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Investigating the Links of Social-Emotional Competencies: Emotional Well-being and Academic Engagement among Adolescents

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ABSTRACT

This cross-sectional study examined the links of social-emotional competencies (SECs: emotional regulation, relationship skills, and planning of schoolwork) with emotional well-being (EWB) and academic engagement (behavioral and emotional) among 1085 lower secondary school students. A latent structural model was tested using Mplus. The model specified the SECs as the independent variables, EWB as the intermediate variable, and behavioral and emotional engagement as the dependent variables. In line with hypotheses, the SECs showed statistically significant links with EWB; the strongest for emotional regulation. In addition, EWB was significantly associated with both dimensions of academic engagement and planning of schoolwork was directly associated with the engagement variables. The findings support the notion that EWB is linked to academic engagement and that SECs, especially emotional regulation can promote academic engagement via EWB. Yet, skills in planning schoolwork emerged as the SECs with the greatest likely potential for promoting academic engagement among adolescent students.

ARTICLE HISTORY

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KEYWORDS

Social-emotional competence; emotional well-being; academic engagement; adolescent students; structural equation modelling

Introduction

In recent decades, researchers have increasingly emphasized the importance of enhancing students' social-emotional competencies (SECs) at school (Clarke et al., 2015; Greenberg et al., 2003; Taylor et al., 2017). Students who master these competencies are more likely to engage confidently in learning activities and remain resilient in the face of difficulties (Wang & Eccles, 2012). They also tend to enjoy positive relationships with teachers and peers (Hall & DiPerna, 2017), and exhibit fewer behavioral problems while promoting prosocial behaviors (O'Connor et al., 2018). Additionally, they achieve higher grades and exhibit good performance, as indicated by standardized test scores (Buckner et al., 2003).

What is lacking in this growing body of research, however, is an investigation of how specific SECs relate to different outcomes. Much of the existing research has merely assessed the effects of interventions that simultaneously stimulate several SECs (Jagers et al., 2015). Moreover, most of these studies were conducted in the US, with a relatively small number focusing on European contexts (Holsen et al., 2008), and among most groups that were younger than adolescents. A recent meta-study (Taylor et al., 2017) asserted this need to address this gap to clarify which SECs are of

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particular importance during adolescence. The present study aims to contribute to filling this gap, focusing on Norwegian lower secondary school students and investigating how three specific SECs – emotional regulation (ER), relationship skills (RS), and planning of schoolwork (PS) – affect their academic engagement and emotional well-being (EWB).

Academic Engagement

Although several interpretations of academic engagement are evident in the literature (see Fredricks et al., 2004), this study relies on the work of Skinner et al. (2009), who adopt a motivational conceptualization of the term that includes behavioral and emotional participation in the classroom (Skinner et al., 2009). *Behavioral engagement* refers to the concentration and effort that students invest in their learning tasks in school. *Emotional engagement*, on the other hand, represents what students experience and feel. Accordingly, it is defined as the students' interest in their schoolwork and is closely linked to the concept of intrinsic or autonomous motivation (Skinner et al., 2009). These dimensions operate together, reflecting students' approach to learning and hereby with the learning tasks, values, and places that constitute their learning experience.

Academic engagement has been shown to decline during adolescence, making it an important research area (Eccles & Wang, 2012). This phenomenon has previously been demonstrated in Norway (Bakken, 2019), where the present study was conducted. These observations are particularly concerning given that academic engagement is a central aim of schooling (Skinner & Pitzer, 2012). Students who are academically engaged adapt better to challenging situations (Ladd & Dinella, 2009), are more likely to take advantage of learning opportunities, produce higher quality work than those whose engagement is lower (Fredricks, 2011), and exhibit greater awareness of social rules and standards in their behavior (Skinner et al., 2008). Researchers have also focused on academic engagement as a critical target for successful completion of school (Eccles & Wang, 2012). Consequently, academic engagement is of considerable interest for educators, not only because it is related to various valued academic outcomes but also because adolescents must be actively involved in the learning process to acquire the skills and knowledge necessary for success in further education (Skaalvik & Skaalvik, 2011).

Emotional Well-being

A growing body of research suggests that students' EWB is related to their academic outcomes. For example, findings indicate that positive EWB occurs with higher school attendance and better test scores (Suldo et al., 2011; Pekrun et al., 2017). The term EWB has been conceptualized in various ways, and no single definition to date has received universal acceptance. The presence of positive aspects of EWB, such as happiness and self-esteem, and the absence of negative aspects, such as school burnout and depression, are commonly used as indicators of adolescents' EWB (Pollard & Lee, 2003). In the present study, EWB was defined as students' positive affect and self-confidence, and positive affect is aligned with the hedonistic approach (see Kahneman et al., 1999) in terms of pleasure attainment and pain avoidance.

Pekrun and Linnenbrink-Garcia (2012) consider emotions to be the fuel of coping behavior, which implies that emotions – and probably, positive emotions – are a driving force of valued academic outcomes. When students experience positive affect, such as enjoyment and interest in schoolwork, they tend to exhibit more energy and invest greater effort, influencing their attitudes toward learning and greater engagement in learning tasks (Fredricks, 2011). Consistent with this argument, positive affect and self-confidence are positively associated with students' adoption of achievement goals (Pekrun et al., 2002) and are considered vital to their ability to cope with academic-related challenges. High levels of EWB may, therefore, be a possible predictor for the promotion of academic engagement, as positive emotions help individuals to envision goals and energize their attempts to attain them (Pekrun & Linnenbrink-Garcia, 2012). By contrast, low

EWB levels are associated with loss of self-esteem (Jindal-Snape & Miller, 2008), depression (Salmela-Aro, Kiruru, & Nurmi, 2008), and poor academic performance (Skinner et al., 2009).

Social-Emotional Competencies

The present study draws on the empirical research conducted by the Collaborative of Academic and Social and Emotional Learning (CASEL), an international organization aiming to establish social and emotional learning as an essential part of education. CASEL (2021) characterizes socially and emotionally competent students as being able to understand and manage their emotions, set and achieve goals, solve problems successfully, establish and maintain healthy relationships, and process and retain information within settings that intentionally nurture these skills. The present study investigated how three aspects of SECs may relate to students' EWB and academic engagement: ER, RS, and PS.

Emotional Regulation (ER)

ER draws on cognitive appraisal theory and concerns individuals' ability to rethink emotive events in a way that changes how they impact them (Gross, 2015) and reflects the processes by which emotions one chooses to allow or contain, including how to express these emotions. Reappraisal of one's understanding of situations is an important part of ER and constructive represents ER in this study. Findings indicate that constructive reappraisal of a situation is typically associated with beneficial effects (Ben-Eliyahu & Linnenbrink-Garcia, 2013), such as effective cope with stress and more positive affect (Gross et al., 2006).

ER can further be theorized as influencing students' learning by directing positive and negative psychological energy to guide their attention toward learning tasks (Pekrun et al., 2002). The ability to positively reappraise challenging learning tasks is believed to promote emotions like enjoyment and enthusiasm that enhance engagement, while unpleasant emotions can lead to frustration and boredom, which may negatively impact students' academic engagement (Pekrun & Stephens, 2010). Satisfactory ER is believed to stimulate individuals' ability to overcome obstacles and adverse conditions, select appropriate tactics to achieve high-quality goals, and monitor progress toward those goals in flexible ways (Zimmerman, 1990; Bandura, 1997). By managing potential emotional barriers, ER was assumed to be directly related to EWB and indirectly related to academic engagement via EWB.

Relationship Skills (RS)

During adolescence, as students spend a greater amount of time with their peers, and these peer networks' norms and characteristics attain increasing salience as socializing agents (Ryan, 2000). In the current study, RS concerns individuals' perceived ability to adequately interact with others (Eckenrode, 2013). Researcher have found that when students can adequately navigate the social aspects of school, strong links are evident between positive RS and experienced EWB (Leme et al. 2015). Students who exhibit competence in establishing healthy and productive relationships tend to experience higher self-esteem and perceive more social support (Thoits, 2012). By contrast, socially inadequate students tend to exhibit more symptoms of depression, social withdrawal, and loneliness (Cook et al., 2008). Therefore, we propose that RS is related to higher EWB because of its association with better social inclusion and more social support availability, as it may allow individuals to attract more social support when required, thereby resulting in less loneliness. School is an important aspect of adolescents' lives, and a sense of social belonging and support is assumed to enhance their EWB.

Several researchers have also found significant positive links between a sound set of RS and academic achievement (Wentzel & Watkins, 2002; DiPerna & Elliott, 2002). Blum and Libbey (2004)

suggested that students' RS may make it easier for them to integrate into peer networks with positive academic aspirations, leading to an increased sense of belonging in the classroom and higher academic engagement. In the present study, a link between RS and academic engagement was assumed to exist because it is likely to underlie behaviors that facilitate functionality in academic environments, such as establishing and maintaining beneficial relationships with teachers and peers (Hattie & Anderman, 2013). A direct relationship with academic engagement is possible, but supportive academic collaboration is likely intertwined with EWB, and a direct link between RS and academic engagement, therefore, is uncertain.

Planning of Schoolwork (PS)

Within the CASEL-framework, planning is considered a self-management strategy (CASEL, 2021), and within psychological stress theory, a problem-focused or active coping strategy for handling or preventing stressful encounters within the environment (Lazarus & Folkman, 1986; Carver et al., 1989). Planning is used for handling different tasks or challenges. Thus, active and efficient planning can solve problems, thereby reducing stress and enhancing feelings of self-efficacy about achieving a goal (Vancouver et al., 2001). Successful planning can, in turn, lead to appropriate changes in behavior, increasing the likelihood that the goal will be obtained (Bandura, 1997). In this study, we were preoccupied with schoolwork as a task or challenge.

Students who employ active coping strategies, such as PS, are thought to experience more positive and fewer negative emotions in academic settings (Ben-Eliyahu & Linnenbrink-Garcia, 2013). For example, Mantzicopoulos (1990) found that students who employ positive, action-oriented strategies are more likely to increase their sense of self-worth, which may be linked to EWB, whereas students with low self-esteem have been shown to have negative coping strategies, lower achievement records, and higher emotional distress (Weare, 2000). Moreover, lack of structure and high task demands are positively related to students' test anxiety (Pekrun & Linnenbrink-Garcia, 2012). An individual's good perceived ability to PS is, therefore, likely to increase their sense of control and hereby enhance their optimism with respect to managing their schoolwork. School is one of the most crucial contexts in adolescents' lives, and such optimism may be assumed to enhance their EWB.

Furthermore, students who can employ active coping strategies have been defined as behaviorally active participants in their own learning (Zimmerman, 1989). They are more likely to have effective ways of dealing with academic-related challenges, such as changing priorities and actions related to structuring and planning schoolwork. Students who fail to employ these strategies are more likely to experience low self-efficacy and poor academic performance, which may induce them to abandon their efforts entirely (Vestad et al., 2021; Lazarus, 1991). Students' perceptions of their own self-efficacy impact many aspects of their lives, including their goals, the amount of effort they invest with a view to accomplishing those goals, and their perseverance in the face of challenges (Bandura, 1991). Over time, students' abilities to actively plan and keep track of their schoolwork may help them to adjust their responses to management of their study time as well as their views of their own abilities (Wigfield & Eccles, 2007), which may, in turn, help them to rally following setbacks and failures and to constructively reengage with their learning tasks (Pitzer & Skinner, 2017). Based on earlier findings, PS was assumed to be directly linked to both EWB and academic engagement.

The Present Study

The main objective of this study was to examine how three specific SECs – ER, RS, and PS – were related to students' academic engagement (behavioral and emotional), directly and indirectly through EWB. The research questions that this study seeks to address were as follows:

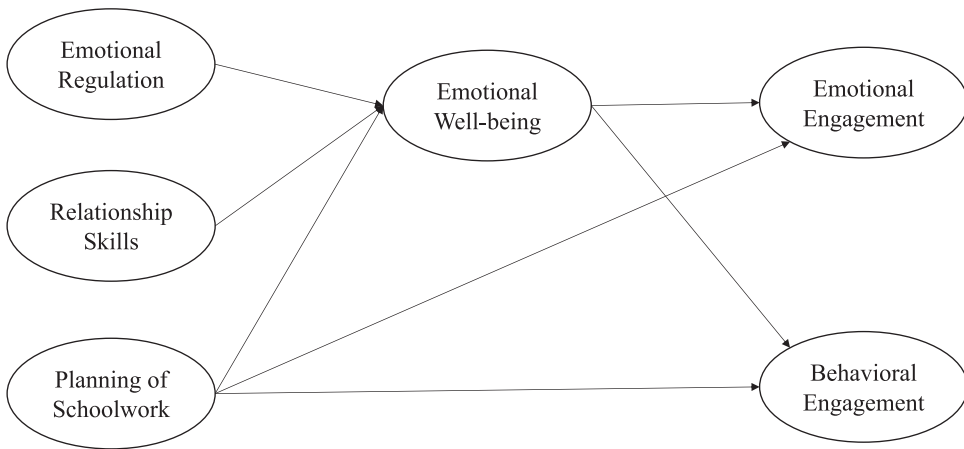


Figure 1. Hypothesized links of the SECs, EWB and academic engagement.

1. To what extent are the specific social-emotional competencies (SECs) – emotional regulation (ER), relationship skills (RS), and planning of schoolwork (PS) – linked with emotional well-being (EWB)?
2. How do the SECs and EWB relate to academic engagement?
3. To what extent does EWB act as an intermediate variable between the SECs and academic engagement?

Based on the above-described theoretical rationale, the structural model depicted in [Figure 1](#) is proposed. It specifies the following assumptions: 1) that all SECs relate to EWB; 2) that EWB relates to both dimensions of academic engagement; 3) that all three specific SECs are indirectly related to both dimensions of academic engagement; and 4) that perceived ability to plan schoolwork is directly related to both dimensions of academic engagement.

Methods

Sample and Procedures

Participants were 1085 (563 female, 522 male) eighth-grade students (aged 13–14 years) recruited from 55 classrooms in 11 lower secondary schools located in six different municipalities in Norway. The data collection process, which is part of a longitudinal study, took place during spring 2019. The student participants responded to a 45-minute self-report, internet-based questionnaire administered by the main teacher, who followed the instructions provided by the study team.

All procedures were approved by the Norwegian Centre for Research Data and in accordance with the Norwegian Data Protection Authority. Written parental consent was a prerequisite for student participation. Additionally, the students were informed that their participation was confidential and voluntary and that they could choose to withdraw from the study at any time and for any reason without consequences.

Measures

The measures included are presented below, and the items' wording, factor loadings, and fit indices for the measurement models are detailed in Appendix 1. Some of the measurement models required a correlation of residuals to yield good fit. Residuals correlated gave substantial meaning, and the correlation of residuals is likely to have improved the construct validity of the latent variables (Cole et al., 2007). Some of the measures were translated or adapted. This was done following

recommended procedures for cross-sectional adaption (Beaton et al., 2000; Gjersing et al., 2010) First, lingual experts translated the English worded scales into Norwegian and back to English. Subsequently, an expert group oversaw the adaption of the items' wording and content to a Norwegian context.

Academic engagement was measured using a slightly modified version of scales developed by Skinner et al. (2009). The modified versions are documented by; Bru et al. (2021). The measurement of academic engagement has a motivational approach, grounded in self-determination theory (SDT). Behavioral engagement ($\alpha = .87$) included four items estimating their effort, persistence, and attention while initiating and participating in the learning activities. The latent variable showed a good fit when the residuals for "I listen carefully" and "I pay attention during class" were correlated. Emotional engagement ($\alpha = .93$) included four items that assessed their emotional involvement in terms of interest and enjoyment. The latent variable showed adequate fit given that the residuals for the items "I think it's fun working with the subjects" and "I find schoolwork pleasurable" were correlated. The combined measurement model for both dimensions of academic engagement yielded a good fit (see Table 1). The Likert scale had a six-category scoring format to better capture variations in the students' perceptions: 1 (totally disagree), 2 (quite disagree), 3 (slightly disagree), 4 (slightly agree), 5 (quite agree), and 6 (totally agree).

Emotional well-being was assessed using six items from the Warwick-Edinburgh Mental Well-being scale (WEMWBS; Tennant et al., 2007). Items were selected from the Norwegian version of WEMWBS (Ringdal et al., 2018). The items reflected positive affect and self-confidence (see Appendix 1). The latent variable gave adequate fit given that residuals for the items "I have been happy with myself" and "I have felt confident" were correlated. The responses were made on the original 5-point Likert scale using the following options: 1 (none of the time), 2 (rarely), 3 (some of the time), and 5 (all of the time). Cronbach's α was .84. The use WEMWBS were registered on the scale's website (<https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/using/register/>).

Emotional regulation, as assessed using the five-item subscale Re-Interpretation of the Emotional Regulation Questionnaire for Children and Adolescents (Gullone & Taffe, 2012), refers to the feeling of re-interpretation. In the present study, the cognitive appraisal subscale was utilized to measure students' tendency to regulate their emotions. The latent variable yielded good fit given that residuals for the items "When I want to feel happier, I think about something else" and "When I want to feel less bad, I think about something else" were correlated. The items were rated on a 5-point Likert-type response scale using the following options: 1 (strongly disagree), 2 (disagree), 3 (half-and-half), 4 (agree), 5 (strongly agree). Cronbach's α was .93.

Relationship skills ($\alpha = .96$) was measured using a scale developed by the Norwegian Center for Learning Environment and Behavioral Research in Education and documented by Vestad et al. (2021). The scale contained positively worded statements about students perceived ability to make contact with others to capture the students' considerations regarding their social competence. The latent variable yielded good fit. The scale had a six-step format using the options: 1 (completely disagree), 2 (strongly disagree), 3 (slightly disagree), 4 (slightly agree), 5 (strongly agree), and 6 (totally agree).

Table 1. Fit for measurement models based on CFA: independent variables together, intermediate variable, and complete six-factor model ($n = 1085$).

	Fit indices	Range of factor loadings
Dependent variables: Behavioral and emotional engagement	RMSEA = 0.34 (90% CI: .019-.048); CFI = .96; TLI = .93; SRMR = .015	.81–.97
Intermediate variable: Emotional well-being	RMSEA = .069; 90% CI (.052-.089), CFI = .98; TLI = .96; SRMR = .023	.67–.71
Independent variables: The SECS	RMSEA = .046 (90% CI: .040-.052) CFI = .98; TLI = .97; SRMR = .028	.75–.99
Complete six-factor model:	RMSEA = 0.39 (90%CI: .036-.042); CFI = .97; TLI = .98; SRMR = .042	.68–.99

Planning of schoolwork ($\alpha = .90$) was assessed using an adapted version of the Planning subscale selected from the COPE inventory (Carver et al., 1989). The introduction to the subscale was adapted to focus on PS, and one additional item was included. The subscale had five items measuring distinct aspects of problem-focused coping in the academic domain. The latent variable yielded a good fit. In the present study, the original four-step scoring format was changed into a six-step scoring format using the following options: 1 (completely disagree), 2 (strongly disagree), 4 (slightly disagree), 4 (somewhat agree), 5 (strongly agree), and 6 (totally agree).

Control Variable

Student Gender

Student gender was coded as 1 for males and 2 for females.

Statistical Analysis

SPSS (version 26) were used for preliminary analysis. These analyses included descriptive statistics, Cronbach's alpha, and Pearson product-moment correlation. Mplus (version 8.1) was utilized for confirmatory factor analysis (CFA) and structural equation modeling (SEM) with latent variables. Robust maximum-likelihood estimation combined with bias-corrected bootstrapping accounted for possible deviations from normal distributions and checked the confidence interval around the estimated coefficients (Hayes, 2013).

The goodness of fit was evaluated using the X^2 test statistic, Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Standardized Root Mean Square Residual (SRMR). As outlined by Hu and Bentler (1998), an adequate fit is supported when a cut-off value close to $\leq .08$ is used for SRMR. A cut-off value close to $\leq .95$ was used for the TLI and CFI. RMSEA-values $\leq .06$ was considered to indicate good fit, whereas values $\leq .08$ considered to indicate acceptable fit. Percentages of missing data were low. None of the observed variables had more than 1% missing data. The full information likelihood estimator (FIML) was implemented to handle the missing data.

Results

Preliminary Analysis

The measurement models were investigated individually using confirmatory factor analysis (CFA; Jöreskog & Sörbom, 1993). Following this, the combined measurement model for the three independent variables was tested and, likewise, the combined measurement for the two dependent variables. The same procedure was conducted for the mediator and the dependent variables. Finally, all variables were tested simultaneously in a first-order measurement model defining six latent variables. The test of individual measurement models showed an acceptable to good fit. When the SEC variables were tested together, a good fit was achieved. Testing of the two latent variables of academic engagement and the complete model also yielded a good fit (see Table 1). Testing of the individual factors yielded acceptable to good fit (see Appendix 1 for further details).

Data were nested within schools and classes. Systematic variation between clusters was generally low, with design effects between 1.1 and 1.6. Therefore, a single-level approach was deemed appropriate.

Descriptive Statistics and Bivariate Correlations

Descriptive statistics and Pearson correlation were computed for the manifest versions of the study variables (Table 2). The results showed that correlations were moderate to high and in the expected direction. That is, EWB was significantly correlated with the various SECs, ranging from 0.35–0.44, $p < 0.001$, and strongly correlated with ER. Next, associations between the SECs and academic

Table 2. Pearson *r*, means, and standard deviations for the study variables (Manifest index scores; *n* = 1085).

	1.	2.	3.	4.	5.	M	SD	Scoring range
1. Emotional regulation	–					3.90	1.31	1–6
2. Relationship skills	0.28					4.68	1.12	1–6
3. Planning of schoolwork	0.36	0.24				3.71	1.44	1–6
4. Emotional well-being	0.44	0.35	0.34			3.55	0.85	1–5
5. Emotional engagement	0.29	0.21	0.37	0.37		3.35	1.34	1–6
6. Behavioral engagement	0.32	0.25	0.38	0.36	0.59	4.39	1.11	1–6

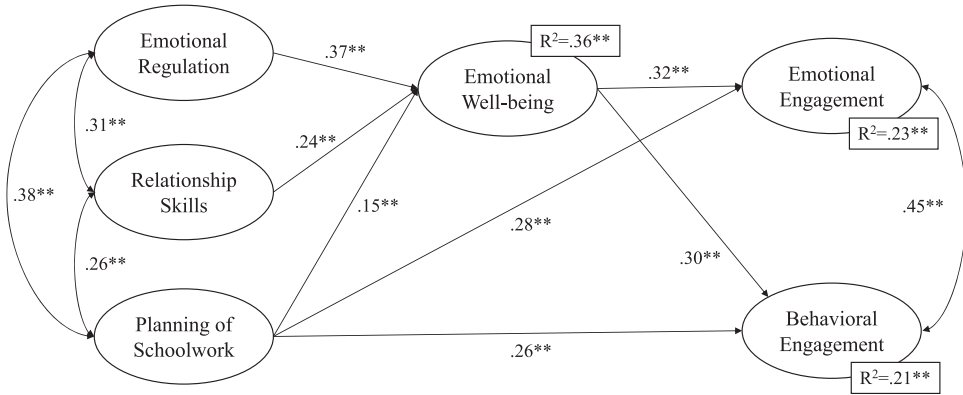


Figure 2. Results of analysis of the structural model (*n* = 1085).

Note: ***p* < .01.

engagement indicate positive and statistically significant associations. These associations ranged from *r* = 0.21–0.38.

Structural Model with Latent Variables

The structural latent variables path model specified two dimensions of academic engagement as dependent variables, EWB as the intermediate variable, and ER, RS, and PS as the independent variables. Gender was control variable. The structural latent variables model yielded good fit: RMSEA 0.39 (90% CI: .036-.042); CFI = .97; TLI = .98; SRMR = .042.

The results from the structural latent path model showed that all independent variables showed significant multivariate associations with EWB, with ER yielding the highest beta coefficient and PS yielding the lowest (see Figure 2).

EWB had a relatively strong and direct link with both behavioral and emotional engagement. Of the variables used to assess the SECs, ER was observed to have the strongest link with EWB. A slightly weaker but significant link was observed for RS in the direct path of the link with EWB. The weakest path was observed for PS and EWB. However, a positive and strong direct link was observed between PS and both dimensions of academic engagement.

PS yielded clearly significant direct link with both behavioral and emotional engagement, whereas ER had the strongest indirect link with the academic engagement variables (see Table 3 for an overview). Analyses with boot strapping confirmed coefficient represented in Figure 1 and in Table 3.

Discussion

Given the centrality of this issue in current educational policy, it is important to advance our understanding of which SECs are of importance for different outcomes during adolescence

Table 3. Total, indirect, and direct effects (associations) from the structural latent variable path analysis ($n = 1085$).

	Total		Indirect		Direct	
	Emotional Engagement	Behavioral Engagement	Emotional Engagement	Behavioral Engagement	Emotional Engagement	Behavioral Engagement
<i>Independent variables</i>						
Emotional regulation	.12**	.12**	.12**	.12**	–	–
Relationship skills	.07**	.07**	.07**	.07**	–	–
Planning schoolwork	.28**	.26**	.05**	.05**	.28**	.26**
<i>Intermediate variable</i>						
Emotional Well-being	.32**	.30**			.32**	.30**

Note: ** $p < .01$.

(Durlak et al., 2011; Jagers et al., 2015). The main focus of this study was, therefore, to examine how three specific SECs – ER, RS, and PS – were related to students' academic engagement, directly and indirectly through EWB. Findings related to the research questions will be discussed below.

Social-Emotional Competencies with Emotional Well-being

One initial hypothesis of this study was that all three SECs were related to students' EWB. As we assumed, ER – indicated by the ability to reappraise situations more constructively – was observed to be relatively strongly related to EWB. This suggests that ER leads to enhanced emotional control, which might, in turn, help students to interpret situations better, leading to higher levels of EWB (John & Gross, 2004). These results mirror earlier empirical findings suggesting that students' ability to reappraise situations more beneficially is associated with more positive affect (Gross, 2015; Gross et al., 2006).

The second most salient link was found for RS, which showed a positive multivariate link with EWB. This finding supports the assumption that RS increases the likelihood that students will maintain supportive relationships with their teachers and peers and promotes their EWB (Taylor et al., 2017; Thoits, 2012). Empirically, a relatively strong relationship has been demonstrated between the quality of relationships and psychological aspects of well-being (Ryff et al., 2001), whereas students with RS deficiencies tend to exhibit social withdrawal, loneliness, and depression (Cook et al., 2008).

Students' perceived ability to adopt active coping strategies, such as PS, was hypothesized to relate positively to their EWB (Lazarus, 1991). This hypothesis was supported to a certain extent. The structural model showed a significant, though relatively weak multivariate link. However, the significant correlations between PS, RS, and ER in particular should be noted. This may indicate that systematic application of effective planning is more likely to include constructive reappraisal of challenging situations. This is in accordance with the notion that effective use of active coping strategies depends on the students' capacity to constructively modify their thoughts and emotions (Lazarus, 1991). Moreover, finding seems to reflect that those who engage in PS are more likely to be conscious about creating supportive relationships with teachers and peers at school. Finally, in particular, the links between ER and PS may suggest that both skills are expressions of self-regulation (Zimmerman, 1989).

Findings suggest perceived PS ability enhance students' sense of control over their schoolwork and supports their progress toward their academic goals. Such appraisal will likely simulate their EWB (Lazarus, 1991), which is also supported by Chu et al. (2010), who linked EWB to adaptive coping strategies.

Social-Emotional Competencies with Academic Engagement

The second research question of this study concerned how the various SECs related to students' academic engagement. PS showed direct and vital links with both dimensions of academic engagement. These findings may highlight the importance of employing active coping strategies in the learning process (Pitzer & Skinner, 2017). Indeed, Zimmerman (1991) suggested that students who can employ these strategies are more likely to be active participants in their own learning. The initial claim was that PS could help increase positive, action-oriented strategies (Mantzicopoulos, 1990) while also increasing self-efficacy (Bandura, 1991; Pekrun et al., 2002). High self-efficacy is considered necessary for enjoyment and enthusiasm, while low self-efficacy can trigger negative emotions toward learning tasks, which could negatively impact academic engagement (Ben-Eliyahu & Linnenbrink-Garcia, 2013). Thus, the ability to engage in PS was thought to be associated with more positive and fewer negative emotions in academic settings, leading to more positive appraisals of schoolwork.

Our results showed only indirect links between ER and RS and academic engagement via EWB. These findings may indicate that ER and RS primarily influence academic engagement by stimulating positive emotions (Pekrun & Linnenbrink-Garcia, 2012) and corroborate the findings of a recent study by Chin et al. (2017) that linked students' positive emotions to their performance. This is in accordance with the notion that positive emotions facilitate self-regulated learning strategies, in contrast to negative emotions, which are related to greater perceptions of failure (Pekrun et al., 2002). That is, the activation of positive emotions in the classroom may enhance students' enjoyment of the learning process, which, in turn, could predict academic engagement (Pekrun & Perry, 2014). This will be discussed further below.

Emotional Well-being and Academic Engagement

Empirical research into both emotions and academic engagement is increasing, with widespread agreement that both are critical determinants of desirable academic outcomes (Pekrun & Linnenbrink-Garcia, 2012). As reflected in the control-value theory of achievement emotions (CTV; Pekrun, 2006), it was assumed that students' EWB would relate to academic engagement. This theory, which builds partly on appraisal theory, is an integrated framework that asserts that academic emotions play an essential role in academic engagement and motivation. Lazarus' appraisal theory (see Lazarus & Folkman, 1986; Lazarus, 1991) is a prominent example. As mentioned, emotions are considered the fuel of coping behavior, which implies that emotions are a driving force of academic engagement. When students experience positive affect, such as enjoyment and interest in schoolwork, they tend to exhibit more energy and effort, which influence their attitudes toward learning and encourage them to engage more in learning tasks (Fredricks, 2011). Therefore, the claim was that EWB may be a possible predictor for the promotion of students' academic engagement, as positive emotions could help them to envision goals and energize their attempts to attain them.

The measurement of academic engagement implemented in this study was inspired by SDT. Intrinsic or autonomous motivation is a central concept in this theory, and SDT claims that positive emotions characterize this type of motivation. As the CTVAE posits, SDT also argues for a link between positive emotions and academic engagement. The finding that EWB showed a clearly significant link with both dimensions of academic engagement supports the notion that emotions may play an essential role in shaping students' academic engagement. Moreover, although the findings suggest that PS is more critical for academic engagement than ER and RS, the results also indicate that the ability to reappraise academic challenges constructively could promote academic engagement by enhancing EWB.

Limitations

Although the study's strength was its relatively large sample size used to examine the links, nonetheless, it has several limitations. The primary weakness in the cross-sectional design is the inability

to draw causal inferences. Without longitudinal data, it is impossible to provide evidence for an actual cause-and-effect relationship between the variables. Research that uses longitudinal or experimental designs is needed to facilitate conclusions about how students' SECs influence their academic engagement and EWB during adolescence. The present study also collected data from students' self-report, internet-based questionnaires, which may have influenced the data and findings. Moreover, this study included a limited number of SECs, and the items captured only parts of these SECs, particularly for ER and RS. Future studies should investigate how other SECs are linked with academic engagement and EWB in adolescence.

Conclusion

Perceived ER ability showed the strongest link with EWB, followed by RS. However, PS was most closely linked with both dimensions of academic engagement. These findings may suggest that social-emotional learning interventions aimed at promoting adolescents' EWB should emphasize ER and RS. If the primary goal is to stimulate academic engagement, the ability to adopt a well-structured approach to schoolwork appears to be of primary importance. However, EWB's and ER's links with academic engagement support the theoretical assumptions that emotions can play a substantial role in academic engagement and that the ability to engage in ER could be essential to persistent academic engagement.

There is a general need to evaluate research-based social-emotional learning interventions among adolescents (Jagers et al., 2015), and findings from this study could inform the content of these interventions. Moreover, if these interventions were designed to test how different SECs mediate effects on diverse educational and developmental outcomes, the knowledge base in this important field could be expanded (Weissberg et al., 2015).

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Appendix

Table A1. Measurement models for latent variables.

	Factor loadings
<i>Behavioral Engagement</i>	
I am working hard to do well at school	.67
I work as effectively/as well as I can	.82
I pay attention during class. *	.72
I listen carefully. *	.80
RMSEA = .00; 90% CI (.000-.068), SRMR = .001, CFI = 1.0, TLI = 1.0	
<i>Emotional Engagement</i>	
I like doing schoolwork.	.90
I think it's fun working on the subjects. *	.96
The subjects we study at school interest me.	.90
I find schoolwork pleasurable. *	.93
RMSEA = .08; 90% CI: (.038-.138), SRMR = .006, CFI = .99, TLI = .98	
<i>Emotional Well-being</i> (see Tennant et al. (2007) or Ringdal et al. (2018) for wording of items)	
Item 1 in WEMWBS.	.67
Item 2 in WEMWBS.	.82
Item 5 in WEMWBS.	.72
Item 8 in WEMWBS. *	.80
Item 10 in WEMWBS. *	.79
Item 14 in WEMWBS.	.74
RMSEA = .069; 90% CI (.052-.089), SRMR = .023; CFI = .98; TLI = .96	
<i>Emotional Regulation</i>	
When I want to feel happier, I think about something else. *	.61
When I want to feel less bad [e.g., sad, angry, or worried], I think about something else. *	.67
When I am worried about something, I think about it in a way that helps me feel better.	.78
When I want to feel better in relation to something, I change the way I think about it.	.89
I can control my feelings about things by changing the way I think	.80
RMSEA = .023; 90% CI: (.00-.056), SRMR = .08, CFI = .99, TLI = .99	
<i>Relationship Skills</i>	
I get to know others easily.	.79
I get in touch with others quickly.	.84
I know how to make contact with others.	.86
I capture the interest of others in a positive way.	.75
I easily find something to talk to others about.	.76
RMSEA = .034; 90% CI: (.000-.064), SRMR = .012, CFI = .99, TLI = .98	
<i>Planning of Schoolwork</i>	
I make a plan for action.	.76
I try to come up with a strategy about what to do.	.82
I think about how I might best handle the problem.	.82
I think hard about what steps to take.	.87
I have done what must be done step by step.	.77
RMSEA = .034; 90% CI: (.008-.060), SRMR = .011, CFI = .96, TLI = .92	

* Items (observed variables) for which residuals were correlated.