

Social-Emotional Skills, Behavioural Problems and Learning Outcomes of Elementary School Children

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ABSTRACT

A topical question for teachers and parents is how to improve students' well-being and success at school, starting from the early stages of their education. Research shows that social-emotional competence is one of the key variables significantly impacting children's learning outcomes and that social-emotional learning contributes to higher learning outcomes and fewer behavioural problems, even in preschool. It is of great importance to obtain more evidence on the role of social-emotional skills in school adjustment, addressing this issue as early as possible to develop a deeper understanding of how to support children after their transition to elementary school. The current research aims to analyze relationships between social-emotional skills, behaviour problems and learning outcomes in a sample of elementary school students while also addressing gender differences in these relationships.

The sample consisted of 590 elementary school students aged 7–11 years (mean age 9.14, *SD* 1.38), 53.2% (314) of whom were boys and 46.8% (276) were girls. The teachers completed the Social Skills Improvement System Social-Emotional Learning brief scales, the Strengths and Difficulties Questionnaire, and a three-item questionnaire on their students' learning outcomes. Higher social-emotional skills in elementary school students had significant associations with lower levels of behavioural problems and higher levels of learning outcomes. Moreover, the results indicated that teachers reported significantly higher levels of social-emotional skills and learning outcomes and fewer behavioural problems amongst girls in contrast to boys. These findings highlight the necessity to develop social-emotional skills in facilitating learning outcomes and behaviour adjustment in elementary school children. Teachers' role as facilitators of social-emotional development must also be emphasized.

Keywords: behavioural problems, elementary school students, gender educational differences, learning outcomes, social-emotional skills, teachers' evaluations

Introduction

Children need different skills to succeed in school, and for a long time, the focus has been on their intellectual or cognitive skills (Thompson, 2002). However, research in recent decades shows that social-emotional competence is another skill set that has a positive impact on students' ability to adapt and achieve better outcomes in school (Denham & Brown, 2010; Thompson, 2002) or later in life (Durlak et al., 2011). Social-emotional competence has been defined as the process where children or adults use the attitudes, knowledge and skills they have acquired to better understand the feelings and behaviours of themselves or others, to be empathic, deliberately set and achieve goals, and maintain healthy relationships with others (Collaborative for Academic, Social, and Emotional Learning [CASEL], 2012). CASEL has also outlined five interconnected core competencies: self-awareness (e.g., being able to understand the relationships between emotions, thoughts and behaviours), self-management (e.g., being able to regulate one's thoughts, emotions and, in turn, behaviour in different settings), social awareness (e.g., being able to see things from other people's perspectives and being empathic to the other), relationship skills (e.g., being able to form healthy relationships with people around you) and responsible decision-making (e.g., being able to make conscious decisions considering the interests of both one's own and other people or groups) (CASEL, 2012).

Students who struggle to adjust to academic requirements often display behavioural and emotional difficulties (Cramer et al., 2019; Sawyer et al., 2015; White et al., 2013). There are several possible explanations for the occurrence of emotional or behavioural problems, such as adverse family circumstances (Raver & Knitzer, 2002), special educational needs (Menting et al., 2014) and inadequate social-emotional skills (Cramer et al., 2019; Durlak et al., 2011; Sawyer et al., 2015; West et al., 2001). In the literature, emotional, behavioural and social difficulties of children and teenagers are often viewed as internalizing or externalizing problems (Achenbach, 2009; Achenbach et al., 2016). The main focus on mood or emotions is distinctive of internalizing problems. Anxiety, symptoms of depression, difficulties in regulating one's emotions and social withdrawal are a few possible manifestations of internalizing difficulties (Achenbach, 2009; Birch & Ladd, 1998; Kring & Sloan, 2010). Externalizing problems are those that can be assessed from "outside". Verbal and physical aggression, a tendency to violate the rules and impulsive behaviour are examples of externalizing behaviour (Achenbach, 2009; Oland & Shaw, 2005). Nevertheless, it is important to stress that internalizing and externalizing problems are often intertwined and rarely seen as separate (Oland & Shaw, 2005).

Even in elementary school, children often demonstrate difficulties in regulating their behaviour (Cramer et al., 2019), and this tendency has been linked with the development of internalizing and externalizing problems at a later age (Sawyer et al., 2015; White et al., 2013). Children who have lower levels of social-emotional skills often exhibit academic and behavioural difficulties at school (Denham, 2006). At school, learning outcomes are viewed as a result of the learning process – something that the student is expected to understand, know or do at the end of either the lesson, semester or school year (Adam, 2006). To achieve this goal, the student has to exhibit not only academic but also non-academic skills and behaviours that are considered as prompting (DiPerna et al., 2002), and this includes academic engagement and academic motivation. The former is a series of activities that facilitates the learning process (Greenwood et al., 1989; Salmela-Aro et al., 2016), and it involves emotional (a positive attitude towards school and one's part in it), cognitive (the motivation to continue to learn and regulate one's study process) and behavioural aspects (involvement in activities), and it can partially overlap with academic motivation (Eccles, 2016; Fredricks et al., 2004; Salmela-Aro et al., 2016). Academic engagement and motivation are seen as vitally important aspects of the learning process and academic performance (Af Ursin et al., 2020; Ladd & Dinella, 2009; Lei et al., 2018; Pietarinen et al., 2014; Wentzel & Miele, 2016).

The number of studies that confirms the role of social-emotional skills in enhancing students' attitudes towards school, learning outcomes and reducing mental health, emotional and/or behavioural problems continues to grow (Durlak et al., 2011; Greenberg et al., 2003; Ornaghi et al., 2014; Zins et al., 2004). Children with insufficiently developed social-emotional skills have a higher risk of displaying emotional and behavioural problems and lower levels of learning outcomes. There is evidence that children at risk of developing emotional, behavioural or academic difficulties are perceived more negatively by their teachers than by their peers (Montague & Rinaldi, 2001). Those children also exhibit greater difficulties in establishing and maintaining healthy and supportive relationships with their peers and teachers (Baker, 2006; Berry & O'Connor, 2010). As a result, their social and emotional functioning is negatively affected, and their learning outcomes worsen (Montague & Rinaldi, 2001). However, Carroll et al. (2020) observed that social-emotional skill training has the highest impact on children with emotional and behavioural difficulties, indicating that children in at-risk groups benefit the most from universal programmes (applied to everyone in the class).

Notably, gender differences have previously been found. For example, students, teachers and parents often rate social-emotional skills higher for girls than for boys (Romer et al., 2011). Emotional problems are also more common for girls (Zen et al., 2019); however, there are studies that do not report gender-related differences in internalized behaviour (Holsen et al., 2008). Boys are also seen

more often as having higher behavioural difficulties (Lei et al., 2018; Snyder et al., 2013). Still, the research shows that gender itself may not be the prognostic factor in the development of social-emotional skills (Carroll et al., 2020).

Previous findings indicate that an improvement in social-emotional skills enhances positive behaviours and learning outcomes and decreases emotional and behavioural difficulties, starting even from pre-school (Martinsonsone et al., 2022; Ornaghi et al., 2015; Wong et al., 2014; Zins et al., 2004). This is the first study exploring such relationships in elementary school children in Latvia as a social-emotional learning curriculum has only recently been developed and implemented in several Latvian schools. It is important to examine whether elementary school children in Latvia present similar relationship patterns between social-emotional skills, emotional and behavioural problems and learning outcomes as have been shown in other studies in order to offer evidence-based recommendations for educational policy regarding the integration of universal social-emotional learning in the national curriculum. The foregoing literature review indicated contradictory results about gender differences, and thus an additional research question was raised.

The aim of this study is to investigate relationships between social-emotional skills, behavioural problems and learning outcomes among Latvian elementary school children, as well as to address possible gender differences. Two hypotheses and one research question were raised:

- H1: Elementary school children with higher levels of social-emotional skills will present lower levels of emotional and behavioural problems and higher levels of learning outcomes according to their teachers.
- H2: Higher social-emotional skills among elementary school children will be related to higher learning outcomes and lower levels of emotional and learning difficulties.
- Q1: Are there gender differences in teacher-reported social-emotional skills, emotional and behavioural problems and learning outcomes of elementary school children?

Methodology

The research conducted in this paper is part of the international ERASMUS + project “Promoting mental health at schools” (PROMEHS). One of the main tasks of the project is to develop an evidence-based curriculum to promote social-emotional learning and resilience and prevent behavioural problems. Multiple schools from the Latvian region of Sigulda participated in this project. The present research uses only pre-test data for elementary school children, which were collected in October 2020. The sample comprises 590 elementary school students aged 7–11 years ($M_{age} = 9.14$; $SD = 1.38$), consisting of 314 (53.2%) boys and 276 (46.8%) girls. Teachers were the informants.

The Ethics Committee for Humanities and Social Sciences Research Involving Human Participants of the University of Latvia gave their approval for the research on 12 December 2019. Children's parents were informed about the research and received informed consent forms to be signed if they approved their child's participation in the study. After receiving consent from parents, teachers filled in the surveys in paper format and placed them in closed envelopes, which were later collected by the researchers. Teachers filled in three surveys assessing students' social-emotional skills, behaviour difficulties and learning outcomes: the Social Skills Improvement System Social-Emotional Learning brief scales (SSIS SEL, Elliott et al., 2020), the Strengths and Difficulties Questionnaire (SDQ, Goodman, 1997), and three-item questionnaire on learning outcomes.

The SSIS SEL brief scales were used to measure children's social-emotional skills. The questionnaire consists of 20 statements that make up five subscales: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. The statements are measured using Likert scales from 0 to 3, where 0 is "never" and 3 is "almost always". The total score for each subscale can range from 0 to 12, and combining all the subscales provides a general measure of social-emotional skills ranging from 0 to 60. In the original tool, Cronbach's alpha is 0.91 (Elliott et al., 2020). The SSIS SEL brief scales were translated and adapted into Latvian by leading researchers on the Latvian PROMEHS team, and Cronbach's alpha of the validated version was 0.95 (Martinsons et al., 2022).

The SDQ was used to assess children's emotional and behavioural problems as reported by their teachers. The questionnaire consists of 25 statements comprising five subscales, where emotional symptoms, conduct problems, hyperactivity-inattention, and peer relationship problems are considered difficulties, and prosocial behaviour is considered a child's strength. In low-risk groups, the scores can be categorized into three scales, namely internalizing problems (emotional symptoms & peer relationship problems), externalizing problems (conduct problems & hyperactivity-inattention) and prosocial behaviour (Goodman et al., 2010). The questions are measured on a 3-point Likert scale, where 0 is "disagree", 1 is "somewhat agree", and 2 is "certainly agree". Each subscale rating can range from 0 to 10, and the overall difficulties assessment can range from 0 to 40 points. The internalizing and externalizing scales can range from 0 to 20, and the prosocial behaviour rating can range from 0 to 10. Cronbach's alpha of the previously validated Latvian version of SDQ is 0.74 (Livena, 2014),

The learning outcomes of children were assessed with a three-statement questionnaire. Teachers were asked to rate students' academic engagement, academic motivation, and academic performance on a 5-point Likert scale, where 0 is "very weak" and 4 is "very good". The higher the rating, the higher the learning outcomes. Overall, the score could range from 0 to 12. Pairwise correlations of these questions surpassed 84%, and it was decided to combine the items in one scale.

The statistical analysis of the data was done using the Statistical Package for the Social Sciences (SPSS) program, and descriptive and inferential statistical methods were used.

Results

Descriptive statistics (see Table 1) show that all questionnaires' internal consistency measures are good enough for statistical analysis. One statement was excluded from the self-awareness scale to achieve an acceptable level of internal consistency. A Kolmogorov-Smirnov test showed that non-parametric tests had to be used for the analysis of data.

Table 1. Descriptive Statistics for SSIS SEL Brief Scales, SDQ and Learning Outcomes ($n = 590$)

	<i>M</i>	<i>SD</i>	<i>A</i>
Overall difficulties	9.21	6.07	0.85
Emotional symptoms	2.02	1.97	0.74
Conduct problems	1.46	1.89	0.76
Hyperactivity-inattention	3.50	2.79	0.85
Peer relationship problems	2.22	1.84	0.60
Prosocial behaviour	6.85	2.23	0.79
Internalizing problems	4.24	3.21	0.75
Externalizing problems	4.96	4.28	0.87
Social-emotional skills	39.26	9.39	0.93
Self-awareness	5.78	1.79	0.78
Self-management	7.91	2.36	0.76
Social awareness	8.16	2.30	0.80
Relationship skills	8.42	2.14	0.73
Responsible decision-making	8.89	2.48	0.85
Learning outcomes	8.61	2.62	0.92

It was hypothesized that elementary school children with higher levels of social-emotional skills would have lower levels of behavioural and emotional difficulties and higher levels of learning outcomes. To confirm or reject the study's first hypothesis, Spearman's correlation coefficient was used to assess the data (see Table 2). The results indicate that social-emotional skills are significantly and negatively associated with behavioural and emotional difficulties and positively associated with learning outcomes.

Elementary school children's difficulties were also observed using internalizing and externalizing problem scales and the prosocial behavioural scale (see Table 3). Correlations between the variables show that internalizing and externalizing problems are negatively associated with social-emotional skills and learning outcomes. Prosocial behaviour, on the other hand, is positively correlated with all social-emotional competencies and learning outcomes.

Table 2. Spearman Correlations for Social-Emotional Skills, Learning Outcomes, and Behavioural Problems ($n = 590$)

Variable	Overall difficulties	Emotional symptoms	Conduct problems	Hyperactivity-inattention	Peer relat. problems	Learning outcomes
Social-emotional skills	-.75**	-.23**	-.64**	-.68**	-.48**	.66**
Self-awareness	-.67**	-.28**	-.51**	-.58**	-.44**	.59**
Self-management	-.70**	-.15**	-.67**	-.77**	-.31**	.59**
Social awareness	-.50**	-.10*	-.45**	-.40**	-.38**	.41**
Relationship skills	-.64**	-.28**	-.47**	-.47**	-.54**	.53**
Responsible decision-making	-.70**	-.17**	-.65**	-.69**	-.42**	.69**
Learning outcomes	-.64**	-.25**	-.44**	-.66**	-.36**	-

* $p < 0.05$; ** $p < 0.01$

Table 3. Spearman Correlations for Social-Emotional Skills, Learning Outcomes, Internalizing and Externalizing Problems, and Prosocial Behaviour ($n = 590$)

Variable	Internalizing problems	Externalizing problems	Prosocial behaviour
Social-emotional skills	-.43**	-.73**	.71**
Self-awareness	-.44**	-.61**	.57**
Self-management	-.28**	-.80**	.41**
Social awareness	-.29**	-.47**	.80**
Relationship skills	-.49**	-.52**	.66**
Responsible decision-making	-.35**	-.74**	.62**
Learning outcomes	-.37**	-.65**	.41**

** $p < 0.01$

To address the second hypothesis, according to which higher social-emotional skills among elementary school students will be related to lower levels of emotional and behavioural problems and higher levels of learning outcomes, a one-factor regression analysis was used (see Tables 4 and 5).

Table 4. One-Factor Regression Analysis with Behavioural and Emotional Problems as the Dependent Variable (n = 590)

Parameter	B	B Std. Error	B	t
Social-emotional skills	-0.44	0.02	-0.73	-25.31***

R² = 0.53; ***p < 0.001

Table 5. One-Factor Regression Analysis with Learning Outcomes as the Dependent Variable (n = 590)

Parameter	B	B Std. Error	β	t
Social-emotional skills	0.18	0.01	0.66	21.29***

R² = 0.44; ***p < 0.001

Social-emotional skills significantly predicted the elementary school children’s behavioural and emotional difficulties, and this model explained 53% of their variations. As the score for social and emotional skills increases by 1 point, behavioural and emotional problems will decrease by 0.44 points.

Social-emotional skills explain 44% of the results regarding the learning outcomes of elementary school children. When increasing the social-emotional skill level by 1 point, learning outcomes will increase by 0.18 points.

Table 6. Social-Emotional Skills, Behavioural and Emotional Problems and Learning Outcomes by Gender

	Gender				
	Girls (n = 276)		Boys (n = 314)		U
	M	SD	M	SD	
Overall difficulties	7.62	5.20	10.61	6.43	31285.5***
Emotional symptoms	2.08	1.90	1.97	2.03	40642.00
Conduct problems	0.89	1.44	1.95	2.10	28915.00***
Hyperactivity-inattention	2.57	2.43	4.32	2.83	27558.50***
Peer relationship problems	2.07	1.78	2.36	1.89	39473.00
Prosocial behaviour	7.64	1.93	6.15	2.25	26437.50***
Internalizing problems	4.14	3.14	4.33	3.27	42163.00
Externalizing problems	3.47	3.47	6.28	4.50	26281.50***
Social-emotional skills	42.93	8.34	36.02	9.07	23679.50***
Self-awareness	6.31	1.67	5.32	1.77	28612.00***
Self-management	8.71	2.18	7.21	2.29	26821.50***
Social awareness	9.03	2.13	7.40	2.17	25536.50***

Relationship skills	9.09	1.96	7.82	2.12	27945.00***
Responsible decision-making	9.81	2.18	8.09	2.46	25241.50***
Learning outcomes	9.20	2.45	8.09	2.65	32522.00***
Performance	2.98	0.91	2.70	0.93	32482.50***
Motivation	3.06	0.90	2.64	0.97	32581.50***
Engagement	3.16	0.86	2.75	0.93	35807.50***

*** $p < 0.001$

To answer the question of whether there are gender differences relating to elementary school children's social-emotional skills, emotional and behavioural problems and learning outcomes, Mann-Whitney tests for two independent groups were used (see Table 6). The results indicate that there are statistically significant differences between the gender groups in almost all variables. Teachers reported that boys had higher levels of behavioural problems than girls and lower levels of social-emotional skills and learning outcomes. There were no gender differences for internalizing problems.

Discussion

The aim of this study was to explore relationships between the social-emotional skills, behavioural and emotional problems, and learning outcomes of elementary school children. An additional question about gender differences within the constructs was raised. The results of this research indicate that overall social-emotional competence and each skill separately are positively related to learning outcomes and negatively associated with behavioural and emotional problems. Elementary school children who have better developed social-emotional skills have higher levels of learning outcomes and fewer behavioural and emotional problems. Accordingly, those with less developed social-emotional skills will show greater internalizing and externalizing problems and lower levels of learning outcomes. These results are in line with other studies (Alzahrani et al., 2019; Durlak et al., 2011; Elias et al., 1997; Greenberg et al., 2003; Martinsone et al., 2022; Osher et al., 2016; Snyder et al., 2009; Zins et al., 2004). Additionally, social-emotional skills had positive associations with the prosocial behaviour of preschool children. This reinforces the fact that an increase in social-emotional skill levels not only decreases emotional and behavioural problems but also increases prosocial behaviour. Other studies have shown that higher levels of social-emotional skills help to lower externalizing problems by improving students' ability to regulate their own emotions (Ağırkan & Ergene, 2022; Ronen et al., 2007) and, specifically, insufficient self-management was closely related to externalizing problems. Other studies also indicate that self-management is closely related to internalizing problems. In general, the

higher the level of social-emotional skills, the lower the internalizing and externalizing behaviour difficulties (Durlak et al., 2011; Elias et al., 1997).

This study emphasizes that higher levels of behavioural and emotional problems are associated with lower levels of learning outcomes, including performance, motivation and engagement. Similar results have been reported by other researchers (Graziano et al., 2007; Hamre & Pianta, 2001; Spilt et al., 2012; Zee & Roorda, 2018), and thus it can be concluded that children with emotional and behavioural problems, even during their first years of elementary school, consequently have more difficulties with achieving better academic outcomes. Over time, their lack of knowledge and skills can lead to greater behavioural difficulties that can adversely affect their relationships with peers and teachers and therefore foster a greater drop-out risk from school (Wang et al., 2015).

It also was hypothesized that higher levels of social-emotional skills among elementary school students would be related to higher learning outcomes and lower emotional and behavioural problems. Data from this research confirm this hypothesis and complement other studies (Alzahrani et al., 2019; Durlak et al., 2011; Elias et al., 1997; Greenberg et al., 2003; Osher et al., 2017; Snyder et al., 2009; Zins et al., 2004), confirming that improvement in social-emotional skills is an effective way to decrease behavioural problems and increase both learning outcomes and prosocial behaviour.

Finally, gender differences were examined in view of the lack of consistent evidence in previous research on this aspect (Holsen et al., 2008; Lei et al., 2018; Romer et al., 2011; Ronen et al., 2007; Spilt et al., 2012). The findings indicate that there are significant differences between the gender groups in social-emotional skills, learning outcomes and behavioural problems. These results match those of other studies (Lei et al., 2018; Snyder et al., 2013), where girls are observed as having higher levels of social-emotional skills, better learning outcomes, and fewer behavioural problems. However, the present findings do not indicate that girls have greater emotional or internalizing problems than boys, as has sometimes been reported (Zen et al., 2019). It should be noted that only those scales of behavioural difficulties that indicate externalizing problems show a significant difference between genders. There are several possible explanations why boys have lower levels of social-emotional skills than girls, one of which points to the teaching methods of educators (Sanchez-Nunez et al., 2008), and another depends on the role played by society in general. We could speculate that in Latvia, schools are more supportive of girls than boys due to requesting more self-regulation and independence from boys even in the early stages of their education.

This study has shown that an increase in social-emotional skills is related to a decrease in emotional and behavioural problems and significantly increases the learning outcomes of elementary school children. Therefore, every school should consider implementing social-emotional learning as a way to foster the

social-emotional development of their students. Research shows that universal programmes (implemented for everyone in the class) targeting children at risk are effective in improving emotional and behavioural problems (Carroll et al., 2020). This may be the most effective way to support every child in elementary classes while also improving children's social-emotional skills, behavioural adjustment and learning outcomes.

Conclusions

The results of this study indicate that higher social-emotional skills are associated with better learning outcomes and lower levels of behavioural and emotional difficulties among elementary school children and vice versa – students with lower levels of social-emotional skills have greater emotional and behavioural difficulties and lower levels of learning outcomes. Thus, the first hypothesis, according to which social-emotional skills are positively associated with learning outcomes and negatively associated with emotional and behavioural problems, was supported.

The second hypothesis that higher social-emotional skills predict a decrease in behavioural and emotional problems and an increase in learning outcomes was also confirmed. A 53% improvement in social-emotional skills explains the decrease in emotional and behavioural problems, and a 44% improvement explains the increase in learning outcomes. It is expected that emotional and behavioural problems will marginally decrease by improving students' social-emotional skills. Likewise, an improvement in their social-emotional skills is associated with better results in learning outcomes.

Regarding the gender differences, it was found in all variables (with the exception of internalizing behaviour) that boys were assessed as having lower social-emotional skills and lower learning outcomes and significantly greater behavioural problems than girls.

These findings support the importance of the development of social-emotional competence as a prerequisite for improving elementary school children's learning outcomes and prosocial behaviour while also significantly decreasing emotional and behavioural problems. Gender differences indicate that boys could be in a vulnerable position even from the early days of school since their social-emotional skills and learning outcomes are assessed as being lower than those of girls. According to teachers' reports, the emotional and behavioural difficulties of boys are greater than girls of the same age. These findings should prompt a necessary discussion of teachers' role in developing relationships with and among students and providing support for all of them, including those with lower levels of social-emotional skills or those struggling with emotional or behavioural problems.

Aknowledgment

This research was conducted within the scope of the EU-funded Erasmus + KA3 research project “PROMEHS – Promoting Mental Health at Schools” (No. 606689-EPP-1-2018-2-IT-EPPKA3-PI-POLICY).

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