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# A model of general self-concept for students with learning disabilities: Does class placement play a role? [1]

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*The purpose of this study was to investigate the effects of school, home, and environmental variables on the general self-concept of students with learning disabilities (LD). These variables included (a) class placement, (b) social skills, (c) social self-concept, (d) student perception of teacher fairness, (e) parents' academic expectations of their child, (f) academic self-concept, (g) general self-concept, (h) socioeconomic status (SES), and (i) gender. A model of the relationships between these variables was created based on existing research and theory. Data from the Canadian National Longitudinal Survey of Children and Youth (NLSCY) were analysed using Structural Equation Modeling (SEM). Results indicated that the model was an excellent fit to the data. As well, class placement had a moderate, indirect negative effect on general self-concept which was largely mediated by social self-concept. Implications arising from the findings are discussed*

Improving students' self-concept has become a major goal of the modern education system. Although its importance in schools is generally usurped by academic achievement, longitudinal studies have shown that students with high self-concept have better peer and family relationships, higher grades, and lower levels of alcohol and drug use, depression, and anxiety (Deihl, Vicary, & Dieke, 1997; DuBois, Felner, Brand, & George, 1999; Zimmerman, Copeland, Shope, & Dielman, 1997). Student self-concept is particularly influential in relation to achievement, as it has been shown to significantly impact on students' willingness to expend effort and persistence on academic tasks (Guay, Larose, & Boivin, 2004; Marsh & Yeung, 1997).

Self-concept is a construct that is not commonly defined in educational and psychological research. Broadly described, self-concept is a person's

perceptions of him- or herself. According to Shavelson, Hubner, and Stanton (1976), "These perceptions are formed through his [or her] experience with his [or her] environment…and are influenced especially by environmental reinforcements and significant others" (p. 411). Both unidimensional and multidimensional models of self-concept have been endorsed. The latter has become more prevalent in recent years following the development of a hierarchical, multidimensional model presented by Shavelson and his colleagues and subsequently tested by Marsh (e.g. Marsh, 1989; Marsh & Ayotte, 2003). According to this model, self-concept consists of a general component, which is a higher order factor comprising multiple, domain-specific self-concepts that, while related, can be viewed as separate constructs (Marsh & Shavelson, 1985). For the present study, then, self-concept will be defined according to the Shavelson/Marsh model as having a general domain as well as more specific domains such as academic and social self-concept. The specific domains are assumed to be correlated to varying degrees with each other, and all are assumed to be highly correlated with the general domain.

While school, home, and individual influences on general self-concept for average-achieving students have been examined for some time, recent research has focused on groups of students assumed to be at-risk for lowered self-concept. Students with learning disabilities (LD), for example, are the largest group of special needs students in North American schools. In the United States, the number of students identified as LD in 1998-1999 was 2.8 million (U.S. Department of Education, 2000). Approximately 50 percent of students who receive special education services have been identified as having an LD (e.g., British Columbia Ministry of Education, 2006; Ontario Ministry of Education and Training, 2005).

For students with learning disabilities, the identification of variables that influence self-concept is of particular importance for at least two reasons. First, students with LD are suggested to be at-risk for lowered self-concept due to their difficulties in social and academic areas as well as the possible stigmatization of the labeling and placement process

(Vaughn, Elbaum, & Boardman, 2001). Second, students with LD are characterized by low achievement, and self-concept has been found to have a significant effect on school grades. If factors significant to the positive self-concept of learning disabled students can be identified, efforts can be focused on these variables, and both affective and academic outcomes can be improved.

One factor likely contributing to the self-concept of students with LD is class or school placement. While united in a policy of educating all students in neighbourhood schools as a first placement option (e.g., Government of Alberta, 2003, Government of Ontario, 2000), individual school boards in Canada have chosen various settings in which to meet the needs of these students. These range from segregated schools to fully inclusive settings.

"Inclusion" is a term that emerged in the 1990s. This signified a philosophical shift from a view of education as parallel systems of regular and special education to a unified system of education. According to Lupart (2000), "authentic inclusion means full participation of all teachers and students in an open, unified learning community and shared responsibility for continuous growth and progress" (p. 222). Proponents of inclusion list the social benefits of being with same-age peers, the "real-life" experiences of a regular classroom, and the negative effects of segregated classes on self-concept and self-esteem as arguments in favour (Wiener & Tardif, 2004).

Despite these claims, there are few published studies that provide empirical support for inclusion. A meta-analysis conducted by Elbaum (2002) compared the self-concept of students with LD in various placements, including general class, pull-out (periodic resource room), and self-contained class. Elbaum concluded that there was "no systematic association between the self-concept of students with LD and their educational placement" (p. 221). Canadian studies (Beltempo & Achille, 1990; Morvitz & Motta, 1992; Wiener & Tardif, 2004) have similarly failed to provide evidence that class placement has an effect on the self-concept of students with LD. Studies to date, however, have

looked solely at the *direct* effect of this variable. It is more likely that class placement influences general self-concept indirectly, through classroom- and student-level variables. For example, students with LD who are placed in more heterogeneous classes, and who have poor social skills, may suffer lowered self-concept. Students with LD who have adequate social skills may not be negatively affected by the placement. Thus it is important to examine the relationship between class placement and self-concept in tandem with other variables that may also impact on the socio-emotional outcomes of students with LD.

The method most appropriate to testing the influence of several variables in tandem is Structural Equation Modeling (SEM). Structural equation methods provide estimates of the strength of all the hypothesized relationships between variables in a theoretical model. The method yields information about hypothesized impact, both directly from one variable to another and indirectly, via other variables (Maruyama, 1998).

The purpose of the present research, then, is to test a structural equation model of self-concept with Canadian elementary-aged children with learning disabilities. Results of these analyses will provide information regarding the effect of each variable on self-concept as well as the overall fit of the model; in other words how well the hypothesized relationships between these variables match what is observed in the data. Identifying a model of self-concept can provide direction for interventions and school policy that will improve outcomes for students with LD. Class placement will be the variable of primary interest in the model and will be measured by teacher reports of where the student receives special education services (ranging from a fully segregated setting to a general education classroom).

## Variables in the Model

Based on an extensive review of research, two background (exogenous) variables will be included in the model: (a) socioeconomic status and (b) gender; six outcome (endogenous) variables will also be included: (a) class placement, (b) social skills, (c) social self-concept, (d) teacher

fairness (e) parent expectations of academic attainment, (f) academic self-concept, and (g) general self-concept. The following paragraphs summarize the literature guiding the selection of these variables with the exception of class placement, which has been discussed previously. A description of the indicators used to measure each variable is presented in the Methods section.

*Socioecnomic Status.*

Socioeconomic status (SES) refers to one's position in society as determined by a variety of factors, including income, education, occupation, and accumulated wealth (Bollen, Glanville, & Stecklov, 2001). While the importance of SES in explaining student achievement has been well documented (Lytton & Pyryt, 1998; Sirin, 2004), its role in relation to self-concept is less clear. Most large-sample studies have reported positive correlations ranging from weak to moderate (Khor, Coldiron, Skiffington, Masters, & Blust, 1988; Mullis, Mullis, & Normandin, 1992). Trusty, Peck, and Mathews (1994) found that achievement was more closely related to self-concept than SES, while Muijs (1997) reported a unique contribution of SES to general self-concept above school grades and academic self-concept. While the contribution of SES to general self-concept is still under investigation, it is an important background variable and will be measured in the present study as a composite of parent education, income, and occupational status.

*Gender.*

A number of studies have documented gender differences in self-concept. A meta-analysis conducted by Kling, Hyde, Showers, and Buswell (1999) reported an overall effect size of 0.21 indicating that males had a somewhat higher general self-concept than females. Gender differences were particularly apparent when students were in late adolescence (i.e., 15 – 18 years old; $d = 0.33$). The effect of gender on the self-concept of students with learning disabilities has rarely been investigated. Beltempo and Achille (1990) examined the self-concept of

131 students with and without LD in five elementary schools, using the unidimensional Piers-Harris Children's Self-Concept Scale. The authors found that students with LD reported significantly lower self-concept than students without LD. As well, boys reported significantly higher self-concept than girls. However, there was no interaction which indicates that the gender effect existed independent of LD status. The literature documenting gender differences in general self-concept supports the inclusion of this variable in the present model.

*Social Skills*.

The social skills deficits of students with LD have been documented for some time. Kavale and Forness (1996), in an oft-cited meta-analysis, concluded that "...findings indicated that about 75% of students with LD can be differentiated from their NLD peers through measures of social competence" (p. 233). No studies to date have examined the relationship between social skills and general self-concept for students with LD. This may be due to the common assumption that social difficulties are characteristic of all students with LD. It is likely, however, that there is a range of social proficiency among students with LD and that those with strengths in this area have better peer relationships and higher self-concept. This hypothesis is supported by studies that have reported that, when behaviour problems are controlled for, the self-concept of students with and without LD does not differ (Vaughn, Elbaum, & Schumm, 1996). For this reason, social skills will be included in the current model and will be measured using a teacher-rated scale.

*Social Self-Concept.* Social self-concept refers to the ways in which individuals perceive their competence in peer relationships. Correlations between social and general self-perception are generally estimated to be moderate and positive. For example, Marsh and his colleagues have reported correlations ranging from 0.23 to 0.37 using their Self-Description Questionnaire (Marsh, Craven, & Debus, 1991; Marsh & McDonald-Holmes, 1990). Harter reports, in the manual for the Self-Perception Profile for Children (1985), correlations between social and general self-concept ranging from 0.45 to 0.60.

Students with learning disabilities have been found to have significantly lower social self-concept than their non-disabled peers. Nowicki (2003) conducted a meta-analysis of the social self-perceptions of students with LD compared to their non-LD classmates across a number of placement types. She found that, in comparison to average or high achieving classmates, effect sizes for self ratings of social acceptance were medium, indicating that students with LD rated themselves as significantly less accepted than their peers ($d' = 0.69$). Thus social self-concept represents an important factor in a model of general self-concept for students with LD. It is measured in the present study by a student-rated scale.

*Teacher Fairness.* The quality of the relationships between students and their teachers has been found to have an important influence on students' general self-concept. It has been suggested that students who feel supported, liked, and well-treated by their teachers are more motivated and engaged in their school work, and also possess higher self-concept than students with less positive relationships (Birch & Ladd, 1997; Midgley, Feldlaufer, & Eccles, 1989).

The importance of the teacher-student relationship and teacher fairness in particular for the success of students with learning disabilities has been given limited attention. However, Canadian researchers Jordan and Stanovich (2001) have examined the interactions of teachers with both average-achieving students and those with disabilities. They found that teachers who believed that student learning difficulties were due to internal, permanent characteristics of the student that are immune to teacher intervention (Pathognomonic beliefs) typically interacted with students with disabilities using lower levels of cognitive engagement. Teachers who viewed themselves as responsible for the learning of all students and strove to create interventions to meet student needs (Interventionist beliefs) interacted with them using high level engagement. General self-concept scores were significantly higher for students whose teachers held Interventionist views as compared to those with Pathognomonic views ($F[1, 47] = 6.74$, $p < 0.01$). This finding is an indication that differential treatment by teachers may be particularly influential for students with disabilities and that such a variable should

be included in the present model. It is measured using student reports of perception of teacher fairness.

*Parent Expectations.* There is extensive evidence that parents' expectations or aspirations for their child's educational attainment have a significant impact on student achievement for students with and without LD. This effect has been shown in numerous studies to be mediated by parent behaviours (Davis-Kean, 2005; Englund, Luckner, Whaley, & Egeland, 2004; Sy & Schulenberg, 2005) and student expectations (Patrikakou, 1996). However, the influence of parent expectations on academic and general self-concept has rarely been investigated with LD or non-LD populations. Parent expectations will be measured in the present study by parent reports of educational aspirations for their child.

*Academic Self-Concept.* With the development of multidimensional theories of self-concept, many educational researchers began to focus on the academic aspect of student self-perception. This shift was particularly salient for students with LD, as it was hypothesized that, while differences may not be evident in general self-concept, the perceptions of students in areas of difficulty, such as academics, would be lower than those of average achievement. A number of studies have supported this assumption (Grolnick & Ryan, 1990; Hagborg, 1996; Nowicki, 2003; Vaughn et al., 1996). The relationship between academic self-concept and general self-concept for students with LD has been found to be positive and significant (Smith & Nagle, 1995; Vaughn et al., 1996). Academic self-concept is measured in the present study as a score on a student-reported scale.

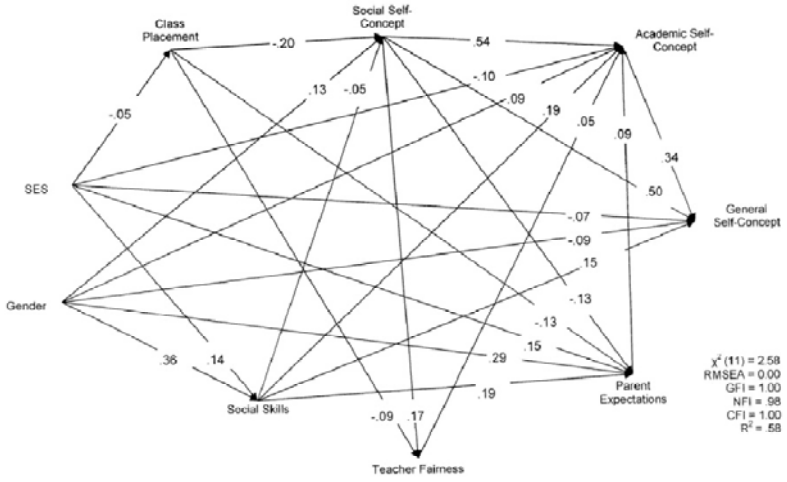
## Method

Incorporating the variables listed above, a structural equation model was constructed depicting the hypothesized relationship between variables for students with learning disabilities (Figure 1). As no guiding models exist, the causal ordering specified by the model was based on empirical research, theory, and logic. Specifically, general self-concept is shown as

being affected directly by a number of endogenous variables: class placement, social self-concept, teacher fairness, parent expectations, and academic self-concept. It was hypothesized that class placement would have a direct effect on general self-concept in that the less segregated the placement, the more positive the students would feel about themselves. In addition to direct effects, class placement was also assumed to have an indirect or mediated effect on general self-concept through its effect on teacher fairness, social self-concept, parent expectations, and academic self-concept.

Social skills were hypothesized to affect general self-concept both directly and indirectly, through class placement, social self-concept, teacher fairness, parent expectations, and academic self-concept. Social self-concept was theorized to influence self-concept directly, as well as indirectly through teacher fairness, parent expectations, and academic self-concept. Teacher fairness was assumed to affect general self-concept directly, as well as indirectly through academic self-concept. Finally, academic self-concept was posited to influence general self-concept directly.

*Figure 1.* Theoretical model of general self-concept for students with learning disabilities



*Data Source*

Indicators of the variables of interest in this study were found within the National Longitudinal Study of Child and Youth data set (NLSCY; Statistics Canada, 1999). This dataset is maintained jointly by Statistics Canada and Social Development Canada. Data are collected every two years and the fifth cycle has recently been released. The unit of analysis in the NLSCY is the child. Surveys are completed by the child's parents, teachers and, for children over the age of 10, themselves. Topics within the surveys include the physical, emotional, and cognitive development of the child; parenting practices; education-related factors; and influences such as peers, schools, and the larger community. When the survey began in 1994, approximately 22,831 children were sampled. Children were followed longitudinally and, by Cycle 5 (2002/2003), 15,163 children remained in the sample. For the purposes of the current study, data from Cycles 2 and 3 were analysed. The primary factor in this choice was the participation of students' teachers which, in the NLSCY, has been relatively low. Maximum response rates were observed for Cycles 2 and 3.

*Variable Indicators*

Structural equation modeling uses latent variables rather than measured variables as might be more typically seen in path analysis. As a latent variable, teacher fairness, for example, is a concept that the researcher believes exists in the "real world" and, as such, has expected relationships with other variables, such as general self-concept. The measurement of the latent variables can be described as a separate model. Whereas the paths from one latent variable to another (e.g., social self-concept to academic self-concept) constitute the structural model, the paths from latent to measured variables constitute the measurement model. The items used in the present study to operationalize the variables that were chosen to comprise the measurement model are detailed in the Appendix; the three scales included in the model are described below.

The Social Skills scale was completed by teachers and was intended to measure social and personal skills demonstrated by the child in class. The scale consisted of a list of 10 behaviours (e.g., cooperative work with other students) which were each rated on a 5-point frequency scale of occurrence ranging from 1 = never to 5 = always. The internal consistency of the scale was measured by the NLSCY using Cronbach's alpha, which was reported by the NLSCY as 0.93 (Statistics Canada, 2003, p. 138).

The Social Self-Concept scale, referred to in the NLSCY as the Friends scale, consisted of four items that were taken from the Peer Relations Sub-Scale of the Self-Description Questionnaire (SDQ; Marsh, 1988). According to Marsh, this scale measures "student perceptions of how easily they make friends, their popularity, and whether others want them as a friend" (Marsh, Craven, & Debus, 1998; p. 1051). The Social Self-Concept scale consists of the following items, which were rated by students on a five point scale ranging from 1 = false to 5 = true: (a) I have many friends, (b) I get along easily with others my age, (c) I feel that my close friends really know who I am, and (d) most others my age like me. Marsh's SDQ is one of the most well-validated measures of self-concept for children (Byrne, 1996). Cronbach's alpha was reported as 0.78 (Statistics Canada, 1999, p. 85).

The third scale was General Self-Concept, entitled About Me by the NLSCY. This was also adapted from the SDQ (Marsh, 1988). According to Marsh (Marsh, Craven, & Debus, 1998), this scale is intended to measure "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" (p. 1051). Students responded to the following four items on a five point scale ranging from 1 = false to 5 = true: (a) In general, I like the way I am; (b) overall, I have a lot to be proud of; (c) a lot of things about me are good; and (d) when I do something, I do it well. Cronbach's alpha was reported as 0.73 (Statistics Canada, 1999, p. 126).

*Participants*

Students were selected based on three criteria, the foremost of which was their teachers' responses to a two-part question in Cycle 3 of the NLSCY. First, teachers were asked, "Does this student receive special/resource help because a learning disability, a physical, emotional, behavioural, or other problem limits the kind or amount of school work he/she can do?" For teachers who responded in the affirmative, the following was asked: "What type of problem limits this student's ability to do school work in a regular classroom?" Those students for whom teachers indicated "learning disability" were included in the sample for the present study. Students identified as having multiple limitations were not included in the sample.

The second criterion for inclusion in the study was student age. A number of the variables that were included in the model were obtained through student self-report surveys which were administered to students aged 10 and older. As well, in an effort to create a sample with similar school experiences, the final criterion was that all subjects were taught by a single teacher. In summary, students who were between 10 and 14 years of age, who were taught by a single teacher, and whose teachers indicated that they were receiving special education services for a learning disability, were included in the study.

Applying selection criteria resulted in a sample of 106 students, with a greater number of male students ($n$ = 66) than female students ($n$ = 40). This gender difference is supported by extensive literature that has documented the higher incidence of learning disabilities in boys (Hallahan, Lloyd, Kauffman, Weiss, & Martinez, 2005). The average age of students was 11.35 years ($SD$ = 1.20), with the majority of students between ages 10 and 12.

*Data Analysis*

Structural equation modeling (SEM) was used to test the relationships among variables identified in the present study. The analyses were

completed using LISREL 8 (Jöreskog & Sörbom, 1996), which is one of the most well respected and widely used programs for conducting SEM. LISREL 8 solves structural equations by using maximum likelihood estimation (MLE) to estimate all model parameters (i.e., path values) simultaneously. MLE attempts to minimize the differences between the covariance matrix implied by the theoretical model and that observed in the dataset. LISREL 8 also provides information regarding the goodness of fit of the data to the model.

A small percentage of missing data was observed in the data set (ranging from .08 to 2.9). An examination of the missing values revealed that there was no apparent pattern, indicating that data were missing at random. Consequently, the Expectation Maximization (EM) algorithm in SPSS Missing Values Analysis (MVA; 2006) was used to compute maximum likelihood estimates of the means, standard deviations, and the correlation and covariance matrices.

## Results

### *Model Testing*

The theoretical model for the sample of students with learning disabilities was tested and indices suggest that the model provided a very good fit to the data and explained approximately 58 percent of the variance in general self-concept. However, there were a number of paths whose values (e.g., standardized regression weights) were less than 0.05 and thus not meaningful. Since more parsimonious models are desirable (Hayduk, 1987), these paths were deleted and the revised model was re-tested. The removal of the paths resulted in a slight improvement in fit so, consequently, the revised model was accepted.

The means, standard deviations and correlation matrix that were used in the analysis are presented in Table 1. The final model of self-concept for students with LD, including individual standardized path coefficients and fit indices, is presented in Figure 2. Fit indices presented were those found to be the most appropriate given our modest sample size (Hu &

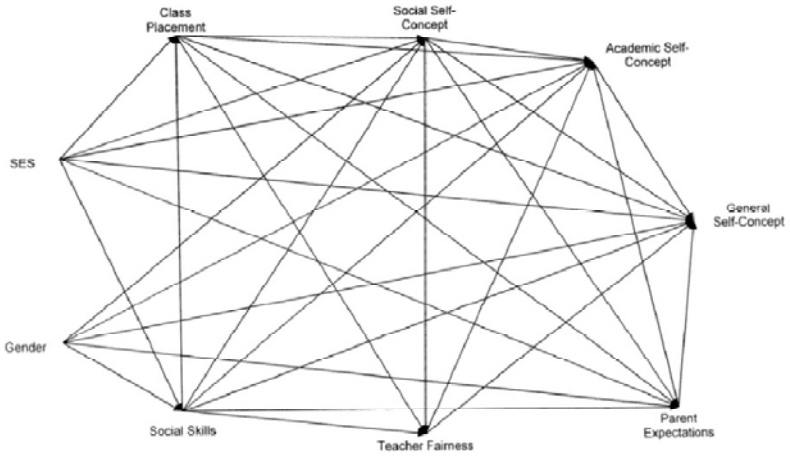
Bentler, 1999; Schermelleh-Engel, Moosbrugger, & Müller, 2003). Examinations of the fit indices suggest that the hypothesized model was an excellent fit to the data. (large print figures available from author.)

**Table 1**
**Correlations, Means, Standard Deviations & Cronbach's $\alpha$ for the LD Sample**

| Indicator | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| Means | 1.95 | 27.17 | 12.76 | 4.00 | 3.19 | 3.73 | 12.86 | -0.49 | 1.38 |
| Standard Deviations | 0.73 | 6.23 | 2.91 | 1.22 | 0.79 | 0.89 | 3.11 | 0.61 | 0.49 |
| 1. Class Placement | - | | | | | | | | |
| 2. Social Skills | 0.003 | 0.910[a] | | | | | | | |
| 3. Social Self-Concept | -0.168 | 0.002 | 0.660[a] | | | | | | |
| 4. Teacher Fairness | -0.110 | -0.043 | 0.161 | - | | | | | |
| 5. Parent Expectations | -0.094 | 0.278 | -0.071 | 0.037 | - | | | | |
| 6. Academic Self-Concept | -0.073 | 0.206 | 0.484 | 0.139 | 0.115 | - | | | |
| 7. General Self-Concept | -0.152 | 0.164 | 0.579 | 0.138 | 0.025 | 0.554 | 0.800[a] | | |
| 8. SES | -0.040 | 0.142 | 0.003 | -0.014 | 0.190 | -0.014 | -0.050 | - | |
| 9. Gender | 0.051 | 0.339 | 0.091 | 0.102 | 0.337 | 0.241 | 0.092 | 0.056 | - |

*Note*. Reliabilities for scales are presented on the diagonal. Error was estimated for class placement (.10), social skills (.15), social self-concept (.15), teacher fairness (.10), parent expectations (.10), academic self-concept (.10), general self-concept (.15), SES (.10), and gender (.01).

*Figure 2*. Revised model of self-concept for students with learning disabilities.



*Model Effects*

Standardized path values can be understood as standardized regression weights and, as such, may be interpreted as the number of standard deviations change in a construct expected to follow a one standard deviation increase in another construct, holding all the other relationships constant. For example, a one standard deviation change in social skills is expected to lead to an increase of 0.19 standard deviations in academic self-concept, after accounting for the other effects (see Figure 2). In addition to direct effects, variables may also have indirect (mediated) effects as well as total effects, which are calculated by summing direct and indirect effects. The direct, indirect, and total standardized effects of model variables on general self-concept are shown in Table 2. Effect sizes are categorized according to Keith (1993), who states that "for manipulable influences on learning, paths of .05 -.10 may be considered small but meaningful influences, paths of .10 -.25 may be considered moderate influences, and paths above .25 may be considered large effects" (p. 26).

**Table 2**
**Standardized Effects of Model Constructs on General Self-Concept**

| Variable | Effects | | |
|---|---|---|---|
| | Direct | Indirect | Total |
| Socioeconomic Status | -0.07 | 0.01 | -0.06 |
| Gender | -0.09 | 0.20 | 0.11 |
| Class Placement | -- | -0.15 | -0.15 |
| Social Skills | 0.15 | 0.04 | 0.19 |
| Social Self-Concept | 0.50 | 0.18 | 0.68 |
| Teacher Fairness | -- | -- | -- |
| Parent Expectations | -- | -- | -- |
| Academic Self-Concept | 0.34 | -- | 0.34 |

As can be seen in Table 2, self-concept was influenced most strongly and positively by social and academic self-concept. Social skills and class placement had moderate total effects; social skills had a positive influence while class placement had a negative impact. Neither teacher fairness nor parent expectations had meaningful total effects on general self-concept. Finally, SES and gender had small but meaningful effects

on general self-concept; the former having a negative total effect and the latter having a positive total effect such that girls had higher general self-concept scores than boys.

## Discussion

The main results of the present study are twofold. First, for students with LD, a model of the influence of individual, family and school characteristics on student's general self-concept fit the data extremely well and explained approximately 60 percent of the variance. Second, class placement, a variable of particular interest in the present study, had a moderate, negative total effect on the general self-concept of students with learning disabilities, which was entirely indirect.

### *Class Placement*

Findings regarding the influence of class placement on general self-concept emphasize the importance of examining both direct and indirect effects. Class placement had no direct effect on general self-concept. However, it had a total effect of -0.15, which was indirect, through social self-concept, teacher fairness, and parent expectations. Class placement affected each of these negatively such that increasingly inclusive placements resulted in more negative student ratings of relationships with peers, teacher fairness, and parents' expectations of their child's academic attainment.

### *Social Self-Concept*

For students with disabilities, general class placement is often deemed favourable because of its assumed social benefits (Stainback, Stainback, & Bunch, 1989; Winzer, 1999). However, previous studies have reported that the social self-concept of students with learning disabilities did not differ depending on their class placement (Elbaum, 2002; Wiener & Tardif, 2004). For students in the present sample, a one unit change in class placement (e.g., segregated school/class to periodic resource class to regular class) actually resulted in a decrease in social self-concept of -0.79

(unstandardized).

This finding may be explained by drawing on social comparison theory. Festinger, who is credited with the original conception of the theory, states that, "to the extent that objective, non-social means are not available, people evaluate their opinions and abilities by comparison respectively with the opinions and abilities of others" (1954, p. 118). In an educational context, Marsh proposed and tested the big-fish-little-pond effect (BFLPE) to capture the frame of reference effects posited by Festinger (Marsh, 1987; Marsh, Koeller, & Baumart, 2001). According to this theory, students will assess their social competencies by making comparisons to their classmates. If they are placed in more inclusive classes, where students may display greater social abilities, students with LD may rate their social self-concept as lower. However, if students are placed in segregated settings, with a more homogeneous peer group, they may rate themselves as more competent in comparison. Marsh's research has focused on the BFLPE as it applies to the academic self-concept of gifted students and has not explored it's relevance to social self-concept. However, the present findings suggest that a re-casting of Marsh's theory as the little-fish-big-pond effect may be relevant for students with LD who are placed in various classroom settings.

A second explanation for this finding is simply that students with learning disabilities, who are placed in general education classes, have poorer peer relationships than those in more segregated settings. Research exploring the preferences of students with learning disabilities has demonstrated that they believe that they have more opportunities to make friends in the mainstream or general education classroom than in pull-out or segregated settings (Klingner, Vaughn, Schumm, Cohen, & Forgan, 1998; Vaughn & Klingner, 1998). However, students with LD have been shown repeatedly to be more rejected and neglected by peers in general education classrooms (Nowicki, 2003). While these students feel the negative effects of social segregation, then, they may nonetheless perceive themselves as more socially successful when grouped with students who have similar academic and social difficulties.

*Teacher Fairness*

The negative relationship between more inclusive class placement and teacher fairness has not been reported previously. However, studies investigating interactions between teachers and students with LD in general education classes may shed light on this finding. Boardman (2004) discovered that fourth grade teachers interacted more frequently with students with LD, followed by those who were low-achieving and, finally, average-achieving. However, discourse analyses revealed that the quality of most interactions, in terms of their ability to increase learning, was low. Teachers typically focused exchanges with students on procedural and behavioural aspects of learning, such as reminders to stay on task and repetition of instructions. Similarly, Jordan and Stanovich (2001) found that, while some teachers had greater numbers of interactions with exceptional or at-risk students, the quality of the interaction varied depending on teachers' rating on the Pathognomonic-Interventionist Scale described previously. Specifically, teachers with interventionist beliefs interacted with students with exceptionalities at higher levels of cognitive engagement than teachers with pathognomonic beliefs.

Thus, for students with learning disabilities who are placed in general education classes, communication with their teacher may consist in large part of behavioral reminders, as compared to their non-disabled peers, who benefit from discussion related to academic material. Students with LD may perceive being treated less fairly than their peers as a result. Students who are served in pull-out or self-contained classes may have the benefit of smaller classes with teachers who are more focused on the specific needs of students who may perceive more equitable treatment. This finding should not be overemphasized, however, as the effect of class placement on student-teacher relationship was quite small, with a one unit change in the former resulting in a 0.15 decrease in students' ratings of teacher fairness.

*Parent Expectations*

The negative effect of class placement on parents' expectations of their child's educational attainment was also very small, with an unstandardized direct effect of -0.14. However, this finding is interesting as we may expect that parents whose child is placed in regular, more "normal" placements would have higher aspirations for their child (Ritter, Michel, & Irby, 1999). However, some parents have expressed uncertainty as to whether their child will have enough individualized attention to improve academically in a regular classroom (Leyser & Kirk, 2004; Palmer, Fuller, Arora, & Nelson, 2001). Parents who believe that their child has high academic potential given appropriate support may in fact lobby for their placement in a class or school for students with LD. Conversely, some parents of students with LD in the present sample may not feel that their child's academic needs are being met in the general classroom and they may express lower expectations of their child's attainment as a result. As with the previous finding, the negative influence of class placement on parent expectations needs be further substantiated before strong conclusions can be drawn.

*Educational Implications*

Class placement had a negative impact on general self-concept indirectly, primarily though social self-concept. Clearly, as elucidated in Kavale and Forness (2000), "simple contact with students with disabilities itself does not result in more favorable attitudes and improved acceptance" (p. 286). Thus, simply placing students with LD in a regular classroom will not automatically result in perceptions of greater peer acceptance. Social skills training, which is often suggested for students with LD, may also not improve social self-concept as these constructs were found to be weakly linked in the present study. Instead, students with LD may benefit from increased opportunities for meaningful engagement with their classmates in both academic areas as well as non-academic domains, where learning difficulties may be less apparent. Examples include participation in structured collaborative or group work, where the role of students is clearly defined in order to

allow equal success for students with LD, and differentiated instruction and assessment that allows students to display their abilities without having "special" accommodations that may serve to ostracize them in the classroom.

Teachers are also responsible for setting the tone in the class and students without disabilities are certainly influenced by the apparent beliefs and practices of their teachers regarding students with LD. Thus, the authentic social inclusion of students with LD in the classroom requires that teachers examine the ways in which they interact with these students and the expectations they have, of both their own ability to facilitate learning and the child's ability to learn. Experiences in classes where inclusion has been successfully implemented at the pre-service level may help prospective teachers develop more interventionist beliefs. Once in the field, in-service programs can help equip teachers with skills in using inclusive methods such as co-teaching and differentiated instruction. With opportunities for positive interaction with classmates and the true support of teachers, students with LD will enjoy greater social acceptance, student-teacher relationships and, ultimately, general self-concept in the general education classroom.

*Limitations*

The use of the NLSCY provided the opportunity to test a model of general self-concept with national samples of Canadian students with learning disabilities. However, there are a number of important limitations that should be considered when interpreting the results of the analyses. First, the selection of the sample of students with learning disabilities was based on a two-part question addressed to the students' classroom teacher. Students must have been both (a) receiving special/resource help, and (b) requiring special/resource help because of a learning disability. Thus, the students identified by teachers, while presumably meeting local standards for LD diagnosis, likely do not have identical learning profiles.

Second, the choice of indicators used to measure each latent variable in

the model was clearly restricted by the availability of items in the NLSCY. Academic self-concept was measured by a single question and was general to student performance across all areas of schoolwork. As students begin to differentiate their academic self-concept in the later elementary years, multiple, subject-specific questions would have been preferable. As well, teacher fairness was measured by a single item, asking students to indicate how fairly they felt they were treated by their teacher. Certainly other measures that captured a more multidimensional view of student-teacher relationships may have altered results in the present study.

Finally, there were only 106 students identified as receiving services for LD in the survey for whom complete data was available. This is a small sample and while acceptable (Fan, Thompson, & Wang, 1999; Hayduk, 1987), may be considered by some to be on the low side for SEM analyses.

*Directions for Future Research*

The testing of the current model of general self-concept has been mainly exploratory in nature. Thus, there may be other school-related variables that may impact on general self-concept and may be included in future models. There are, also, certainly indicators that may better capture variables in the model, such as academic self-concept. Re-testing of the model using alternate measurements of variables would certainly assist in validating or refuting effects within the model.

## Conclusion

The general self-concept of students is impacted on by a myriad of factors. A selection of school-related variables, which previous research had demonstrated to affect self-concept, was chosen for inclusion in a structural equation model for students with learning disabilities. Test results indicated that the model fit data obtained from a nationally representative sample of 10-14 year old students extremely well. This model provides valuable information regarding the direction of future

research in the area as well as food for thought for educators and administrators who are working toward including students with LD in classrooms with their same-age peers. For students with learning disabilities, the inclusion of class placement as one influential variable offered a unique contribution to the ongoing debate regarding the optimal approach to meeting their academic and social needs. Hopefully this study will be the first step toward a more multidimensional examination of the experiences of students with disabilities in Canadian classrooms.

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## Footnote

[1]This paper comprises part of dissertation research conducted by the author at the University of Alberta, Edmonton.

**Appendix**
**Variable Indicators from the NLSCY**

| Variables | Indicators | Coding | Variable Name |
|---|---|---|---|
| Exogenous Variables | | | |
| Socioeconomic Status | A standardized score derived from:<br>(a) Highest level of education of both parents or single parent<br>(b) Household income<br>(c) Occupational status of both parents or single parent | Scores range from approximately -2.0 to +2.0, with higher scores reflecting higher SES | BINHbD8L (Parent) |
| Gender | Parent reported gender of child | 1=Male<br>2=Female | BMMCQ02 (Parent) |
| Endogenous Variables | | | |
| Class placement | Where does this student receive this special/resource help (e.g., special education)? ® | 1= Exclusively in a segregated school/class<br>2=Primarily in a regular classroom but with periodic removal<br>3=Exclusively within a regular classroom | CETScQ20 (Teacher) |

| Variables | Indicators | Coding | Variable Name |
|---|---|---|---|
| Social skills | Social Skills Scale (10 items) | Scores range from a low of 0 (poor social skills) to a high of 40 (high social skills) | CETSS17 (Teacher) |
| Social Self-Concept | Friends Scale (4 items) | Scores range from a low of 0 (low perception of competency) to a high of 16 (high perception of competency) | CFFCS01 (Student) |
| Teacher Fairness | In general, my teacher treats me fairly ® | 1=Never<br>5=All the time | CSCCQ12 (Student) |
| Parent expectations | How far do you hope your child will go in school? | 1=Primary/Elementary, 2=Secondary, 3=College/trade, 4=University degree | CEDCQ18B (Parent) |
| Academic self-concept | | | |
| General self-concept | How well do you think you are doing in your schoolwork? ® | 1=Very poorly<br>5=Very well | CSCCQ02 (Student) |

®: Original item was recoded to result in high scores representing positive endorsements.