

## Article

# Self-Concept, Prosocial School Behaviors, Well-Being, and Academic Skills in Elementary School Students: A Whole-Child Perspective

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**Abstract:** Whole-child development focuses on supporting not only academic but also social emotional skills. This cross-sectional study's aim was to examine the associations between the child-rated self-concept and well-being, teacher-rated prosocial school behaviors, and academic skills (as measured by child performance tasks) and to examine if there were group differences by gender for these constructs. The sample was 143 s grade students (M age = 8 years old). The results indicate that self-concept correlated highly with well-being and moderately with prosocial behaviors, while academic skills correlated moderately with prosocial behaviors. The results also show that the boys had lower average prosocial behavior (teacher-rated) and self-concept (child-rated) ratings relative to the girls. The findings indicate that prosocial behavior, well-being, and self-concept can be measured in psychometrically sound and practically meaningful ways in Swedish elementary schools. Because many of the socioemotional and behavioral constructs were correlated with academic skills, these constructs could be important targets for early academic support interventions inspired by a whole-child approach.

**Keywords:** self-concept; prosocial school behaviors; well-being; academic skills; gender; primary school



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## 1. Introduction

Attention to whole-child development leads to improvements in a diversity of outcomes [1]. A whole-child development approach focuses on supporting not only academic skills but personal, social, and emotional skills in children. Thus, academic learning in school is inherently tied to social emotional learning (SEL), and children can thrive when they have support across these areas [2].

Meta-analyses [2,3] have shown that there are moderate, positive associations among various facets of social emotional competence and between these competencies and indicators of well-being and academic skills and outcomes. Meta-analyses have also found beneficial effects from children's participation in SEL programs in the short and long term for substantial numbers of K–12 children living in several countries [2,3]. The meta-analysis authors' conclusions were that well-implemented and supported school-based SEL programs are beneficial for the development of the whole child in terms of boosting social emotional competencies, and these interventions are also linked to gains in academic achievement, well-being, and mental health [2,3].

The Collaborative for Academic, Social, and Emotional Learning [4] is a U.S.-based organization that disseminates research and best practices concerning SEL. CASEL has supported the use of SEL programs, which has made SEL increasingly commonplace in U.S. schools [4]. In Sweden, social emotional development is included in early childhood education guidelines but not emphasized. However, systematic measurement of social

emotional development in young children is not commonplace in the Swedish education context. Despite this, there is interest in the promotion of children's social emotional competence, as evidenced by recent intervention trials of SEL programs like Promoting Alternative Thinking Strategies (PATHS) in Swedish preschool contexts [5]. Although the promotion of children's social emotional development is an uncontroversial goal of Swedish educational practice and policy, there remains much empirical work to be done to understand social emotional competence in a Swedish preschool and elementary school context, and gender may be an important consideration in this work, as evidenced in the aforementioned PATHS trial [5]. For example, in the PATHS trial, moderation analyses indicated unique intervention-related benefits for girls who took part in PATHS relative to girls in a control condition [5]. As in many other countries, as Swedish children transition from preschool into elementary and later grades, the impetus to attend to the education of the whole child often may become overshadowed by a focus on children's academic performance [6,7].

In terms of theory, Weissberg et al. (2015) put forward the CASEL Competency Framework, which consists of five social and emotional key competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision making [8]. Growth in these competencies not only promotes children's academic skills and is associated with positive social behaviors and social relationships during the school years, but it is also connected with improved well-being and less emotional distress [2].

Particularly important for this study were the CASEL framework's competencies of self-awareness, social awareness, and relationship skills. Children's self-concept is one key index within the domain of self-awareness [8]. It consists of children's awareness of themselves psychologically in relation to who they are from their own viewpoint and is rooted in the perspective of others [9]. As noted by Brummelman and Thomaes [9]. (p. 1769) "... children construct their self-concept based on the social relationships they have, the feedback they receive, the social comparisons they make, and the cultural values they endorse". In this study, the children's generalized view of themselves was examined, and the operationalization of self-concept was consistent with the CASEL framework (in the CASEL domain of self-awareness) as well as being in line with the social-developmental approach to self-concept [9]. While this study focused on a generalized view of self-concept, it is recognized that domain-specific facets of self-concept are also important to understanding how children develop and adapt in key proximal contexts, such as school.

The domains of social awareness and relationship skills within the CASEL framework [8] are also represented in this study. These domains are indexed by a wide-ranging rating of children's behaviors called prosocial school behaviors. Specifically, these are child behaviors that teachers have reported to be important for academic and social adjustment and thriving in school [10,11]. In this study, we examined the associations between indicators of social emotional competence that included children's self-concept (an indicator of self-awareness) and teacher-rated prosocial school behaviors (an indicator of social awareness and relationship skills) in relation to other important indicators of the whole child: the child's self-rated well-being at school and academic skills through child performance measures for reading and math.

In this study, well-being was conceived of as the child's life satisfaction, namely the predominance of positive over negative emotional states within the everyday life of the child at school [12]. Hascher [13] noted that children's well-being has an educational value in its own right. Well-being is not only an indicator of learning but also an indicator of wellness [14]. It is warranted to examine the well-being or mental health indicators in young children, as empirical evidence in this area is lacking. Indeed, understanding well-being and other indicators of mental health in young children was identified as a knowledge gap in a systematic review [15].

### 1.1. Prior Research in This Area

Quílez-Robres et al. [16] conducted a meta-analysis on the relations between academic achievement and several factors reflective of or connected to the present study constructs (i.e., self-concept, prosocial behaviors, and well-being). The constructs in this meta-analysis included self-concept, motivation and self-esteem, social competence, social skills, social intelligence and emotional well-being, emotional competence, and emotional intelligence in children 6–12 years old (37 samples,  $N = 15,777$ ). The included studies had been conducted in various parts of the world. The results demonstrated that academic achievement was related to self-concept, social skills, and well-being. Walgermo et al. [17] examined the associations between motivational factors (as indexed by self-concept) and early reading skills in first grade students ( $N = 1141$ ) in Norway. Their findings showed a significant bidirectional association between reading skills and self-concept. Children's self-concept regarding their reading ability was connected with increased reading interest and more practice in reading. Cooper et al. [18] analyzed the patterns of early reading skills and social skills predicting academic success in a large longitudinal sample (21,260). The results of this study indicated that the subgroup of children with low or average reading skills performed better later in the study relative to the children with similar reading skills but low social skills [18]. Gustavsen [19] investigated how social skills predicted achievement in multiple grades, ranging from 1st to 10th grade (153 samples,  $N = 2266$ ) across 2 years in Norway. The results showed that social skills were prospectively and significantly predictive of academic achievement 2 years later, and there was no moderation of this association by gender. In summary, in diverse samples, several studies indicated that children's self-concept, prosocial behaviors, and well-being are key elements in understanding academic achievement. Yet, little is known about these associations in Swedish elementary school children.

Previous research concerning the experiences and perceptions of children related to their performance in primary school is lacking in the Swedish context, as the majority of data collected refer to Swedish students from middle school and later school years. The present study offers new evidence on whether significant relations between the early indicators of academic performance (reading and math ability), social skills, self-concept, and well-being are already observable at early school ages (at approximately 8 years old). If this was the case, then the aim was also to explore if there were meaningful group level differences in these constructs by gender.

### 1.2. Gender, Social Emotional Competence, Well-Being, and Academic Achievement

The possible role of gender in regard to the constructs of interest in this study have been examined in several studies with children and youths living in several countries, including Sweden. On the whole, the studies showed a pattern of gender differences and similarities depending on the construct considered. For instance, a Bosnian study ( $N = 14,732$ ) found that the girls were rated higher than the boys in social skills, and yet no significant gender differences were found for achievement [20]. Furthermore, longitudinal studies in early childhood have shown that boys were overrepresented among children with low social skills [18,21]. Nordlander and Olofsdotter Stensöta [22] examined the associations between well-being and achievement in children 12–16 years of age in Swedish secondary schools ( $N = 2154$ ). The results showed that there was a positive significant correlation between the children's grades and well-being, and this association applied to both girls and boys. Thus, there is mixed evidence in regard to the importance of gender when considering social emotional competence, well-being, and the indicators of academic achievement. Because gender issues are important within a Swedish school context, and teachers work toward equality among students in several different regards, the possibility of documenting gender differences or similarities in the examined study constructs could be important information that teachers could reflect on and use to inform the pedagogical and social aspects of their classrooms.

Beyond an empirical and practical standpoint, there are also other wider imperatives that motivate the exploration of the importance of gender in this study. The World Health Organization [23] noted that exploring the importance of gender in school life, including academic achievement, is a priority due to concerns about possible inequity in children's life conditions and life chances. Equal opportunities and conditions for all students, regardless of gender, are important for an equitable school [23]. Furthermore, important conceptions of mental health [24], have put well-being and adaptive internal and external functioning at the forefront of what mental health actually entails. This conceptualization of mental health [24] includes several dimensions, namely the emotional (well-being), motivational (self-concept), and social (social skills) dimensions. Mental health problems in children have increased in Sweden, especially for girls in early adolescence (11–15 years old) [7]. Gender differences in mental health are important for understanding how to improve education so that it is better adjusted to both boys' and girls' needs. Due to the current trends with decreasing well-being in adolescents and girls in particular, there is a need to further examine the indicators of well-being at younger ages, as is undertaken in the present study.

The present study is also important from a Swedish perspective, given that there is a need to build up empirical examples in our national context for why a whole-child approach to education has value and should be retained and emphasized throughout an individual's education. If there are also the expected associations between the indicators of social emotional competencies, well-being, and academic skills, this would provide additional empirical support for a whole-child educational approach and would contribute to efforts to promote greater systematic synergy between steps to support academic achievement and SEL, which are infused throughout the school experience (e.g., in classrooms and in school policy and ethos) [4].

### 1.3. Study Aim, Hypotheses, and Research Questions

This cross-sectional study aimed to examine the associations between children's self-concept, prosocial behaviors, well-being, and academic skills and examine if there were group differences by gender for these constructs.

**Hypothesis 1 (H1).** *Based on prior empirical research and theories, we expected positive and significant associations between self-concept, prosocial behaviors, well-being, and academic skills (as indexed by reading and math ability).*

**Hypothesis 2 (H2).** *Based on prior empirical research, we expected there to be significant average (mean level) gender-related differences in prosocial behaviors. As an exploratory extension of Hypothesis 2, we also examined if there were gender-related differences in the other study constructs (i.e., children's self-concept, well-being, and academic skills).*

## 2. Materials and Methods

### 2.1. Participants

The participants were 143 children (74 girls ( $M$  age = 8.33 years,  $SD$  = 0.34 years) and 69 boys ( $M$  age = 8.31 years,  $SD$  = 0.35 years)). The children were in the second grade in four municipal primary schools. The teachers all had teaching certificates. The schools were located in two commuting (suburban) municipalities and one large city in Sweden.

### 2.2. Procedure

This study used a cross-sectional research design. The study measures included child-rated self-concept and well-being, teacher-rated prosocial school behaviors, and academic skills (i.e., child performance tasks). The procedure consisted of teachers being invited to a presentation of the study and its aims. The students' parents and the students (consent form adjusted to their age) were required in order to take part in the study

(study response rate = 73%). The analyses for this study were based on pre-tests of a wider program of research that tested the effects of an intervention focusing on the social climate in the learning environment. The data for this study were collected prior to any intervention activities.

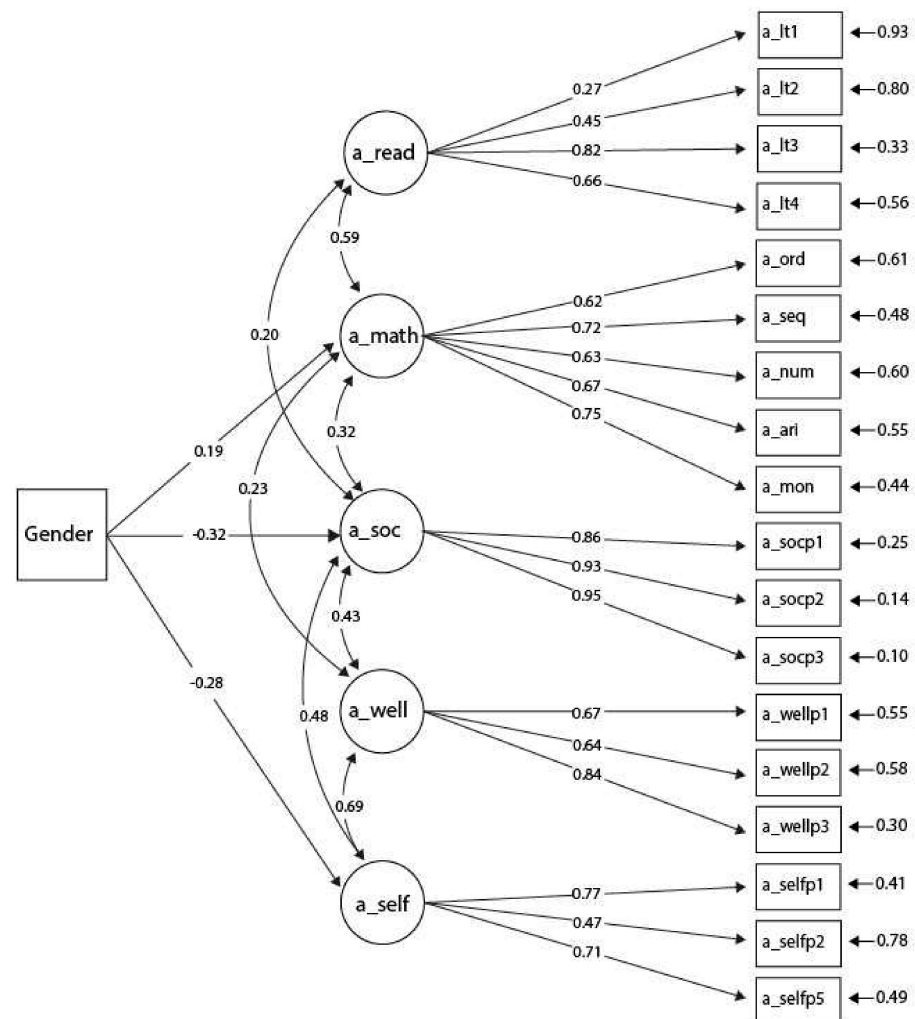
The assessments of self-concept, well-being at school, and a math test and literacy test took place during regular school hours in the children's classrooms. The questions were read aloud within the classroom to the participating students (as a group), and they completed the questionnaires and tests individually, with guided support as needed by a researcher. In total, eight elementary school teachers provided ratings of the prosocial school behaviors for the participating children.

### 2.3. Measures

*Self-concept* (child report): The index of a child's self-concept in this study was UMESOL's self-concept questionnaire [25]. UMESOL is a 20-item, child-rated instrument of confidence in one's ability to cope with schoolwork and peer relations. UMESOL is rated on a 2-point Likert scale: 1 for positive self-concept and 0 for negative self-concept. A sample item would be "remembers easily/does not remember easily". This measure was developed at Umeå University [25]. UMESOL has been used in Swedish primary classroom settings. In past research with UMESOL, the mean sum score was 16.34 ( $SD = 2.54$ ), and the reported split-half reliability was 0.49 [25], 1984). In the present study, the mean sum score was 12.13 ( $SD = 2.79$ ), and the split-half reliability was 0.72. To test UMESOL's factor structure, structural equation modeling (SEM) was used. UMESOL's factor structure was tested with self-concept as a latent variable with confirmatory factor analysis (CFA). The final model with satisfactory fit had three indicators consisting of item parcels (see descriptive statistics at Appendix A, Table A1) following the parceling technique outlined by Little et al. [26]. The 11 items with the highest factor loadings were randomly divided into parcels named a\_selfp1, a\_selfp2, and a\_selfp3 (see Appendix B, Table A2). The internal reliability of the 11 items calculated with Cronbach's alpha was 0.74. The items are often parceled when the conditions are not ideal [26]. Because the sample size was 143, there could be benefits from parceling due to a lower number of parameters being tested [26]. The three self-concept parcels (i.e., a\_selfp1, a\_selfp2, and a\_selfp3) were positively and moderately correlated with each other ( $r > 0.33$ ). See Figure 1 for all factor loadings for all measures used in this study.

*Prosocial school behaviors* (teacher-rated): The Elementary Social Behavior Assessment (ESBA) [11] is a 12-item, teacher-rated index of prosocial behaviors at school. The ESBA is rated on a 3-point Likert scale, with high scores indicating more prosocial behaviors and low scores indicative of less-than-typical behavior. A sample item would be "Works with effort". The instrument was developed in the U.S., and two studies have investigated the psychometric properties of the ESBA scale. These studies reported high internal reliabilities (Cronbach's  $\alpha = 0.94$ ) and high test-retest correlation ( $r = 0.77$ ,  $p < 0.001$ ) [11]. In the U.S. study, the ESBA fit a single factor, implying that the items described one prevalent skill. The ESBA has also been tested in Norwegian elementary schools. The SEM results supported a one- or two-factor structure, though a three-factor model was also tested. Cronbach's alpha ranged from 0.90 to 0.93. The 8-week test-retest reliability was  $r = 0.78$  [27]. The instrument has also been tested in Swedish elementary schools with the same data as the present study. The total average score's Cronbach's alpha was 0.92, and the mean score of the items ranged from 2.2 to 2.9. In the Swedish study, the SEM results (using CFA) indicated support for three- and two-factor models [28]. However, the CFA results indicated that the one-factor model also showed a good fit, except for the CFI index (CFI = 0.94). Because prior studies in the U.S. and Norway indicated support for a single-factor model, a one-factor model was used in the present study to simplify the structure of the hypotheses focused on SEM analysis. A latent variable for prosocial behavior was created by parceling. The 12 items of the test were built with the means and randomly divided into parcels named a\_socp1, a\_socp2, and a\_socp3 (see Appendix B). The total average score showed excellent internal

reliability (Cronbach's  $\alpha = 0.94$ ). The latent factor (prosocial behavior) demonstrated that items a\_socp1–a\_socp3 were positively and highly correlated ( $r > 0.83$ ).



**Figure 1.** Structural and measurement SEM model tested with standardized estimate coefficients between observed variables (parcels) and latent variables (a\_read, a\_math, a\_soc, a\_well, and a\_self), correlations between latent variables, and significant standardized estimates of math skills, prosocial school behaviors (soc), and self-concept (self) by gender (gender-coded: female = 1 and male = 2).

*Well-being* (child report): “How I Feel about My School” (HIFAMS) [29,30] is a 7-item questionnaire and a child-rated instrument of subjective well-being at school rated on a 3-point Likert scale employing emoticons. The students responded by choosing an emoticon with the appropriate emotions: sad (0), OK (1), and happy (2). An example item is “On my way to school I feel”. The total score is the sum of the items on this scale (score ranging from 0 to 14), with higher scores reflecting greater well-being. The scale has been validated in England, where Cronbach’s alpha ranged from 0.62 to 0.67. The mean of the sum score ranged between 10.7 ( $SD = 2.6$ ) and 11.1 ( $SD = 2.4$ ) [29]. The HIFAMS has also been tested in Sweden [31] with a sample of preschool children ( $n = 85$ ) and primary school children ( $n = 143$ ). In this study, Riad et al. [31] analyzed the same data collected in the present study and additional data from preschool children. Cronbach’s alpha was 0.63 for the total scale. The total average sum score was 10.82 ( $SD = 2.6$ ). The CFA indicated a one-factor model of well-being with an overall good fit to the data. In the present study, based only on the data from the primary school children, the total average score demonstrated moderate internal reliability (Cronbach’s  $\alpha = 0.76$ ). The average sum

score was 11.4 ( $SD = 2.0$ ). A latent variable for well-being was created by parceling. The seven items of the test were built with the means and randomly assigned into parcels named a\_wellp1, a\_wellp2, and a\_wellp3 (Appendix B). Moreover, the latent factor (well-being) showed that items a\_wellp1—a\_wellp3 were positively and moderately correlated ( $r > 0.57$ ) with each other.

*Reading skills* (child performance task): The DLS-based standardized diagnostic test [32] measures students' reading comprehension and reading fluency. The reading comprehension and fluency part of the task includes 20 sentences interwoven into a small story. There are five pictures for each sentence. The students mark the picture that can be best linked to the events in the story. An example sentence is "Elin sits behind tiger on a bike". The reading time was 5 min for children in second grade. The total possible score was 20. The internal reliability of the reading skills construct (parcels) calculated with Guttman's split-half coefficient was 0.71. A latent variable for reading skills was created by parceling. Four parcels, Lt1-Lt4, were composed of the means of five items for every parcel (see Appendix B). The latent variable reading indicated that items a\_lt1—a\_lt4 were positively and moderately correlated ( $r > 0.24$ ) with each other.

*Math skills* (child performance task): In the LUKIMAT test [33] (Koponen et al., 2011), students' skills in mathematics are assessed. The Swedish test version was used. The test is tailored to students of this age. The highest total score on the test is 52 points. The test is divided into six items: assessment of which number is the largest or smallest, understanding number sequences, mastering number symbols, counting addition, subtraction, and money [33]. The researcher gave the students instructions before every sub-task. In total, the test was completed in 40 min. A latent variable for math skills was created by parceling. The six items of the test were divided into parcels and built with means named a\_ord, a\_seq, a\_num, a\_ari, and a\_mon. The fourth and fifth items conveyed one parcel, a\_ari, because of their similarity (counting addition and subtraction) (Appendix B). The total average score demonstrated good internal reliability (Cronbach's  $\alpha = 0.83$ ). The latent factor (math) showed that items a\_ord, a\_seq, a\_num, a\_ari, and a\_mon were positively and moderately correlated ( $r > 0.52$ ).

#### 2.4. Data Analysis

##### Statistical Models

The analyses were conducted with SPSS and Mplus version 8.4 [34]. SPSS was used to examine the univariate normality (item and scale level), item total correlations, and scale reliability (Cronbach's alpha and Guttman's split-half). A measurement and structural SEM model was examined in Mplus to test Hypotheses 1 and 2 (Figure 1). For the tested model, an ML estimator was used. The missing data were estimated with FIMIL. Any changes to the tested models were guided by theory, prior research, and modification indices [35]. The determination of model fit was based on the cut-offs for several fit indices: the Comparative Fit Index (CFI, value at or greater than 0.95), Root Mean Square Error of Approximation (RMSEA, value at or below 0.08), and Standardized Root Mean Square Residual (SRMR, value at or below 0.08) [36].

### 3. Results

The descriptive statistics of the instruments with the sum scores, standard deviations, and variances are reported in Table 1. In Appendix A, the descriptive statistics (i.e., mean, standard deviation, variance, skewness, and kurtosis) are reported. The item total correlations and internal reliability were examined for all items at the parcel level (reliabilities reported in the Measures section). The parcels and items are in Appendix B. In Appendix C, the standardized estimates of the structural model with the correlation between the latent variables are reported.

**Table 1.** Descriptive statistics: N (number of participants), sum score, standard deviation (SD), and variance for the instruments DLS, LUKIMAT ESBA, HIFAMS, and UMESOL.

Instrument	N	Sum Score	SD	Variance
DLS	139	14.91	5.28	7.39
LUKIMAT	142	38.01	7.81	61.01
ESBA	143	32.33	6.18	3.50
HIFAMS	123	11.40	2.00	4.01
UMESOL	141	12.13	2.79	7.80

Note. DLS (reading skills), LUKIMAT (math skills), ESBA (prosocial school behaviors), HIFAMS (well-being), and UMESOL (self-concept).

To test Hypotheses 1 and 2, an SEM model with five latent variables was examined: self-concept, prosocial behaviors, well-being, reading, and math (see Figure 1). It was posited that there would be a positive moderate association between these five latent constructs (Hypothesis 1). Gender was also entered into this model to examine the possibility of gender differences in the study constructs, particularly for prosocial skills (Hypothesis 2). This model also provided measurement information CFAs for all latent constructs in the model (i.e., a test of the construct validity of the measures used with respective factor loadings and error variances).

The overall model fit was acceptable for the tested SEM model. The SEM model fit indices for the measurement and structural model tested in Figure 1 were the following:  $X^2 = 242$  and  $df = 138$ ,  $p < 0.00$ . The Comparative Fit Index (CFI) was 0.90, Root Mean Square Error of Approximation (RMSEA) was 0.07, and Standardized Root Mean Square Residual (SRMR) was 0.07. Due to the present study's sample size, the chi-squared value could be overestimated [37], and the RMSEA and SRMR fit measures met the cut-off values [36]. Thus, we considered the overall model to show an acceptable fit.

In terms of the measurement aspects of the model, all the factor loadings for the respective parcels of the five latent constructs were significant (Figure 1).

In regard to examining Hypothesis 1, the correlations between the latent variables ranged from low to high (ranging between 0.01 and 0.69; Appendix C, Table A3). A moderately high significant correlation was found between reading and math (0.59), which together constitute academic achievement. The indicators of social emotional competence that included children's self-concept (an indicator of self-awareness) and teacher-rated prosocial behaviors (an indicator of social awareness and relationship skills) were moderate and significantly (0.48) related to one another, which was consistent with the CASEL model.

In relation to the other important indicator of the whole child in the present study, the children's self-rated well-being at school indicated a moderately high and significant correlation with self-concept (0.69) and a moderate and significant correlation with prosocial behavior (0.43). Furthermore, there were moderate and significant correlations between academic achievement and prosocial behavior, namely reading—prosocial behavior (0.20) and math—prosocial behavior (0.32). The correlation between math and well-being (0.23) was moderate and significant.

To investigate Hypothesis 2, gender was included in the SEM. The focus was on gender-related differences in prosocial skills; however, this analysis also explored the possibility of other gender-related differences in all the main study constructs. The results indicated significant standardized path coefficients concerning gender and math (0.19), gender and prosocial behavior (−0.32), and gender and self-concept (−0.28). Thus, the boys had higher math scores relative to the girls in this sample, and the girls were higher than the boys in prosocial behavior and self-concept. The standardized estimates and Effect Sizes (ES) are reported in Table 2.



**Table 2.** Standardized estimates of the latent variables (reading, math, prosocial behavior, well-being, and self-concept) for gender, with Standard Errors (SE), t-value, *p*-value, and Effect Sizes (gender was coded: female = 1; male = 2).

Variables for Gender	Estimate	SE	Est/S.E.	<i>p</i> -Value	ES
a_read	−0.12	0.10	−1.23	0.22	-
a_math	0.19	0.09	2.09	0.04	0.35
a_prosoc	−0.32	0.08	−4.11	0.00	−0.69
a_well	−0.15	0.09	−1.62	0.10	-
a_self	−0.28	0.09	−2.95	0.00	−0.49

#### 4. Discussion

The purpose of this study was to examine the associations between the indicators of children’s social emotional competence (i.e., self-concept and prosocial behaviors) and their well-being and academic skills (as indexed by reading and math ability). The possibility of gender differences in these constructs was also examined. The findings indicated that moderately high and significant correlations were found between reading and math, respectively. This finding is consistent with previous research e.g., [38]. Learning to read and count demands many of the same abilities, such as concentration, attention, and resilience [38].

The indicators of social emotional competence—self-concept and prosocial behaviors—correlated significantly with each other. These findings are theoretically consistent with the CASEL model of social emotional competence [8]. In reference to other prior related studies [1], the associations between key indicators of social emotional competence, as found in this study, would be consistent with several meta-analyses that have shown that there are moderate positive associations among the indicators of social emotional competence [2,3]. These indicators also correlate with well-being, which is another important indicator of the whole-child approach. Furthermore, prosocial behaviors correlated with academic achievement, showing that children are more successful in school when they have relationship skills and understand the social norms for behavior [8]. Existing research indicates that a general self-concept cannot sufficiently reflect the diversity of specific academic subjects [39]. However, in the present study, self-concept did contribute to the present model in an overall sense due to the association between this indicator and well-being as well as prosocial behaviors. Self-concept was highly correlated with well-being and moderately associated with prosocial behaviors, as posited in Hypothesis 1. To the best of our knowledge, the items of the UMESOL self-concept questionnaire have not been modeled with CFA using SEM previously. The present study’s results regarding UMESOL show that this instrument may be suitable for use as an indicator of self-concept in young, elementary school-aged students, which could be useful not only in educational practice but also in research. Instruments such as UMESOL which are suitable to use with young children are needed in future research, as they can contribute to the increasing knowledge on the experiences of young children in the early school years in regard to self-concept, which is still better understood in older children and adolescents. For the further development of UMESOL, it would be important to better understand the concurrent validity of the instrument in a Swedish context in relation to other instruments that measure young children’s self-concept, have sound psychometric properties, and have the variations in facets of self-concept examined, as well as the variation in item content and response format e.g., [40,41].

Furthermore, in the present study, well-being correlated moderately with math skills. Nordlander and Olofsdotter Stensöta [22] found that there was a positive association between children’s grades and their self-rated well-being among secondary school children. In the present study, the children were 8 years old. However, children’s daily life satisfaction is something that children are familiar with and know the most about [42]. At this young age, children’s self-rating of their well-being might be more difficult to assess than at older ages.

The results concerning Hypothesis 2 showed some gender differences in a subset of the study constructs. The results indicated that the boys performed better than the girls in math. Garon-Carrier et al. [43] found that boys at this age were more motivated than girls in mathematics, which could be one explanation for the gender difference regarding math in this study. The present study results also indicated that the girls had better prosocial skills and self-concept in comparison with the boys. In childhood, biological and cognitive development are substantial, with considerable individual variation also found in development, and early maturation in girls may in part explain the girls' better scores in prosocial behavior and self-concept relative to the boys in the present study [16]. In the present study, there were no significant gender differences in reading ability and well-being. Thus, we were conservative in our expectation regarding gender-related differences in Hypothesis 2, and indeed, there was support for Hypothesis 2, but other areas in which gender was important to child development in this sample were split in the academic realm, with gender similarities in reading ability. However, the boys on average performed better in terms of math ability than the girls in this sample. For the social emotional constructs, prosocial skills and self-concept were elevated among the girls in this sample relative to the boys (as partially predicted in Hypothesis 2). Gender was related to group differences in well-being, which was an interesting finding given the interest in adolescent girls' recent increase in mental health problems in comparison with adolescent boys in Sweden e.g., [7]. Thus, at this young age of approximately 8 years old, some aspects of mental health which could be indexed by well-being were showing gender similarities rather than differences.

#### *4.1. Implications*

From the perspective of practice, it is evident from the overall study results that a whole-child approach to educational practice has empirical value and should be retained and emphasized throughout a child's education. In other words, social emotional development and academic competencies are interrelated. Efforts to promote synergy between academic achievement and SEL efforts, which are infused throughout the school experience (e.g., in classrooms and in school policy and ethos), are warranted and vital. The whole-child approach could be especially beneficial for children with special education needs, due to the dual emphasis on SEL competencies and learning. Furthermore, the possible importance of gender is important to examine and consider so that efforts to promote gender equality can be rooted in an understanding of where differences may exist in a particular setting. Based on the present study's results, it seems that girls might benefit from support in math, while boys showing low social skills would benefit from additional support targeting social skills. In fact, their present low skills in the classroom may have a negative impact on their future academic success [18,21]. The gender-related study implications discussed here in this article are highly tentative due to the lack of similar research like that in the present study in Swedish elementary schools. However, these findings are noted to provide the impetus to further research in the area.

#### *4.2. Limitations and Contributions*

The schools participating in this study were recruited based on convenience sampling, and the generalizability of these study findings may be limited in terms of not being nationally representative. Furthermore, the age of the participating children was approximately 8 years old, and children of younger and older ages may have varying results. Thus, these findings are also limited in terms of the stage of childhood examined. This study also examined the cross-sectional associations between the constructs and could not demonstrate causal relationships. Despite these shortcomings, the participating schools were located in areas with different socioeconomic characteristics. The sample size was appropriate as a first exploratory study on this topic, but future research would benefit from larger and more diverse samples in terms of geography and age.

This study's strengths include data from multiple reporters, variations in the methods (teacher and child reporting, as well as child performance measures), a good study response

rate at the individual child level, and confirmation in a Swedish context of the associations between the SEL indicators within themselves (of theoretical importance, supporting the CASEL model) [8]. Furthermore, the findings also support associations between SEL and early academic achievement indicators, which is consistent with the relevant meta-analyses [2]. The other main study contributions include illustrating the value of a whole-child approach specifically in a Swedish elementary school context and that working to improve socioemotional development maybe a useful way to support children's academic skills. In practice, teachers may prioritize SEL over academics or vice versa. However, this study illustrates that these issues go hand in hand and have important interrelations with one another.

The results of this study add value in that the constructs important to the daily life of elementary school classrooms, like children's prosocial behavior, well-being, and self-concept, can be measured in psychometrically sound and practically meaningful ways. The results of this study thereby provide more tools for Swedish schools to systematically work with these constructs and work to improve them. This study also contributes empirically as it adds new evidence regarding children in primary schools, which is under-studied relative to the majority of the extant research evidence in Sweden, which is from middle and high school students. For example, this study adds value, considering that there is less information about self-concept and well-being in children of this age (8 years old) within the Swedish research literature.

Finally, in regard to gender, some expected differences were found, yet a key finding was the gender similarities in well-being. At the age of the children in this sample (approximately 8 years old), some aspects of mental health which could be indexed by well-being were showing gender similarities rather than differences. In summary, the results of this study are critical to new advancements in a field in which knowledge gaps have been previously described [15].

#### 4.3. Conclusions

This study adds to a growing body of research on the whole-child approach. This study supports the notion that children's self-concept, prosocial behaviors, and well-being are key elements to understanding academic achievement and more distally could be important to efforts that work to prevent school failure and disengagement from school.

In this study, prosocial behaviors were significantly correlated with the indicators of early academic achievement, showing that children who are academically well prepared to be successful in school also benefit from relationship skills and understand social norms for behavior. The findings also emphasize the importance of taking gender into account and working toward achieving greater equity in educational settings.

These findings echo other research that advocates taking children's social emotional development into account as part of their academic education and that by promoting SEL, children can also gain academic benefits [2]. Accordingly, teachers can include evidence-based SEL activities and other practices and take advantage of assessment instruments to understand children's level of social emotional development, as well as their academic achievement, as a basis for giving appropriate support to students. Furthermore, these SEL-related constructs could be important targets for academic support interventions, inspired by the whole-child approach. In this way, researchers and practitioners can attain a wider and more precise understanding of the associations between academic skills and social emotional factors in different samples and populations in various nations and educational school systems.

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**Institutional Review Board Statement:** This study was conducted in accordance with the Declaration of Helsinki. This study was reviewed by the Swedish Ethical Review Authority #019-03058. The evaluation concluded that this study did not require ethical approval.

**Informed Consent Statement:** Written informed consent was obtained from the study participants and their guardians.

**Data Availability Statement:** The data for this study are not publicly available, as data sharing was not included in the ethical review. Individual requests for de-identified data (IPD) will be reviewed for qualified researchers who obtain ethical permission under Swedish ethical regulations and laws for secondary data analysis for purposes such as meta-analysis or confirmation of published study results.

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## Appendix A

**Table A1.** Descriptive statistics: mean, standard deviation, variance, skewness, and kurtosis of the measures in the SEM model.

Parcel	M	SD	Variance	Skewness	Kurtosis
A_Lt1	4.48	0.93	0.87	−2.64	8.32
A_Lt2	4.01	1.12	1.23	−1.35	2.05
A_Lt3	3.88	1.43	2.03	−1.39	1.17
A_Lt4	2.53	1.79	3.20	−0.15	−1.37
A_ord	7.43	1.39	1.92	−3.21	10.53
A_seq	6.65	2.21	4.87	−1.75	1.96
A_num	7.43	1.23	1.67	−2.49	5.27
A_ari	9.67	4.22	15.25	0.43	−0.08
A_mon	6.67	1.58	2.48	−1.38	1.63
A_Socp1	2.59	0.38	0.14	−1.21	1.26
A_Socp2	2.73	0.39	0.15	−1.45	1.77
A_Socp3	2.73	0.42	0.17	−1.76	2.71
A_Wellp1	1.60	0.41	0.17	−1.30	2.07
A_Wellp2	1.55	0.46	0.21	−0.59	−0.47
A_Wellp3	1.64	0.44	0.19	−1.24	1.22
A_Selfp1	0.90	0.19	0.04	−2.11	4.64
A_Selfp2	0.85	0.22	0.05	−1.73	3.06
A_Selfp3	0.84	0.26	0.07	−1.44	1.04

## Appendix B

**Table A2.** Parcels in the SEM model and corresponding items from the literacy test (Lt 1–20 items), Math test (1–52 items), ESBA questionnaire (Soc 1–12), HIFAMS (Well 1–7), and self-concept index (11 items). The parcels’ measures consist of the means of the corresponding items.

Parcels	Items
A_Lt1	1–5
A_Lt2	6–10
A_Lt3	11–15
A_Lt4	16–20
A_ord	1–8
A_seq	9–16

**Table A2.** *Cont.*

Parcels	Items
A_num	17–24
A_ari	25–44
A_mon	45–52
A_Socp1	A_Soc1, A_Soc4, A_Soc7, A_Soc10
A_Socp2	A_Soc2, A_Soc5, A_Soc8, A_Soc11
A_Socp3	A_Soc3, A_Soc6, A_Soc9, A_Soc12
A_Wellp1	A_Well1, A_Well4, A_Well7
A_Wellp2	A_Well2, A_Well5
A_Wellp3	A_Well3, A_Well6
A_Selfp1	A_Self1, A_Self4, A_Self9, A_Self15
A_Selfp2	A_Self2, A_Self6, A_Self10, A_Self16
A_Selfp3	A_Self3, A_Self8, A_Self14

## Appendix C

**Table A3.** Standardized estimates of the structural model with the correlation between the latent variables: read, math, prosocial behavior, well-being, and self-concept with standard errors, *t*-values, and *p*-values. Correlations range in magnitude from  $-1.00$  to  $1.00$ .

Latent Variables	Estimate	S.E	EST./S.E.	<i>p</i> -Value
Read—Math	0.59	0.08	7.00	0.00
Read—Prosocial behavior	0.20	0.10	2.13	0.03
Read—Well-being	0.21	0.11	1.87	0.06
Read—Self-concept	0.01	0.12	0.11	0.91
Math—Prosocial behavior	0.32	0.09	3.65	0.00
Math—Well-being	0.23	0.10	2.25	0.02
Math—Self-Concept	0.04	0.11	0.41	0.68
Prosocial behavior—Well-being	0.43	0.08	5.01	0.00
Prosocial behavior—Self-concept	0.48	0.09	5.46	0.00
Well-being—Self-concept	0.69	0.08	8.59	0.00

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