important to this field as they were based upon strong experimental research designs. Experiment 1 investigated the effects of half-day inclusion in regular classes upon the multifaceted self-concepts of 50 students with learning disabilities (mean age of 9.5 years) who had been placed in special classes for the past 12 months. Half of these students were randomly assigned to an experimental group, which consisted of half-day inclusion with students in regular classes. The other half remained in a special class. All students were administered the Piers-Harris Children’s Self-Concept Scale (Piers, 1984) at the beginning of the school year (Time 1, October), then 1 month after reassignment began (Time 2, Feb/March) and at the end of the school year (Time 3, May). The total and specific self-concepts of both groups was comparable at Time 1. Scores obtained at Time 1 were used as covariates. The experimental group who were partially included in regular classes reported significantly greater gains in self-concept than those who remained in special classes in the areas of intellectual, school status, physical appearance and attributes, popularity, happiness and satisfaction. There were no significant effects of time or time-by-treatment for total self-concept. These results support labeling theory. Strang, Smith, and Rogers (1978) interpreted these results as either: Supporting Festinger’s (1954) proposal that students select those most similar to themselves (that is, students in special classes) for social comparisons; or being placed in a regular class may indicate academic success to the students. A second experiment (see subsequent discussion) was conducted to test these hypotheses.

One year later, Strang, Smith, and Rogers (1978) conducted a second experiment to examine the effects of limiting self-other comparisons to one reference
group following the placement of students with learning disability in regular classes. Participants were the 20 students from Experiment 1 who had received partial inclusion. This time, the placement of the students was not manipulated, but they were randomly assigned to either an experimental or comparison group. The experimental group received a manipulation designed to enhance the saliency of their membership in regular classes for comparison, and reduce comparison with their special classroom peers. When students were permitted to compare themselves with students in their regular classes only, self-concept decreased; whereas when there were no restrictions placed on with whom they compared themselves with, self-concept increased. These self-concept differences were in terms of intellectual and school status, and anxiety. That is, when students with learning disabilities were restricted to compare themselves with students in regular classes, their self-concept decreased. Strang, Smith, and Rogers (1978) argued that the increased homogeneity of ability in special classes provides students with disabilities with a social comparison group where their own abilities may be perceived more favourably. This conclusion clearly supports the contentions of the big fish little pond effect. Interestingly, Strang, Smith, and Rogers (1978) incorporated both the assimilation and contrast effects proposed in the big fish little pond effect in which the observed effect was the net effect of these two counter-balancing processes.

In 1996 Vaughn, Elbaum, and Schumm investigated the self-concepts of 64 students in Year 2 to 4 placed full-time in regular classes. Sixteen of these students had identified learning disabilities and were taught via a ‘pull-out resource room’ model the previous year whereby they were enrolled in a regular class but were withdrawn from class for specific instruction in a small group setting with other students with learning disabilities. Primary comparisons were between the self-concept of students with learning disabilities and students in the low and average/high achievement ranges. Vaughn, Elbaum, and Schumm (1996) collected self-concept data at the beginning and end of the school year in which students were placed in a regular class full-time. Analyses revealed no significant change in the self-worth of students with learning disabilities over time. However, students with learning disabilities reported lower academic self-concept scores over time. This finding supports the big fish little pond effect, however, a stronger research design
would have included baseline self-concept data prior to students’ enrolment in a regular class full-time.

Inclusion advocates have focused on the anticipated benefits upon the self-concepts of students with disabilities. Despite the substantial and continuing impact that labeling theory has had in special education placement policy, there are few sound empirical studies that actually demonstrate either the detrimental impact of special class placement (Coleman, 1983) or the presumed benefits (Gresham & MacMillan, 1997) of inclusion upon the self-concepts of students with mild disability. There has been greater empirical support for a competing theoretical stance based upon the predictions of the big fish little pond effect.

Calhoun and Elliott’s early study conducted in 1977 has many notable qualities, especially given its historical nature. It provides evidence of the superiority of regular class placement over special education classes for students with mild intellectual disability, but only in terms of enhancing general self-concept. Calhoun and Elliott (1977) devised a longitudinal design in which students with disabilities were randomly assigned to differential educational placements and teachers were rotated in an effort to discount individual teachers as a confounding variable. One hundred students (50 with mild intellectual disability and 50 who were emotionally disturbed) were involved in the study. Fifty students (25 from each diagnostic group) were randomly assigned to special class placement and their self-concepts were assessed over a three year period on the Piers-Harris Children’s Self-Concept Scale (Piers, 1984). Findings revealed that students with mild intellectual disability in regular classrooms reported a significantly higher general self-concept than those assigned to special classrooms. The results provide some support for labeling theory. However, because multiple academic and nonacademic facets of self-concept were not reported, the predictions of the big fish little pond effect on academic self-concept are unable to be evaluated based on this early study.

Budoff and Gottlieb (1976) addressed the issue of reintegrating students with mild intellectual disability into regular classes by collecting a range of social/personal and achievement data over a 12 month period on three occasions. Data was collected: Prior to placement when all students were in special classes; 2
months and 8 months following random assignment to either an integrated or segregated placement. The study involved 31 students aged 8 to 14 years. At Time 2, 14 were assigned to a segregated placement while 17 were placed in an integrated placement. The integrated placement included attendance at remedial learning centres for at least 40 minutes each day, during which 20 children with learning needs worked with three teachers. Those in a segregated placement attended a special class for the whole day. On all three occasions, Academic Self-Concept (Budoff & Gottlieb, 1976) and Projected Self-Concept (general self-concept) (Budoff & Gottlieb, 1976) were measured. Results revealed no significant difference between students at Time 1 and Time 2 on any dependent variable. At Time 3, however, integrated students reported a higher academic self-concept than did the segregated students. Students with mild intellectual disability who were considered high-ability in integrated placements had higher academic self-concepts than did high-ability students in segregated placements. However, low-ability students with mild intellectual disability in segregated placements reported higher academic self-concepts than did low-ability students with mild intellectual disability in integrated placements. Similarly, as measured by the Projected Self-Concept instrument (Budoff & Gottlieb, 1976), high-ability students with mild intellectual disability in integrated settings attributed more positive attitudes towards themselves by others than their counterparts in segregated settings, whereas low-ability students with mild intellectual disability in segregated settings attributed more positive attitudes toward themselves than their counterparts in integrated settings. These results seem to support labeling theory in terms of students within the high-ability range of mild intellectual disability, but support for the big fish little pond effect with regards to students within the low-ability range of mild intellectual disability.

**Social comparison processes.** Social comparison processes are commonly used to explain the elevated academic self-concepts of students with mild intellectual disability once placed in special classes with other students with mild intellectual disability. In most cases, however, social comparison processes have only been inferred as altering, witnessed by the change in self-concept. Few researchers have attempted to directly measure the social comparison processes which are hypothesised to underlie the change in self-concept scores. For example, Silon and Harter (1985) and Schroeder, Walker, and Bailey (1994) all found that students with
disabilities in regular classes reported that they compared themselves to other students in the regular class, whereas those in special classes reported that they compared themselves with others in the special class when forming self-evaluations. These findings are consistent with Festinger’s (1954) prediction that individuals choose similar individuals in proximity with which to compare themselves. In contrast, however, some studies have reported that students with learning disabilities tend to use their non-disabled peers for comparison when forming their self-concept, and not other students with learning disabilities (Renick & Harter, 1989; Smith & Nagle, 1995; Stein, 1994).

Renick and Harter (1989) conducted a study investigating the impact of altering the social comparison groups used by students in Years 3 to 8 with learning disability upon the students’ reported self-concepts. The students were placed in regular classrooms but attended learning disability resource rooms for one hour each day. This provided students with two possible social comparison groups - other students with disabilities and students without disabilities. The students completed the Self-Perception Competence Scale for Children (Harter, 1985), initially spontaneously choosing one of the available comparison groups. The students then completed the scale again, this time instructed to use the comparison group they had not used previously. It was found that the students perceived themselves to be more academically able in the classroom with other students with learning disability compared to the regular classroom. There was, however, no significant difference between the social acceptance, athletic competence or general self-worth reported by students when using the two comparison groups. This study clearly demonstrates that the use of different social comparison groups can have an impact upon the academic self-perceptions of students with learning disability, but not their nonacademic self-perceptions.

Recent research conducted by Crabtree and Meredith (2000) assessed the multidimensional self-concept of 180 students with moderate learning difficulties aged 11 to 16 years, using the Self-Perception Profile for Learning Disabled Students (Renick & Harter, 1988). The range of learning difficulties experienced by students included mild autistic tendencies, learning disability and various behavioural and emotional difficulties. One hundred and eleven students attended special schools
while 69 were placed in special classes in regular schools. Significant differences in self-concept were found between the groups on the subscales of General Intellectual Ability and Maths Competence showing that students attending special schools had significantly higher academic self-concepts than students with learning disability attending regular schools in these three areas. These results are limited due to the comparison of two intact groups and post-test scores, however, this research is important as it also directly measured students’ social comparison processes by administering the “Who I am like” (Renick & Harter, 1988) measure. Findings revealed a trend for students attending special schools to make social comparisons with other individuals in their social group (that is, other students with disabilities), whilst for students with mild disabilities attending special classes in regular schools there was a trend for them to make social comparisons with individuals in their out-group (that is, other students without disabilities).

**Review Evidence**

Burns (1982) conducted a review of the research literature on the effects of placing students with learning disability in special schools instead of regular classrooms. He concluded that placement in special schools resulted in an improvement in self-concept and that self-concept was positively related to the length of time these students spent in the special schools. He interpreted these results as favouring social comparison theory.

Chapman (1988b) conducted a highly regarded meta-analysis of studies of the self-concepts of students with learning disability. The meta-analysis incorporated 27 studies published from 1974 through to 1986. Results revealed, that overall students with learning disability had poorer self-concepts than did their non-disabled peers. Of central importance to the current investigation, however, was his evaluation of the self-concept of students with learning disability in various educational placements. Three educational placements were compared - students who were: a) completely segregated in special classes, b) partially segregated for some work and partially included in regular classes with non-disabled peers, and c) “unplacd” students with learning difficulties in regular classes full-time and not receiving remedial assistance. Labeling theory predicts that the latter group of students are the
least likely to experience stigmatisation, and thus are likely to have the highest self-concepts. In contrast, the big fish little pond effect predicts that the latter group of students should have the lowest academic self-concepts.

Twenty one studies measured students’ general self-concept while twenty studies reported students’ academic self-concept. With regard to general self-concept, students in special classes and partially segregated placements did not significantly differ from each other but reported higher self-concepts than did students with learning disability placed in regular classes full-time. In terms of academic self-concept, students in special classes full-time had higher self-concepts than partially segregated students and both groups had substantially higher self-concepts compared to students with learning disability in regular classes full-time. These results imply that the placement of students with learning disability in regular classes full-time has a more detrimental effect upon their academic self-concept than their general self-concept. These findings lend persuasive support for the big fish little pond effect, and reinforce the importance of measuring multiple facets of self-concept when attempting to evaluate the merit of either labeling theory or the big fish little pond effect.

Manning, Bear, and Minke (2001) conducted a meta-analysis, which included the recent studies since Chapman’s (1988b) influential meta-analysis. Manning, Bear, and Minke (2001) included 61 studies published from 1986 to 2000, which evaluated the self-concept of school-aged children with learning disabilities. Three educational placements were evaluated: Full-time regular class (inclusion), resource room (partial inclusion) and self-contained special class (segregation). Post hoc contrasts revealed, that students with learning disabilities in both inclusive and resource rooms held significantly lower self-perceptions of intellectual/academic competence than students with learning disabilities in special classrooms. What initially appeared to be a significant finding in differences across educational placement in academic self-perceptions, however, was largely accounted for by the instrument used by the researcher, and not the specific characteristics of the educational placement. Thus, Manning, Bear, and Minke (2001) concluded that “contrary to popular assumption and a previous research review (Chapman, 1988), setting appears to have a negligible impact upon self-perceptions” (p. 4). However,
students in special class placements, who presumably show the most significant academic deficits, actually had academic self-concepts less discrepant from non-disabled peers compared to students in either resource or inclusive placements. This conclusion is consistent with predictions of the big fish little pond effect, and Chapman’s (1988b) findings.

Importantly, the focus of the Manning et al. (2001) meta-analysis was on studies comparing learning disabled students and non-disabled students rather than studies comparing learning disabled students in different settings. Studies specifically designed to solely compare matched groups of learning disabled students in different settings were explicitly excluded from this meta-analysis. Hence, inferences about setting were based typically on results from one setting in one study with results based on a different setting in an entirely separate study. Because of the lack of control for pre-existing differences for students in different settings based on different studies, the Manning et al. (2001) meta-analysis is inherently weak in terms of evaluating the effects of different settings. Nevertheless, students in special class placements, who presumably showed the most significant academic deficits, actually had academic self-concepts less discrepant from non-disabled peers than students in either resource or inclusive placements. This is consistent with predictions of the big fish little pond effect, and Chapman’s (1988b) findings.

**A Review of the Empirical Investigation of the Impact of Educational Placement Upon the Academic Achievement of Students with Mild Intellectual Disability**

Because it is low academic achievement that typically defines students as ‘special’, improving the achievement of students with mild intellectual disabilities is a priority. Special educators seek to ensure that the academic achievement of students with mild intellectual disability is maximised. Similarly, researchers have endeavoured to investigate whether the academic achievement of students with mild intellectual disability is best facilitated in the regular classroom or in the special classroom. The current study investigates the academic achievement of students with mild intellectual disability placed in either regular classes or special classes over time. This, however, is not a central component of the thesis. As such, the following
review of the literature shall be limited to reviews and single studies, which embody a strong research design.

**Research Evidence**

The majority of studies have found that students with mild intellectual disability in regular classrooms do better academically than comparable students in special education classrooms (Baker, Wang, & Walberg, 1994-1995). However, the findings of many of these studies are questionable due to methodological flaws, characterised by inadequate research designs and sampling procedures. Studies that have employed a comparative design and tested the academic performance of two intact groups: those in regular classes and those in special classes are problematic (e.g. Carroll, 1967; Centre & Curry, 1993; review by Freeman & Alkin, 2000). It is not surprising that they have found that those in regular classes outperform those in special classes. However, this difference is a direct function of selection rather than the impact of the placement – as those students who are more academically competent are usually selected to participate in regular classes, whilst those who are less academically capable are placed into special classes.

The best evidence of the superiority of the regular class in facilitating academic achievement is encapsulated in Calhoun and Elliott’s (1977) study, which was described earlier. Fifty students with mild intellectual disability were administered the Stanford Achievement Test over three years following random assignment. Students with mild intellectual disability placed in regular classes obtained significantly higher reading and mathematics achievement than their counterparts in special classes. Despite random assignment, students with mild intellectual disability placed in special classes had significantly higher achievement scores compared to regular class counterparts at the commencement of the study. By the end of the first year this difference had disappeared, and by the end of the second year those in regular classes scored significantly better.

In a smaller, but similarly controlled study, Leinhardt (1980) studied a group of low achieving first graders selected for full-time enrolment into special classes, and suitable comparison groups. Three specific groups were studied: Students in a
special education program using individual instruction (transition room); students in a mainstreaming program using individual instruction; and students in a mainstreaming program using a basal reading program. Low achieving students in regular classes using the individualised reading system made significantly greater gains in reading achievement than did students in transition rooms. There was no significant difference between the transition room students and students in the regular classroom that used a basal reading system. Both Calhoun and Elliott’s (1977) and Leinhardt’s (1980) results suggest that regular classes are superior to special classes in facilitating academic achievement when curriculum and teacher variables are controlled for.

Myers (1976) assessed the academic achievement of 90 students with mild intellectual disability between 7 and 12 years of age in a comparative study in which 30 were placed in special schools, 30 in special classes, and 30 in regular class. Participants’ academic achievement was measured by the Wide Range Achievement Test (Jastak & Jastak, 1965). Overall, there were no significant differences in academic achievement, but post hoc comparisons revealed some interactions with initial ability levels. For students in the lower end of this IQ range, those in special schools achieved higher scores in reading and spelling than their counterparts in either special classes or regular classes. For students in the higher end of this IQ range, students in regular classes performed better in reading than did those placed in special classes. No other significant differences were observed.

Many early studies (e.g. Myers, 1976; Thurstone, 1959) are flawed by selection bias, as the process used to assign students to either special or regular classes allowed for the likelihood that lower achieving students would be assigned to special placements. These biases usually operate in favour of the regular class, therefore, the findings that indicate the superiority of special class placement for lower IQ students are likely to underestimate true effects. Other research, however, has found that the academic achievement of students with mild intellectual disability placed in regular classes and special classes did not differ significantly (e.g. Budoff & Gottlieb, 1976; and Eshel, Katz, Gilat, & Nagler, 1994).
Review Evidence

Carlberg and Kavale (1980) conducted a meta-analysis on studies investigating the impact of integrated versus segregated educational placements upon academic and social/personality outcomes for students with mild intellectual disability, slow learners, students with learning disability and students with behaviour and emotional disorders. Fifty studies were included which utilised a comparison group to investigate the impact of regular class versus special class placement. When all groups of students were considered together, there were no significant differences between the academic performance of different educational placements. However, when the category of exceptionality was considered, differential placement effects were revealed. Special class placement was most disadvantageous for students whose primary difficulty was lowered IQ levels (such as students with mild intellectual disability). In comparison to their regular class counterparts the academic achievement of students with mild intellectual disability declined by 6 percentile marks.

Similarly, Wang and Baker (1986) conducted a meta-analysis of 11 studies published between 1975 and 1984 to determine the impact of educational placement upon the academic achievement of a range of students with disabilities. This meta-analysis produced equivocal findings, but slightly favoured the placement of students with disabilities in integrated settings. They found that either part-time or full-time integration into regular classes improved student academic performance. Wang and Baker (1986) concluded that placement in special education classes resulted in improved academic achievement outcomes for students with mild intellectual disability and hearing impairments, but did not improve academic achievement outcomes for students with learning disability.

Freeman and Alkin (2000) reviewed 14 studies on the academic attainments of school-age children with intellectual disability. Analysis included comparing students with intellectual disability in general education settings with students with intellectual disability in special education settings. Results showed that children in integrated settings performed better compared to segregated students on measures of academic achievement. This result, however, is not surprising given that the selection of
students for either placement is usually a function of their academic achievement. That is, students placed in segregated settings are usually there because they are struggling with academic skills moreso than those with intellectual disability who can be maintained in regular classes.

In sum, it would appear that although special class placement is intended to enable teachers to better meet the educational needs of low achieving students, research fails to lend clear support to the assertion that special class placement enhances the academic performance of students with mild intellectual disability. A major flaw of research in this area is the lack of proper controls to ensure that equivalent group comparisons are made (i.e. research is not merely comparing the academic achievement on one occasion of two groups that are nonequivalent) in that selection bias in educational placement predominates these studies as selection for placement is based upon the very outcome variable of academic achievement being evaluated.

Summary

Two dominant, yet competing, theories which predict that educational placement will impact significantly upon the self-concept of students with mild intellectual disability were described – labeling theory and the big fish little pond effect based upon social comparison theory. Empirical research that has endeavoured to evaluate these competing theories has been plagued with limitations, which inevitably reduce our understanding of the value of each theory. The current chapter detailed the nature of such past limitations and the flawed studies. Strong studies in the field were discussed and their support for either the big fish little pond effect or labeling theory with regard to the impact of educational placement upon the self-concepts of students with mild intellectual disability was discussed.

Studies of the impact of educational placement upon the self-concepts and social comparisons of students with mild intellectual disability, although not conclusive, appear to lend support to the big fish little pond effect. In terms of the impact of educational placement upon the academic achievement of students with mild intellectual disability, however, results are equivocal with no definitive trends
evident. In this chapter it was argued that prior research has significant methodological flaws, and thus its findings should be interpreted cautiously. It was also argued that most past research has been based on self-concept measures for which the reliability and validity for students with mild intellectual disability have not been demonstrated. Methodological concerns also undermine this field of research as many studies rely on small sample sizes, inadequate research designs, unsophisticated statistical analysis, and a mixture of participants with a range of disabilities. These serious methodological flaws characterising the research literature led to the conclusion that the inclusion versus segregation question is still unanswered as the variation in findings can be attributed to conceptual and methodological problems plaguing this area of research. Most research has been conducted; with small idiosyncratic samples of children with disabilities, experimental designs that were weak and seldom included appropriate control groups (let alone randomly assigned control groups), constructs were vaguely or generally defined, and instruments were not psychometrically strong measures of multiple dimensions of self-concept that differentiated between academic and nonacademic components of the construct.
CHAPTER 5
AIMS, HYPOTHESES AND RESEARCH QUESTIONS:
RATIONALE

Introduction

The purpose of the current chapter is to present the: a) overarching aims of the current research; b) nature of the problem; c) specific hypotheses to be tested; d) research questions to be addressed, and e) rationale for such concerns. Hypothesised predictions are conceptualised based on previous theory and research. As research with students with mild intellectual disability is limited in scope and plagued by poor methodology, which has resulted in equivocal findings (see Chapter 4), some hypotheses are extrapolated from knowledge of the structure and nature of self-concepts of students without disability. Where past research and theory provides little direction for clear predictions to be made, research questions have been formulated.

Aims

The aims of the present investigation are to capitalise on and extend recent advances in self-concept theory and research by: a) identifying a psychometrically sound, multidimensional self-concept measurement instrument for use with primary students with mild intellectual disability; b) critically examining the structure and nature of self-concepts of students with mild intellectual disability; c) fully investigating the effects of regular class placement and IM Support Unit placement upon the self-concepts, social comparison processes, academic achievement and stigma of preadolescents with mild intellectual disability; and d) testing the competing theories of labeling theory and the big fish little pond effect based upon social comparison theory.
The objectives of the study are to:

1. Evaluate whether the SDQI-IA has sound reliability and construct validity when used to measure the self-concepts of preadolescent students aged 7 to 13 years with mild intellectual disability;
2. Elucidate and compare the structure and nature of multidimensional facets of self-concept of male and female students aged 7 to 13 years diagnosed with mild intellectual disability; and
3. Evaluate the impact of educational placement in either regular classes or IM Support Units upon the self-concepts, social comparison processes, academic achievement and stigma of preadolescents with mild intellectual disability.

The Problem

Do preadolescents with mild intellectual disability have a multidimensional self-concept? Is the SDQI-IA a valid and reliable measure of the self-concepts of preadolescents with mild intellectual disability? Does the structure and level of self-concept differ for students with mild intellectual disability in Year 2 to Year 6, and for females and males? Is labeling theory or the big fish little pond effect correct in predictions about the effects of educational placement on the self-concepts of students with mild intellectual disability, that is: Do students with mild intellectual disability placed in IM Support Units experience lowered general self-concept? Or do students with mild intellectual disability placed in IM Support Units experience higher academic self-concepts? Do social comparison processes, self-smartness ratings and the experience of stigmatisation differ as a consequence of students’ educational placement? Do students with mild intellectual disability placed in IM Support Units or regular classes perform better in academic achievement?
Statement of the Hypotheses and Research Questions

**Hypotheses: Structure and Nature of Self-Concepts for Students with Mild Intellectual Disability**

1. The SDQI-IA will be a reliable measure of the self-concepts of students with mild intellectual disability aged 7 to 13 years; whereby:
   1.1. The reliability of the SDQI-IA for measuring the self-concepts of preadolescents with mild intellectual disability will be comparable to its reliability for measuring the self-concepts of preadolescent students without disability, as reported in Marsh (1988), and Marsh, Craven, and Debus (1991;1998);
2. The self-concepts of students with mild intellectual disability aged 7 to 13 years will be multidimensional and responses to the SDQI-IA will fit the 8-factor a priori model based on the eight scales the instrument was designed to measure; More specifically:
   2.1. The four nonacademic SDQI-IA scales (physical ability, physical appearance, peer relationships and parent relationships self-concepts) will be more positively correlated with each other than with the three academic SDQI-IA scales (mathematics, reading and general-school self-concepts);
   2.2. The correlation between the SDQI-IA scales of mathematics and general-school, and reading and general-school, will be substantially higher than correlations between any of the three academic scales and the four nonacademic scales;
   2.3. The mathematics and reading self-concept subscales will be nearly uncorrelated, as has been found with preadolescents without disabilities;
3. The structure of self-concepts of students with mild intellectual disability in Year 2 to Year 6 will be similar, as has been found with preadolescents without disabilities;
4. The structure of self-concepts of preadolescents with mild intellectual disability will be similar for female and male students, as has been found with preadolescents without disabilities.
Research Questions: Structure and Nature of Self-Concepts for Students with Mild Intellectual Disability

1. For preadolescents with mild intellectual disability, what is the pattern of relations between specific SDQI-IA self-concept subscales and the general self-concept score? In particular, are the academic subscales systematically more or less related to the general self-concept scale than the nonacademic subscales?
2. As preadolescents with mild intellectual disability age from 7 to 13 years, do they report a significant change in mean levels of multidimensional self-concept?
3. Do female and male preadolescents with mild intellectual disability report significantly different levels of multidimensional self-concept?

Hypotheses: The Impact of Differential Educational Placement

The predictions of the big fish little pond effect will be supported in relation to the effects of educational placement on the self-concepts of students with mild intellectual disability – whereby:

5. Preadolescents with mild intellectual disability who have been placed in IM Support Units will report higher academic (that is, mathematics, reading and general-school) self-concepts than will preadolescents with mild intellectual disability placed in regular classes;
6. No significant differences will be present between the nonacademic (that is, physical ability, physical appearance, peer relationships and parents relationships) self-concepts reported by preadolescents with mild intellectual disability who have been placed in IM Support Units and preadolescents with mild intellectual disability placed in regular classes;
7. For the longitudinal analysis, students with mild intellectual disability who have been placed in IM Support Units will report higher academic (that is, mathematics, reading and general-school) self-concepts at Time 2 (five months after placement) compared to students with mild intellectual disability placed in regular classes, and at Time 3 (ten months after placement) these differences will be as large or larger than at Time 2;
8. For the longitudinal analysis, no significant differences will be present between the nonacademic (that is, physical ability, physical appearance, peer relationships and parent relationships) self-concepts reported by students with mild intellectual disability who have been placed in IM Support Units and students with mild intellectual disability placed in a regular classes at either Time 2 or Time 3;

9. Students with mild intellectual disability placed in IM Support Units will report that they compare themselves with students not as able as themselves, while students with mild intellectual disability placed in regular classes will report that they compare themselves with students more able than themselves. This difference will be evident after five months (Time 2) in their respective classes, and at Time 3 (ten months after placement) these differences will be as large or larger than at Time 2;

10. Students with mild intellectual disability placed in IM Support Units will rate their academic performance in the class higher than students with mild intellectual disability placed in regular classes. This difference will be evident after five months (Time 2) in their respective classes, and at Time 3 (ten months after placement) these differences will be as large or larger than at Time 2.

**Research Questions: The Impact of Differential Educational Placement**

4. Will there be a significant difference in the general self-concept reported by preadolescents with mild intellectual disability placed in IM Support Units and students with mild intellectual disability placed in regular classes?

5. Will there be a significant difference in the general self-concept reported by students with mild intellectual disability placed in IM Support Units and regular classes after five months (Time 2) and ten months (Time 3) in their respective placements?

6. Will there be a significant difference in the academic achievement of students with mild intellectual disability placed in IM Support Units and students with mild intellectual disability placed in a regular classes after five months (Time 2) and ten months (Time 3) of placement in their respective classes?

7. After ten months in their respective class placement (Time 3), will differences in academic self-concept between students with mild intellectual disability placed in IM Support Units and regular classes be larger than observed after five months (Time 2)?
8. After ten months in their respective class placements (Time 3), will students with mild intellectual disability placed in IM Support Units report greater experience of stigmatisation than students with mild intellectual disability placed in regular classes?

9. After ten months in their respective class placements (Time 3), what will be the preferred educational placement of students with mild intellectual disability – regular classes or IM Support Units?

Rationale for Hypotheses and Research Questions

In the following section the rationale for each hypothesis and research question will be presented. The application of current research and theory to the present investigation will be summarised.

Rationale for Hypotheses: Structure and Nature of Self-Concept for Students with Mild Intellectual Disability

1. 1.1. The SDQ-I is considered to be the most reliable and valid measure of multiple self-concept for preadolescent children without disabilities (Byrne, 1996). The new adaptive interview procedure of the SDQI-IA (see Chapter 3) has permitted the reliable and valid assessment of the multiple self-concepts of children as young as five years (Marsh, Craven, & Debus, 1991; 1998). It is predicted that this new procedure will provide a reliable and valid assessment of the self-concepts of students with mild intellectual disability aged 7 to 13 years.

2. The first attempt to demonstrate the multidimensionality of self-concepts for preadolescents with mild intellectual disability was made by Silon and Harter in 1985 using the Perceived Competence Scale for Children (Harter, 1985). Exploratory Factor Analysis identified two factors only - Competence and Popularity. Since that time, the multidimensional nature of self-concept has been identified for older adolescent students with mild intellectual disability (e.g. Little, Widaman, Farren, MacMillan, Hemsley, & MacMillan, 1990). Given recent advances in measurement procedure (that is, the interview format and binary response format of the SDQI-IA) and advances in statistical analysis, the multidimensional self-concept of children as young as five years has been identified (Marsh, Craven, & Debus, 1991; 1998). It is
envisaged that given recent measurement, theoretical and statistical advances, the multidimensional nature of self-concepts of preadolescents with mild intellectual disability can be clearly demonstrated.

2.1. - 2.2. The hierarchy of self-concept scales, proposed in the Marsh/Shavelson model (see Chapter 3) of self-concept upon which the SDQI-IA is based, predicts that the four nonacademic scales will be more highly correlated with each other than with the three academic scales. Similarly, the model proposes that the correlation between mathematics and general-school, and reading and general-school self-concept, will be substantially higher than correlations between any of these three academic scales and the four nonacademic scales. It is anticipated that this will also be apparent in the self-concept responses of preadolescents with mild intellectual disability.

2.3. The hierarchical nature of self-concept proposed by the Marsh/Shavelson model predicts that mathematics self-concept and reading self-concept will be nearly uncorrelated.

3. - 4. Research with preadolescents without disabilities suggests that the structure of self-concepts is similar for students within this age range, and for females and males.

Rationale for Research Questions: Structure and Nature of Self-Concept for Students with Mild Intellectual Disability

1. There is a paucity of research that has successfully investigated the relationship between the multiple dimensions of self-concepts for preadolescents with mild intellectual disability. Therefore, no specific predictions have been made. Findings based upon adolescents with mild intellectual disability, other disabilities, and students without disabilities reveal mixed results. Research with the SDQI with preadolescent students without disabilities suggest that general self-concept is most highly correlated with physical appearance (Marsh, 1988; Marsh & Ayotte, 2002). Similarly, Harter, Whitesell, and Junkin (1998); and Crabtree and Rutland (in press) found that the general self-concept of adolescents with learning difficulties was most highly associated with physical appearance self-concept. Crabtree and Rutland (in press) concluded that students with learning difficulties placed significantly less importance on scholastic areas than students without learning difficulties. In contrast,
Renick (1987) and Harter (1990) suggested that the general self-worth of adolescents with learning disabilities is most highly related to perceptions of intellect. Harter (1990) concluded that “given their history of educational identification…, it is not surprising that the domain of intellectual ability should be particularly salient for these students, impacting, in turn their overall level of self-worth” (p.308). It would seem that both explanations are feasible and thus a research question is posed rather than specific predictions made.

2. Research investigating the level of self-concept for students without disabilities as they grow older (within the ranges of age considered in the current research) has revealed that as students without disabilities age their self-concept in all domains decreases. To date, however, it is unknown as to whether these same developmental trends exist for preadolescents with mild intellectual disability.

3. Research investigating gender differences in multiple dimensions of self-concept among preadolescents without disabilities reveal that the differences between the genders is consistent with stereotypical expectations (e.g. boys have higher physical ability self-concepts and girls have higher reading self-concepts). Prior research suggests that gender differences are mostly stable over age. Research investigating such gender differences for preadolescents with mild intellectual disability, however, is sparse and inconclusive.

Rationale for Hypotheses: The Impact of Differential Educational Placement

5. - 8. According to the big fish little pond effect, students with mild intellectual disability placed in an educational placement with other students experiencing similar difficulties will report higher academic self-concepts. This occurs as, when students compare their abilities with others in order to formulate their self-concept, their self-evaluations will be more favourable and thus their academic self-concept will be enhanced. In turn, when students with mild intellectual disability are placed in regular classes with peers that are more able, their self-evaluation will be less favourable. The big fish little pond effect only impacts upon the academic self-concepts of students. Thus, it is predicted that students with mild intellectual disability placed in IM Support Units will experience higher academic (that is, mathematics, reading and general school) self-concepts than will their counterparts in regular classes. It is anticipated that five months of full-time enrolment in either
placement will be sufficient time for the big fish little pond effect to appear. Past research with adolescent gifted students suggests that the big fish little pond effect may take place gradually over time with increased effects at the third data collection point (e.g. Marsh, Chessor, Craven, and Roche, 1995; Marsh, Koeller, and Baumert, in press; and Marsh, Kong, and Hau, 2000). It is anticipated that this gradual effect will also be evident for this population, and may even occur at a slower rate given the young, special population under consideration. The big fish little pond effect predicts that there will be no significant difference between the nonacademic self-concept reported by the two groups.

9. The big fish little pond effect and social comparison theory predict that the self-concept of students with mild intellectual disability will be enhanced when placed in IM Support Units as when they compare themselves with others to form their self-concept, they will compare themselves with less able students than will their counterparts in regular classes.

10. Consistent with the prior prediction, the big fish little pond effect assumes that students with mild intellectual disability placed in IM Support Units will rate their academic performance higher when compared to students in their class than will their counterparts in regular classes.

**Rationale for Research Questions: The Impact of Differential Educational Placement**

4. - 5. The principles of labeling theory predict that students with mild intellectual disability placed in IM Support Units will experience a significantly lower general self-concept than will their counterparts in regular classes. The big fish little pond effect, however, predicts that the academic self-concept of students with mild intellectual disability will be greater than the academic self-concept of their counterparts in regular classes, while their nonacademic self-concept will not be significantly different. According the Shavelson’s et al. (1976) model, general self-concept is conceived as neither an academic or nonacademic construct, but rather an overarching concept which encompasses both constructs. Thus, the premise of the big fish little pond effect does not make specific predictions about the impact of placement in IM Support Units upon the general self-concept of preadolescents with mild intellectual disability.
6. Research investigating the impact of placing students with mild intellectual disability in either IM Support Units or regular classes upon their academic achievement has resulted in equivocal findings. For example, some researchers have found that students with mild intellectual disability assigned to regular classes have significantly better academic skills (e.g. Calhoun & Elliott, 1977; Centre & Curry, 1993) than those assigned to special classrooms. In contrast, some researchers have concluded that students with mild intellectual disability in segregated environments perform better academically than their counterparts in regular classes (e.g. Myers, 1976). Alternatively, there is also a body of research which reports no significant differences between academic performance as a function of educational placement (e.g. Eshel, Katz, Gilat, & Nagler, 1994). Research in this area is clearly equivocal, prompting the need for a research question rather than a specific hypothesis.

7. Recent research findings suggest that big fish little pond effects are evident at Time 3 which are beyond those witnessed at Time 2 data collection points (e.g. Marsh, Koeller, and Baumert, in press). This research, however, has only considered such trends in self-concepts for adolescent gifted students. It is not yet known whether these same trends are reported for preadolescents with mild intellectual disability;

8. Labeling theory proposes that students with mild intellectual disability placed in IM Support Units will experience a heightened level of stigmatisation as a result of their identification and segregation. These predictions, however, have not been substantiated through empirical research and therefore a research question is posed rather than a specific hypothesis.

9. To date, there has been limited research which has endeavoured to determine which educational placement is preferred by students with mild intellectual disability – IM Support Units or regular classes. Thus, predictions cannot be confidently made about the preferred educational placement of preadolescents with mild intellectual disability.
Summary

The current chapter clearly specified that the three major purposes of this research are to: a) evaluate whether the SDQI-IA has sound reliability and construct validity when used to measure the self-concepts of students aged 7 to 13 years with mild intellectual disability; b) identify the structure and nature of multidimensional facets of self-concept of male and female students aged 7 to 13 years diagnosed with mild intellectual disability; and c) evaluate the impact of educational placement in either a regular class or IM Support Unit upon the self-concepts, academic achievement, social comparison and stigma of preadolescents students with mild intellectual disability. The last objective was also presented as providing an empirical evaluation of the merit of both the big fish little pond effect and labeling theory.

The evaluation of these aims will advance current theoretical and practical understanding of an area in which there is a paucity of sound research. Hypotheses and research questions were developed in order to satisfy the overarching purpose of the study and a rationale for these predictions and issues of concern was presented. The following chapter will now describe the methodology designed specifically to address these hypotheses and research questions.
CHAPTER 6
METHODOLOGY

Introduction

The primary purpose of this chapter is to provide a comprehensive presentation of the methodology designed to successfully investigate the specific hypotheses and research questions posed. Three distinct studies have been constructed to address the specified aims, hypotheses and research questions appropriately. Study 1 investigates the structure and nature of self-concepts for preadolescents with mild intellectual disability as well as evaluating the SDQI-IA as a reliable and valid measure of self-concept for this population. Study 2 aims to determine the impact of educational placement upon the self-concepts of preadolescents with mild intellectual disability using a cross-sectional design. Study 3 investigates the impact of educational placement upon the self-concepts, social comparison processes, academic achievement and stigmatisation of students with mild intellectual disability based upon a longitudinal design. Both Study 2 and Study 3 provide strong empirical tests of the contrasting predictions based on labeling theory and the big fish little pond effect that is the focus of this thesis. Studies 1 and 2 are based upon the same cross-sectional design, participants, instruments and procedures, while Study 3 is a longitudinal study utilising a subsample of Study 1 and 2 participants. Study 3 includes measurement instruments and administration procedures used in Study 1 and 2 as well as additional components unique to Study 3.

In this chapter the methodology to be employed in all three studies is presented. A detailed description of the characteristics of the participants, measures employed, the administration procedures, and research designs for distinct study components are discussed. In addition, further detailed description of specific methodology unique to each study is presented in each of the results chapters along with details of the selected statistical analyses in relation to each of the primary aims of the research. This chapter demonstrates that a strong and appropriate methodology has been employed to successfully address the research questions and hypotheses,
and that powerful statistical tests have been conducted to identify the research findings. In addition, procedures are described in sufficient detail to enable other researchers to duplicate the methodology employed in this research.

**Participants**

All students participating in each of the three studies had previously been identified by the New South Wales Department of Education and Training as having a mild intellectual disability. That is, participating students had an IQ quotient falling within the range of 56 to 75, as assessed on an approved individually administered test of intelligence, and had impairment in adaptive functioning (New South Wales Department of Education and Training, 1998). This criterion was determined by the New South Wales Department of Education and Training (see Chapter 2 for an overview of the nature and identification of mild intellectual disability).

**Study 1 and Study 2**

A total of 211 students (120 males and 91 females) with mild intellectual disability enrolled in Years 2–6 participated in both Study 1 and Study 2. The age of the participants ranged from 7 years 5 months to 13 years (with a mean age of 10 years and 3 months, S.D. of 1.48 years).

On the basis of the students’ current educational placement, two separate groups of students were identified: a) Students enrolled full-time in regular classes with peers without disability (n=98); and b) Students enrolled full-time in IM Support Units with peers with mild intellectual disability (n=113). Students from the IM Support Units were involved in activities with the wider school population for sport, assemblies, playground and extracurricular activities.

The sample was drawn from 22 New South Wales Department of Education and Training primary schools, across 9 school districts, that agreed to participate in the study. School suburbs all fell within one standard deviation either below or above the average Index of Relative Disadvantage. The Index of Relative Disadvantage is a measure of socio-economic status that encompasses such indicators as income,
educational qualifications and occupations (Australian Bureau of Statistics, 1998). The sample was culturally heterogeneous, as measured by the students’ main language spoken at home. For the 211 participants, languages spoken at home included: English (63%), Arabic (14.7%), Samoan (7.1%), and ‘other’ non-English languages (15.2%).

**Study 3**

A subsample of the original sample participating in Study 1 and 2 took part in Study 3 - a 12 month, 3-wave longitudinal study. At the commencement of Study 3, 42 students participated. However, during the study period, 2 students moved interstate and 1 student moved overseas, leaving a total of 39 students (22 males and 17 females) with mild intellectual disability to constitute the participant pool. The age of the participants ranged from 7 years 5 months to 9 years (with a mean age of 8 years and 3 months, S.D. of 0.39). Thirty-one of these 39 participants had no other disability, while 5 had a language delay, 2 had been diagnosed with Attention Deficit/Hyperactivity Disorder and 1 student had a mild hearing impairment.

At the commencement of the study - Time 1, all students were in Year 2 and participating in the Early School Support Program. At the commencement of Year 3 students became eligible to enrol in IM Support Units. As such, at Time 2 (Five months into the next academic year -Year 3), and Time 3 (Ten months into the academic year - Year 3), students were placed in two distinct educational placements. Twenty-one students were enrolled in regular classes full-time while 18 were enrolled in IM Support Units full-time. Eight of the participating students (Four from regular classes, and four from IM Support Units) were chosen at random to participate in a brief semi-structured interview at Time 3.
Quantitative Measures

Self-Concept

The SDQI-IA (Marsh, Craven, & Debus, 1991; 1998) (see Appendix A) assesses three areas of academic self-concept (Reading, Mathematics, and General-School self-concept), four areas of nonacademic self-concept (Physical Ability, Physical Appearance, Peer Relationships, and Parent Relationships self-concept), and General self-concept (see Table 6.1 for a brief description of each scale). Three total scores can also be measured on the basis of these scales: Academic self-concept (the average of Reading, Mathematics, and General-School self-concept), Nonacademic self-concept (the average of Physical Ability, Physical Appearance, Peer Relationships, and Parent Relationships self-concept), and Total self-concept (the average of all eight self-concept scales). Appendix B contains the items that comprise each SDQI-IA scale.
<table>
<thead>
<tr>
<th>Subscale</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Ability</td>
<td>Student perceptions of their skills and interest in sports, games, and physical activities.</td>
</tr>
<tr>
<td>Physical Appearance</td>
<td>Student perceptions of their physical attractiveness, how their appearance compares with others, and how others think they look.</td>
</tr>
<tr>
<td>Peer Relationships</td>
<td>Student perceptions of how easily they make friends, their popularity, and whether others want them as a friend.</td>
</tr>
<tr>
<td>Parent Relationships</td>
<td>Student perceptions of how well they get along with their parents, whether they like their parents, and the extent to which they feel parental acceptance and approval.</td>
</tr>
<tr>
<td>Reading</td>
<td>Student self-perceptions of their ability, enjoyment, and interest in reading.</td>
</tr>
<tr>
<td>Mathematics</td>
<td>Student self-perceptions of their ability, enjoyment, and interest in mathematics.</td>
</tr>
<tr>
<td>General-School</td>
<td>Student self-perceptions of their ability, enjoyment, and interest in school subjects in general.</td>
</tr>
<tr>
<td>General</td>
<td>Student self-perceptions of themselves as effective, capable individuals who have self-confidence and self-respect and are proud and satisfied with the way they are.</td>
</tr>
</tbody>
</table>

The SDQI-IA is an individually administered interview procedure measuring multiple dimensions of self-concept using a double-binary response format (see Appendix A). In the actual administration of the SDQI-IA, six example items were read to the student. After reading each example item the interviewer asked the student whether he or she understood the sentence. If the student did not understand the sentence, the interviewer explained the sentence further, ascertained whether the student understood the sentence, reread the sentence, and requested a response. After ascertaining that the student understood the example item, the interviewer initially asked the student to respond “yes” or “no” to the sentence to indicate whether the sentence was a true or false description of the student. If the student initially responded “yes” the interviewer then asked the student whether he or she meant “yes
always” or “yes sometimes”. If the student responded “no” the interviewer then asked the student whether she or he meant “no always” or “no sometimes”. After the student successfully responded to sample items and questions raised were answered, the interviewer then read aloud each of the 64 positively worded items. Halfway through the administration of the SDQI-IA items the interviewer asked the student to do some physical activities for a brief period before the interviewer proceeded to administer the remaining 32 items. This procedure was devised by Marsh, Craven, and Debus (1991) to cater to young children’s limited attention spans.

After presenting each of the first eight test items, the interviewer asked the student before obtaining a response, what the sentence meant (emphasising key concepts like reading and work with numbers). The student was subsequently encouraged to indicate any difficulties he or she experienced in responding to the remainder of the items. This procedure was included to encourage students to seek clarification of any item they did not understand. If the student stated that the item was not understood, the interviewer explained the meaning of the item further and ascertained that the student understood the sentence before readministering the item. Students were periodically asked if they understood subsequent items during the remainder of the administration.

If a student did not initially respond to an item by stating “yes” or “no”, the interviewer explained the meaning of the sentence, reread the sentence, and requested a response. If the student still did not respond appropriately, the item was circled and reread after the administration of remaining items. If the student still did not respond appropriately, the student was asked whether he or she understood the sentence. If the student did not understand the item, the item was further clarified by the interviewer. If the student indicated that she or he understood the sentence but could not decide whether to respond yes or no, the interviewer recorded a response of 3, halfway between the responses of “no sometimes”, and “yes sometimes”. As this occurred infrequently and because students were not told of this option, this middle category was rarely selected. The response options are based on a 5 point response scale: 1 = “no always”, 2 = “no sometimes”, 3 = student understands sentence but does not state yes or no, 4 = “yes sometimes”, and 5 = “yes always”.
**Pilot study to evaluate the SDQI-IA.** Given that the SDQI-IA has not been administered to preadolescents with mild intellectual disability prior to this investigation, the suitability of both its format and content was explored by means of a pilot study. The SDQI-IA was administered to 20 preadolescents with mild intellectual disability according to the suggested administration procedure outlined in Marsh, Craven, and Debus (1991; 1998). The participants were drawn from each of the Years 2-6, and from each educational placement, that is, Early School Support Program, Regular Class and IM Support Unit (see Appendix C).

The main objectives of the pilot study were to firstly, check the suitability of the format of delivery and response alternatives, and secondly, determine if the questions were understood by preadolescents with mild intellectual disability. The suitability of the wording was explored with open-ended questions. For example, rather than asking the student “Do you understand?” after presenting the first few items, the researcher asked the student to define terms in their own words (e.g., “What is mathematics?”).

The pilot study revealed that the response alternatives were understood and utilised successfully throughout the completion of the questionnaire. To ascertain whether the response options “sometimes” and “always” were understood, the researcher questioned participants “What is more, sometimes or always?”. All participants answered “always” correctly.

As a result of the pilot study findings, additional explanations were provided when required, for the following terms:

- ‘Athlete’ : explained as ‘sports person’;
- ‘Pleasant’: explained as ‘nice’;
- ‘Good marks’: explained as ‘do well in’;
- ‘Mathematics’: explained as ‘work with numbers’;
- ‘Look forward to’: explained as ‘get excited about’; and
- ‘School subjects’: explained as ‘school work’.

The terms ‘In general’ and ‘Overall’ were removed to simplify the statements.
Social Comparison Processes

To ascertain how the student perceives their ability when compared to others, and with whom they compare their academic skills, two measures of social comparison were utilised - the social comparison rating and the self-smartness rating.

The social comparison rating (see Appendix D) was devised by Reuman (1989) to examine whether students choose a more capable or less capable student with whom to compare themselves. Reuman’s (1989) measure was specifically designed to assess Year 6 students’ social comparison processes in relation to their mathematics skills. For the purpose of this study the word ‘mathematics’ was replaced with ‘reading’, as reading is the chief learning activity undertaken by children during the first few years of schooling (Perfetti & Curtis, 1986; Wilson, Chapman, & Tunmer, 1995). This measure is comprised of a single item whereby students are asked to:

Make believe you just got a reading test back from your teacher (insert name). If you could look at someone else’s test in your class, whose test would you want to look at? The student is then asked to indicate whether this person is: Not as good at reading as me (1); about the same as me (2); or better at reading than me (3).

The self-smartness rating (see Appendix E) devised by Stipek (1981) was used to determine how smart the student perceives themselves to be when compared to other students in their class. This measure is comprised of a single item whereby students are shown a chart with columns of 1 to 5 stars and told:

This is how many stars the smartest person in the class would get (interviewer points to a row of 5 stars). This person is very smart. This is how many stars the dumbest person in the class would get (interviewer points to a row of 1 star). This person is not very smart. The other children aren’t the smartest and they aren’t the dumbest, and they can get 2 stars, 3 stars, or 4 stars. The more stars you get the smarter they are. How many stars should you get?
**Academic Achievement**

Reading, spelling and mathematics achievement were assessed using the standardised Wide Range Achievement Test – Third Edition (WRAT3) (Wilkinson, 1993). The subtests of the WRAT3 measure the students’ ability in:

1. **Reading**: The ability to recognise and name letters and pronounce words in isolation;
2. **Spelling**: The ability to write one’s own name, write letters and words, and to correctly spell words that have been dictated; and
3. **Mathematics**: The ability to count, read number symbols, solve oral problems, and perform written computations.

The WRAT3 was administered and scored according to the instructions in the test administration manual (Wilkinson, 1993). This test is specifically designed to be appropriate for ages 5 to 75. Two equivalent forms (Tan and Blue) are provided so that parallel forms can be used alternatively to avoid artificially inflated scores due to a practice effect. The Blue version was used at Time 1 and Time 3 whereas the Tan version was used at Time 2. All three subtests were completed in 25 to 35 minutes.

**Student Background Information Sheet**

A Student Background Information Sheet (see Appendix F) was devised by the researcher for the purpose of this study to gather relevant background information about each student. It was completed by the teacher on the same day that the student was interviewed. Student information gathered from the teacher included: students’ gender, date of birth, language spoken at home, year at school, year they were diagnosed as having a mild intellectual disability, whether the student had any other disability, students’ current educational placement and the length of time the student had been enrolled in this placement (see Appendix F, Part A and Part B). At the time of this research a new means of objectively assessing students’ needs, for the ‘ascertainment process’, was being piloted by the New South Wales Department of Education and Training. Some sections of the draft version (see Appendix F, Part C) were completed by teachers in an effort to obtain an objective and convenient indication of the students’ level of support: a) required to access the regular
education curriculum; and b) needed to support the development of social skills. A seven point continuum was used in which lower scores indicated less need, and therefore, a more capable student.

**Qualitative Interviews**

Semi-structured interviews were conducted in order to elucidate student perceptions of stigmatisation and student preference for placement in either regular classes or IM Support Units. The length of the interviews ranged from 5 to 15 minutes. Questions (see Appendix G) were asked to ascertain whether students:

1. Perceived themselves as different to other students because of their learning needs, and whether this varied depending upon their educational placement;
2. Experienced positive and/or negative peer relationships in their current educational placement;
3. Felt that their class was different to other classes in the school;
4. Experienced labeling and stigmatisation, and whether this varied according to their educational placement; and
5. Identified a preferred educational placement.

In addition, if the student mentioned the concept of ‘Special Education’ during the interview, its meaning and the students’ opinion of it was explored.

**Procedure**

Consent to conduct the current research was obtained from the University of Western Sydney Ethics Review Committee (Human Subjects) as well as the New South Wales Department of Education and Training. Written parental/guardian permission to participate was obtained for all students participating in the study, as was verbal student consent at the time of test administration (see Appendix H and I). The parental/guardian consent form included permission to obtain student background information from the student’s teacher. An overall consent form return rate of 62% was obtained. Only 4% specifically requested that their child not participate in the study, whereas the remainder simply did not respond.
The testing sessions were conducted individually, and students were interviewed in a location on the school grounds chosen to ensure that responses would not be heard by other students. As a consequence of the individual testing procedure, there were no missing data. Each testing session began with a brief set of instructions assuring students of the confidentiality of their responses and encouraging students to indicate any difficulties they experienced in responding to an item. The administration of the SDQ-IA for Study 1 and 2 took approximately 30 minutes for each student.

Study 3 consisted of three occasions of testing over a twelve month period\(^1\). Testing was conducted:

1. At the end of Year 2 when all students were enrolled in the Early School Support Program (Time 1);
2. Five months into Year 3 when 18 students had been placed in an IM Support Unit and 21 in regular classes (Time 2); and
3. Ten months into Year 3 (Time 3).

The same testing procedures were followed for all three testing administration occasions. All quantitative measures were administered on all three occasions. Due to the number of tests at each time, testing administration was divided into two 30 minute sessions, conducted several hours apart on the same day. The SDQI-IA was administered in the first session and the social comparison rating, self smartness rating, and WRAT3 were administered in the second session. Students participating in the qualitative interview at Time 3 were interviewed on the same day after the conclusion of the second testing session.

**Researcher Training**

The measurement instruments were administered by the researcher, a PhD student psychologist, and a third year university student in a primary teacher education program, all of whom had experience working with students with mild

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\(^1\) The total duration of the longitudinal study (Study 3) was twelve months, however, excluding school holidays, students had only been in their Year 3 placement for five months at Time 2 and ten months at Time 3.
intellectual disability. Training for the research assistants consisted of a 2-hour session in which procedures for administering the instruments were explained, and a 40-minute administration practice session took place. Written instructions were distributed to research assistants. All researchers subsequently tested students from each of the age groups and educational placements.

Research Design

Study 1 and Study 2

Study 1 and Study 2 applied the same cross-sectional design, but addressed different aims and hypotheses. Two hundred and eleven students with mild intellectual disability aged 7 to 13 years were administered the SDQI-IA. Study 1 investigated the structure and nature of self-concepts of preadolescents with mild intellectual disability. Study 2 investigated the difference between self-concepts of students with mild intellectual disability placed in regular classes (n=98) and IM Support Units (n=113). Independent variables were the students’ age, gender and educational placement. Dependent variables were physical ability, physical appearance, peer relationships, parent relationships, reading, mathematics, general-school, and general self-concepts, as measured by the SDQI-IA. The Student Background Information Sheet was completed by each student’s teacher to obtain demographic information about participants.

Study 3

A longitudinal design was employed using a randomly selected subsample of students from Study 1 and Study 2. Thirty nine students in Year 2 with mild intellectual disability were assessed on three occasions over a twelve month period. At the commencement of the study (Time 1) all students were enrolled in the same educational placement (Early School Support Program). At Time 2 and Time 3, 21 were enrolled in regular classes and 18 were enrolled in IM Support Units. Independent variables were the students’ age, gender, and educational placement. Dependent variables were physical ability, physical appearance, peer relationships, parent relationships, reading, mathematics, general-school, and general self-concepts, as measured by the SDQ-IA; social comparison processes; academic achievement, as
measured by the WRAT3; and stigmatisation, as measured in the qualitative interviews.

**Data Analysis**

Data were analysed using SPSS for Windows and LISREL 7.2 (Joreskog & Sorbom, 1989). Given that data were collected through individual interviews with students, there were no missing data.

**Data Analysis for Study 1**

Examining the reliability of the SDQI-IA for preadolescents with mild intellectual disability. Reliability refers to the extent to which responses are attributable to systematic sources of variance rather than to errors in measurement (Borg & Gall, 1989). The primary basis for estimating reliability in SDQ research has been the internal consistency of item responses on each of the SDQ scales (Marsh, 1988). The reliability of each of the 8 SDQI-IA scales in the current study was estimated using two procedures. The first was the traditional coefficient alpha estimate of reliability conducted with the reliability procedure in SPSS (1999). In addition, one factor congeneric models were conducted for each subscale separately, producing coefficient omega estimates of reliability (McDonald, 1985) that is more consistent with the confirmatory factor analyses emphasis of this study. These procedures differ in that alpha is based on the assumption of a parallel model in which all items load equally onto the latent factor, whereas coefficient omega assumes a congeneric model in which factor loadings for each item are allowed to differ. Coefficient alpha is a logical lower bound estimate of coefficient omega and provides a negatively biased estimate of reliability, unless the assumption of parallel measures is met. To the extent that all items do not load equally on the latent factor, the traditional coefficient alpha estimate of reliability is negatively biased relative to the more appropriate omega estimate. For well-developed scales in which all items have substantial and similar relations to the underlying latent construct, coefficient omega estimates of reliability tend to be only slightly larger than the slightly negatively biased coefficient alpha estimates of reliability.
Examining the factor structure of the SDQI-IA for preadolescents with mild intellectual disability. Confirmatory factor analysis (CFA) was conducted to assess the multidimensionality of self-concept responses. The raw data were used as input to PRELIS (Joreskog & Sorbom, 1989), and a covariance matrix was produced that was subsequently analysed using LISREL (Joreskog & Sorbom, 1989). LISREL is, perhaps, the most widely used statistical program to test the fit between a sample covariance matrix and a hypothesised matrix. Maximum likelihood was the method of estimation used for the models. Maximum likelihood estimation procedures are robust in relation to violations of assumptions of normality – particularly in relation to parameter estimates (factor loadings, factor correlations, path coefficients, etc) that are of main concern in this thesis (Hu, Bentler, & Kano, 1992; Joreskog & Sorbom, 1993; Muthen & Kaplan, 1985).

In confirmatory factor analysis the researcher postulates relations between the observed measures and the underlying a priori factors, based on theory and/or empirical research, and then tests the ability of this hypothesised structure to fit the data statistically (Byrne, 1998). An 8-factor model was proposed with factors corresponding to the 8 subscales the SDQI-IA was designed to measure (see the CFA measurement component in Figure 6.1). In these models, each measured variable was permitted to only load on the one factor that it was proposed to reflect. Factor correlations and uniquenesses (residuals for each measured variable) were estimated, but correlations among the uniquenesses were constrained to be zero.

Ideally, the use of maximum likelihood estimation is based on large sample sizes. In this respect, it would be desirable if the sample size (n= 211) were larger. However, as emphasised by Tanaka (1987) in his classic article on “how big is big enough”, in research with special populations it is often difficult to obtain fully adequate sample sizes in studies based on a small portion of the population and when responses must be collected individually. Tanaka stressed that a sample size of n = 100 should be viewed as a lower limit sample size, but noted that larger sample sizes are desirable. He also indicated that maximum likelihood is likely to be more robust than other estimation procedures in relation to potential problems of non-normality when sample size is small.
As in other SDQ research (e.g., Marsh & Hocevar, 1985; Marsh, Craven, & Debus, 1991), and recommended in the SDQ-I test manual (Marsh, 1988), confirmatory factor analyses were conducted on item-pair scores in which the first two items in each scale are averaged to form the first item pair, the next two items are averaged to form the second pair, and so forth. Thus, the 64 SDQI-IA items were reduced to 32 item pairs, which were used in subsequent analyses. Analysis of item pairs instead of individual items is advantageous because; the item pairs tend to be more reliable, to be more normally distributed, and to have less idiosyncratic variance than do individual items (Marsh, 1988; Marsh & O’Neill, 1984).

Additionally, in determining a suitable sample size, it is sometimes recommended that there be at least five times as many participants as estimated parameters in confirmatory factor analyses (e.g., Tanaka, 1987). Marsh, Balla, and Hau (1996), and Ding, Velicer, and Harlow (1995), however, argued that there was no logical, theoretical, or empirical support for such guidelines. They found that traditional guidelines suggesting that fewer indicators should be used for smaller sample sizes are inappropriate, arguing instead that it is important to have more – not fewer – indicators per factor when sample size is small. In particular, Marsh et al. (1996) emphasised the most defensible rule is the need to have N of at least 100 and preferably more than 200. It is on this basis that the sample size of N = 200 was chosen in the present investigation. Also, using item pairs instead of individual items substantially reduced the number of measured variables without reducing the quality of the strength of the constructs – particularly relations among the self-concept factors and their relations with other constructs. This issue is particularly important in the present investigation where subsequently more complicated models will be considered in which additional variables are included so that the number of measured variables is considerably larger.

Determining whether the fit of the a priori model to the data is sufficient to support the a priori model involves evaluating the goodness of fit indices for alternative models. The Tucker Lewis Index (TLI) is emphasised as simulation studies have shown that it is the only frequently used measure that is, to a large degree, independent of sample size and also imposes an appropriate penalty for inclusion of additional parameter estimates in a given model (Marsh, Balla, & Hau,
1996; McDonald & Marsh, 1990). Other fit indices reported include the Relative Noncentrality Index (RNI) and the Root Mean Square Error of Approximation (RMSEA). The TLI and RNI vary along a 0-to-1 continuum in which values greater than 0.90 are typically taken to indicate an acceptable fit (Marsh, Balla, & Hau, 1996; Schumacker & Lomax, 1996). RMSEAs less than 0.05 are taken to reflect a “close fit” whereas values of less than 0.08 are indicative of a reasonable fit (Browne & Cudeck, 1993; Joreskog & Sorbom, 1993). Model comparison is also facilitated by positing a nested ordering of models in which the parameter estimates for a more restrictive model are a proper subset of those in a more general model (for further discussion see Bentler, 1990). Under appropriate assumptions, the difference in $\chi^2$ between two nested models has a $\chi^2$ distribution and so can be tested in relation to the difference in degrees of freedom. This feature of the $\chi^2$ test statistic is particularly useful in the evaluation of tests of invariance across different groups (see below). Whereas tests of statistical significance and indices of fit aid in the evaluation of the fit of a model, there is ultimately a degree of subjectivity and professional judgment in the selection of a ‘best’ model.

**Examining the age-related and gender-related structural differences in the self-concepts of preadolescents with mild intellectual disability.** When the researcher has parallel data from more than one group (i.e., males and females or students in different year levels) it is possible to test the invariance of the solution for each group by requiring any one, any set, or all parameter estimates to be the same in the two groups. Tests of factorial invariance (see Bollen, 1989; Joreskog & Sorbom, 1993; Marsh, 1994) traditionally posit a series of partially or fully nested models. The end-points of this series are the least restrictive model with no invariance constraints and the most restrictive (total invariance) model with all parameters are constrained to be invariant across all groups. A minimal condition of factorial invariance is the invariance of the factor loading coefficients. For current purposes, analyses were conducted on separate covariance matrices constructed for participants from each of the year and gender groups. As a consequence of small sample sizes, the results should be interpreted with caution.
In order to evaluate age-related and gender-related differences in the structure of self-concept for students with mild intellectual disability, separate covariance matrices for each of the two year groups and gender groups were computed. A number of models were tested in which aspects of the factor structure were systematically held invariant across groups. Fit indices were assessed when elements of these structures were constrained.

**Examining the impact of age and gender on the self-concepts of preadolescents with mild intellectual disability.** Using Structural Equation Modeling (SEM), self-concept factors were related to students’ age and gender. Age, gender, and the age-by-gender interaction were all represented as single-item constructs assumed to be measured without error. The main effects of age and gender were partialled out of the variable representing the age-by-gender interaction so that the interaction term reflected variance that could not be explained in terms of the main effects (that is, the interaction effect is the effect of the age-by-gender crossproduct after controlling for the main effect; see Aiken & West, 1991). The CFA/SEM approach is like the multiple regression approach to analysis of variance (Aiken & West, 1991), but it is even stronger, as it is based on latent constructs that are purged of measurement error (as well as providing a test of the underlying model rather than just assuming that it is correct in the formation of scale scores). This CFA approach is also superior as it allows much greater flexibility in pursuing detailed tests (e.g., requiring the gender effects to be the same for all factors). This approach to evaluating age and gender effects is a potentially useful contribution to the literature.

**Data Analysis for Study 2**

**Examining the impact of age, gender and educational placement upon the self-concepts of preadolescents with mild intellectual disability.** Data were analysed for Study 2 via Structural Equation Modeling, to determine the effects of age, gender and educational placement on self-concept scores generated. Single-indicator factors representing age, gender, educational placement and their interactions were added to the CFA. Interaction effects consisted of the cross-product of two z-scores for standardised variables involved in the interaction. For purposes of the present investigation, the main effects were partialled out of the variables
representing the interaction effects so that interaction terms reflected variance that could not be explained in terms of the main effects. This model can be tested in a one-step simultaneous analysis and the goodness of fit indices can be assessed to determine the test of the fit between the model and the data. The SEM component in Figure 6.1 provides a pictorial representation of the path model to be tested. [Note. Not shown in order to avoid clutter (but included in the model) are correlations among the residual latent variables (that is, latent factors corrected for gender and age) and interactions among the (single-item) factors representing the main dependent variables (e.g. age x gender interaction).]
Figure 6.1. Confirmatory factor analysis model relating a priori self-concept latent factors to their multiple indicators and to the observed independent variables.
Data Analysis for Study 3

Examining the impact of educational placement on the self-concepts, social comparison processes, academic achievement and stigmatisation of preadolescents with mild intellectual disability. A series of Multivariate Analysis of Variance (MANOVA) were conducted to examine the possible effects of educational placement (Regular Class and IM Support Unit) and time (Time 2 and Time 3) on students’ multidimensional self-concepts, social comparison rating, self smartness rating, and academic achievement. For all analyses the corresponding Time 1 (pretest) scores were used as covariates. MANOVA assesses the main effects of each independent variable upon the dependent variables and the interaction effects among independent variables (Tabachnick & Fidell, 1996). Given the limited sample size (n= 39), MANOVA was more appropriate than CFA.

To examine students’ experience of stigmatisation and preference for placement in either regular classes or IM Support Units, qualitative interviews were conducted. Transcripts of qualitative interviews were analysed manually using content analysis (Miles & Huberman, 1994). Content analysis is a way of grouping information into a small number of sets of themes or constructs. The researcher systematically identified themes within the transcripts and assigned them to categories. Once this process was complete two research psychologists were asked to “expert check” that the generated themes were agreed upon (Strauss & Corbin, 1994). Expert checking was applied to ensure that the generated themes were identified and clustered in a way which was consistent with the views of several people, rather than simply a reflection of the researchers subjective interpretation.

Summary

This chapter established that the present investigation is based on sound methodology which incorporates recent developments in self-concept theory and measurement. Three innovative studies were designed to specifically address the research aims, hypotheses and research questions. Some major methodological limitations that have been present in previous research were avoided by:
a) evaluating the psychometric properties of the self-concept instrumentation administered for this special population;

b) administering a multidimensional measure of self-concept to adequately witness the differential impact of educational placement upon academic and nonacademic self-concept and thus empirically test labeling theory and the big fish little pond effect;

c) employing a strong longitudinal, quasi-experimental design to investigate the effects of educational placement;

d) utilising a larger number of participants given the special population studied;

e) employing a sample diagnosed with one primary disability rather than a mixed group encompassing many different disabilities; and

f) conducting sophisticated statistical analysis.

Hence a strong and suitable methodology was devised to examine hypotheses and research questions which were evaluated by powerful statistical tests.
CHAPTER 7
STUDY 1 RESULTS:
THE STRUCTURE AND NATURE OF SELF-CONCEPTS FOR PREADOLESCENTS WITH MILD INTELLECTUAL DISABILITY

Introduction

Past research investigating the self-concepts of preadolescents with mild intellectual disability has failed to identify multiple dimensions of self-concept and an appropriate measure of self-concept for this population. In her definitive review of self-concept instruments, Byrne (1996) identified that there was a “critical void in the availability of self-concept measures for special populations” (p.221). Thus, questions about the nature of self-concept and the impact of age and gender remain unanswered for preadolescent students with mild intellectual disability aged 7 to 13 years. Study 1 was specifically designed to address these needs and advance current theory and practice by evaluating the most validated self-concept measure available for use with normal developing preadolescents with this special population.

The overarching purpose of this chapter is to elucidate the structure and nature of self-concepts for students with mild intellectual disability aged 7 to 13 years. More specifically, this chapter will:

a) evaluate the SDQI-IA as a reliable and psychometrically sound measure of the self-concepts of students with mild intellectual disability;

b) test the multidimensional structural theory of self-concept in relation to students with mild intellectual disability;

c) evaluate age-related and gender-related differences in the structure of self-concepts for students with mild intellectual disability; and

d) determine the impact of age and gender upon the self-concepts of students with mild intellectual disability.
The results presented in this chapter are based upon the methodology employed in Study 1 in which 211 students with mild intellectual disability were individually administered the SDQI-IA. Participants consisted of females and males aged 7 years 5 months to 13 years (see Chapter 6 for a detailed description of the methodology for Study 1).

This chapter reports the results of data analyses assessing internal consistency reliability and the multidimensional factor structure of the SDQI-IA using confirmatory factor analyses. Results based on confirmatory factor analyses and tests of invariance between age cohorts and males and females are also reported. Lastly, structural equation modeling is utilised to determine the impact of age and gender upon the self-concepts of students with mild intellectual disability. For a comprehensive description of the statistical techniques applied in this chapter see Chapter 6.

**Evaluation of the Reliability of the SDQI-IA for Preadolescents with Mild Intellectual Disability**

Prior research has determined that the SDQI-IA is a reliable measure of the self-concepts of preadolescents without disability. As such, it was hypothesised that the SDQI-IA is a reliable measure of the self-concepts of students with mild intellectual disability aged 7 to 13 years (Hypothesis 1), and that the reliability derived with preadolescents with mild intellectual disability would be comparable to that reported with preadolescents without disability (e.g. Marsh, 1988; Marsh, Craven, and Debus, 1991; 1998) (Hypothesis 1.1). Reliability estimates presented are: a) coefficient alpha estimates (α); and b) coefficient omegas (ω) based on one-factor congeneric CFA models conducted separately for items in each scale (see Chapter 6). The internal consistency of the 7 domain-specific subscales, the general self-concept scale, the total academic, total nonacademic and the total self-concept scales were assessed. Estimates of reliability were calculated for the total participants, and for a younger (Year 2 - Year 4), and older (Year 5 - Year 6) cohort (see Table 7.1).
Results

For the total participants, internal consistency estimates for the subscales (see Table 7.1) are generally high with a mean omega of 0.88, and an omega range of 0.72 to 0.95. For the younger cohort (Year 2-4), the mean omega was 0.89, with an omega range of 0.72 to 0.96. For the older cohort (Year 5-6), the mean omega coefficient was 0.88, with a range of 0.77 to 0.95. Internal consistency estimates for the younger cohort and the older cohort are similar. The General subscale had the lowest internal consistency estimates among all subscales (0.72 for the total participants) which is consistent with past research reported in the SDQI test manual (Marsh, 1988). The internal consistency estimates for the three total scores are consistently high (i.e., mean for the total participants = 0.94). The high reliabilities for the total scores, however, are based partly on the larger number of items incorporated into these scales as the average correlation among the items is somewhat smaller than for the specific scales.

Table 7.1 demonstrates that the coefficient alpha estimates of reliability obtained in the current study are very similar to those reported in the SDQI normative archive (Marsh, 1988), with the exception of General which drops from 0.81 to 0.67. The coefficient alpha estimates of reliability obtained in the current study with students aged 7-13 years with mild intellectual disability are higher than those obtained using the SDQI-IA instrument with children aged 5-8 years without disability, as reported in Marsh, Craven, and Debus (1998), with the exception of General which drops from 0.72 to 0.65.

The hypothesis (Hypothesis 1.1) that the SDQI-IA is a reliable measure of the self-concepts for this population, and comparable to reliabilities reported in Marsh (1988) and Marsh, Craven, and Debus (1998) is supported. Overall, the internal consistency estimates are good, with the possible exception of the General self-concept scale which had a moderate reliability. These results indicated that the subscales reliably measure the multidimensional facets of self-concepts for students with mild intellectual disability, and thus support Hypothesis 1.
Table 7.1
Coefficient Alpha and One Factor Congeneric Coefficient Estimates of Reliability, for the Younger and Older Cohorts and the Total Participants in Comparison to the SDQI Normative Archive and SDQI-IA data for Students aged 5-8 years without disabilities

<table>
<thead>
<tr>
<th>Subscale scores</th>
<th>Year 2-4 (n = 121)</th>
<th></th>
<th>Year 5-6 (n = 90)</th>
<th></th>
<th>Total (n = 211)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Subscale scores</td>
<td>α</td>
<td>ω</td>
<td>α</td>
<td>ω</td>
<td>α</td>
<td>ω</td>
</tr>
<tr>
<td>Physical ability</td>
<td>.85 [.67]</td>
<td>.93</td>
<td>.79</td>
<td>.85</td>
<td>.82 (.83)</td>
<td>.90</td>
</tr>
<tr>
<td>Physical appearance</td>
<td>.92 [.83]</td>
<td>.94</td>
<td>.88</td>
<td>.93</td>
<td>.91 (.90)</td>
<td>.93</td>
</tr>
<tr>
<td>Peer relationships</td>
<td>.88 [.79]</td>
<td>.90</td>
<td>.87</td>
<td>.89</td>
<td>.87 (.85)</td>
<td>.90</td>
</tr>
<tr>
<td>Parent relationships</td>
<td>.76 [.72]</td>
<td>.83</td>
<td>.87</td>
<td>.89</td>
<td>.83 (.80)</td>
<td>.86</td>
</tr>
<tr>
<td>Reading</td>
<td>.91 [.82]</td>
<td>.93</td>
<td>.85</td>
<td>.90</td>
<td>.89 (.89)</td>
<td>.90</td>
</tr>
<tr>
<td>Mathematics</td>
<td>.95 [.82]</td>
<td>.95</td>
<td>.92</td>
<td>.93</td>
<td>.94 (.92)</td>
<td>.94</td>
</tr>
<tr>
<td>General-school</td>
<td>.87 [.80]</td>
<td>.88</td>
<td>.80</td>
<td>.85</td>
<td>.85 (.86)</td>
<td>.86</td>
</tr>
<tr>
<td>General</td>
<td>.65 [.75]</td>
<td>.72</td>
<td>.70</td>
<td>.77</td>
<td>.67 (.81)</td>
<td>.72</td>
</tr>
<tr>
<td>Total scores</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total nonacademic</td>
<td>.90 [.87]</td>
<td>.93</td>
<td>.91</td>
<td>.93</td>
<td>.90 (.91)</td>
<td>.92</td>
</tr>
<tr>
<td>Total academic</td>
<td>.94 [.90]</td>
<td>.95</td>
<td>.91</td>
<td>.94</td>
<td>.93 (.92)</td>
<td>.94</td>
</tr>
<tr>
<td>Total score</td>
<td>.95 [.94]</td>
<td>.96</td>
<td>.94</td>
<td>.95</td>
<td>.94 (.94)</td>
<td>.95</td>
</tr>
</tbody>
</table>

Note. Alpha coefficients from SDQI-IA responses by children aged 5-8 years are presented in square parentheses for the Year K-2 participants, in Marsh, Craven, and Debus (1998). Alpha coefficients from SDQI normative data are presented in parentheses for the total participants, as reported in Marsh (1988).
Evaluation of the Multidimensional Structure of Self-Concepts for Preadolescents with Mild Intellectual Disability

A primary aim of Study 1 is to examine the fit of the 8-factor model used in previous SDQI research as a suitable multidimensional model of the structure of self-concepts for students with mild intellectual disability. The confirmatory factor analysis assessing the structure of the SDQI-IA instrument involved the assessment of the 8-factor model based on the 8 scales the instrument was designed to measure (see Table 7.2). It was predicted that the self-concept responses from this population would be consistent with the 8-factor a priori model derived from preadolescents without disability (Hypothesis 2). In this model, each measured variable was permitted to only load on the one factor that it was proposed to reflect. Factor correlations and uniquenesses (residuals for each measured variable) were estimated, but correlations among the uniquenesses were constrained to be zero.

Results

The confirmatory factor analysis based on the 8-factor model clearly identified all eight factors that the SDQI-IA was designed to measure, thus supporting hypothesis 2. The factor loadings for the 8-factor model are presented in Table 7.2. The factor loading for each variable is consistently high on the factor that it was designed to measure (average factor loading = 0.80). A chi square of 776.95 (df= 436) was obtained, with a TLI of 0.909, RNI of 0.920, and RMSEA of 0.0610. The TLI and RNI scores suggest that the model is a good fit for the data, while the RMSEA score falls slightly above (i.e., poorer than) the 0.05 criteria for a close fit but within the range of a reasonable fit (i.e., less than 0.08).

These results offer strong support for a multidimensional model of self-concept for students with mild intellectual disability aged 7 to 13 years and provide further support for the Marsh/Shavelson model of self-concept upon which the SDQI-IA was based. This finding substantiates the multidimensionality of self-concept for this population which has been questioned by past researchers (e.g. Silon & Harter, 1985). The current study with preadolescent students with mild intellectual
disability produced similar findings to that of Little et al. (1990) study with adolescents with mild intellectual disability and the SDQII.
Table 7.2
Factor Loadings and Correlations among Factors for the 8-factor Model of Self-Concept (n=211)

Factor loading for each scale

<table>
<thead>
<tr>
<th>Item parcel</th>
<th>PHYS</th>
<th>APPR</th>
<th>PEER</th>
<th>PRNT</th>
<th>READ</th>
<th>MATH</th>
<th>SCHL</th>
<th>GENL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phys1</td>
<td>.69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phys3</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phys4</td>
<td>.87</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Appr1</td>
<td></td>
<td>.89</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Appr2</td>
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<td>Appr3</td>
<td></td>
<td>.72</td>
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<td></td>
</tr>
<tr>
<td>Appr4</td>
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<td>Peer1</td>
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</tr>
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<tr>
<td>Peer4</td>
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<td>.77</td>
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<tr>
<td>Prnt1</td>
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<tr>
<td>Read1</td>
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<td></td>
<td></td>
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<td>Math3</td>
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<td>.89</td>
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<td></td>
<td></td>
<td></td>
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<td>.75</td>
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<td>Schl2</td>
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<td></td>
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<td>.73</td>
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Correlations among factors

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Note. PHYS = Physical ability APPR = Physical appearance PEER = Peer relationships PRNT = Parent relationships READ = Reading MATH = Mathematics SCHL = General-school GENL = General self-concept.
Evaluation of the Relationship Between the Self-Concept Factor Scores for Preadolescents with Mild Intellectual Disability

In evaluating the relations between the self-concept factors, predictions were made based on the exhibited relations that exist for preadolescents without disability and as predicted by the Marsh/Shavelson model. More specifically, it was predicted that: the four nonacademic SDQI-IA are more positively correlated with each other than they are with the three academic SDQI-IA scales (Hypothesis 2.1); that the correlation between the SDQI-IA scales of mathematics and general-school, and reading and general-school will be substantially higher than correlations between any of the three academic scales and the four nonacademic scales (Hypothesis 2.2); and that the math and reading self-concepts will be nearly uncorrelated (as in the case of preadolescents without disability) (Hypothesis 2.3). Research Question 1 poses the question of which SDQI-IA subscale is more highly correlated with the SDQI-IA general self-concept scale for preadolescents with mild intellectual disability.

Results

Correlations among factors for the 8-factor model (see Table 7.2) are all lower than 1.0, ranging from 0.10 to 0.80. The average correlation between factors is 0.42. These results clearly demonstrate that preadolescent students with mild intellectual disability are successfully able to differentiate between multiple dimensions of self-concept.

The average correlation between the four nonacademic factors is 0.33 and the average correlation between the three academic factors is 0.55. The average correlation between nonacademic and academic factors is 0.31. As hypothesised (Hypothesis 2.1), the four nonacademic scales are more correlated with each other than with the three academic scales, and the three academic scales are more correlated with each other than with the four nonacademic scales. Also consistent with predictions (Hypothesis 2.2), the correlation between mathematics and general-school is high (0.65), as is the correlation between reading and general-school (0.69), and higher than the correlation between the three academic subscales (0.55) and the correlation between the four nonacademic subscales (0.33). The correlation between
mathematics and reading obtained with students with mild intellectual disability (0.31), however, is higher than predicted by the multifaceted, hierarchical structure of self-concept proposed by Marsh and Shavelson (1985) and found in other research (and thus does not support Hypothesis 2.3).

Correlations among the self-concept factors were consistent with a hierarchical ordering of self-concept as hypothesised by Shavelson et al. (1976) in that the largest correlations among factors occurred between the four scales within nonacademic self-concept, the three scales within academic self-concept, and between the general-school and the other two academic self-concepts. This research is the first to demonstrate that the structure of self-concepts for preadolescent students with mild intellectual disability is similar to that reported by their peers without disability.

It is of interest to determine which self-concept facet is most highly associated with general self-concept, and thus possibly important in defining one’s general self-concept. Given the equivocal findings in this area, a research question was posed rather than a hypothesis (Research Question 1). Correlation coefficients among factors (see Table 7.2) suggest that general-school self-concept is most highly associated with general self-concept. This finding is disparate with findings for students without disability (e.g. Marsh, 1989; Marsh, Craven, & Debus, 1998), and with learning disability (e.g. Crabtree & Rutland, in press; Harter, Whitesell & Junkin, 1998) that suggest that nonacademic self-concept facets such as physical appearance are most highly correlated with general self-concept. The current finding lends support to Harter’s (1990) proposal that the general self-concept of students experiencing difficulty learning is more intimately linked to their academic self-concept. Harter (1990) suggests that given their history of educational identification, it is not surprising that the domain of school performance should be particularly salient for these students, and thus impact on their general self-concept.
Evaluation of Age-Related and Gender-Related Differences in the Structure of Self-Concepts for Preadolescents with Mild Intellectual Disability

In order to evaluate age-related and gender-related differences in the structure of self-concept for students with mild intellectual disability, separate covariance matrices for each of the two year groups and each of the two gender groups were computed. Results of these analyses should be interpreted carefully due to small samples sizes for both gender (males = 120, females = 91) and age (Years 2-4 = 121, Years 5-6 = 90). In confirmatory factor analysis studies with multiple groups it is possible to test the invariance of any one, any set, or all parameter estimates across the multiple groups. Here the invariance of the parameters in the 8-factor model across the two year groups and across gender is evaluated. It is predicted that the structure of self-concept is consistent for preadolescent students with mild intellectual disability across age (Hypothesis 3) and gender (Hypothesis 4).

Testing for factor invariance essentially involves comparing a number of models in which aspects of the factor structure are systematically held invariant across groups and assessing fit indices when elements of these structures are constrained. If the introduction of increasingly stringent invariance constraints results in little or no change in goodness of fit, then there is evidence in support of the invariance of the factor structure. If, on the other hand, the introduction of a set of invariance constraints results in a substantial decrement in goodness of fit, then there is evidence against the appropriateness of those invariance constraints. For purposes of these analyses, focus is placed upon goodness of fit indices that control for parsimony (e.g., TLI and RMSEA, see Chapter 6 for further discussion).

The present analyses examined the comparative fit indices for five models across the two year groups and gender. The first model contains no invariance within the groups (NO IN); the second holds the factor loadings invariant (LOAD=IN); the third holds both factor loadings and variance invariant (LOAD, VAR=IN); the fourth holds the factor loadings and uniquenesses invariant (LOAD, UN=IN); the fifth holds the factor loadings, the variance, and the covariance invariant (LOAD, VAR, COV=IN); the sixth holds the factor loadings, the variance and uniquenesses invariant (LOAD, VAR, UN=IN); and the seventh holds the factor loadings, the
variance, covariance and uniquenesses invariant (LOAD, VAR, COV, UN=IN, that is, total invariance).

**Results**

Statistics generated from these five models across the two year groups and two gender groups for the 8-factor model are presented in Table 7.3 and 7.4, respectively.

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<th>Model</th>
<th>CHISQ</th>
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<th>TLI</th>
<th>RNI</th>
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**Note.** IN=Invariant      LOAD=Factor loadings      UN=Uniquenesses      VAR=Variance      COV=Covariances.

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<tr>
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**Note.** IN=Invariant      LOAD=Factor loadings      UN=Uniquenesses      VAR=Variance      COV=Covariances.
Results in Tables 7.3 and 7.4 indicate that when successive elements of the factor structure are held invariant across both year level and gender, the fit indices are quite comparable. For indices that control for parsimony (TLI and RMSEA) the results indicate that the model with complete invariance of all parameter estimates provides a better fit than models that allow some or all of the parameter estimates to be freely estimated.

The results of the invariance tests indicate that the multidimensional structure of self-concepts of students with mild intellectual disability is similar for students in the two age cohorts (Year 2-4 and Year 5-6), and for females and males, thus endorsing both Hypothesis 3 and Hypothesis 4. However, the fit indices are moderate and thus need to be interpreted cautiously. This finding is of theoretical and practical importance as these results provide unique insight into the structure of the self-concepts of preadolescents with mild intellectual disability across age and gender. Secondly, these findings provide strong support for the appropriateness of the SDQI-IA instrument over the range of ages considered here, and for both genders.

**Implications for subsequent analyses.** Tests of invariance have illustrated that the structure of self-concept is similar for preadolescents with mild intellectual disability across males and females, and students aged from 7 to 13 years. On the basis of these results, it is justifiable to pool the responses across age and gender for subsequent analyses.

**Evaluation of the Impact of Age and Gender Upon the Self-Concepts of Preadolescents with Mild Intellectual Disability**

Given that the structure of self-concepts was similar for students with mild intellectual disability across males and females and those aged 7 to 13 years it was of interest to determine whether the mean level of self-concepts was similar for males and females and those aged 7 to 13 years. The relationship of age, gender, and the interaction of age-by-gender, upon self-concepts were assessed using Structural Equation Modeling (for further discussion see Chapter 6).
The current SEM model is an extension of the CFA model with the addition of age, gender and age-by-gender effects relating to self-concept factors. Age, gender and the age-by-gender interaction were all represented as single-item constructs assumed to be measured without error. This model is similar to the previous CFA model based on the total group so that each factor loading and uniquenesses are essentially the same – it is only the path coefficients relating age, gender and age-by-gender and the self-concepts factors that are different.

Based upon previous equivocal findings with preadolescent students with mild intellectual disability, two research questions were formulated: Research Question 2) As preadolescents with mild intellectual disability age from 7 to 13 years, do they report a significant change in mean levels of multidimensional self-concept? Research Question 3) Do female and male preadolescents with mild intellectual disability report significantly different levels of multidimensional self-concept?

Results

Table 7.5 presents the SEM Path Model relating age, gender and age-by-gender to the self-concepts of students with mild intellectual disability. A chi square of 890.44 (df = 508) was obtained, with a TLI of 0.896, RNI of 0.912, and RMSEA of 0.0585. The RNI score suggests that the model is a reasonably good fit for the data, while the TLI and RMSEA scores fall slightly below the 0.90, and above the 0.05 criteria for a close fit, respectively, but within the range of a reasonable fit. Figure 7.1 presents the significant causal relationships pictorially.
Table 7.5
Path Model of Relations Between Student Age, Gender, and Age-by-Gender to
Multiple Self-Concept Dimensions

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**Note.** PHYS = Physical ability  APPR = Physical appearance  PEER = Peer relationships  PRNT = Parent relationships  READ = Reading  MATH = Mathematics  SCHL = General-school  GENL = General self-concept  All parameter estimates are presented in completely standardised form (see Byrne, 1998; Joreskog & Sorbom, 1989). The first variable for each factor had a factor loading fixed at 1.0 so that there was no test of statistical significance. This occurred because age, gender, and age x gender came before the self-concept constructs in the SEM. Variances and covariances for the self-concept constructs are residuals after controlling these effects. Gender was coded male = 1, female = 2 so that negative path coefficients mean that females scored lower than males.

* p < .05. ** p < .01.
Table 7.5 and Figure 7.1 demonstrate that the main effects of age and gender, and the interaction effect of age-by-gender are not sizable for students with mild intellectual disability aged 7 to 13 years. The significant relations indicate that as male and female students with mild intellectual disability age from 7 to 13 years they report a significant decrease in physical appearance self-concept. Females aged 7 to 13 years with mild intellectual disability report significantly lower physical ability self-concept than do their male counterparts. There are no other significant main effects of age, gender or age-by-gender upon the self-concepts of students with a mild intellectual disability.

The residual parameters presented in Table 7.5. indicate that the combination of age, gender, and age by gender does not explain the variance within ones’ Parent Relationships self-concept, Reading self-concept, or General-School self-concept. It does, however, explain approximately 8% of variance within the Physical Ability self-concept factor.
Figure 7.1. Significant path coefficients from age, and gender to multiple self-concept dimensions.
Summary

This chapter has presented substantial findings, which advance our understanding of the structure and nature of self-concepts for students with mild intellectual disability. Sophisticated analyses based on confirmatory factor analyses demonstrated that the SDQI-IA is a reliable and psychometrically strong self-concept measurement instrument for this population. The current findings have established the SDQI-IA as a psychometrically sound self-concept measure for use with preadolescents with mild intellectual disability. Importantly, this study resolves the issue of poor quality self-concept measurement instruments for this population, that has plagued previous research.

Results support the distinctiveness of self-concept dimensions for preadolescents with mild intellectual disability thus debunking past conclusions that these students are incapable of differentiating among various facets of self-concept (e.g. Silon & Harter, 1985). These results clearly establish that the self-concept of preadolescents with mild intellectual disability cannot be adequately understood unless the multiple dimensions of the structure of their self-concept is considered. Through the application of structural equation modeling, the results of Study 1 provide new information about the structure of self-concept for males and females with mild intellectual disability as they age from 7 to 13 years, as well as differences in mean levels across gender and age which has previously received little attention.

This chapter details an exciting and unique study which delivers important and previously unknown information about the structure and nature of the self-concept of students with mild intellectual disability. It demonstrates that theory and instrument construction are inextricably entwined. From both a theoretical and practical perspective, the most important finding of Study 1 was the clearly differentiated factor structure of the SDQI-IA for preadolescents with mild intellectual disability and the good psychometric properties obtained for the SDQI-IA with this population. The results presented in this chapter, and their implications for research and practice, will be explored in Chapter 11.
CHAPTER 8
STUDY 2 RESULTS:
A CROSS-SECTIONAL ANALYSIS OF
THE IMPACT OF PLACEMENT UPON THE
SELF-CONCEPTS OF PREADOLESCENTS WITH
MILD INTELLECTUAL DISABILITY

Introduction

The purpose of this chapter is to determine if there is a significant difference in the multiple dimensions of self-concept reported by students with mild intellectual disability placed in regular classes and those placed in IM Support Units. This evaluation will empirically test the competing predictions based on labeling theory and the big fish little pond effect. The results presented in this chapter are based upon the methodology employed in Study 2 in which 211 students with mild intellectual disability were individually administered the SDQI-IA. Participants consisted of females and males aged 7 years 5 months to 13 years placed in either regular classes (n=98) or IM Support Units (n=113) (see Chapter 6 for a detailed description of the methodology for Study 2).

This chapter uses Structural Equation Modeling to evaluate three structural equation path models: a) A path model in which educational placement impacts upon each of the 8 self-concept subscales; b) A path model in which the main effect of the students’ age and gender are partialled out first, and then the impact of educational placement upon each of the 8 self-concept subscales is presented; and c) A path model in which the main effect of the students’ age and gender, as well as the age-by-gender interaction, are partialled out first, and then the impact of educational placement upon each of the 8 self-concept subscales is presented. For a comprehensive description of the statistical techniques applied in this chapter see Chapter 6 (also see results from Chapter 7).
Initial Comparison of Demographic Information Between Students with Mild Intellectual Disability in Regular Classes and IM Support Units

Given that Study 2 utilises a cross-sectional design in which two intact groups are compared on one occasion, the two groups were compared in terms of student characteristics to determine how similar or disparate the groups were before further comparisons were conducted. The student characteristics presented were compiled from the Student Background Information Sheet which was completed by each student’s teacher (see Chapter 6 and Appendix F for a detailed description). Independent Samples t-tests were employed for continuous variables, while Pearson Chi-Square test of significance was employed for categorical variables. The participant characteristics of students with mild intellectual disability placed in regular classes and IM Support Units are presented in Table 8.1.
Table 8.1
Demographic Characteristics of Students with Mild Intellectual Disability in Regular Classes and IM Support Units

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**Note:** Information about assistance required for academic instruction and assistance required for social skills based on 195 participants (86 from regular classes and 109 from IM support units).

Higher scores on both ‘assistance required for academic instruction’ and ‘assistance required for social skills’ indicate a less capable student.

** p<.01   *** P<.001
Table 8.1 illustrates that students with mild intellectual disability placed in regular classes and those in IM Support Units did not significantly differ in terms of male : female ratios, level of support needed with regard to social skills, and the portion of students identified as having an additional disability.

Students with mild intellectual disability in regular classes are significantly younger than students in the IM Support Units (see Table 8.1). This discrepancy is a direct result of current educational policy specifying that students cannot be placed into an IM Support Unit until 8 years of age. Placement in an IM Support Unit may also be seen as an option once a regular class placement has not been successful, thus, delaying entry into an IM Support Unit. Consistent with this pattern, typically students in IM Support Units have been identified as having mild intellectual disability for a longer period than students in regular classes with mild intellectual disability (see Table 8.1). This may be explained by the fact that these students are significantly older than those in regular classes. Lastly, teachers were asked to comment on the amount of assistance required by students in the area of academic instruction. This was scored on a seven-point continuum specifying the type of support required, moving from none to substantial (see Appendix F, Part C). According to teachers’ responses, students with mild intellectual disability placed in IM Support Units required significantly more assistance in accessing the academic curriculum than their counterparts in regular classes. Cave and Madison (1978) argue that in most cases the placement of students in special education settings is not random and thus students with disability in regular classes and special classes are not equivalent. The present sample is probably no exception. However, there is reason to believe that the two groups were similar enough to warrant comparison, and by employing appropriate statistical techniques comparisons can be made. It is not, of course, surprising that students with mild intellectual disability placed in regular classes require less academic assistance than those in IM Support Units – as this is part of the basis for placing students into the two groups. It is, however, important to emphasise that this initial group difference works against the hypothesis that students with mild intellectual disability in regular classes will have poorer academic self-
concepts than students in IM Support Units, thus providing further justification to the hypothesis if supported by the current research.

**Evaluating the Impact of Regular Class Placement versus IM Support Unit Placement upon the Self-Concepts of Preadolescents with Mild Intellectual Disability**

To ascertain whether students with mild intellectual disability in regular classes and IM Support Units differ in terms of the level of self-concepts three models were tested using structural equation modeling in which the path from educational placement to multiple dimensions of self-concept was evaluated. It was predicted that students with mild intellectual disability in IM Support Units would report significantly higher academic self-concepts (i.e. mathematics, reading, general-school) than students with mild intellectual disability in regular classes (Hypothesis 5), but the two groups would report similar nonacademic (i.e. physical ability, physical appearance, peer relationships, parent relationships) self-concepts (Hypothesis 6). The question as to whether the groups would differ significantly in terms of general self-concept was posed as a research question rather than a prediction (Research Question 4).

In the extended models, self-concept factors were related to age, gender, and educational placement. Age, gender and educational placement were all represented as single-item constructs assumed to be measured without error (see Chapter 6).

**Model 1: The Impact of Educational Placement Upon the Self-Concepts of Preadolescents with Mild Intellectual Disability**

The first model investigates the impact of educational placement upon self-concepts. A chi square of 810.72 (df=460) was obtained, with a TLI of 0.896, RNI of 0.920, and RMSEA of 0.0603. The RNI score suggests that the model is a good fit for the data while the TLI and RMSEA fall slightly below and above, respectively, the criteria for a close fit. Factor loadings, path coefficients, uniquenesses, and factor residuals are presented in Table 8.2. Because the factor loadings, uniquenesses and relations among the self-concept factors are essentially the same as those discussed
in Chapter 7, discussion will be focused on the path coefficients representing the effects of placement. Figure 8.1 displays the significant path coefficients pictorially.

As predicted by the big fish little pond effect, students with mild intellectual disability placed in IM Support Units reported significantly higher academic self-concepts than their counterparts in regular classes (thus confirming Hypothesis 5). More specifically, path coefficients reveal that students with mild intellectual disability placed in IM Support Units reported significantly higher reading self-concept, mathematics self-concept, and general-school self-concept than students with mild intellectual disability placed in regular classes.

The hypothesis (Hypothesis 6) that students in the two placement groups would not differ in terms of nonacademic self-concept was supported with the exception of peer relationships self-concept. Results indicate that students with mild intellectual disability placed in IM Support Units reported significantly higher peer relationships self-concept than their counterparts in regular classes, which was not predicted. This result was particularly interesting given that one of the arguments for including students with mild intellectual disability into regular classes has been an assumed enhancement of peer relationships. Similarly, students in IM Support Units reported significantly higher general self-concepts than did students with mild intellectual disability in regular classes (Research Question 4).

Overall, substantial differences in five of the eight self-concepts dimensions were discovered, all favouring students with mild intellectual disability placed in IM Support Units. These results lend support to social comparison theory and the big fish little pond effect, and contradict predictions underlying labeling theory.

The residual parameters presented in Table 8.2. indicate that educational placement explains 7% of the variance observed in the Mathematics self-concept factor and none of the variance in the Physical Appearance and Parent Relationships self-concept factors.
Table 8.2
Path Model of Relations Between Student’s Educational Placement and Multiple Self-Concept Dimensions

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Note. PHYS = Physical ability  APPR = Physical appearance  PEER = Peer relationships  PRNT = Parent relationships  READ = Reading  MATH = Mathematics  SCHL = General-school  GENL = General self-concept  All parameter estimates are presented in completely standardised form (see Byrne, 1998; Joreskog & Sorbom, 1989). The first variable for each factor had a factor loading fixed at 1.0 so that there was no test of statistical significance. This occurred because age, gender, and age x gender came before the self-concept constructs in the SEM. Variances and covariances for the self-concept constructs are residuals after controlling these effects.  
* p < .05. ** p < .01.
Figure 8.1. Significant path coefficients from educational placement to multiple self-concept dimensions (Model 1).
Model 2: The Impact of Educational Placement Upon the Self-Concepts of Preadolescents with Mild Intellectual Disability Beyond the Main Effects of Age and Gender

The second model investigates the impact of educational placement upon self-concepts once the main effects of students’ age and gender have been taken into account. A chi square of 887.29 (df=508) was obtained, with a TLI of 0.899, RNI of 0.913, and RMSEA of 0.0596. The RNI score suggests that the model is a good fit for the data while the RMSEA indicates that the model is a reasonable fit. The TLI falls slightly below the criteria for a close fit. Factor loadings, path coefficients, uniquenesses, and factor residuals are presented in Table 8.3. Figure 8.2 displays the significant path coefficients pictorially.

This analysis provides a stronger evaluation of the impact of educational placement upon self-concept by looking at this effect above and beyond differences that can be explained by age and gender. Students with mild intellectual disability placed in IM Support Units reported significantly higher peer relationships, reading, mathematics, general-school and general self-concept than did their counterparts placed in regular classes. These significant differences between the groups remained, even after the main effects of age and gender are accounted for, thus providing strong support for the differential impact of educational placement upon academic and nonacademic self-concepts (as predicted by Hypothesis 5 and 6). Hypothesis 6, however, did not predict that students with mild intellectual disability in IM Support Units would report a significantly higher peer relationships self-concept than their counterparts in regular classes.

Results also provide information about the impact of age and gender upon the self-concepts of students with mild intellectual disability, as explored in Chapter 7. Results were similar to those presented in Chapter 7, with only one exception. The impact of age upon general-school self-concept only became significant in the current analysis when educational placement was controlled for (as educational placement is significantly related to both age and self-concept). Most importantly, however, the inclusion of added controls for age and gender had no effect on conclusions based on Model 1.
### Table 8.3
Path Model of Relations Between Students’ Age, Gender, Educational Placement and Multiple Self-Concept Dimensions

**Factor loadings**

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Note. PHYS = Physical ability  APPR = Physical appearance PEER = Peer relationships PRNT = Parent relationships READ = Reading  MATH = Mathematics SCHL = General-school GENL = General self-concept EP = Educational Placement. All parameter estimates are presented in completely standardised form (see Byrne, 1998; Joreskog & Sorbom, 1989). The first variable for each factor had a factor loading fixed at 1.0 so that there was no test of statistical significance. This occurred because age, gender, and age x gender came before the self-concept constructs in the SEM. Variances and covariances for the self-concept constructs are residuals after controlling these effects.

* p < .05. ** p < .01.
Figure 8.2. Significant path coefficients from age, gender and educational placement to multiple self-concept dimensions (Model 2).
Model 3: The Impact of Educational Placement Upon the Self-Concepts of Preadolescents with Mild Intellectual Disability Beyond the Main Effects of Age and Gender and the Age-by-Gender Interaction Effect

The final model investigates the impact of educational placement upon the self-concepts of students with mild intellectual disability once the main effects of students’ age and gender, and the interaction effect of age-by-gender have been taken into account. A chi square of 1016.13 (df=604) was obtained, with a TLI of 0.887, RNI of 0.908, and RMSEA of 0.0570. The RNI score suggests that the model is a marginally good fit for the data while the RMSEA indicates that the model is a reasonable fit. The TLI falls slightly below the criteria for a close fit. Factor loadings, path coefficients, uniquenesses, and factor residuals are presented in Table 8.4. Figure 8.3 displays the significant path coefficients pictorially.

Path coefficients provide information about the impact of age and gender upon the self-concepts of students with mild intellectual disability, as explored in Chapter 7. The results of this model with added variables is essentially the same as those presented in the last two models. No significant age-by-gender, age-by-educational placement, or gender-by-educational placement interaction effects were evident. However, a significant three way age-by-gender-by-educational placement effect upon parent relationships self-concept was evident. Further exploration of this three way interaction suggests that as males with mild intellectual disability grow older, those placed in regular classes report a decline in parent relationships self-concept.

The current results demonstrate that even after the main effects and various interaction effects of students’ age, gender and educational placement are accounted for, path coefficients reveal students with mild intellectual disability placed in an IM Support Unit reported significantly higher peer relationships, reading, mathematics, general-school and general self-concept scores than students with mild intellectual disability placed in regular classes. Thus, hypothesis 5 was fully supported. The prediction that there would be no significant difference between the two groups in terms of reported nonacademic self-concept (Hypothesis 6), was only partially supported by the current results. Although there was no significant difference
between the physical ability, physical appearance and parent relationships self-concepts of preadolescents with mild intellectual disability in regular classes and IM Support Units, those in IM Support Units reported significantly higher peer relationships self-concept than did their regular class counterparts. Lastly, research question 4 posed the question as to whether there would be a significant difference in the general self-concept scores reported by the two groups of students. The current results affirm that there is indeed a significant difference, with those in IM Support Units reporting higher general self-concepts and that these effects generalise across students differing in gender and age.
### Table 8.4
Path Model of Relations Between Students’ Age, Gender, Educational Placement, Interaction Effects and Multiple Self-Concept Dimensions

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Note. PHYS = Physical Ability  APPR = Physical Appearance  PEER = Peer Relationships  PRNT = Parent Relationships  READ = Reading  MATH = Mathematics  SCHL = General-School  GENL = General self-concept  EP = Educational Placement

* p < .05.  ** p < .01.
Figure 8.3. Significant path coefficients from age, gender and educational placement main effects and interaction effects to multiple self-concept dimensions (Model 3).
Summary

Current educational policy and procedures are based, in part, upon the assumptions made by labeling theory that inclusion in regular classes will enhance the self-concepts of students with disability. However, the results of Study 2 provide an impressive endorsement of the big fish little pond effect, and contradict labeling theory. Systematically more rigorous testing procedures were applied clearly demonstrating that educational placement has an impact upon self-concepts above and beyond the effects attributable to age and gender. Students with mild intellectual disability placed in IM Support Units report significantly higher peer relationship, mathematics, reading, general-school and general self-concept than students with mild intellectual disability placed in regular classes. The lack of interaction effects show that the placement effects generalise over gender and age, for the ages considered here. Indeed, these results refute the presumed benefits of inclusion advocated by proponents of labeling theory, and have significant policy implications for the worldwide inclusion movement.

These findings highlight that educational placement has a different effect on the academic and nonacademic self-concepts of students with mild intellectual disability. Indeed, it is argued that only a multidimensional measure of self-concept is capable of successfully capturing this differential effect. Measures of general self-concept, which have been prominent in this area of research, are unable to detect differential impacts on specific dimensions of self-concept that underlie the predictions of the competing theories of labeling theory and the big fish little pond effect. As a result, the potency of arguments based on outdated unidimensional models of self-concept in testing these competing theories and the validity of findings emanating from such studies are dubious.

This study has successfully demonstrated the need to intertwine good theory, good measurement, a strong research design, appropriate statistical analysis and application to critical educational policy issues. Study 2 has avoided previous limitations in the literature by: Utilising a multidimensional measure of self-concept with demonstrated sound reliability and construct validity for this population; incorporating a good sample size relative to past research in this field; and
implementing sophisticated statistical analyses to discount the impact of demographic pre-existing variables such as age and gender to fully evaluate the impact of educational placement upon self-concept of students with mild intellectual disability. Building upon the findings of Study 2, Study 3 will utilise a more sophisticated research design by employing a longitudinal study in which a control group is used to further test the hypotheses using methodologically and statistically strong approaches.
CHAPTER 9
STUDY 3 RESULTS:
A LONGITUDINAL ANALYSIS
OF THE IMPACT OF PLACEMENT UPON THE SELF-CONCEPTS, SOCIAL COMPARISONS AND ACADEMIC ACHIEVEMENT OF PREADOLESCENTS WITH MILD INTELLECTUAL DISABILITY

Introduction

The purpose of this chapter is to evaluate the impact of placement in regular classes versus placement in IM Support Units upon the: a) Multiple dimensions of self-concept; b) Social comparison processes; and c) Academic achievement of students with mild intellectual disability. The current study employs a strong longitudinal design to directly test the competing predictions made by labeling theory and the big fish little pond effect.

The results presented in this chapter are based upon the methodology employed in Study 3 in which a cohort of 39 students with mild intellectual disability were individually administered the SDQI-IA, the social comparison rating, the self-smartness rating, and the WRAT3 on three separate occasions over a period of twelve months. Study 3 was a longitudinal study in which Time 1 was at the end of Year 2 when all students were in the same program (Early School Support Program) while enrolled full-time in regular classes. Time 2 was six months later, five academic months into Year 3 when 21 students were enrolled in regular classes and 18 were in IM Support Units. Time 3 occurred at the end of Year 3, when students had been in their respective placements for ten academic months (see Chapter 6 for a detailed description of the methodology for Study 3). This chapter reports the results of data analyses using repeated measures, where time (2 occasions after initial baseline data) and educational placement (2 types – regular class and IM Support Unit) are cast as independent variables and responses gathered at Time 1, prior to
differential educational placement, were used as covariates for the corresponding measure. For a comprehensive description of the statistical techniques applied in this chapter see Chapter 6.

**Initial Comparison of Demographic Information Between Students with Mild Intellectual Disability in Regular Classes and IM Support Units**

The current study employs a strong longitudinal design in which the progress of two groups is monitored over a twelve month period. It was of interest to compare the group of students placed in regular classes and those placed in IM Support Units with regard to demographic information before further comparisons were conducted. The student characteristics were compiled from the Student Background Information Sheet which was completed by each student’s teacher at the commencement of the study (Time 1) (see Chapter 6 and Appendix F for a detailed description). Independent Samples t-tests were employed for continuous variables, while Pearson Chi-Square test of significance was employed for categorical variables. The participant characteristics of these two groups is presented in Table 9.1.
Table 9.1
Demographic Characteristics of Students with Mild Intellectual Disability in Regular Classes and IM Support Units

<table>
<thead>
<tr>
<th></th>
<th>Regular class (n=21)</th>
<th>IM support unit (n=18)</th>
<th>T value</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>8.23</td>
<td>0.41</td>
<td>8.18</td>
<td>0.37</td>
</tr>
<tr>
<td>Years diagnosed</td>
<td>2.02</td>
<td>0.84</td>
<td>1.94</td>
<td>0.81</td>
</tr>
<tr>
<td>Assistance required for academic instruction</td>
<td>3.25</td>
<td>1.24</td>
<td>3.71</td>
<td>1.31</td>
</tr>
<tr>
<td>Assistance required for social skills</td>
<td>2.25</td>
<td>1.44</td>
<td>2.12</td>
<td>1.22</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>n</th>
<th>%</th>
<th>n</th>
<th>%</th>
<th>χ²</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>male</td>
<td>14</td>
<td>67</td>
<td>8</td>
<td>44</td>
<td>1.95</td>
<td>ns</td>
</tr>
<tr>
<td>female</td>
<td>7</td>
<td>33</td>
<td>10</td>
<td>56</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other disability:</th>
<th>n</th>
<th>%</th>
<th>n</th>
<th>%</th>
<th>χ²</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>nil</td>
<td>15</td>
<td>71</td>
<td>16</td>
<td>89</td>
<td>3.02</td>
<td>ns</td>
</tr>
<tr>
<td>language</td>
<td>3</td>
<td>14</td>
<td>2</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>behaviour</td>
<td>2</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>physical</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sensory</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Higher scores on both ‘assistance required for academic instruction’ and ‘assistance required for social skills’ indicate a less capable student.

Table 9.1 demonstrates that students with mild intellectual disability placed in regular classes and those in IM Support Units did not significantly differ in terms of: mean age, mean years since diagnosis, level of support needed for academic instruction and social skills, male:female ratio and the portion of students identified as having an additional disability. Whereas the direction of the difference in academic assistance required was the same as that found in Study 2 for the entire sample of participants (that is, students who subsequently went into IM Support
Units were seen as needing more assistance), the difference here was not statistically significant due in part to the much smaller sample size.

**Evaluating the Impact of Placement in Regular Classes and IM Support Units Upon the Self-Concepts of Students with Mild Intellectual Disability**

It was predicted that, consistent with the big fish little pond effect, at Time 2, students placed in IM Support Units would report significantly higher academic self-concepts than would their counterparts in regular classes, and that this difference would be as large, or larger, at Time 3 (Hypothesis 7). It was predicted that at Time 2 and Time 3 there would be no significant difference between the nonacademic self-concepts reported by students placed in regular classes and those placed in IM Support Units (Hypothesis 8). Research question 7 considered whether the difference in academic self-concept between those placed in IM Support Units and regular classes would be larger at Time 3 than that observed at Time 2. No predictions were made with regard to the level of general self-concept between the two groups at Time 2 and Time 3 (Research Question 5).

To investigate these hypotheses Repeated-Measures Factorial Analyses of Covariance were used to analyse the longitudinal self-concept data gathered. Time 2 and Time 3 data served as repeated criterion measures and Time 1 data as the covariate. Table 9.2 presents the mean and standard deviation of multiple self-concept scores for both groups at Time 1, Time 2, and Time 3. Table 9.3 presents the analysis of difference between the two groups, including the main effect of time, the main effect of educational placement, the main effect of self-concept scale (that is, differences between the multiple dimensions of self-concept), and the corresponding interaction effects.
<table>
<thead>
<tr>
<th>Self-concept subscales</th>
<th>Time 1</th>
<th></th>
<th></th>
<th>Time 2</th>
<th></th>
<th></th>
<th>Time 3</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Regular class</td>
<td>IM support unit</td>
<td>Regular class</td>
<td>IM support unit</td>
<td>Regular class</td>
<td>IM support unit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n=21</td>
<td>n=18</td>
<td>n=21</td>
<td>n=18</td>
<td>n=21</td>
<td>n=18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical ability</td>
<td>M 34.67</td>
<td>SD 3.81</td>
<td>M 31.50</td>
<td>SD 8.19</td>
<td>M 32.52</td>
<td>SD 7.52</td>
<td>M 31.11</td>
<td>SD 6.62</td>
<td></td>
</tr>
<tr>
<td>Physical appearance</td>
<td>M 30.81</td>
<td>SD 7.91</td>
<td>M 33.83</td>
<td>SD 5.26</td>
<td>M 27.48</td>
<td>SD 7.59</td>
<td>M 32.89</td>
<td>SD 2.97</td>
<td></td>
</tr>
<tr>
<td>Peer relationships</td>
<td>M 30.57</td>
<td>SD 8.41</td>
<td>M 29.44</td>
<td>SD 9.29</td>
<td>M 29.38</td>
<td>SD 7.85</td>
<td>M 30.00</td>
<td>SD 6.38</td>
<td></td>
</tr>
<tr>
<td>Parent relationships</td>
<td>M 35.05</td>
<td>SD 5.91</td>
<td>M 35.44</td>
<td>SD 3.62</td>
<td>M 32.90</td>
<td>SD 8.15</td>
<td>M 34.00</td>
<td>SD 3.69</td>
<td></td>
</tr>
<tr>
<td>Reading</td>
<td>M 29.57</td>
<td>SD 8.88</td>
<td>M 30.67</td>
<td>SD 7.78</td>
<td>M 30.48</td>
<td>SD 8.06</td>
<td>M 30.67</td>
<td>SD 7.13</td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>M 23.81</td>
<td>SD 10.96</td>
<td>M 22.28</td>
<td>SD 10.74</td>
<td>M 25.86</td>
<td>SD 9.30</td>
<td>M 26.00</td>
<td>SD 9.00</td>
<td></td>
</tr>
<tr>
<td>General-school</td>
<td>M 28.10</td>
<td>SD 7.66</td>
<td>M 29.61</td>
<td>SD 7.50</td>
<td>M 28.57</td>
<td>SD 8.32</td>
<td>M 28.56</td>
<td>SD 6.04</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>M 30.81</td>
<td>SD 5.62</td>
<td>M 32.78</td>
<td>SD 4.44</td>
<td>M 30.29</td>
<td>SD 5.80</td>
<td>M 31.11</td>
<td>SD 4.55</td>
<td></td>
</tr>
</tbody>
</table>

Note. Maximum score for each SDQI-IA subscale = 40.
Table 9.3
Repeated Measures Analysis for Total Self-Concept Scores by Educational Placement, Scale and Time

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total self-concept score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Between subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>5043.25</td>
<td>1</td>
<td>5043.25</td>
<td>18.25 **</td>
</tr>
<tr>
<td>Educ Placement (EP)</td>
<td>176.10</td>
<td>1</td>
<td>176.10</td>
<td>0.43</td>
</tr>
<tr>
<td>S within-group error</td>
<td>9944.80</td>
<td>36</td>
<td>276.24</td>
<td></td>
</tr>
<tr>
<td><strong>Within subjects effect of ‘scale’</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scale</td>
<td>1626.56</td>
<td>7</td>
<td>232.37</td>
<td>5.40 **</td>
</tr>
<tr>
<td>EP x scale</td>
<td>262.98</td>
<td>7</td>
<td>37.57</td>
<td>0.87</td>
</tr>
<tr>
<td>S within-group error</td>
<td>11096.85</td>
<td>258</td>
<td>43.01</td>
<td></td>
</tr>
<tr>
<td><strong>Within subjects effect of ‘time’</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>0.13</td>
<td>1</td>
<td>0.13</td>
<td>0.00</td>
</tr>
<tr>
<td>EP x time</td>
<td>21.92</td>
<td>1</td>
<td>21.92</td>
<td>0.34</td>
</tr>
<tr>
<td>S within-group error</td>
<td>2356.06</td>
<td>37</td>
<td>63.68</td>
<td></td>
</tr>
<tr>
<td><strong>Within subjects effect of ‘scale by time’</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scale x time</td>
<td>60.47</td>
<td>7</td>
<td>8.64</td>
<td>0.67</td>
</tr>
<tr>
<td>EP x scale x time</td>
<td>263.39</td>
<td>7</td>
<td>37.68</td>
<td>2.94 **</td>
</tr>
<tr>
<td>S within-group error</td>
<td>3314.83</td>
<td>259</td>
<td>12.80</td>
<td></td>
</tr>
</tbody>
</table>

*Note. S = subjects. EP = Educational Placement.  
* p < .05.  ** p < .01.

Table 9.3 shows that for the total self-concept score (that is, the average across all eight self-concept scales) there is no significant main effect of educational placement, or time-by-educational placement interaction effect. However, there is a significant main effect of scale, and a significant educational placement-by-scale-by-time interaction effect. Of central importance to this thesis, the effect of educational placement-by-time varies according to the self-concept scale. To determine the nature of this interaction, separate analyses for the three academic self-concept scales (see Table 9.4), and the four nonacademic self-concept scales (see Table 9.5), and general self-concept (see Table 9.6) were pursued to test a priori predictions.
Table 9.4
Repeated Measures Analysis for Total Academic Self-Concept Score by Educational Placement, Scale and Time

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Between subjects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>2174.68</td>
<td>1</td>
<td>2174.68</td>
<td>10.43 **</td>
</tr>
<tr>
<td>EP</td>
<td>190.72</td>
<td>1</td>
<td>190.72</td>
<td>0.91</td>
</tr>
<tr>
<td>S within-group error</td>
<td>7504.45</td>
<td>36</td>
<td>208.46</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Within subjects effect of ‘scale’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scale</td>
<td>211.32</td>
<td>2</td>
<td>105.66</td>
<td>2.77</td>
</tr>
<tr>
<td>EP x scale</td>
<td>9.77</td>
<td>2</td>
<td>4.89</td>
<td>0.13</td>
</tr>
<tr>
<td>S within-group error</td>
<td>2780.52</td>
<td>73</td>
<td>38.09</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Within subjects effect of ‘time’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>1.75</td>
<td>1</td>
<td>1.75</td>
<td>0.04</td>
</tr>
<tr>
<td>EP x time</td>
<td>200.86</td>
<td>1</td>
<td>200.86</td>
<td>4.94 *</td>
</tr>
<tr>
<td>S within-group error</td>
<td>1503.46</td>
<td>37</td>
<td>40.63</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Within subjects effect of ‘scale by time’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scale x time</td>
<td>36.08</td>
<td>2</td>
<td>18.04</td>
<td>1.29</td>
</tr>
<tr>
<td>EP x scale x time</td>
<td>5.89</td>
<td>2</td>
<td>2.95</td>
<td>0.21</td>
</tr>
<tr>
<td>S within-group error</td>
<td>1032.77</td>
<td>74</td>
<td>13.96</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05.  ** p < .01.

Table 9.4 shows that for total academic self-concept there is no significant main effect of educational placement, time, or scale. However, there is a significant educational placement-by-time interaction effect, suggesting that over time students in the two educational placements differ in terms of total academic self-concept (that is, the average score across the three academic self-concept scales). Table 9.2 indicates that students with mild intellectual disability placed in IM Support Units reported higher academic self-concepts than did their counterparts in regular classes. Furthermore, given that there are no significant interaction effects involving scale, it is evident that this significant difference between placement groups is consistent for all three academic self-concept scales: Reading, Mathematics, and General-School. This finding supports the hypothesis (Hypothesis 7) based upon the predictions of the big fish little pond effect that students with mild intellectual disability placed in IM
Support Units experience higher academic self-concepts than their counterparts in regular classes, and reinforces the results discovered in the previous cross-sectional study (Study 2).

Figure 9.1 shows the adjusted means of total academic self-concept for students with mild intellectual disability placed in regular classes and IM Support Units at Time 2 and Time 3. Means presented in the figure are adjusted for Time 1 responses. Figure 9.1 demonstrates that the difference in academic self-concept does not occur until Time 3, more than five months after being placed in either IM Support Units or regular classes. According to Figure 9.1, this change was a result of the relative increase in academic self-concept for students in IM Support Units, and a relative decrease in academic self-concept for students in regular classes. It was hypothesised that this difference would be evident after five months in their respective classes (Time 2), and be either as large, or larger, after ten months in their respective classes (Time 3) (Hypothesis 7). In response to Research Question 7, it appears that the impact of the big fish little pond effect was gradual because after ten months of differential educational placement, young children with mild intellectual disability exhibited continued self-concept changes.

Figure 9.1. Adjusted means of total academic self-concept for students with mild intellectual disability placed in regular classes or IM support units after five and ten months in their respective placement.
Table 9.5
Repeated Measures Analysis for Total Nonacademic Self-Concept Score by Educational Placement, Scale and Time

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total nonacademic self-concept</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Between subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>2382.51</td>
<td>1</td>
<td>2382.51</td>
<td>16.80 **</td>
</tr>
<tr>
<td>EP</td>
<td>55.45</td>
<td>1</td>
<td>55.45</td>
<td>0.39</td>
</tr>
<tr>
<td>S within-group error</td>
<td>5105.49</td>
<td>36</td>
<td>141.82</td>
<td></td>
</tr>
<tr>
<td><strong>Within subjects effect of ‘scale’</strong></td>
<td></td>
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</tr>
<tr>
<td>Scale</td>
<td>183.28</td>
<td>3</td>
<td>61.09</td>
<td>1.93</td>
</tr>
<tr>
<td>EP x scale</td>
<td>95.80</td>
<td>3</td>
<td>31.93</td>
<td>1.01</td>
</tr>
<tr>
<td>S within-group error</td>
<td>3477.66</td>
<td>110</td>
<td>31.62</td>
<td></td>
</tr>
<tr>
<td><strong>Within subjects effect of ‘time’</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>1.45</td>
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<td>1.45</td>
<td>0.05</td>
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<td>EP x time</td>
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</tr>
<tr>
<td>S within-group error</td>
<td>1147.64</td>
<td>37</td>
<td>31.02</td>
<td></td>
</tr>
<tr>
<td><strong>Within subjects effect of ‘scale by time’</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scale x time</td>
<td>20.03</td>
<td>3</td>
<td>6.68</td>
<td>0.58</td>
</tr>
<tr>
<td>EP x scale x time</td>
<td>36.44</td>
<td>3</td>
<td>12.15</td>
<td>1.06</td>
</tr>
<tr>
<td>S within-group error</td>
<td>1273.98</td>
<td>111</td>
<td>11.48</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05. ** p < .01.

Table 9.5 shows that for nonacademic self-concept there is no significant main effect of educational placement, time, or scale, and no significant interaction effects. This finding supports the hypothesis (Hypothesis 8) based upon the predictions of the big fish little pond effect that nonacademic self-concept is not affected by educational placement. The non-significant main effect of scale demonstrates that this pattern is consistent for all four nonacademic self-concept scales: Physical ability, Physical appearance, Peer relationships and Parent relationships. Figure 9.2 shows the adjusted means of total nonacademic self-concept for students with mild intellectual disability placed in regular classes and IM Support Units at Time 2 and Time 3. Means presented in Figure 9.2 are adjusted for Time 1 responses.
Figure 9.2. Adjusted means of total nonacademic self-concept for students with mild intellectual disability placed in regular classes or IM support units after five and ten months in their respective placement.

It is apparent that while there is no significant difference between the total nonacademic self-concepts of students with mild intellectual disability placed in regular classes and those placed in IM Support Units, the latter group clearly experiences a significantly higher total academic self-concept after being in this setting for ten months. To confirm that the impact of educational placement-by-time is significantly different for total nonacademic and total academic self-concept a further multiple factorial analysis was conducted to directly compare total nonacademic self-concept with total academic self-concept, and is presented in Table 9.6.
Table 9.6
Analysis of Variance for Total Nonacademic Self-concept and Total Academic Self-Concept Scores by Educational Placement, Scale and Time

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total academic self-concept versus total nonacademic self-concept</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘Scale’ within subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>94.01</td>
<td>1</td>
<td>94.01</td>
<td>3.89 *</td>
</tr>
<tr>
<td>Scale</td>
<td>76.56</td>
<td>1</td>
<td>76.56</td>
<td>3.10</td>
</tr>
<tr>
<td>EP by scale</td>
<td>12.09</td>
<td>1</td>
<td>12.09</td>
<td>0.49</td>
</tr>
<tr>
<td>S within-group error</td>
<td>887.67</td>
<td>36</td>
<td>24.66</td>
<td></td>
</tr>
<tr>
<td>‘Time’ within subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>0.01</td>
<td>1</td>
<td>0.01</td>
<td>0.00</td>
</tr>
<tr>
<td>EP x time</td>
<td>12.56</td>
<td>1</td>
<td>12.56</td>
<td>0.74</td>
</tr>
<tr>
<td>S within-group error</td>
<td>624.04</td>
<td>37</td>
<td>16.87</td>
<td></td>
</tr>
<tr>
<td>‘Scale by time’ within subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scale by time</td>
<td>0.93</td>
<td>1</td>
<td>0.93</td>
<td>0.21</td>
</tr>
<tr>
<td>EP by scale by time</td>
<td>64.45</td>
<td>1</td>
<td>64.45</td>
<td>14.54 **</td>
</tr>
<tr>
<td>S within-group error</td>
<td>164.02</td>
<td>37</td>
<td>4.43</td>
<td></td>
</tr>
</tbody>
</table>

Note. S = subjects. EP = Educational Placement.
* p < .05.  ** p < .01.

Table 9.6 confirms that the effect of educational placement-by-time is significantly different for total academic and total nonacademic self-concept. In sum, results presented lend support for the big fish little pond effect in that the total academic self-concept of students with mild intellectual disability placed in IM Support Units is significantly greater than that of their counterparts in regular classes. As predicted there was no significant difference between the two groups on total nonacademic self-concept. Table 9.7 evaluates whether students with mild intellectual disability in regular classes and IM Support Units differ significantly in terms of general self-concept.
Table 9.7
Repeated Measures Analysis for General Self-Concept Score by Educational Placement, Scale and Time

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>General self-concept</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Between subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>123.27</td>
<td>1</td>
<td>123.27</td>
<td>2.24</td>
</tr>
<tr>
<td>EP</td>
<td>7.69</td>
<td>1</td>
<td>7.69</td>
<td>0.14</td>
</tr>
<tr>
<td>S within-group error</td>
<td>1978.53</td>
<td>36</td>
<td>54.96</td>
<td></td>
</tr>
<tr>
<td><strong>Within subjects effect of ‘time’</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>1.29</td>
<td>1</td>
<td>1.29</td>
<td>0.07</td>
</tr>
<tr>
<td>EP x time</td>
<td>1.91</td>
<td>1</td>
<td>1.91</td>
<td>0.10</td>
</tr>
<tr>
<td>S within-group error</td>
<td>713.04</td>
<td>37</td>
<td>19.27</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* S = Subjects. EP = Educational Placement.
* p < .05. ** p < .01.

Table 9.7 reveals that there is no significant main effect of time or educational placement upon general self-concept, and no significant educational placement-by-time interaction effect. The general self-concept of students with mild intellectual disability placed in regular classes and IM Support Units at Time 2 and Time 3 is displayed in Figure 9.3. Means presented in the figure are adjusted for Time 1 responses. Thus, in response to Research Question 5, there is no significant difference between the general self-concept reported by students with mild intellectual disability placed in IM Support Units and students with mild intellectual disability placed in regular classes after five or ten months in their respective placements.
Evaluating the Impact of Placement in Regular Classes Versus IM Support Units Upon the Social Comparison Ratings and Self-Smartness Ratings made by Students with Mild Intellectual Disability

The current study predicted that students with mild intellectual disability placed in regular classes: a) compare themselves with students more able than themselves (Hypothesis 9); and b) rate their academic performance as lower than other students in their class (Hypothesis 10). In contrast, the study also predicted that students with mild intellectual disability placed in IM Support Units: a) compare themselves with students less able than themselves (Hypothesis 9); and b) rate their academic performance as higher than other students in their class (Hypothesis 10). It was predicted that these differences would be present after five months in their respective placements (Time 2) and would be as large, or possibly larger at ten months after placement (Time 3). To test these predictions Repeated-Measures Factorial Analyses of Covariance were employed in which Time 2 and Time 3 data served as repeated criterion measures and Time 1 data as covariates. Table 9.8 presents the means and standard deviations of social comparison and self-smartness
rating scores for both groups at Time 1, Time 2, and Time 3. Table 9.9 presents the analysis of difference between the two groups, including the main effect of time, the main effect of educational placement and the interaction effect of time-by-educational placement.

Table 9.8
Mean and Standard Deviations for Social Comparison Ratings and Self-Smartness Ratings made at Time 1, 2 and 3 by Students with Mild Intellectual Disability Placed in Regular Classes or IM Support Units

<table>
<thead>
<tr>
<th>Item</th>
<th>Time 1</th>
<th></th>
<th>Time 2</th>
<th></th>
<th>Time 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Regular class</td>
<td>IM support unit</td>
<td>Regular class</td>
<td>IM support unit</td>
<td>Regular class</td>
<td>IM support unit</td>
</tr>
<tr>
<td></td>
<td>( n=21 )</td>
<td>( n=18 )</td>
<td>( n=21 )</td>
<td>( n=18 )</td>
<td>( n=21 )</td>
<td>( n=18 )</td>
</tr>
<tr>
<td>Social comparison rating</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td></td>
<td>2.20</td>
<td>0.95</td>
<td>2.44</td>
<td>0.89</td>
<td>2.19</td>
<td>0.87</td>
</tr>
<tr>
<td>Relative self-smartness rating</td>
<td>3.85</td>
<td>1.18</td>
<td>3.80</td>
<td>1.08</td>
<td>3.62</td>
<td>1.16</td>
</tr>
</tbody>
</table>

Note. Maximum score for social comparison rating = 3. Higher scores indicate that students are comparing their abilities with students more able than themselves. Maximum score for relative self-smartness rating = 5. Higher scores indicate that students are rating themselves more able than other students in their class.
Table 9.9

Multiple Analysis of Variance for Time by Educational Placement for Social Comparison Rating and Self-Smartness Rating

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social comparison rating</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>0.24</td>
<td>1</td>
<td>0.24</td>
<td>0.30</td>
</tr>
<tr>
<td>EP</td>
<td>4.84</td>
<td>1</td>
<td>4.84</td>
<td>6.13 *</td>
</tr>
<tr>
<td>S within-group error</td>
<td>24.47</td>
<td>31</td>
<td>0.79</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>0.24</td>
<td>1</td>
<td>0.24</td>
<td>0.43</td>
</tr>
<tr>
<td>EP x time</td>
<td>4.48</td>
<td>1</td>
<td>4.48</td>
<td>7.96 **</td>
</tr>
<tr>
<td>S within-group error</td>
<td>18.01</td>
<td>32</td>
<td>0.56</td>
<td></td>
</tr>
<tr>
<td><strong>Self-smartness rating</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>15.16</td>
<td>1</td>
<td>15.16</td>
<td>6.88 *</td>
</tr>
<tr>
<td>EP</td>
<td>10.77</td>
<td>1</td>
<td>10.77</td>
<td>4.89 *</td>
</tr>
<tr>
<td>S within-group error</td>
<td>66.12</td>
<td>30</td>
<td>2.20</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>0.77</td>
<td>1</td>
<td>0.77</td>
<td>0.85</td>
</tr>
<tr>
<td>EP x time</td>
<td>4.41</td>
<td>1</td>
<td>4.41</td>
<td>4.83 *</td>
</tr>
<tr>
<td>S within-group error</td>
<td>28.26</td>
<td>31</td>
<td>0.91</td>
<td></td>
</tr>
</tbody>
</table>

Note. S = subjects. EP = Educational Placement.
* p < .05. ** p < .01.

Results presented in Table 9.9 suggest that when Time 1 responses were used as a covariate there was a significant interaction effect of time-by-educational placement with regard to the level of ability of the student they chose to compare themselves with (that is, social comparison rating). Further evaluation of this interaction effect (see Figure 9.4) revealed that at Time 3 (10 months after placement) students in IM Support Units were more likely to choose a person ‘not as good as them’, while students with mild intellectual disability in regular classes were
more likely to compare themselves with a student ‘better than them’. This self-reported difference indeed reflects reality, as the plausibility of students with mild intellectual disability in regular classes choosing a student more able than themselves was substantially lower than students with mild intellectual disability in IM Support Units. Although Hypothesis 9 was generally supported, it was hypothesised that this difference would be evident at Time 2 and as larger or larger at Time 3. As found with the academic self-concept responses, it appears that social comparison processes only become apparent ten months after placement for young children with mild intellectual disability. This finding lends support to the contention that the impact of the big fish little pond effect is gradual.

Figure 9.4. Adjusted means of social comparison ratings for students with mild intellectual disability placed in regular classes or IM Support Units after five and ten months in their respective placement.

Students were asked to rate their smartness relative to their classmates on all three testing occasions (relative self-smartness, see Table 9.9). Results suggest that there was a significant time-by-educational placement interaction effect. Further evaluation of responses (see Figure 9.5) revealed that after ten months (Time 3) of being in their respective classes, students with mild intellectual disability in IM Support Units rated their ability higher relative to classmates than did students with mild intellectual disability in regular classes. Once again, although Hypothesis 10 was generally supported it was predicted that this difference would occur after five months in their respective placements, instead it took ten months for this difference to emerge.
Results provide insight into the social comparison processes and relative self-smartness ratings occurring, which may lead to the observed difference in levels of academic self-concept between students with mild intellectual disability in regular classes and IM Support Units. It is apparent, however, that the impact of the big fish little pond effect is not witnessed until more than five months after placement for young children with mild intellectual disability.

**Evaluating the Impact of Placement in Regular Classes and IM Support Units Upon the Academic Achievement of Students with Mild Intellectual Disability**

Prior research evaluating the impact of educational placement upon the academic achievement of students with mild intellectual disability has provided little consensus. Given the equivocal findings in this area, the following research question was posed: Is there a significant difference between the academic achievement of students with mild intellectual disability placed in regular classes and those placed in IM Support Units after five months (Time 2) and ten months (Time 3) in their respective placements? (Research Question 6). To investigate this question Repeated-Measures Factorial Analyses of Covariance were used to analyse the longitudinal academic achievement data collected. Time 2 and 3 data served as repeated criterion measures and Time 1 data as the covariate. Table 9.10 presents the mean and standard deviation of academic achievement scores for both groups at
Time 1, Time 2, and Time 3. Table 9.11 presents the analysis of difference between the two groups for the main effect of time, the main effect of educational placement and the interaction effect of time-by-educational placement.
Table 9.10
Mean and Standard Deviations for Reading, Mathematics, Spelling and Averaged Academic Achievement of Students with Mild Intellectual Disability in Regular Classes and IM Support Units at Time 1, 2 and 3

<table>
<thead>
<tr>
<th>Achievement subscales</th>
<th>Time 1</th>
<th></th>
<th>Time 2</th>
<th></th>
<th>Time 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Regular class n=21</td>
<td>IM support unit n=18</td>
<td>Regular class n=21</td>
<td>IM support unit n=18</td>
<td>Regular class n=21</td>
<td>IM support unit n=18</td>
</tr>
<tr>
<td>Reading</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td></td>
<td>84.29</td>
<td>11.64</td>
<td>68.44</td>
<td>13.08</td>
<td>85.67</td>
<td>10.20</td>
</tr>
<tr>
<td>Mathematics</td>
<td>77.33</td>
<td>10.00</td>
<td>66.33</td>
<td>13.88</td>
<td>77.86</td>
<td>10.07</td>
</tr>
<tr>
<td>Spelling</td>
<td>88.10</td>
<td>10.32</td>
<td>79.17</td>
<td>10.18</td>
<td>86.24</td>
<td>9.51</td>
</tr>
<tr>
<td>Average</td>
<td>83.24</td>
<td>8.31</td>
<td>71.32</td>
<td>11.06</td>
<td>83.26</td>
<td>8.29</td>
</tr>
</tbody>
</table>

Note. Mean scores reported are standard score which have a mean of 100 and a S.D. of 15 (based on test score normative data).
Table 9.11
Multiple Analysis of Variance for Time by Educational Placement for Reading, Mathematics, Spelling and Averaged Academic Achievement

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading achievement</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>4926.73</td>
<td>1</td>
<td>4926.73</td>
<td>71.39 **</td>
</tr>
<tr>
<td>EP</td>
<td>41.10</td>
<td>1</td>
<td>41.10</td>
<td>0.50</td>
</tr>
<tr>
<td>S within-group error</td>
<td>2484.40</td>
<td>36</td>
<td>69.01</td>
<td></td>
</tr>
<tr>
<td><strong>Within subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>0.08</td>
<td>1</td>
<td>0.08</td>
<td>0.01</td>
</tr>
<tr>
<td>EP x time</td>
<td>4.69</td>
<td>1</td>
<td>4.69</td>
<td>0.32</td>
</tr>
<tr>
<td>S within-group error</td>
<td>536.79</td>
<td>37</td>
<td>14.51</td>
<td></td>
</tr>
<tr>
<td><strong>Mathematics achievement</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>4988.10</td>
<td>1</td>
<td>4988.10</td>
<td>54.61 **</td>
</tr>
<tr>
<td>EP</td>
<td>805.94</td>
<td>1</td>
<td>805.94</td>
<td>8.82 **</td>
</tr>
<tr>
<td>S within-group error</td>
<td>3288.04</td>
<td>36</td>
<td>91.33</td>
<td></td>
</tr>
<tr>
<td><strong>Within subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>17.44</td>
<td>1</td>
<td>17.44</td>
<td>0.63</td>
</tr>
<tr>
<td>EP x time</td>
<td>77.23</td>
<td>1</td>
<td>77.23</td>
<td>2.80</td>
</tr>
<tr>
<td>S within-group error</td>
<td>1019.95</td>
<td>37</td>
<td>27.57</td>
<td></td>
</tr>
<tr>
<td><strong>Spelling achievement</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>4720.71</td>
<td>1</td>
<td>4720.71</td>
<td>67.97 **</td>
</tr>
<tr>
<td>EP</td>
<td>0.41</td>
<td>1</td>
<td>0.41</td>
<td>0.01</td>
</tr>
<tr>
<td>S within-group error</td>
<td>2500.44</td>
<td>36</td>
<td>69.46</td>
<td></td>
</tr>
<tr>
<td><strong>Within subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>37.61</td>
<td>1</td>
<td>37.61</td>
<td>3.93</td>
</tr>
<tr>
<td>EP x time</td>
<td>15.45</td>
<td>1</td>
<td>15.45</td>
<td>1.61</td>
</tr>
<tr>
<td>S within-group error</td>
<td>354.39</td>
<td>37</td>
<td>9.58</td>
<td></td>
</tr>
<tr>
<td><strong>Average achievement</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>3758.19</td>
<td>1</td>
<td>3758.19</td>
<td>84.27 **</td>
</tr>
<tr>
<td>EP</td>
<td>83.52</td>
<td>1</td>
<td>83.52</td>
<td>1.87</td>
</tr>
<tr>
<td>S within-group error</td>
<td>1605.41</td>
<td>36</td>
<td>44.59</td>
<td></td>
</tr>
<tr>
<td><strong>Within subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>12.44</td>
<td>1</td>
<td>12.44</td>
<td>1.69</td>
</tr>
<tr>
<td>EP x time</td>
<td>5.50</td>
<td>1</td>
<td>5.50</td>
<td>0.75</td>
</tr>
<tr>
<td>S within-group error</td>
<td>272.68</td>
<td>37</td>
<td>7.37</td>
<td></td>
</tr>
</tbody>
</table>

Note. S = subjects. EP = Educational Placement.
* p < .05. ** p < .01.
Table 9.10 shows that there were pre-existing differences between the two groups with students with mild intellectual disability placed in regular classes consistently performing better on academic achievement measures prior to entering their differential classes (Time 1). Independent samples t-tests revealed that at Time 1 students with mild intellectual disability in regular classes performed significantly better in mathematics \(t\) (df=37) = -2.87, \(p < .01\), reading \(t\) (df=37) = -4.00, \(p < .01\), spelling \(t\) (df=37) = –4.00, \(p < .01\) and average academic achievement \(t\) (df=37) = -3.84, \(p < .01\) than their counterparts who were later placed in IM Support Units. These differences were expected as students referred for placement in IM Support Units are usually not coping with the academic work as well as students with mild intellectual disability remaining in regular classes. In an attempt to control for this initial difference, Time 1 achievement scores were used as covariates for the repeated measures analysis of covariance.

Table 9.11 demonstrates that there was a significant main effect of educational placement for mathematics achievement, suggesting that students with mild intellectual disability in regular classes performed better in mathematics on each occasion of testing than did those in IM Support Units (see Table 9.10 for means and standard deviations). There were no other main effects of educational placement or time, and no significant educational placement-by-time interaction effects for academic achievement. In sum, results indicate that the educational placement of students with mild intellectual disability in either regular classes or IM Support Unit over a period of ten months does not have a significant impact upon their overall academic achievement, but those in regular classes achieved significantly better than those in IM Support Units in mathematics - even after initial differences at Time 1 were controlled for using covariate analysis.

**Summary**

The current chapter has provided a comprehensive evaluation of the impact of placement in regular classes or IM Support Units for students with mild intellectual disability upon self-concepts, social comparison processes and academic achievement. A strong longitudinal design was employed in which the impact of educational placement on self-concepts, social comparisons, and academic achievement was
evaluated for a cohort of 39 students as they moved from being in the same educational placement into two different placements (regular classes and IM Support Units) over a twelve month period. Students were tested on three occasions; prior to placement, and then five months and ten months after being placed in either regular classes or IM Support Units. A multidimensional measure of self-concept with demonstrated reliability and validity for this population was utilised. Sophisticated statistical analyses were used to evaluate responses in which Time 1 responses were used as covariates.

The self-concept results clearly lend support to the predictions based on the big fish little pond effect - and consequently contradict labeling theory. The nonacademic and general self-concepts of students with mild intellectual disability did not significantly differ according to educational placement. Students with mild intellectual disability in IM Support Units, however, reported significantly higher academic self-concepts than did students with mild intellectual disability in regular classes. Consistent with this difference in self-concept is the finding that students with mild intellectual disability in IM Support Units reported that they compare themselves with students who are less able than themselves, and rate themselves as more able in their class. This study successfully showed the differential impact upon academic and nonacademic facets of self-concept and directly measured the underlying social comparison processes taking place, rather than simply inferring them, as past research has done.

Findings are consistent with predictions of the big fish little pond effect, however, an interesting finding was that for young children with mild intellectual disability, it took more than five months for differences in academic self-concept and social comparison processes to become apparent. Although the length of time required until this process became observable was longer than expected, results for the self-concept and social comparison measures are internally consistent and thus persuasive. These findings suggest that the impact of the big fish little pond effect is indeed a gradual process with changes in self-concept occurring at Time 3 that are consistent with the predictions of the big fish little pond effect.

Students with mild intellectual disability placed in regular classes performed significantly better in terms of mathematics achievement than did their counterparts in
IM Support Units, even after controlling for initial differences. The reading, spelling and averaged academic achievement of students with mild intellectual disability in IM Support Units and regular classes, however, did not vary as a function of time. Prior to placement, students who were subsequently placed into IM Support Units scored significantly lower than students who were placed in regular classes on all academic achievement tests (reading, mathematics, spelling). These results are not surprising as a common reason for placing students in IM Support Units is that they are not coping with the academic demands of the regular class.
CHAPTER 10
STIGMATISATION AND PREFERRED EDUCATIONAL PLACEMENT REPORTED BY STUDENTS WITH MILD INTELLECTUAL DISABILITY - A QUALITATIVE ANALYSIS

Introduction

The following chapter presents a qualitative investigation of the inclusion of students with mild intellectual disabilities – as reported by the students themselves. Past research investigating the merits of inclusion has typically involved all key stakeholders in this discussion, except for the most important stakeholders - the students themselves. This chapter collected qualitative data from eight students with mild intellectual disability in both regular classes (n=4) and IM Support Units (n=4) in an attempt to give a voice to these students and explore their experience and preference for educational placement (see Chapter 6 for a detailed description of the methodology for Study 3).

Qualitative Research

There has been in recent years, growing recognition that quantitative and qualitative research methods can complement each other in ways that both consolidate findings and shed light upon issues that were previously seen to be best addressed by one and not the other. Increasingly, quantitative researchers seem dissatisfied with purely quantitative results and are turning toward qualitative analyses to provide a comprehensive research approach (Strauss & Corbin, 1994). Whilst the emphasis of the present study is on the quantitative data, it is proposed that a qualitative approach can enrich the findings identified through quantitative analyses by allowing students to raise issues that are not dictated by the structure and content of a likert-type, quantitative approach. As such qualitative data was gathered to illuminate key quantitative findings and extend the integrity of the quantitative findings.
Method

Eight students (4 placed in regular classes, and 4 placed in IM Support Units) were randomly selected to partake in a semi-structured interview at Time 3. This number (representing 20% of the sample) was selected as it was manageable, yet ample enough to provide a range of perspectives. Responses obtained from participants were relatively limited as it is difficult to elicit complex answers from children so young, especially those with mild intellectual disability. Despite the relative brevity of the interviews, the data were indeed illuminating, and addressed some of the substantive issues of the research. The aim of the interview data was to: Provide a verbal commentary on the experience of stigmatisation, as reported by students with mild intellectual disability; ascertain whether this experience differs for students placed in regular classes and those placed in IM Support Units (Research Question 7); and identify students’ preferred educational placement (Research Question 8).

Thematic analyses coupled with ‘expert checking’ were employed to generate agreed upon themes (Strauss & Corbin, 1990) (see Chapter 6). Table 10.1 provides a synthesis of identified themes and compares the responses of students with mild intellectual disability placed in IM Support Units with their counterparts placed in regular classes. Each statement was coded either as positive (reflecting a positive statement about themselves or their educational placement), negative (reflecting a negative statement about themselves or their educational placement), or as neutral – essentially factual comments (neither a positive or negative statement). The number in parentheses reflects the number of comments made in that particular category. For example, in terms of Peer Relationships, among the eight students interviewed ten comments were made around this theme: four reflecting positive relationships with class mates, three reflecting negative relationships with class mates, and three reflecting negative relationships with students in other classes.

Following Table 10.1 the comments made by respondents are listed under a set of themes derived from the qualitative data. This was created through ‘pattern
coding’, which is a means of grouping information into a small number of sets of themes or constructs (Miles & Huberman, 1994).
**Results**

Table 10.1
Response Themes Occurring in Interviews and their Prevalence by Educational Placement

<table>
<thead>
<tr>
<th>Broad themes</th>
<th>IM support unit</th>
<th>Regular class</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average total academic self-concept score at time of interview</strong>&lt;sup&gt;1&lt;/sup&gt; (Time 3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Being different to other students</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- No difference (neutral)</td>
<td>† (0)</td>
<td>† (0)</td>
</tr>
<tr>
<td>- Difference based on characteristics other than learning needs (neutral)</td>
<td>† (0)</td>
<td></td>
</tr>
<tr>
<td>- Difference, because of greater learning needs (negative score)</td>
<td>† † † (-3)</td>
<td>† † (-2)</td>
</tr>
<tr>
<td><strong>Peer relationships</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- positive peer relationships with class mates (positive score)</td>
<td>† † † † (4)</td>
<td></td>
</tr>
<tr>
<td>- negative peer relationships with class mates (negative score)</td>
<td></td>
<td>† † † (-3)</td>
</tr>
<tr>
<td>- teasing received from students in other classes (negative score)</td>
<td>† † † (−3)</td>
<td></td>
</tr>
</tbody>
</table>

<sup>1</sup> This score was based on the quantitative data produced from the SDQI-IA, as summarised in Chapter 9.
Table 10.1 continued…

<table>
<thead>
<tr>
<th>Broad themes</th>
<th>IM support unit</th>
<th>Regular class</th>
</tr>
</thead>
<tbody>
<tr>
<td>My class being different to other classes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- No difference (neutral)</td>
<td>✰ ✰ (0)</td>
<td>✰ ✰ (0)</td>
</tr>
<tr>
<td>- Different because it is a small class (neutral)</td>
<td>✰ (0)</td>
<td></td>
</tr>
<tr>
<td>- Different because we get to do good things (positive)</td>
<td>✰ ✰ ✰ (3)</td>
<td></td>
</tr>
<tr>
<td>- Have trouble learning (negative)</td>
<td>✰ ✰ ✰ (-3)</td>
<td></td>
</tr>
<tr>
<td>- Difference, not based on academic reasons (neutral)</td>
<td>✰ ✰ (0)</td>
<td></td>
</tr>
<tr>
<td>Preference for Educational Placement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Being in an IM Support Unit helps me learn</td>
<td>✰ ✰ ✰ ✰ ✰ ✰ ✰ ✰ (8)</td>
<td></td>
</tr>
<tr>
<td>- People tease me for being in an IM Support Unit</td>
<td>✰ (-1)</td>
<td></td>
</tr>
<tr>
<td>- You get to learn good things in a regular class</td>
<td>✰ (1)</td>
<td></td>
</tr>
<tr>
<td>- Being in a regular class makes me feel dumb and sad</td>
<td>✰ (-1)</td>
<td></td>
</tr>
<tr>
<td>Total number of positive aspects of this educational placement</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>Total number of negative aspects of this educational placement</td>
<td>13</td>
<td>6</td>
</tr>
</tbody>
</table>

*Note.* The number in brackets indicates the number of students making this response, while the sign indicates the negative or positive nature of responses. A zero score indicates that this response was coded as a neutral comment.
**Broad Themes**

**Being different to other students.** The majority of students demonstrated an awareness of being different to other students because of their special learning needs. Five of the eight students identified that they were different because of their poor learning skills and their need for more help with school work than other students (2 in regular classes and 3 in IM Support Units). The following quotes are characteristic of these comments, which were coded as ‘negative’:

I’m different. I’m different because some people get their work right, and I can get it wrong. We are different people. I’ve got a different brain (Alex, regular class).

Different because sometimes in some maths I might do some wrong when other kids do some all right (Lee, IM Support Unit).

Sometimes I’m not very good at reading and that. I do things different. They do different work. I do easier work cause they can do the work. Sometimes I can do it (Bradley, IM Support Unit).

Different, I need help when there is hard things at school (Sarah, IM Support Unit).

I’m not like the other kids. I find it hard to do work at school in class and that (Clair, regular class).

Two students reported that they were no different to other students (1 in a regular class and 1 in an IM Support Unit), while the remaining student explained he was different because of reasons other than his special learning needs: “Some kids have different clothes on and they probably have a soccer ball and I haven’t” (Mohamed, regular class) (coded as neutral).

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4 Fictitious names were used to ensure the confidentiality of participants.
The students’ comments suggest a level of comprehension and understanding of the ways in which they are ‘different’ from other students regardless of their educational placement. Whilst the majority of students were aware that their special learning needs made them different from others, this was not always the case.

**Peer relationships.** Interestingly, both students in regular classes and IM Support Units experienced a similar amount of negative peer relationships, however, the students they experienced difficulties with originated from different educational placements. Students in regular classes reported negative interactions with students within their own class, while students in IM Support Units reported negative interactions with students from other classes. Students in regular classes appeared to be neglected, or worse, by their peers within their own class, whereas those in IM Support Units were actively rejected through teasing by students from different classes. It appears that students with mild intellectual disability in IM Support Units had their own class as a safe haven but were ridiculed by students in other classes (e.g. at recess). The students with mild intellectual disability in regular classes, on the other hand, did not feel really accepted in any school context. This finding was supported by the quantitative peer relationships self-concept scores gathered through the SDQI-IA.

The following quotes are characteristic of the comments made by students in IM Support Units about being teased by students in regular classes because of their placement, coded as ‘negative’ comments:

I wish I was in a class with more kids so I don’t get teased. It makes me feel sad. If I was in an integration class you would be mixed with a big class and you wouldn’t have to you know go out in a small class. This boy, his name is Ryan, and he says “You’re in a Special Ed class” and he teases me cause I’m in Special Ed (Candice, IM Support Unit).

Some kids tease me, they reckon I’m in the dumbest class. It makes me sad. I hate saying I come from 3/6 K cause the others tease me (Bradley, IM Support Unit).
I like being in a special class, but out in the playground it would be embarrassing - everybody knows it’s a small class (Alex, IM Support Unit).

The following quotes are characteristic of the comments made by students in regular classes about being neglected by students in regular classes because of their placement, coded as ‘negative’ comments:

I don’t fight with anyone or nothing, but like no-one in here talks to me in the playground (Veu, regular class).

There are three boys in my class who call me dumb and won’t sit next to me, but I tell the teacher and I stay next to the teacher (Mohamed, regular class).

I play with my sister at lunch. She is in Year 5. I don’t play with Samantha (a girl in her class) and them, they tell me not to (Clair, regular class).

Students with mild intellectual disability placed in IM Support Units reported being more rejected by peers who were from other classes, while their counterparts reported being more neglected by peers in their class. Therefore, it could be argued that the regular class is a better educational environment to facilitate the peer relationships of students with mild intellectual disability. However, it is important to consider that students in IM Support Units also reported positive peer relationships within their class that their counterparts in regular classes did not. These positive peer relationships may serve as a buffer to counteract the rejection received from other students outside of their classroom context. Whilst further research is required to establish the generalisability of this analysis, the findings suggest that inclusion is not achieving the social outcomes the policy was designed to achieve.

The following quotes are characteristic of the comments made by students in IM Support Units about their positive peer relationships within their class:

People that be my friends are in the special class (Bradley, IM Support Unit).
I have more friends in this class cause all the time they want to be my friend - other kids in this class (Lee, IM Support Unit).

I like being in this class because there is more people my friends (Sarah, IM Support Unit).
My friends in this class don’t tease me (Candice, IM Support Unit).

**My class being different to other classes.** It was on this theme that students with mild intellectual disability placed in regular classes and IM Support Units appeared to differ most. Of the four students in regular classes, two reported that their class was no different to other classes and two reported that their class was different to other classes because of factual reasons not founded on differing learning needs [for example, “Miss Kemp is my teacher and others have other teachers” (Veu, regular class) coded as neutral].

In contrast, all four students with mild intellectual disability placed in IM Support Units interviewed believed that their class was different to other classes. All respondents identified the unique features of the IM Support Unit as reasons for this difference, however, these differences were perceived as positive, negative and neutral. Students’ comments comprised three distinct themes.

The following quotes are characteristic of the comments made by students in IM Support Units about their class being a small class, coded as ‘neutral’ comments because they were presented as factual information without associated emotion:

Because we’ve got a small class. There is 11 people and normally there is 21 in other classes (Candice, IM Support Unit).

Sometimes its different cause it has small people in my class, not many people. Cause ours is a special class (Bradley, IM Support Unit).

The following quotes are characteristic of the comments made by students in IM Support Units stating that in their class you get to do good things, coded as
‘positive’ comments. These quotes also present an awareness that the curriculum in regular classes is more rigorous than in IM Support Units.

Our class is different to other classes. Other classes do harder work and we do easy work (Sarah, IM Support Unit).

It means special to people and we go out to Christmas things and we get presents cause we are special kids (Candice, IM Support Unit).

Cause sometimes we do things different. Like we do sport and other classes are still working (Lee, IM Support Unit).

The following quotes are characteristic of the comments made by students in IM Support Units stating that being in this class means you have trouble learning, coded as ‘negative’ comments:

It means you’re like a dumb class (Lee, IM Support Unit).

It’s the third lowest class. It’s a dumb class I reckon (Candice, IM Support Unit).

They think our class is different. Other classes are smarter (Bradley, IM Support Unit).

Preference for educational placement. Interviews with students with mild intellectual disability in regular classes did not reveal preference for educational placement. This may be directly related to the fact that they did not perceive any substantive difference between their class and others. For example, Veu (regular class) simply stated that;

“I like being in this class cause you get to learn things like maths and that”.

In a powerful declaration, which embodies the premise of the big fish little pond effect, Clair (regular class) commented that;
I want to be in a different class. It has too many people learning and I don’t. It makes me feel sad.

Students in IM Support Units, however, verbalised quite clearly their opinion on being placed in IM Support Units. These comments incorporated both positive and negative aspects of this placement. They perceived this placement as beneficial for learning, but expressed concern over the teasing they received as a result of this same placement.

The following quotes are characteristic of the comments made by students in IM Support Units stating that being in this class is beneficial for learning, coded as ‘positive’ comments:

Sometimes they (students in this class) are not real good at learning – spelling reading and maths. To help them learn more and they help to spell the words out for them and that (Bradley, IM Support Unit).

It’s an IM class. It helps me. The people here need help. Because I can’t do the other classes work. It’s too hard (Lee, IM Support Unit).

I am smarter now because I got help in this class (Sarah, IM Support Unit).

Cause I’m a slow learner, but I’m smarter now cause I’m in a small class and they help me learn (Candice, IM Support Unit).

I like being in this class cause it’s easy. It helps me. Cause we do easy things. Special class cause it helps me learn (Bradley, IM Support Unit).

I always want to be in the IM class. I don’t want to move. It helps me learn (Sarah, IM Support Unit).

I’d rather be in a small class cause then the teacher can learn more and they concentrate on me then if there is 22 and the teacher can do more stuff with
us. I am happy here. I do pretty good work in here than the other class. I can do good work here and not in the other class. I can do better work in this class than the other class. I probably can’t do spelling good in their class (Lee, IM Support Unit).

The following comment, by Candice (IM Support Unit), depicts the conflict experienced in terms of her most favoured educational placement. That is, she experiences teasing as a result of her placement in an IM Support Unit, coded as ‘negative’, but believes that she needs to be in the IM Support Unit to increase her learning, coded as ‘positive’.

I don’t really mind being in this class cause I’ve got my best friend and I’m not the only one who gets teased, but I would like to be in another class. But when you go to a different class you would think back and wish you were in a small class again where it is easy for you. But when people tease you, you want to be in a bigger class.

**Implications for the Big Fish Little Pond Effect and Labeling Theory**

The qualitative comments further contribute to debate surrounding the competing predictions of labeling theory and the big fish little pond effect. Consistent with the predictions of labeling theory, students with mild intellectual disability placed in IM Support Units reported: Feeling different to other students because of their different learning needs; feeling that their class was different to other classes because they had trouble learning; and experiencing more teasing from students in other classes, than did their counterparts in regular classes. Indeed, labeling theory has used some of these arguments to oppose segregated educational environments for students with disabilities. However, students with mild intellectual disability placed in IM Support Units also reported: that their class was different to other classes for positive reasons (for example, students get to do good things); more positive peer relationships with students in their class; and that they preferred being in an IM Support Unit as it helped them to learn. These latter findings, together with the quantitative findings, lend support to the big fish little pond effect which proposes that students with mild intellectual disability placed in IM Support Units would evaluate
their academic competency more favourably than those placed in regular classes with more able students.

Summary

This chapter has presented some interesting and informative data in the form of qualitative comments from a subsample of eight students with mild intellectual disability, four of whom were placed in regular classes and four of whom were placed in IM Support Units. Clearly, some comments lend support to the underlying premise of labeling theory that being allocated to an IM Support Unit, for example, increases students’ feelings of being different to other students. However, consistent with the big fish little pond effect, students in IM Support Units noted that the benefits of this placement, for example; feeling smarter within this classroom context; being able to do the work, and having more positive peer relationships may outweigh the impact of segregation.

The current findings have indeed ‘given a voice’ to the students at the centre of the inclusion debate. The current chapter provides strong evidence of the value of intertwining quantitative and qualitative research methods in order to explore issues more thoroughly. These findings, coupled with the findings of the previous quantitative studies provide consistent support for big fish little pond effect and challenge current practices which place students with mild intellectual disability in regular classes with their peers without disability.
CHAPTER 11
DISCUSSION AND IMPLICATIONS FOR FURTHER RESEARCH AND EDUCATIONAL PRACTICE

Introduction

The present study has been centrally concerned with: a) Evaluating whether responses to the SDQI-IA have sound reliability and construct validity when used to measure the self-concepts of students aged 7 to 13 years with mild intellectual disability; b) identifying the structure and nature of multidimensional facets of self-concepts of male and female students aged 7 to 13 years diagnosed with mild intellectual disability; and c) evaluating the impact of educational placement in either regular classes or IM Support Units upon the self-concepts, social comparison processes, academic achievement and stigma of preadolescents with mild intellectual disability. The intent of this chapter is to discuss the key findings of this investigation in relation to these main objectives and previous knowledge and research. Directions for future research, energized by the current research, are discussed. The significance of the current research is highlighted with a discussion of the strengths of the research and the interpretation of the findings is placed in context by considering the limitations of the current research. Finally, the implications of these findings for future research, theory and educational practice are summarised.

Discussion of Findings

The current study has attempted to address some pivotal questions in the theoretical, research and educational arena of interest. In this section findings and plausible interpretations are explored. In addition, the significance of the findings for theory, research and practice are discussed.
A central finding of the study was clear support for the use of the individually administered SDQI-IA with preadolescents with mild intellectual disability to measure their multifaceted self-concept. Given the critical void in self-concept measurement tools for this population (Byrne, 1996), this finding makes a substantial contribution to the field of research. Demonstration of the sound psychometric properties of the SDQI-IA also ensures that researchers can confidently utilise this instrument to advance research with this population. The development of appropriate measurement instrument of self-concept with this special population represents an important breakthrough in our ability to appropriately evaluate theoretical predictions and inform practice. Theory, measurement, research, and practice are inexorably intertwined such that failure in one area will undermine the others – as seen to be evident from the poor quality of self-concept measurement in special education research. Without suitable instruments, there is little basis for good research to test and refine theory and to inform practice. Now that a suitable self-concept measurement tool has been identified for preadolescents with mild intellectual disability, it is envisaged that there will be a surge in self-concept theory, research and practice. Teachers and practitioners can confidently utilise this instrument to measure students’ self-concepts and as a basis for evaluating self-concept enhancement interventions and the value of particular educational placements with this population.

Results of the present investigation provided stronger support for the construct validity of self-concept responses than those based on other instruments administered to preadolescents with mild intellectual disability (e.g. Silon & Harter). This success may be attributed to the unique features of the SDQI-IA. The individual interview-style administration was an important feature of the strategy used here that Marsh et al. (1991) showed to be more effective than group administration procedures. The binary response format simplified a more complex cognitive task, which may have also been essential given the population under consideration.

**Reliability of the SDQI-IA.** Results suggest that the SDQI-IA has good internal consistency across total scores, individual subscales and for younger (Years
2-4) and older students (Years 5-6), with the possible exception of the general self-concept subscale which had moderate internal consistency (see Chapter 7). In sum, the SDQI-IA subscales reliably measure the multidimensional facets of self-concepts for preadolescents with mild intellectual disability. The coefficient alphas reported in the current study are substantially better, on average, than those achieved in previous research with preadolescents and adolescents with mild intellectual disability (e.g. Begley, 1999; Crabtree & Rutland, in press; Little et al., 1990; Silon & Harter, 1985). For example, Silon and Harter (1985) administered the Perceived Competence Scale for Children (Harter, 1985) to preadolescents with mild intellectual disability and found that the reliability of the Competence subscale was 0.78 (compared to the current study which found the total academic subscale to be 0.90, and the general-school subscale 0.85), and the reliability of the Popularity subscale was 0.64 (which can be compared to the Peer Relationships scale in the current study which achieved an alpha of 0.87).

In an attempt to discover whether the SDQI-IA is as reliable as the SDQI utilised with non-disabled students, the coefficient alphas achieved in the current study were compared with that of Marsh (1988) and Marsh, Craven, and Debus (1998) (see Table 7.1.). Comparisons revealed that the responses gathered from the SDQI-IA with preadolescents with mild intellectual disability were just as reliable as those achieved with non-disabled peers through the use of the SDQI (Marsh, 1988; Marsh, Craven, & Debus, 1998). The only possible exception to this statement was the moderate reliability of the general self-concept scale for preadolescents with mild intellectual disability (see Table 7.1.).

The finding that general self-concept was measured with only moderate reliability tends to support Harter’s contention (e.g. Harter, 1990; Silon & Harter, 1985) that the construction of a general self-concept is cognitively more demanding than the construction of the other self-concept facets. Perhaps, even though students in the current study were aged 7-13 years chronologically, their mental capacity is significantly delayed and they are more able to interpret concrete concepts such as reading and mathematics. Thus, the task of considering one’s general self-concept may be more difficult for preadolescents with mild intellectual disability. Nonetheless, via the SDQI-IA the general self-concept scale received moderate
reliability scores, which is exciting given that the general self-concept scale did not even emerge as a separate scale in Silon and Harter’s (1985) study. In conclusion, results of this study suggest that when self-concept is measured appropriately, that is, through individual administration and a binary response format, that general self-concept is conceptualised by students with mild intellectual disability and that this facet of self-concept can be measured with moderate reliability.

**Multidimensionality of self-concept.** The factor structure achieved in the current study has implications for our understanding of the structure of self-concept as well as the measurement of the self-concept of preadolescents with mild intellectual disability. The confirmatory factor analysis based on the 8-factor model clearly identified all eight factors that the SDQI-IA was designed to measure (see Chapter 7). These results offer strong support for a multidimensional model of self-concept for students with mild intellectual disability aged 7 to 13 years and provide further support for the Marsh/Shavelson (1985) theoretical model of self-concept upon which the SDQI-IA was based. The results attest to the need to account for the multidimensionality of self-concept when examining the self-concept of preadolescents with mild intellectual disability.

As such the findings of the current investigation also add to the weight of studies, which now debunk past contentions that children do not distinguish between multiple facets of self-concept (e.g. Coopersmith, 1967; Marx & Winne, 1978). The misconceptualisation of self-concept as a unidimensional construct has been particularly predominant in research investigating the self-concepts of students with mild intellectual disability (e.g. Beltempo & Achille, 1990; Calhoun & Elliott, 1977; Carroll, 1967; Carvajal, 1972; Coleman, 1983; Crockett, 1977; Myers, 1976; Yauman, 1980). In fact, one of the leading investigations of the structure of self-concepts for this population concluded that “it appears that retarded children do not make distinctions about specific competence domains but rather simply make judgements about one’s competence at activities in general, regardless of their nature. Thus they think one is either competent or not” (Silon & Harter, 1985, p. 223). The results of the current study clearly refute this contention and attest to the multidimensional structure of self-concept for students with mild intellectual disability. This study also contributes to further extending our knowledge by demonstrating the
multidimensionality of self-concept for preadolescent students with mild intellectual disability. Whilst recent research has effectively demonstrated the multifaceted self-concepts of adolescents with mild intellectual disability (Crabtree & Rutland, in press; Little et al., 1990), this study represents the first of its kind in demonstrating the multifaceted self-concept for preadolescents with mild intellectual disability.

The Nature of Self-Concept for Preadolescents with Mild Intellectual Disability

Theoretically, this study provides important evidence about the abilities of preadolescents with mild intellectual disability to differentiate specific facets of self-concept and about age and gender differences in self-concepts for these students.

**Relations between self-concept factors.** The correlation coefficients between self-concept scales are well below 1.0, which suggests that preadolescents with mild intellectual disability are able to differentiate between multiple dimensions of self-concept. Correlations between self-concept subscales were consistent with the predictions of the Marsh/Shavelson model of self-concept, upon which the SDQI-IA was based. That is, the four nonacademic subscales were more correlated with each other than with the three academic subscales, and the three academic subscales were more correlated with each other than with the four nonacademic subscales (see Chapter 7). Consistent with predictions, the correlation between mathematics self-concept and general-school self-concept, and between reading and general-school self-concept were higher than the correlation between mathematics and reading self-concept.

The correlation between mathematics and reading self-concepts obtained with preadolescents with mild intellectual disability, however, is higher than predicted by the multifaceted, hierarchical structure of self-concept proposed by Marsh and Shavelson (1985). Table 7.2. shows that the correlation between mathematics self-concept and reading self-concept is 0.31. Although inconsistent with predictions from the Marsh/Shavelson model of self-concept, recent research with young students without disabilities has resulted in similar findings. For example, Marsh, Barnes, Cairns, and Tidman (1984) reported a 0.49 correlation between mathematics self-concept and reading self-concept for students in Year 2, and a 0.46 correlation for
students in Year 3. Marsh, Craven, and Debus (1998) reported a 0.37 correlation between the factors for children aged 5 to 8 years of age, whereas Marsh, Ellis, and Craven (2002) reported a 0.73 correlation for preschool aged children. It is plausible that the hypothesised near-zero correlation between mathematics self-concept and reading self-concept does not occur until a certain stage of cognitive development has been attained. For example, perhaps after approximately 9 years of age such effects are observed as by this developmental milestone self-concept becomes more differentiated whereby students may be able to more readily make comparisons between specific academic self-concept facets as a basis for internal frame of reference comparisons and between their own abilities in comparison to those of other students as a basis for external frame of reference comparisons (see Chapter 3 for discussion of this concept). This proposed developmental trend may also reflect a cognitive delay in which internal comparison processes are not evident at young ages, or a different style of teaching in the younger years in which the discreteness of specific school subjects is not so salient. It may also be that the external frame of reference, which predicts that maths and reading self-concept will be closely correlated, is more salient than the internal frame of reference, which predicts that maths and reading self-concept will be nearly uncorrelated (see Chapter 3).

For students with mild intellectual disability aged 7 to 13 years, general self-concept was most highly correlated with their general-school self-concept. This finding opposes what has been found with preadolescents and young children without disabilities (e.g. Marsh, 1988; Marsh, Craven, & Debus, 1998) and with students with learning disabilities (e.g. Crabtree & Rutland, in press; Harter, Whitesell & Junkin, 1998) for whom nonacademic self-concept facets, namely physical appearance self-concept, was most associated with general self-concept.

As such, it is surprising that the pattern of correlations differs for students with mild intellectual disabilities and students with learning disabilities. It may be that some or all of earlier research probably confounded correlations and reliability in that correlations were not based on latent constructs corrected for measurement error (and there was substantial measurement error). Another plausible explanation is that many past studies concerning students with learning disabilities have utilised adolescent students, rather than preadolescents as used in the current study. It may be that
nonacademic facets, such as physical appearance, become more salient as a function of growth and development and reaching adolescence rather than the differential diagnostic group.

The current study proposes, as did Harter (1990), that for students with mild intellectual disability that their general-school self-concept is a salient component of their overall self-esteem. This finding further highlights the necessity to measure self-concept as a multidimensional construct in which both nonacademic and academic self-concept facets are considered.

**The impact of age and gender upon self-concept.** For students with mild intellectual disability, the structure of self-concept remains stable across those aged 7 to 13 years (see Chapter 7). Thus, the SDQI-IA is suitable for use with preadolescent students with mild intellectual disability as they develop from 7 to 13 years of age.

In terms of age-related trends in self-concept, results showed that as students with mild intellectual disability age from 7 to 13 years, they reported a decline in their physical appearance self-concept. This age-related change has also been witnessed in students without disabilities (e.g. Marsh, 1989; Marsh, Craven, & Debus, 1998) and can be seen as a normal developmental trend in which students judge their physical appearance as less positive as they move from 7 to 13 years of age. Past researchers, however, have also hypothesised that students with mild intellectual disability would experience a decline in all facets of self-concept as they develop throughout preadolescence (e.g. Beane & Lipka, 1984; Burns, 1982; Raviv & Stone, 1991; Rosenholtz & Simpson, 1984). The results of the current study suggest that this may not be the case. It appears that over the years of schooling from Year 2 to Year 6 students maintain similar levels of academic, peer and parent relationships, physical ability and general self-concept. When compared to the general population, the current results suggest that declines in self-concepts are typically less apparent with preadolescents with mild intellectual disability. These results may be indicative of a difference between the two populations, possibly attributed to the delayed cognitive development of students with mild intellectual disability. This may, however, also be partly due to the small sample size applied in the current study and therefore remains to be elucidated by further research.
For students with mild intellectual disability, the structure of self-concept remains stable for both females and males aged 7 to 13 years (see Chapter 7). Thus, the SDQI-IA is suitable for use with both female and male students with mild intellectual disability aged 7 to 13 years.

In terms of gender-related trends in self-concept, results showed that preadolescent females with mild intellectual disability reported a significantly lower physical ability self-concept than did their male counterparts. This finding reflects results found with preadolescents without disabilities (Marsh, 1989; Marsh, Craven, & Debus, 1998). In the general population, however, additional self-concept gender differences have been discovered. For example, Marsh (1989) and Marsh, Craven, and Debus (1998) found that females without disabilities reported higher reading self-concepts than males whereas males without disabilities reported higher mathematics self-concepts than females. The minor difference between males and females reported in the current study may indeed reflect genuine differences between students with mild intellectual disability and students without disabilities. It is also viable that the current result may be due to either - the relatively small sample size utilised, or sample constitution. That is, placement in an IM Support Units enhances one’s academic self-concept, and there was a higher portion (although non-significant) of females in IM Support Units (45%) than in regular classes (41%). This may have masked further gender differences. This issue will need to be elucidated by further research.

The Impact of Educational Placement Upon the Self-Concepts, Social Comparison Processes and Academic Achievement of Preadolescents with Mild Intellectual Disability

**Academic self-concept.** When considered together, the results of Study 2 and Study 3 offer strong support for the big fish little pond effect. As predicted by the big fish little pond effect, the academic self-concept of preadolescents with mild intellectual disability placed in IM Support Units was significantly higher than that reported by their counterparts in regular classes. Both the cross-sectional (see Chapter 8) and longitudinal data (see Chapter 9 and 10) clearly demonstrate this finding.
Results are consistent with: Previous sound research conducted with students with learning disabilities (e.g. Chapman, 1988a; Renick & Harter, 1989; Rogers, Smith, & Coleman, 1978; Strang, Smith, & Rogers, 1978); effects hypothesised by Marsh and Johnston (1993); and previous sound research with students with mild intellectual disability (e.g. Boersma, Chapman, & Battle, 1979; Schurr & Brookover, 1967; Schurr, Towne, & Joiner, 1972; Towne & Joiner, 1966).

Contrary to predictions, the longitudinal study (Study 3) demonstrated that self-concept differences as predicted by the big fish little pond effect only became apparent at Time 3, after more than five months in their differential educational placement. Analysis of the change in academic self-concepts of students over Time 1, 2 and 3 revealed that although both groups maintained similar mean responses at both Time 1 and 2, at Time 3 students with mild intellectual disability placed in IM Support Units had significantly higher reading, mathematics and general-school self-concepts compared to students with mild intellectual disability placed in regular classes. In sum, it appears that the big fish little pond effect takes more than five months to become observable in young students with mild intellectual disability. This interpretation is also supported by results based upon the Self-Smartness rating scale. When asked to compare their ability with others in their class, students in IM Support Units and regular classes reported similar responses at both Time 1 and 2. At Time 3, however, there was a significant shift with students in IM Support Units rating themselves as more competent when compared to others in their class while those in regular classes rated themselves as less competent than other students in their class.

Responses to the Social Comparison rating also assists in further understanding this apparent delayed result. At Time 2 students did not realise they were academically weakest in their class. It was only at Time 3 that students in IM Support Units were more likely to choose a person ‘not as good as them’, and students in regular classes were more likely to choose someone ‘better than themselves’. Students who were placed in regular classes at Time 2 experienced an environment that was similar to that at Time 1, with only a few students who were not coping being removed and placed in an IM Support Unit. Therefore, it is not surprising that it would take more than five months at this young age (Year 3) to reassess one’s position in the class. The ability to conduct social comparisons is encapsulated in the
quote from Clair at Time 3 (placed in a regular class) “I want to be in a different class. It has too many people learning and I don’t. It makes me feel sad”.

The results of the current study may also be interpreted in terms of contrast and assimilation effects operationalised by Marsh, Kong, and Hau (2000). When considering gifted and talented students placed in selective high schools, Marsh, Kong, and Hau (2000) identified that contrast effects (or negative big fish little pond effects) occur when higher school-average achievement levels (the context) lead to lower individual student academic self-concepts. Assimilation effects (or positive social comparison, reflected glory effects) occur when higher school-average achievement leads to higher academic self-concepts (Marsh, 1984b).

These concepts may be applied in the opposite direction to understand the impact of educational placement upon the academic self-concepts of students with mild intellectual disability. Rather than assimilation effects being positive as a result of reflected glory (as is the case for gifted and talented students in selective schools), in this context, assimilation effects would parallel the negative concept of labeling and stigmatisation - as members of IM Support Units become members of a deviant group. Contrast effects would become positive effects as students with mild intellectual disability compare themselves with students of equal or lesser academic competence in their class environment. Even though labeling/assimilation effects and contrast effects are in opposition, it is possible for both of them to exist simultaneously in such a way that they cancel each other out. Of paramount importance is that the assimilation and contrast effects predicted by the big fish little pond effect enable the incorporation of predictions based upon the big fish little pond effects and labeling effects into a single theoretical framework for students with mild intellectual disability.

This theoretical interpretation has important implications for interpreting the results of the current investigation. After initial placement, students in IM Support Units may have experienced a negative assimilation/labeling effect and students in regular classes may have experienced a positive assimilation/reflected glory effect. It is proposed that at Time 3, contrast effects became more potent and thus more integral to the formation of academic self-concept in that initial contrast and reflected glory
effects may cancel each other out, but over time the reflected glory effect fades whereas the contrast effect becomes stronger.

Recent research conducted with adolescents attending gifted schools has documented the gradual impact of the big fish little pond effect in that at the third data collection period, new changes in self-concept above and beyond that witnessed at Time 2 were noted (e.g. Marsh, Chessor, Craven, and Roche, 1995; Marsh, Koeller, and Baumert, in press; and Marsh, Kong, and Hau, 2000). Results from Study 3 revealed that the impact of the big fish little pond effect upon the academic self-concept and social comparison processes of preadolescents with mild intellectual disability was larger at Time 3 than Time 2. Therefore, this same trend is apparent in younger students with mild intellectual disability. Taken together, these findings may lead to a refinement in the big fish little pond effect in which time is considered a central issue.

Although it was predicted that a change in educational placement would have an immediate impact upon students’ academic self-concept (that is, after five months), perhaps the witnessed delay in academic self-concept change was not surprising, given some of the following considerations.

This apparent delayed big fish little pond effect may be a direct function of the limited cognitive capacity of students with mild intellectual disability. In particular, this finding was based on the responses of young children with mild intellectual disability (Year 2 through to Year 3), and it is not known whether this delayed effect will be evident with older children with mild intellectual disability. In addition, participants in Study 3 may have experienced a gradual change in academic self-concepts due to a gradual process of social comparison. That is, the movement for those in regular classes was not a salient one, in that at the commencement of Year 3 the major change would have been that those students functioning either at the same or a lower level were moved out of the regular class and into an IM Support Unit. Thus, if the move had been from an IM Support Unit to a regular class, the big fish little pond effect may have been evident at Time 2.
In addition, there is a reasonable body of research that has examined self-concept enhancement studies and shown the difficulty of increasing self-concepts in short periods of time (e.g. Hattie, 1992). If structured and concentrated attempts to deliberately increase self-concepts do not produce immediate improvements in self-concepts, then it may be reasonable to assume that a change in one’s frame of reference may also take some time to significantly alter self-concepts. Even in studies with very bright high school students, Marsh, Koeller, and Baumert (in press) found that the onset of the big fish little pond effect was gradual and took an entire academic year. Hence, in retrospect, it is not surprising that the big fish little pond effect was not clearly evident in the present investigation until Time 3.

Qualitative interview data suggest that students with mild intellectual disability placed in IM Support Units, as predicted by labeling theory, felt that their class was different because students in that class had greater learning needs (see Chapter 10). However, students with mild intellectual disability both in IM Support Units and regular classes reported feeling different to other students because of their learning needs. This finding suggests that placing students with mild intellectual disability in regular classes does not automatically mean that they will not experience stigma (which has been assumed by proponents of inclusion).

Nonacademic self-concept. As predicted by the big fish little pond effect, results of the longitudinal study revealed that over time the nonacademic self-concept of students with mild intellectual disability placed in either regular classes or IM Support Units did not significantly differ. Similarly, the results of the cross-sectional study reported no significant differences between these two groups in terms of physical ability, physical appearance, and parent relationships self-concept. However, findings indicated that students with mild intellectual disability placed in IM Support Units experienced significantly better peer relationships self-concept than did those in regular classes (see subsequent discussion).

The finding that, in general, the nonacademic self-concept of students with mild intellectual disability does not significantly differ according to educational placement challenges the premises of labeling theory. Labeling theory argues that, once identified and negatively labeled through placement in an IM Support Unit,
students with mild intellectual disability will come to perceive themselves as different and deviant to the general population. Labeling theory does not specify that this sense of deviation will be limited to one component of the self, and thus implies that all facets of self (including nonacademic facets) will be adversely affected.

**Peer relationships self-concept.** Results of Study 2 indicated that students with mild intellectual disability placed in IM Support Units reported significantly higher peer relationships self-concept than their counterparts in regular classes. This finding was also supported by qualitative evidence which indicated that students in regular classes reported being neglected by students in their own class whereas students in IM Support Units reported positive within-class peer relationships, but experienced teasing from students outside of their own class. In contrast, however, the results of Study 3 did not reveal a significant difference between the peer relationships self-concepts of students with mild intellectual disability in regular classes and IM Support Units.

In an attempt to reconcile the two competing findings of Study 2 and Study 3 in terms of peer relationships self-concept, several interpretations follow. Firstly, the significant difference between groups in terms of peer relationships self-concept only emerged in Study 2, with an older population who had been in differential educational placement for a substantially longer period. The sample used in the longitudinal study were much younger than those in the cross-sectional study and experienced less time in their placements (that is, twelve months versus an average time of 2 years 7 months for the cross-sectional sample). Therefore, it is plausible to assume that the effects upon peer relationships were not yet significantly altered either as a result of the short period in their respective placements, or as a result of the young age of participants. Thus, if the cohort participating in the longitudinal study were retested in 12 to 24 months a difference in peer relationships self-concept (and indeed general self-concept) may be witnessed. The peer relationships self-concept of students in regular classes in Study 3 was slightly higher than those in IM Support Units at Time 1, but slightly lower at Time 2 and Time 3. None of these differences approached statistical significance, in part due to small sample size, but the pattern of difference was in a similar direction to that discovered in Study 2. The results of Study 2 taken together with the qualitative comments are suggestive that peer relationships self-concept may
be enhanced when students with mild intellectual disability are placed in IM Support Units. This finding has important implications for the inclusion debate.

A consistent finding in disabilities research is the frequent peer rejection of students with disabilities and or feelings of alienation in general education classrooms (e.g. Johnson, 1950; Vaughn, Elbaum, & Schumm, 1996). Research on the social acceptance of students with disabilities has demonstrated that these students experience more positive peer relationships when in a segregated environment as opposed to the regular class where they are more likely to be rejected as potential friends (e.g. Burton, 1988; Goodman, Gottlieb, & Harrison, 1972; Gottlieb & Budoff, 1973; Gottlieb & Davis, 1973; Schroeder, Walker, & Bailey; 1994). These findings are supported by the qualitative interview data in the present investigation which suggests that students in regular classes reported being neglected by students in their own class, whereas students in IM Support Units reported positive within-class peer relationships, but experienced teasing from students outside of their own class. It may be that in terms of peer relationships students with intellectual disability, like the general population, are referring to the relationships with the peers in their immediate classroom environment.

When endeavouring to understand more fully the difference in peer relationships self-concepts between students with mild intellectual disabilities in IM Support Units and regular classes, one may consider the smaller peer groups which exist in special classes which may enable children to get to know each member of the group better. Indeed, the qualitative interviews suggest that the small class size of IM Support Units is a salient feature for students with mild intellectual disability enrolled in this placement. Additionally, more emphasis is also placed on social skills training in special classes than in regular schools. Further, because of the lower teacher/pupil ratio in special schools, the teacher is able to better deal with peer conflict situations. Most obviously, students in IM Support Units interact with students with similar cognitive abilities and thus may be able to form friendships more readily in the IM Support Unit.

Preadolescents with mild intellectual disability placed in regular classes reported a significantly lower peer relationships self-concept than their counterparts
placed in IM Support Units. This challenges advocates of inclusion as labeling theory who assume that placing students with disability with their peers without disabilities will facilitate peer relationships. Although this was not the case in the current study (see Table 9.1), students with disabilities who are placed in regular classes full-time are more likely to be more socially competent than their counterparts in segregated environments (Freeman & Alkin, 2000), which may be a basis for setting placement. Therefore, one could hypothesise that the consequences to students’ peer relationships self-concept would be more adverse if the less socially competent students (who are usually placed in IM Support Units) are placed in regular classes. This is a matter for further research to determine.

**General self-concept.** Results of Study 2 revealed that students with mild intellectual disability placed in IM Support Units have significantly higher general self-concept than their counterparts in regular classes. These results suggest that general self-concept may be positively influenced by educational placement in a special setting. This interpretation, based on one study, may be premature and will need to be elucidated by further research. In addition, the results of Study 3 did not reveal a significant general self-concept difference between the two groups. Perhaps a decline in general self-concept occurs after a prolonged depression in academic self-concept experienced in regular classes, and the students in Study 3 were simply too young and had not been in school long enough for this to occur. Chapman (1988a) proposed that it may take longer for academic difficulties to influence general self-concept whereas earlier decrements in academic self-concepts of students struggling with learning is expected.

**Academic achievement.** The longitudinal study (Study 3) evaluated the impact of placing students with mild intellectual disability in regular classes or IM Support Units upon their academic achievement. Findings revealed that students with mild intellectual disability in regular classes performed significantly better in mathematics achievement at Time 2 and Time 3 (after controlling for initial differences at Time 1) than did their counterparts in IM Support Units. There were no other significant differences in terms of academic achievement. Results confirmed that the educational placement of students with mild intellectual disability did not have a significant impact upon their reading, spelling and average academic achievement, however, those placed in regular classes performed better in terms of
mathematics achievement than did their counterparts in IM Support Units. It is logical that students with mild intellectual disability who were later to be placed in regular classes would perform better in terms of academic achievement at Time 1, compared to those who would later be placed in IM Support Units as academic progress is one criteria which determines future educational placement for these students. Students with mild intellectual disability placed in regular classes, however, achieved significantly better in mathematics than did their counterparts in IM Support Units even after controlling for these initial differences. Although it is not ideal to utilise Time 1 scores as covariates when there are large pre-existing differences between groups, this served as the best way to observe change in academic achievement over time as a function of educational placement above and beyond initial group differences. The results, however, are suggestive rather than conclusive that mathematics achievement may be enhanced in regular classroom settings.

The results in relation to reading, spelling and average achievement are consistent with the studies conducted by Budoff and Gottlieb (1976) and Eshel, Katz, Gilat, and Nagler (1994) who found that the academic achievement of students with mild intellectual disability placed in regular classes and special classes did not differ significantly. The findings, however, contradict the majority of research in this field which concludes that students with mild intellectual disability in regular classrooms do better academically than comparable students in special education classrooms (e.g. Calhoun & Elliott, 1977; Carroll, 1967; Centre & Curry, 1993). The majority of these studies, however, based their findings on comparative data in which two intact groups were compared at one time. If the current study had used this same inferior design, similar findings would have been gathered as there were significant differences between the groups at Time 2 (when first enrolled in divergent educational placements) with those in regular classes performing better on all academic achievement areas. This difference, however, was a function of placement criteria. However, results based upon longitudinal data suggests that the educational placement of students with mild intellectual disability only impacted upon mathematics achievement and not reading, spelling and averaged academic achievement scores. It is important to recognise that the academic progress of students with mild intellectual disability is slow (American Psychiatric Association, 1994)
which means that differences between the two groups may become apparent over a longer time period.

The finding that students with mild intellectual disability did not experience a significant change in reading, spelling and average academic achievement as a function of educational placement over time, adds to the potency of the educational placement in determining the academic self-concept of students with mild intellectual disability. That is, the academic self-concept of students in both educational placements altered significantly at Time 3 even though there was no marked difference in the reading, spelling and averaged academic achievement scores of students according to educational placement. Clearly, it follows that improvement in reading, spelling and averaged academic achievement is not necessarily the most influential factor involved in the academic self-concept of students with mild intellectual disability in the present study. Rather, the big fish little pond effect explains more of this variation in self-concepts as a function of educational placement.

Study 3 found that, although the academic self-concepts of students with mild intellectual disability were altered as a result of educational placement, the academic achievement of these students did not vary as a function of educational placement. This finding may question the hypothesised relationship between academic self-concept and academic achievement (Marsh, Byrne, & Yeung, 1999; Marsh & Yeung, 1997).

The relationship between academic self-concept and academic achievement was not a central component of the thesis, as academic self-concept was investigated as a valuable outcome in itself, rather than simply as a means to an end. However, given this finding, it is interesting to explore possible explanations.

Firstly, the academic growth of students with mild intellectual disability is relatively slow (American Psychiatric Association, 1994). Study 3 followed students for a period of 12 months, and thus such significant academic growth may not be witnessed within this time period. Future research may wish to address this issue by employing a longer longitudinal study.
Secondly, given that students with mild intellectual disability placed in regular classes performed better academically than their counterparts in IM Support Units at the commencement of the study, one would have expected the academic progress of this group to be greater over the 12 month period. This, however, did not occur and the fact that those in regular classes experienced only minimal academic growth compared with those in IM Support Units may in fact reflect the predicted relationship between academic self-concepts and academic achievement.

Preference for placement and experienced stigmatisation. Qualitative interviews endeavoured to discover students’ preference for educational placement as well as the level of stigmatisation experienced by students with mild intellectual disability placed in IM Support Units and regular classes. The overwhelming majority of students with mild intellectual disability enrolled in IM Support Units commented that they preferred to be in an IM Support Unit as it helped them to learn. On the other hand, students with mild intellectual disability in regular classes were less vocal about their preferred educational placement. Of the two responses, one favoured regular class and the other the IM Support Unit. This difference may be directly related to the fact that students with mild intellectual disability in regular classes did not perceived their class as being different to other classes, unlike students in IM Support Units.

The interviews revealed that students with mild intellectual disability, in general, felt different to other students because of their learning needs, and this did not significantly vary as a function of educational placement. Students in IM Support Units, however, did perceive their class as being different to other classes. This difference was identified as both positive and negative. The two groups of students did differ in terms of reported peer relationships. Those in IM Support Units reported negative peer relationships with students in other classes, and positive peer relationships with students in their own class. On the other hand, students with mild intellectual disability enrolled in regular classes reported negative peer relationships with students within their own class.

In sum, although the qualitative interviews produced limited evidence of experienced stigmatisation, the generalisation that a particular educational placement
will inevitably lead to increased stigmatisation (such as proposed by labeling theory) is unsupported by the interpretation of the available data. In contrast, the data suggests that students with mild intellectual disability may prefer to be placed in an IM Support Unit. However, given the small sample size this suggestion needs to be elucidated by further research.

**Strengths of the Current Study**

The present study boasts a number of strengths in comparison to previous self-concept research, and research concerning preadolescents with mild intellectual disability. In this study some major methodological limitations that have existed in previous research were successfully avoided and new developments in self-concept theory and research have been capitalised on.

Recent self-concept theory dictates that self-concept is indeed a multidimensional construct (e.g. Shavelson, Hubner, & Stanton, 1976). The current study evaluated the reliability and validity of a multidimensional self-concept measurement instrument, which demonstrated that preadolescents with mild intellectual disability clearly differentiate between multiple facets of self-concept. The current study implemented a promising new administration procedure and established its sound construct validity and reliability for preadolescents with mild intellectual disability. Progress in the field of self-concept research for this special population has been hampered by the continual reliance on unidimensional measures of self-concept for which the psychometric properties are unknown for these students. The establishment of the SDQI-IA as a valid and reliable multidimensional self-concept measure for preadolescents with mild intellectual disability provides the necessary tool with which a new era of research can be conducted with the confidence of a psychometrically strong measure for this population.

The current research design was carefully planned in order to empirically test the competing theories of the big fish little pond effect and labeling theory. As a result, the differential impact of the big fish little pond effect upon the academic and nonacademic facets of self-concept were documented. This empirical investigation
provides a worthy contribution to the theoretical debate informing current educational policy.

The current study involved an adequate number of participants - given the relatively small population under investigation, the lengthy testing sessions conducted, and the individual administration required. This enabled more sophisticated analysis to be conducted and permitted greater generalisability of, and confidence in, the results.

A strong research design was carefully constructed to effectively address the specific aims of the investigation. A longitudinal study was implemented which allowed the direct observation of the impact of educational placement upon self-concepts - above and beyond natural developmental growth. The current study also conducted sophisticated powerful statistical analyses. Confirmatory factor analysis permitted the evaluation of the psychometric properties of a self-concept measure for this population – which is rare in previous research. Structural equation modeling allowed for powerful tests of the effects of educational placement upon self-concepts above and beyond the impact of the age and gender of the student, and repeated measures factorial analyses of covariance to measure change in self-concept and academic achievement between two educational placement groups over time. Lastly, qualitative interview data enriched the results emanating from the primarily quantitative data and gave voice to students in regards to their preferences and experiences of different educational placements. This qualitative interview data makes a valuable contribution to the field of interest. In consideration of these strong research design characteristics, the current research makes a unique and substantial contribution to the field.

Limitations of the Current Study

Despite well-planned and well-designed research efforts, educational studies inevitably work within the constraints of the environment. Conducting research with students with mild intellectual disability is even more problematic given the special nature of the population. The current study is not impervious to these inherent difficulties. It is important that the limitations of the current study are considered when interpreting the findings and recommendations emanating from this study.
Given the nature of the population studied, and in comparison to previous research in the field, the sample sizes utilised in the current research were adequate. Marsh, Balla, and Hau (1996) emphasised that in order to conduct sophisticated analyses such as confirmatory factor analysis and structural equation modeling, it is desirable to have sample sizes of at least 200. Tanaka (1987) viewed a sample size of 100 as the lower limit sample size, and indicated that maximum likelihood is likely to be more robust in relation to potential problems of nonnormality when sample size is small than other estimation procedures. Based on these recommendations, a sample size over 200 was gathered to permit the application of such sophisticated analyses. Despite this, however, it is recognised that the sample size is limited when compared to other fields of research, such as those dealing with regular populations. The research could have been strengthened by including more participants, particularly for the longitudinal component of the research. The use of a larger sample size would have increased the validity and generalisability of the results.

It should be noted that the results of Study 2 are based upon a cross-sectional design in which two intact groups are directly compared. This is a common dilemma for special education research as ethical considerations dictate that random assignment of students to differential educational placements is not possible because it would violate the student’s guarantee of individually determined appropriate interventions (Individuals with Disabilities Education Act of 1990). Despite this limitation, the value of the results of Study 2 is demonstrated in two ways. Firstly, the direction of any possible bias in comparing non-equivalent groups is likely to run counter to the predictions of social comparison theory and the big fish little pond effect. That is, to the extent that there are pre-existing differences between the two groups, students with mild intellectual disability placed in regular classes were likely to be more academically and socially competent and confident than those in the IM Support Units (as reported in Table 8.1). From this perspective, the results of Study 2 are likely to be conservative and underestimate the negative effects associated with placing students with mild intellectual disability in regular classes. Secondly, the results of Study 3 – which utilised a strong longitudinal design – reported similar findings to Study 2. Given important ethical considerations, however, Study 3 utilised
a sophisticated longitudinal design without the random assignment of students to
differential educational placements.

The intelligence quotient of students participating in the current study under
the classification of mild intellectual disability were not directly tested by the
researcher, but rather identified by the school. Gresham and MacMillan (1997) term
this common practice as ‘system-identified’. Identifying students in this way makes
the assumption that these students have been accurately identified by the system.
When considering a study involving 211 students, using this system-identified
approach has clear benefits of being convenient, cost-effective and time efficient. It
also provides a pre-existing measure that clearly predates the actual placement (that
is, it is not confounded with placement effects). Efforts were made to ensure that
participating students were indeed students with mild intellectual disability; including,
a clear discussion with school staff about the type of students required for
participation. In addition, all participating students had IQ tests conducted within the
last two years which identified them as having an IQ in the range of mild intellectual
disability\(^1\). However, the research design would have been strengthened by utilising
common tests (e.g. IQ) to confirm that participants were accurately identified as
having a mild intellectual disability.

**Implications for Research and Theory**

The current investigation has advanced our understanding of the structure,
nature and measurement of self-concept for preadolescents with mild intellectual
disability, and elucidated the impact of educational placement on students’ self-
concepts. Consistent with high quality research, the current investigation also serves
as a catalyst for guiding future research.

It is evident from the current study that the investigation of the
multidimensional self-concept of preadolescents with mild intellectual disability is
indeed a worthy and interesting endeavour. The current study has advanced this field
of research by successfully identifying the SDQI-IA as reliable and valid self-concept

\(^1\) It is a common practice in New South Wales for students identified as having an intellectual disability
to be administered an IQ test every two years.
measurement tool for use with preadolescents with mild intellectual disability. This has significant implications for future research with this population.

Clearly researchers need to account for the multidimensionality of self-concept in future research with this population. In addition, it is vital that the next generation of researchers demonstrate the reliability and validity of the self-concept instrumentation employed in future research to ensure such instrumentation accounts for the multidimensionality of self-concept and is demonstrated as reliable for this population. The current results may instigate an upsurge in research in which the multidimensional self-concept of these students may now be confidently measured and thus investigated. Teachers and researchers can confidently utilise the SDQI-IA to ascertain the self-concepts of preadolescents with mild intellectual disability. The identification of an appropriate instrument for this population also ensures that researchers may utilise the SDQI-IA to address substantive issues based upon between-construct studies with this population.

The findings of the current study have significant ramifications for our theoretical understanding of the self-concept of students with mild intellectual disability as well as the big fish little pond effect. A multidimensional model of self-concept was the key theoretical basis guiding this investigation. Current models and theories were critically assessed and the Shavelson et al. (1976) model and the subsequent Marsh and Shavelson (1985) revisions to this model were judged to be the best available theoretical model of the structure of self-concept. These results clearly attest to the multifaceted structure of self-concept for preadolescents with mild intellectual disability which has been rejected in previous studies (e.g. Silon & Harter, 1985). It is only through the application of a multidimensional measure of self-concept that the big fish little pond effect can be identified and understood.

A perpetual goal of self-concept researchers has been to devise a multidimensional measure of self-concept to adequately service a range of populations, thus enabling direct comparison among these different populations. This desire, and the inherent difficulties, are embodied by Harter (1990):
the implications are more promising if one strives to reveal the underlying structure of the self-concept of special groups, recrafting instruments to meaningfully assess the manner in which their self-evaluations are organised. The potential disadvantage of such an approach, however, is that there will be a proliferation of population-specific instruments, so unique that one cannot make meaningful comparisons across groups. … The optimal strategy, therefore, would be one in which instruments are kept as similar as possible, for purposes of comparison, but also include modifications where necessary (p. 308).

The current study suggests that the SDQI-IA may be suitable for use in studies that aim to make comparisons between the multidimensional self-concepts of preadolescents with mild intellectual disability and students without intellectual disabilities and addresses the concerns expressed by Harter (1990). Future research is needed, however, before this can confidently be achieved. That is, it remains to be demonstrated that the factor structure of self-concept is fundamentally similar across preadolescents with mild intellectual disability and preadolescents without disabilities. Although the current study identified the factor structure for preadolescents with mild intellectual disability as that hypothesised for the non-disabled preadolescent population, this was not a central focus of the research. To adequately resolve this theoretical issue, future research needs to compare the SDQI-IA responses from both populations through the ‘test of invariance’ confirmatory factor analysis approach. This would allow meaningful comparisons between groups to be made and powerful conclusions to be drawn as to the suitability of the instrument across preadolescents with mild intellectual disability and other population groups.

A key finding of the current research was that for students with a mean age of 8 years 3 months, it took more than five months of differential educational placement (or when they were aged an average of 9 years 3 months) to witness the big fish little pond effect via social comparison processes and self-concept responses. The question remains: Was this the case because it takes more than five months for the big fish little pond effect to strike for this population, or was this a function of the young age of the students? Future research may seek to disentangle these plausible hypotheses, possibly through measuring these changes with students with mild intellectual
disability across a broad age range and time. It may also be important to consider movement in the opposite direction which may be more potent for students, that is, as they move from IM Support Units to regular classes (which, given the current inclusion movement would seem to be the most common movement). As the inclusion movement appears to accelerate, future research may employ the SDQI-IA to measure the change in self-concepts as students move from special educational placements to regular classes.

The newly operationalised concepts of assimilation and contrast effects (Marsh, Kong, & Hau, 2000) were considered when attempting to explain the impact of the big fish little pond effect taking more than five months to be observed through academic self-concept scores. Future research should endeavour to operationalise these two counter-balancing effects in order to empirically evaluate separately each of these effects – as well as their net effect - rather than inferring them. The operationalisation of these concepts for students with mild intellectual disability across differential placements may result in substantial theoretical advances in which the predictions of both labeling theory and the big fish little pond effect can be encapsulated in a single theoretical model. Such advances would challenge previously opposing positions and provide a more comprehensive understanding of factors impacting upon the self-concepts for students with disabilities across educational placements.

These results lend substantial support to the value of social comparison theory (Festinger, 1954) and the big fish little pond effect (Marsh, 1984a) in understanding the influence of special education placement on the self-concepts of preadolescents with mild intellectual disability. In turn, results suggest the re-evaluation of the predictions made by labeling theory (Goffman, 1963) which has dominated special education philosophy and policy. Evidence from the qualitative interviews suggest that students with mild intellectual disability do experience stigmatisation as a result of their placement, however, it is likely (as proposed by Marsh & Johnston, 1993) that these labeling effects are off-set by the concomitant social comparison effects and therefore academic self-concept is bolstered. This calls for the refinement of labeling theory to embody the predictions of social comparison theory and the big fish little pond effect and the incorporation of labeling effects into explanations of assimilation
and contrast effects predicted by the big fish little pond effect in relation to students with mild intellectual disability.

Future research may need to incorporate longer longitudinal studies which employ a larger number of participants to effectively measure small change over a long period of time. For instance, because the academic progress of some students with mild intellectual disability is slow, the effects of an intervention upon a small number of participants might be too small to be identified by standardised academic tests over a twelve month period, such as that of Study 3.

The qualitative interviews suggested that students with mild intellectual disability reported being neglected by students in their own class. Their counterparts in IM Support Units, however, reported positive within-class peer relationships, but rejection by students in other classes. Future research could look at sociometric ratings to either clarify or dismiss this reported experience as reality. Future research may also consider a larger sample size to explore this issue further, and clarify the issues by interviewing older students who might be more readily able to articulate their preferences.

**Implications for Education**

The SDQI-IA has been established as an appropriate tool for use in clinical and educational settings for the assessment of the multidimensional self-concepts of students with mild intellectual disability. The SDQI-IA may be administered in intervention projects in which specific programs aim to increase the self-concepts of students with mild intellectual disability. From a practical perspective, the ability to measure the self-concepts of these students provides an important outcome measure for teachers to better understand their students and for a wide variety of interventions designed for students with mild intellectual disability.

The results of the current study suggest that students with mild intellectual disability will have higher academic self-concepts if they perceive their abilities to be better than those of other students within their external frame of reference (that is, when placed in IM Support Units); and they will have lower self-concepts if they
perceive their abilities to be poorer than those of other students within their external frame of reference (that is, when placed in regular classes). Special education removes children from regular class environments where their academic abilities are likely to appear inadequate in comparison to those of their immediate reference group. Thus, the special education classroom creates a social comparison group far more homogenous with regard to academic ability. Given Festinger’s (1954) contention that individuals are more likely to use specific others for referential evaluation as the perceived similarities increase, it is reasonable to assume that students with disabilities are more likely to use other classmates with disabilities to form estimates of self worth. Consequently, rather than lowering self-concept, special classes might be expected to bolster students’ self-concepts.

In addition, proponents of labeling theory advocate that one of the substantial benefits of placing students with disabilities with students without disabilities is the increased peer relationships experienced by those with disabilities. Conversely, both the quantitative and qualitative results emanating from this study, suggest that placing students with mild intellectual disability in IM Support Units may enhance their peer relationship self-concept. This finding suggests that proponents of labeling theory may need to re-assess their argument, however, future research is required to confirm these findings.

The most significant implication of the current study is that it calls into question current international educational policy and philosophy. For instance, the NSW Department of Education and Training reports that “it has been moving and will continue to move from the provision of predominantly segregated educational settings to the provision of services in the regular neighbourhood school for students with disabilities” (New South Wales Department of School Education, 1992, p. 4). The current policy of placing students with mild intellectual disability into regular classes forces the individual into a situation in which the bulk of the comparisons he or she makes with others is negative, with resulting adverse effects on his or her academic self concept. This is problematic given that a positive self-concept is highly related to one’s academic achievement, academic behaviour, and social and emotional adjustment (Boersma & Chapman, 1991; Branden, 1994; Harter, 1990; Marsh & Yeung, 1997).
The results of this study challenge special educators and policy makers to recognize that the inclusion of students with mild intellectual disability in regular classrooms is likely to result in lowered academic self-concepts and adversely impact upon a range of other desirable educational outcomes that are mediated by self-concept. Hence, appropriate strategies are needed to counter this negative effect of inclusion, rather than accepting the largely unsupported inference from labeling theory that the effects of inclusion on self-concept are positive. To place a child in an educational environment in which he or she cannot maintain feelings of self worth may actually increase rather than decrease the restrictiveness of the school environment which is in discord with the Individuals with Disabilities Education Act of 1990.

These findings are particularly important if there is a continuation of the current inclusion movement, which seems highly likely. Educational policy needs to be determined by educational research rather than educational research evaluating policy based upon presumed rather than empirically demonstrated educational benefits. There is a need for the inclusion movement to be re-evaluated as an educational policy as students with mild intellectual disability may in fact benefit more from special placements which enhance their self-concept and in so doing facilitate the achievement of other desirable outcomes. It does not follow that positive self-concept will flow automatically from physical inclusion in the regular class, as predicted by labeling theory. Much has to be done. Unfortunately, many educators are reluctant to address the social-emotional needs of students. Few teachers and administrators feel adequately prepared to deal with complex social-emotional needs of poorly adjusted students (Madden & Slavin, 1983). In the immediate term additional resources and strategies are needed to cater for students with special needs in regular classes to counteract the reduction in self-concept induced by such settings. However, given the saliency of the external frame of reference in determining one’s self-concept, such resources may do little to bolster the self-concepts of students with special needs who remain in regular classes. If this is the case, the inclusion policy must be challenged on these grounds.
The present study promotes the need to look at educational alternatives in terms of student outcomes rather than on the basis of unsupported theoretical models. The most important criterion must be which placement is superior for each individual. This decision should not be based solely upon philosophical considerations, but upon empirical evidence. The current study provides an important tool for gathering such empirical evidence – the SDQI-IA.

These findings imply that one should take another look at policy trends to include students with mild intellectual disability in regular classes. Clearly, major policy decision cannot and should not rest on the results of any single study, especially one that addresses the effects of educational placement on a single variable, in one country alone. These results, however, should serve as a catalyst for future research to adequately and empirically assess the merits of the inclusion movement.

Summary

The present investigation demonstrated that the self-concept of preadolescents with mild intellectual disability is indeed multidimensional and that the SDQI-IA is a valid and reliable self-concept measurement tool for this population. These findings have significant theoretical and practical significance and will hopefully ignite an upsurge of research with these students now that a psychometrically and theoretically strong measure has been identified.

The results of the present study also challenged the premise of labeling theory which has dictated recent educational philosophy and policy and brings into question the presumed benefits of inclusion.

This chapter has also shown that the findings produced by the present investigation are compelling, as results are based upon a carefully constructed research design that successfully capitalised upon recent advances in theory and research to avoid previous methodological flaws plaguing this area of research, and employed sophisticated statistical analyses to conduct powerful tests of the hypotheses proposed.
CHAPTER 12
SUMMARY AND CONCLUSIONS

The impetus for the current investigation stemmed from one of the most fervently disputed issues in special education – whether students with disabilities should be educated in segregated support units with other students with similar disabilities or in regular classes with their peers without disabilities. It would seem that current international education policy supports the latter through the inclusion movement, which has a large following. An evaluation of this debate revealed that it was one based upon philosophy and presumed benefits rather than empirical research evidence. Indeed, decades earlier, many of the countering arguments (also based on a lack of solid, empirical evidence) were used to argue for the formation of special classes. Policy in this area – particularly in relation to self-concept – appears to be largely based on political whim rather than empirical support.

Facilitating students’ positive self-concepts is a central goal of education internationally. A positive self-concept is valued for its own sake, but also because it is an important facilitator of other desirable educational outcomes, as well as emotional and social benefits. With the importance of a positive self-concept clearly established, it follows that self-concept be cast as a worthy outcome to determine the most appropriate educational placement for students with disabilities. Indeed, this is demonstrated by the citation of self-concept outcomes as underlying arguments for placing students with disabilities in regular classes (labeling theory, Goffman, 1963) as well as placing students with disabilities in segregated support units (social comparison theory, Festinger, 1954, and the big fish little pond effect based upon this theoretical perspective, Marsh 1984a).

Fueling the controversy around the inclusion movement is the lack of sound empirical research investigating this widely adopted educational policy. The present investigation endeavoured to deliver a new standard of research, which would effectively evaluate current policy and generate further quality research. The research capitalised on and was grounded in a multidimensional theory of self-concept to avoid
a theoretical approaches plaguing this area of research and a sophisticated research methodology that addressed many of the limitations of past research was employed.

Key strengths of this study included:

a) Avoiding atheoretical approaches by capitalising on recent advances in self-concept theory and research applied to populations without mild intellectual disability;

b) evaluating the psychometric properties of the self-concept instrumentation administered for this population;

c) administering a multidimensional measure of self-concept to adequately witness the differential impact of educational placement upon academic and nonacademic self-concept and thus empirically test the big fish little pond effect and labeling theory;

d) employing a strong longitudinal, quasi-experimental design to investigate the effects of educational placement;

e) utilising a large sample given the special population studied;

f) employing a sample diagnosed with one primary disability rather than a mixed group encompassing many different disabilities; and

g) conducting sophisticated statistical analysis.

Before substantive issues were addressed (that is, the impact of educational placement upon self-concepts) the psychometric properties of a well-recognised and well-researched instrument were demonstrated for the population under consideration. Sophisticated analyses successfully determined the structure of self-concepts for preadolescents with mild intellectual disability and a reliable and valid self-concept measurement tool to utilise with this population.

In addition, the current study made an important contribution to advancing our understanding of the nature and structure of the self-concepts of preadolescents with mild intellectual disability and critically evaluated the differential predictions based upon labeling theory and the big fish little pond effect in relation to educational placement.

In sum, the yields of the present study are multifold. The SDQI-IA was established as a reliable and valid measure of the multidimensional self-concepts of preadolescents with mild intellectual disability aged between 7 and 13 years.
Confirmatory factor analysis demonstrated that, despite previous conclusions, preadolescents with mild intellectual disability were able to differentiate specific facets of self-concepts, and thus embody a multidimensional self-concept. This finding challenges previous conclusions purporting that self-concept for this population is unidimensional (e.g. Silon & Harter, 1985) and offers clear directions for further research in that self-concept for this population cannot be clearly understood without accounting for the multidimensionality of self-concept in research designs.

The study also elucidated that the structure of self-concepts of preadolescents with mild intellectual disability is similar for males and females and for students aged 7 to 13 years. Females with mild intellectual disability aged 7 to 13 years experienced a significantly lower physical ability self-concept than did their male counterparts. As preadolescents with mild intellectual disability develop from 7 to 13 years, they reported a significant decrease in physical appearance self-concepts. Such changes in self-concepts according to gender and age (from 7 to 13 years) are also evident in the general population.

An investigation of the impact of educational placement upon the multidimensional self-concept of preadolescents with mild intellectual disability provided support for the predictions of the big fish little pond effect and social comparison theory from which it is based. That is, students placed in IM Support Units reported significantly higher academic self-concepts than did their counterparts placed in regular classes. The results of Study 2 and the qualitative interviews suggested that students in IM Support Units also experienced significantly higher peer relationships self-concepts than those in regular classes. The negative effects of inclusion on peer relationships self-concept, although not predicted a priori on the basis of big fish little pond effect research, are very important. Despite the rhetoric of inclusion, it is apparent that preadolescents with mild intellectual disability who were placed in regular classrooms not only suffered lower academic self-concepts but they also reported feeling socially excluded – rather than included.

The significant increase in academic self-concept as a result of enrolment in an IM Support Unit was further supported by the finding that these students; a) Compare themselves with less able students after more than five months in an IM Support Unit,
and b) rate their academic performance higher than did students in regular classes after more than five months in an IM Support Unit. The longitudinal inquiry revealed that it took more than five months for a difference in academic self-concept to emerge between the groups. It may be that negative assimilation effects, or labeling effects, are occurring at initial placement in an IM Support Unit, but over time positive contrast effects emerge and supersede the labeling effects. These findings offer a plausible merging of both the big fish little pond effect and labeling theory in which the resulting change in self-concepts is a result of the cumulative predictions of both theories.

Taken together, the conceptual theoretical advances and findings of the present investigation hold not only substantive and methodological implications for researchers, but are also of potent practical significance to educational practitioners. The time appears appropriate for researchers to capitalise on the findings of this investigation to conduct better quality research to further elucidate the issues addressed in this study and for policy makers to begin to question the presumed benefits of the current international inclusion movement.

In summary, current research supports the big fish little pond effect and social comparison theory and contradicts the labeling theory upon which current special education philosophy, and indeed policy, is currently based. These findings challenge special education policy makers and practitioners to acknowledge that the inclusion of students with mild intellectual disability in regular classrooms is likely to result in lower academic self-concepts. Therefore, specific strategies are needed to counteract this harmful effect of inclusion rather than accepting the largely unsupported assumption from labeling theory that the effects of inclusion upon self-concept are positive.
APPENDIX A
SELF DESCRIPTION QUESTIONNAIRE I-INDIVIDUAL ADMINISTRATION

😊 INSTRUCTIONS TO CHILDREN:

This is a chance to help me find out how you feel. It is not a test. There are no right or wrong answers and everyone will have different answers. I will ask you a question and then ask you to tell me how you feel by stating yes or no. Be sure your answers show how you feel about yourself. I will not show your answers to anyone.

Some sentences you may not understand. If you do not understand a sentence or a word in a sentence say you don’t know what that means.

Before we start let’s try a few examples. I will read you a sentence and you will tell me how you feel by saying yes or no. I will also tell you how a friend called James answered each of these examples.

😊 EXAMPLES:

1. In general, I am neat and tidy.
   Ask the child if he/she understands the sentence. Repeat the sentence. Ask the child to say yes or no. Probe the child’s response. (yes sometimes or yes always? / no sometimes or no always?)
   (James answered yes sometimes as he is at most times very neat and tidy but not always).

2. I like to paint.
   Ask the child if he/she understands the sentence. Repeat the sentence. Ask the child to say yes or no. Probe the child’s response.
   (James answered no sometimes as most times he does not like to paint but not always).

3. I like to watch TV
   Ask the child if he/she understands the sentence. Repeat the sentence. Ask the child to say yes or no. Probe the child’s response.
   (James answered no sometimes as most of the time he does not like to watch TV).

4. I am good at drawing
   Ask the child if he/she understands the sentence. Repeat the sentence. Ask the child to say yes or no. Probe the child’s response.
   (James answered yes always to this question as he thinks he is really good at drawing).

5. I like to go shopping
   Ask the child if he/she understands the sentence. Repeat the sentence. Ask the child to say yes or no. Probe the child’s response.
   (James answered yes always to this question as he thinks he is really good at drawing).

6. Drawing is easy for me
   Ask the child if he/she understands the sentence. Repeat the sentence. Ask the child to say yes or no. Probe the child’s response.
   (James answered no always as drawing is really hard for James to do well)
<table>
<thead>
<tr>
<th>No always</th>
<th>No sometimes</th>
<th>Child understands sentence but does not state yes or no</th>
<th>Yes sometimes</th>
<th>Yes always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

1. I can run fast
2. I am good looking (‘nice looking’)
3. I have lots of friends
4. My parents understand me (‘know me’)
5. Work with numbers is easy for me (‘counting and maths’)  
6. I do well in reading
7. I am good at school work
8. I do lots of important things (‘special’)
9. I like to run and play hard
10. I like the way I look
11. I make friends easily
12. I like my parents
13. I look forward to working with numbers (‘get excited about’)
14. I like reading
15. I enjoy doing school work
16. I like being the way I am
17. I enjoy sports and games
18. I have a nice looking face
19. I get along with other kids easily
20. My parents like me
21. I am good at reading
22. I do well on work with numbers (‘counting and maths’)  
23. I do well at school
24. I have lots of things to be proud of (‘feel good about’)
25. I have good muscles
26. I am a nice looking person
27. I am easy to like
28. If I have kids I would bring them up the same way my parents raised me (‘If I have kids I would treat them the same way my parents treat me’)  
29. I am interested in reading
30. I am interested in work with numbers (‘counting and maths’)  
31. I learn things quickly in all school work
32. I can do things as well as most people

*** STOP AND ASK THE CHILD TO STRETCH

33. I am good at sports
34. Other kids think I am good looking (‘nice looking’)  
35. Other kids want me to be their friend
36. My parents and I spend a lot of time together
37. I enjoy doing work in reading
38. I learn things quickly in work with numbers (‘counting and maths’)  
39. I am interested in all school work
40. A lot of things about me are good
41. I can run a long way without stopping
42. I have a good looking body
43. I have more friends than most other kids
44. My parents are easy to talk to
45. Work in reading is easy for me
46. I like work with numbers (‘counting and maths’)  
47. I look forward to all school work (‘get excited about’)  
48. I am as good as most other people
49. I am a good sportsperson
50. I am better looking than most of my friends
51. I am popular with kids my own age (‘liked by’)
52. I get along well with my parents
53. I look forward to reading (‘get excited about’)  
54. I am good at work with numbers (‘counting and maths’)  
55. All school work is easy for me
56. Other people think I am a good person
57. I am good at throwing a ball
58. I have nice features like nose, and eyes and hair
59. Most other kids like me
60. My parents and I have a lot of fun together
61. I learn things quickly in reading
62. I like all school work
63. I enjoy doing work with numbers (‘counting and maths’)  
64. When I do something, I do it well
APPENDIX B
ITEMS IN THE EIGHT SCALES ON THE SELF DESCRIPTION QUESTIONNAIRE I-IA

Physical Ability Self-Concept
Q1 I can run fast
Q9 I like to run and play hard
Q17 I enjoy sports and games
Q25 I have good muscles
Q33 I am good at sports
Q41 I can run a long way without stopping
Q49 I am a good sportsperson
Q57 I’m good at throwing a ball

Physical Appearance Self-Concept
Q2 I am good looking (‘nice looking’)
Q10 I like the way I look
Q18 I have a nice looking face
Q26 I am a nice looking person
Q34 Other kids think I am good looking (‘nice looking’)
Q42 I have a good looking body
Q50 I am better looking than most of my friends
Q58 I have nice features like nose, eyes, and hair

Peer Relationships Self-Concept
Q3 I have lots of friends
Q11 I make friends easily
Q19 I get along with other kids easily
Q27 I am easy to like
Q35 Other kids want me to be their friend
Q43 I have more friends than most other kids
Q51 I am popular with kids my own age (‘liked by’)
Q59 Most other kids like me
Parent Relationships Self-Concept
Q4 My parents understand me (‘know me’)
Q12 I like my parents
Q20 My parents like me
Q28 If I have kids I would bring them up the same way my parents raised me (‘If I have kids I would treat them the same way my parents treat me’)
Q36 My parents and I spend a lot of time together
Q44 My parents are easy to talk to
Q52 I get along well with my parents
Q60 My parents and I have a lot of fun together

Reading Self-Concept
Q6 I do well in reading
Q14 I like reading
Q21 I am good at reading
Q29 I am interested in reading
Q37 I enjoy doing work in reading
Q45 Work in reading is easy for me
Q53 I look forward to reading
Q61 I learn things quickly in reading

Mathematics Self-Concept
Q5 Work with numbers is easy for me (‘counting and maths’)
Q13 I look forward to working with numbers (‘get excited about’)
Q22 I do well on work with numbers (‘counting and maths’)
Q30 I am interested in work with numbers (‘counting and maths’)
Q38 I learn things quickly in work with numbers (‘counting and maths’)
Q46 I like work with numbers (‘counting and maths’)
Q54 I am good at work with numbers (‘counting and maths’)
Q63 I enjoy doing work with numbers (‘counting and maths’)

General-School Self-Concept
Q7 I am good at school work
Q15 I enjoy doing school work
Q23 I do well at school
Q31 I learn things quickly in all school work
Q39 I am interested in all school work
Q47 I look forward to all school work
Q55 All school work is easy for me
Q62 I like all school work

General Self-Concept
Q8 I do a lot of important things (‘special’)
Q16 I like being the way I am
Q24 I have lots of things to be proud of (‘feel good about’)
Q32 I can do things as well as most people
Q40 A lot of things about me are good
Q48 I am as good as most other people
Q56 Other people think I am a good person
Q64 When I do something, I do it well
APPENDIX C
PARTICIPANTS IN THE PILOT STUDY

Participants in Pilot Study by Year and Educational Placement

<table>
<thead>
<tr>
<th></th>
<th>Year 2 n</th>
<th>Year 3 n</th>
<th>Year 4 n</th>
<th>Year 5 n</th>
<th>Year 6 n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early School Support Program</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Regular Class</td>
<td>-</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>IM Support Unit</td>
<td>-</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
APPENDIX D
THE SOCIAL COMPARISON RATING MEASURE

Part A
Make believe you just got a reading test back from your teacher (insert name). If you could look at someone else’s test in your class, whose test would you look at?

____________________

Part B
Is this person …

Tick

_____ not as good at reading as you  (1)
_____ about the same at reading as you  (2)
_____ better at reading than you  (3)
APPENDIX E
THE SELF-SMARTNESS RATING MEASURE

The interviewer places the following stimuli in front of the student:

. ★ ★ ★ ★ ★

. ★ ★ ★ ★ ★

. ★ ★ ★ ★ ★

. ★ ★ ★ ★ ★

. ★ ★ ★ ★ ★ ★

This is how many stars the smartest person in the class would get *(interviewer points to a row of 5 stars)*. This person is very smart. This is how many stars the dumbest person in the class would get *(interviewer points to a row of 1 star)*. This person is not very smart. The other children aren’t the smartest and they aren’t the dumbest, and they can get 2 stars, 3 stars, or 4 stars. The more stars you get the smarter they are. How many stars should you get? _______________
APPENDIX F
STUDENT BACKGROUND INFORMATION SHEET

Part A: Personal Demographics

1. Student’s Full Name ________________________________

2. Student’s Gender (please circle): Male Female

3. Age _______ years

4. Date of Birth (e.g. 11/09/93) _______________

5. Language spoken at home (please specify) _______________

6. Grade (please circle): 2 3 4 5 6

7. In what year did this student receive the diagnosis of mild intellectual disability?
   19 __ __

8. Has this student been diagnosed with any other disability and/or disorder?
   (please circle): Yes No. If yes, please specify __________________________________________________________________________

Part B: Current and Previous Educational Placement

<table>
<thead>
<tr>
<th>tick one box</th>
<th>tick one box</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current Setting</td>
</tr>
<tr>
<td>IM Support Unit in a regular school</td>
<td></td>
</tr>
<tr>
<td>Regular class</td>
<td></td>
</tr>
<tr>
<td>Early School Support Program (ESSP) (K-2)</td>
<td></td>
</tr>
<tr>
<td>Length of time in this setting (please specify for each)</td>
<td>_____ yrs _____ mths</td>
</tr>
</tbody>
</table>
Part C: Level of Support Needed by the Student in Areas of Curriculum and Social Skills

The following tables depict a continuum of educational needs (moving from a student needing less assistance to a student needing more assistance - left to right) in the areas of curriculum access and social skills. In each table tick the column which best describes the educational needs of this student in this particular area.

<table>
<thead>
<tr>
<th>CURRICULUM ACCESS</th>
<th>Requires no modification to a regular class program</th>
<th>Requires modification to a regular class program requiring minimal additional teacher time to assist with programming</th>
<th>Requires modification to a regular class program requiring additional teacher time to assist with programming</th>
<th>Development of an IEP in some KLAs</th>
<th>Development of an IEP in some KLAs And/Or Occasional modification to a regular class program And/Or Provision of some daily support to assist in implementation of the program And/Or Occasional modification to classroom materials/resources</th>
<th>Development of an IEP in most KLAs And/Or Frequent modification to a regular class program And/Or Provision of frequent daily support to assist in implementation of the program And/Or Frequent modification to classroom materials/resources</th>
<th>Development of an IEP in all KLAs And/Or Substantial modification in a regular class program And/Or Provision of substantial daily support to assist in implementation of the program And/Or Development of alternative materials/resources</th>
<th>Development of an IEP in all KLAs And/Or Long term and constant support to implement the program And/Or Development of alternative materials/resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Please tick one
<table>
<thead>
<tr>
<th>Requires no additional program</th>
<th>Requires additional teacher time to assist with programming for development of social interaction skills:</th>
<th>Requires teacher time to assist with the development of social skills program in the following areas: social interaction skills:</th>
<th>Requires a program for social interaction skills:</th>
<th>Requires a program for social interaction skills:</th>
<th>Requires an individually tailored supported program with respect to social skills:</th>
<th>Requires an individually tailored fully supported program at all times with respect to social skills:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• when working in structured situations</td>
<td>- in pairs - small groups - large groups - classes</td>
<td>• when working in structured situations - in pairs - small groups - large groups - classes</td>
<td>• during loosely structured situations in the playground and/or during free time</td>
<td>And</td>
<td>And/Or</td>
</tr>
<tr>
<td></td>
<td>• during loosely structured situations in the playground and/or during free time</td>
<td>And</td>
<td>Occasionally requires support / supervision in the classroom or playground to assist with implementation / monitoring</td>
<td>And</td>
<td>Needs constant support and supervision in the classroom and/or playground to assist with implementing activities</td>
<td>Needs frequent support and supervision to prevent injury to self and others</td>
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<td>Requires aide support for some aspects of implementation</td>
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Please tick one
APPENDIX G
QUALITATIVE INTERVIEW QUESTIONS

The following questions were asked to all participants so that a comparison could be made between the responses of students with mild intellectual disability in regular classes and those in IM Support Units. Please note that further subsequent prompts and questions may have been provided in order to explore the response given by individual students.

1. Are you different to, or the same as, other children your age? If different, how are you different?

2. Is your class different to, or the same as, other classes? If different, how is it different?

3. When you are in the playground with other children in the school, do you like telling them that you come from (name class)? Why or why not?

4. What do the other children in the school think or say about your class?

5. Is your class (name class) known as a smart class in the school?

6. Do you like being in your class? Why or why not?

7. Would you like to be in your class or another class? Why?

8. In which class would you learn best? Why?

9. In which class would you have more friends? Why?

10. Tell me about how you get along with the children in your class.

11. Tell me about how you get along with children in other classes.
Dear Parent/Guardian,

I am writing to seek your involvement in a project which will collect important information about the needs of primary students requiring additional educational support. The project is being conducted by the University of Western Sydney, and has been approved by the NSW Department of Education and Training, as well as your child’s school.

The aim of the project is to find out how primary students requiring additional educational support feel about themselves. As such, I would like to speak with your child individually, in school time, and upon school premises for approximately 30 minutes. During this time your child will be asked how they feel about their: physical abilities, physical appearance, relationships, reading, mathematics, school subjects in general, and self in general. Questions will be read aloud to your child, and their responses noted. Your child’s teacher will also be asked to provide information regarding your child’s educational needs and background.

Be assured that your child’s responses will be kept confidential and anonymous. Your child’s responses will not be discussed with anyone. Also, your child’s participation is voluntary. They can withdraw from the project at any time, if they so wish.

If you have any questions please contact me on (02) 9772 6296. If you would like your child to participate please complete the bottom slip and return it to your classroom teacher by (insert). Thank you for your consideration.

Yours sincerely,

Danielle Tracey
PhD Candidate, University of Western Sydney

This research project has been approved by the University of Western Sydney Ethics Review Committee (Human Subjects). Any complaints or reservations about this research may be directed to the Ethics Committee through the Executive Officer, Kokila De Silva, phone (02) 4620 3641. Any complaint you make will be treated in confidence and investigated fully and you will be informed of the outcome.

I _____________________ give permission for my child ____________________ of class _________ at ____________________ School, to participate in the study investigating the self-concept of primary students requiring educational support, as described above.

_______________________                                          ________________________
APPENDIX I
PARENTAL/GUARDIAN CONSENT FORM FOR PARTICIPATION IN STUDY 3

Dear Parent/Guardian,

I am writing to seek your involvement in a project which will collect important information about the needs of primary students requiring additional educational support. The project is being conducted by the University of Western Sydney, and has been approved by the NSW Department of Education and Training.

The aim of the project is to find out how primary students requiring additional educational support feel about themselves, and if this changes over time, and as they change educational placements. Because your child may be experiencing some change in their educational placement next year I would like your child to be involved. I would like to speak with your child, individually, in school time, and upon school premises for approximately 60 minutes, on three separate occasions. I would like to meet with your child in Term 4, 1998; Term 2, 1999; and Term 4, 1999. During this time your child will be asked how they feel about their: physical abilities, physical appearance, peer relationships, reading, mathematics, school subjects in general, and self in general. Your child will also complete some reading, spelling and math tasks. Your child’s teacher will also be asked to provide information regarding your child’s educational needs and background.

Be assured that your child’s responses will be kept confidential and anonymous. Your child’s responses will not be discussed with anyone. Also, your child’s participation is voluntary. They can withdraw from the project at any time, if they so wish. If you have any questions please contact me on (02) 9772 6296. If you would like your child to participate please complete the bottom slip and return it to your child’s class teacher by (insert). Thank you for your consideration.

Yours sincerely,

Danielle Tracey
PhD Candidate, University of Western Sydney

This research project has been approved by the University of Western Sydney Ethics Review Committee (Human Subjects). Any complaints or reservations about this research may be directed to the Ethics Committee through the Executive Officer, Kokila De Silva, phone (02) 4620 3641. Any complaint you make will be treated in confidence and investigated fully and you will be informed of the outcome.

I ___________________ give permission for my child ____________________ of class ________ at ________________ School, to participate in the study investigating the self-concept of primary aged students requiring educational support: longitudinal study, as described above.

__________________________                                   ________________________
Signature                 Date
REFERENCES


Myers, J. (1976). The efficacy of the special day school for EMR pupils. Mental Retardation, August, 3-11.


