

The Association of Social Emotional Constructs and Academic Motivation with Academic Achievement in Adolescents

Salil Goyal¹ & Frank C. Worrell²

¹ Department of Mathematics, University of California, Berkeley, CA, USA

² Berkeley School of Education, University of California, Berkeley, CA, USA

Correspondence: Salil Goyal, Department of Mathematics, University of California, Berkeley, CA, USA. E-mail: salilgoyal@berkeley.edu

Received: August 28, 2022 Accepted: October 18, 2022 Online Published: October 25, 2022

doi:10.5539/jedp.v12n2p118

URL: <http://doi.org/10.5539/jedp.v12n2p118>

Abstract

In this cross-sectional study, we examined the association between eight socio-emotional constructs (empathy, global self-concept, happiness, prosocial behavior, optimism, anxiety, depression, and academic motivation) and academic achievement in a diverse sample of 583 high school students in order to see which ones are most useful in predicting academic achievement. We also examined the associations separately for African American and European American students, as these groups had substantial numbers of students. Results indicated that optimism, anxiety, and motivation were statistically and significant predictors of achievement, with motivation contributing the most variance. Both groups had similar results, but African Americans had five meaningful predictors of achievement while European Americans had three. The findings suggest that these constructs may be useful in helping to improve academic performance in students.

Keywords: social and emotional well-being, academic performance, adolescents

1. Introduction

Recent research has shown that improved social and emotional well-being in students can lead to better academic outcomes, which are in turn linked to positive life outcomes. For example, Malecki and Elliott (2002) found social skills to be a significant predictor of future academic functioning in elementary school students. Similarly, Bagdi and Vacca (2005) reported that the social and emotional well-being of very young children was a “building block” (p. 145) for early learning and school success, and in a study of Chilean elementary school students, Berger et al. (2011) found that socio-emotional variables were associated with academic achievement. In fact, social and emotional learning has been said to generally “create more engaging schools” and help prepare students for the “challenges of the world” (Weissberg & Cascarino, 2013, p. 8).

However, a review of the literature examining the association among social and emotional well-being and academic achievement reveals fewer studies in high school students specifically. For example, although Durlak et al.’s (2011) meta-analysis of 213 social and emotional learning programs involving students from kindergarten to high school indicated that improved social and emotional skills were positively correlated with academic achievement, only 13% of the programs in the study were directed at high school students. Hamedani and Darling-Hammond (2015) did look at social and emotional learning programs in high school students, but their focus was around interventions, examining lessons that could be learned from schools already implementing well-being programs and looking at how a systemic approach to social and emotional learning could function as a model for schools. Nonetheless, there is a general belief that social and emotional health yields potential academic benefits for adolescent students and vice versa.

Formal guidance given by the UK’s National Institute for Health and Care Excellence (2009) has indicated that social and emotional health is associated with fewer behavioral problems, lower incidents of violence, and higher academic achievement. French et al. (2015) showed that academic achievement was a positive and significant predictor of socio-economic status in adulthood. These findings indicate that an exploration of the relationship between social and emotional constructs and academic achievement in high school students could be useful to educators and society (McMillan, 2020). However, such an exploration would likely not be generalizable to the entire American high school population, and the results would be most applicable in the context that exploration is

performed in. The present study aims to address that lacuna in the literature and conduct an exploration for high school students in the suburbs of a Mid-Atlantic state.

We first review the conceptualization of social and emotional well-being used in the current study. Then, we discuss the different constructs that are used to evaluate it. Finally, we present a study examining the association between these constructs and academic achievement.

1.1 Social and Emotional Well-Being

There is no single definition for social and emotional well-being. However, there are two general ideas in this area that are most frequently discussed: social and emotional well-being and social and emotional learning (SEL). The latter term is more often used in the context of intervention programs designed to increase levels of social and emotional well-being; it is defined by the Collaborative for Academic, Social and Emotional Learning (CASEL) to encompass five constructs: self-awareness, self-management, responsible decision-making, relationship skills, and social awareness (Core SEL Competencies, 2020). The former term typically refers to the capacity to form positive social relationships, self-regulate emotion and behavior, cope with stresses, and engage in productive tasks (e.g., learning, working). There is a growing body of literature suggesting that social and emotional constructs are related to students' academic outcomes (Schonert-Reichl, 2011; Worrell & Andretta, 2019).

In this study, we used the theoretical framework of social and emotional well-being put forward by the Human Early Learning Partnership at the University of British Columbia (Schonert-Reichl, 2011). This group studied several different dimensions of children's well-being, including social and emotional development, physical health, and use of after-school time. The social and emotional part of their framework includes seven different constructs, five which represent emotional well-being (empathy, global self-concept, happiness, prosocial behavior, and optimism) and two which represent emotional distress (anxiety and depression). The developers were willing to share their survey instruments and the framework was accessible for our purposes. We now provide brief overviews of all the constructs and discuss their associations with academic outcomes. Our interpretation of the literature is guided by C. J. Ferguson's (2009) concept of minimally interpretable effect sizes (.41 for d and g ; .20 for r and β). We describe findings with these levels of effect size as *meaningful* or practically significant.

1.1.1 Positive Social Emotional Constructs

Empathy can be described as the "ability to sense other people's emotions" as well as to "imagine what someone else might be thinking or feeling" ("What is empathy," n.d.). It can be described as emotional version of perspective-taking (VandenBos, 2007). In a study of adolescents using a structural equation model, Zorza et al. (2013) found that empathy was associated with social competence ($\beta = .20, p < .005$), which in turn was associated with academic performance ($\beta = .43, p < .001$). *Happiness* has been defined as both a "fleeting positive emotion" and a "deeper sense of purpose and meaning in life" ("What Is Happiness," n.d.), and has been studied in age groups from infants through adults. In a study of undergraduate college students, Langevin (2013) found that happiness, operationalized as a person's subjective love of life, self-regard, and level of optimism, explained 6% ($\beta = .24, p < .05$) of the variance in academic performance, more so than age, gender, and ethnicity. Coffey (2019) found that infant positive affect predicts childhood IQ ($\beta = .20, p < .05$) and adult academic achievement ($\beta = .18, p < .05$).

Prosocial behavior has been defined as an intent to help others (VandenBos, 2007), and includes altruism, cooperation, and caregiving ("Prosocial Behavior," n.d.). Gerbino et al. (2018) found prosocial behaviors significantly predicted ($\beta = .185, p = .032$) better grades in the short term and over time in middle and high school. These authors concluded that prosocial behavior is a "strength and resource for adolescents' academic attainment" (Gerbino et al., 2018, p. 247). *Optimism* reflects the attitude that "things happen for the best"; optimists "anticipate positive outcomes" and "expect good things to happen to them and to others" (VandenBos, 2007, p. 651). In a large sample of early adolescents attending middle school in Germany, optimism was found to have only small associations with academic achievement ($\beta < |.10|, p < .001$) and self-esteem ($\beta = .08, p < .001$; Tetzner & Becker, 2018). However, Worrell and Andretta (2019) reported that optimism was positively correlated with school belonging ($r = .25, p < .001$) and academic self-concept ($r = .24, p < .001$), and negatively correlated with perceived barriers to college ($r = -.35, p < .001$), all of which are related to achievement outcomes. *Global self-concept* is one of the most frequently assessed constructs in psychology and can be defined as an "individual's belief about himself or herself, including the person's attributes and who and what the self is" (Baumeister, 1999, p. 339). Existing research suggests that self-esteem or global self-concept has negligible associations with academic achievement (e.g., Marsh & O'Mara, 2008), with academic self-concept being more closely associated with achievement outcomes.

1.1.2 Negative Social Emotional Constructs

Anxiety is “an emotion characterized by apprehension and somatic symptoms of tension in which an individual anticipates impending danger, catastrophe, or misfortune” (American Psychological Association, n.d.). Anxiety can be classified into general anxiety, test anxiety, among others. Perhaps not surprisingly, test anxiety was found to have a more deleterious effect on academic performance than general anxiety in a sample of children and adolescents aged 8–13 (Carey et al., 2017). However, several aspects of anxiety, including worry and physiological anxiety, have been shown to have negative impacts on achievement outcomes. For example, in a study of 40 children between the ages of 6 and 13, intervention-induced decreased anxiety predicted improved school performance ($-.125 \leq \beta \leq -1.108$ for different subdomains of anxiety) and social functioning ($-.043 \leq \beta \leq -1.013$; Wood, 2006).

Depression is a “negative affective state, ranging from unhappiness and discontent to an extreme feeling of sadness, pessimism, and despondency, that interferes with daily life” (American Psychological Association, n.d.). Research on adolescents has generally shown students with depressed moods or symptomology have a higher risk of academic failure. For example, Tyson (1996) concluded, from a review of case studies, that the shift into adolescence, if accompanied by underlying depression, can cause academic underachievement or even failure. A study on Canadian adolescents from low socioeconomic secondary schools found that there was a predictive relationship ($\beta = .21$) between depression symptoms and school dropout that was mediated by academic self-esteem (Quiroga et al., 2013).

1.2 Academic Motivation

Although not one of the social emotional constructs in the Human Early Learning Partnership framework, we also examined academic motivation in this study. Academic motivation has been described as a student’s persistence and level of interest (McGrew, 2008). Motivation has been found to affect academic achievement in high school students consistently albeit primarily indirectly (total effect: $\beta = .104$) through “variables such as coursework and homework” (Keith & Cool, 1992 p. 214; Wong & Csikszentmihalyi, 1991). Froiland et al. (2016) found that teacher autonomy support had an indirect association with math achievement in high school students via intrinsic motivation for mathematics (β s of .52 and .23, respectively). Thus, it is possible that the influence of social emotional constructs on achievement may be via their association with motivational constructs.

1.3 Academic Performance

Academic achievement, operationalized as cumulative GPA, is the primary outcome in this study. Participation in social and emotional learning programs in elementary school children has generally have been found to correlate with higher math grades (Schonert-Reichl et al., 2015). Ashdown and Bernard (2012) found that explicit instruction in social and emotional skills in elementary school children had a positive effect on levels of social and emotional well-being and reading achievement and a negative effect on behavioral problems. Schonfeld et al. (2015) found that a social and emotional learning program in elementary school students resulted in higher levels of basic proficiency in reading, writing, and math, and that these results held across race/ethnicity, gender, and socioeconomic status.

There is a growing body of literature on the usefulness of perception-based variables in enhancing academic achievement in students. For example, Sheard et al. (2013) suggested that social and emotional learning was a vehicle for at-risk students to succeed. A mindfulness-based social emotional learning program was found to enhance students’ quarterly grades in reading and science (Bakosh et al., 2016). Emotional intelligence has been found to predict academic performance in high school and college students ($\rho = .24$; MacCann et al., 2020). Wilson and Buttrick (2016) noted that interventions focused on students’ beliefs about themselves and their environments can lead to improved long-term academic performance. Indeed, Lin-Siegler et al. (2016), in a special section of the *Journal of Educational Psychology*, highlighted several studies reporting on how student perceptions can affect their motivation and achievement. However, Dixson (2019) pointed out that some perception-based variables get more attention than others. For example, although both hope and positivity have been found to predict student achievement and other educational outcomes, current American educational policy neglects these areas, whereas grit and growth mindset receive considerable attention in the public sphere. Dixson also argued that perception-based constructs can be incorporated into school-based interventions and used to guide policy changes. These findings indicate that social-emotional constructs have the potential to directly affect students’ academic performance and hence point to the usefulness of filling a gap in the literature on high school students. Adolescents often face myriad mental health issues, and since they are at the cusp of starting higher education and/or entering the workforce, a better understanding of factors related to their well-being and academic performance is crucial—especially so given the recent COVID-19 pandemic.

1.4 The Present Study

As noted in the review of literature, although social and emotional well-being constructs have been found to relate to academic achievement, there is limited research regarding this association in high school students. Much of the currently available research that suggests that social-emotional well-being is predictive of later academic achievement has focused on young children. Many studies that include adolescents do not reflect the breadth of social emotional constructs included here but instead focus on one or two variables. It is likely that some social and emotional well-being constructs are more important in predicting achievement than others. Other studies examine SEL interventional programs in high school students (e.g., the ones covered in the meta-analysis by Sande et al. (2019)), but these studies largely examine the effects of an intervention on some social and emotional outcomes for students, rather than the association of the range of social and emotional variables with academic performance. Thus, it makes sense to examine these constructs together to understand their unique contributions to academic outcomes.

In the present study, we assessed the association between eight constructs—the seven social and emotional well-being constructs reviewed above in addition to academic motivation—and academic performance in a sample of high school students. We hypothesized that the social and emotional well-being variables would predict a meaningful amount of variance in academic performance. In addition to examining this hypothesis in the whole sample, we also examined it in the two ethnic-racial groups with more than 100 participants (i.e., African Americans and European Americans), as a growing body of research indicates that psychological findings do not always generalize across cultural groups (Leath et al., 2019; Worrell, 2014) and that African American students are often at a disadvantage with regards to achievement and well-being (Gamble, 2021). For example, a study of elementary, middle, and high school students from one school district found that the association of social and emotional learning with grades was significantly stronger for European-American students than for students of other racial groups (Jones et al., 2020). Before examining the relationships among the social emotional constructs and achievement, we examined the psychometric properties of scores on the social emotional variables in this sample. Findings based on scores that are psychometrically unsound are less likely to replicate.

2. Method

2.1 Participants and Setting

This study was conducted in a suburban public high school in a mid-Atlantic state. The participants were 583 students in Grades 9 (36.5%, $n = 213$), 10 (18.9%, $n = 110$), 11 (17%, $n = 99$) and 12 (26.1%, $n = 152$). The sample included students from several ethnic-racial groups, including African Americans (35.3%, $n = 206$), European Americans (41.5%, $n = 242$), Hispanic Americans (9.9%, $n = 58$), Asian Americans (5.7%, $n = 33$), and multi-racial (5.5%, $n = 32$) individuals. Nine students did not report grade level or ethnicity/race. Twenty four percent of the sample ($n = 144$) did not report gender and the remaining students were roughly evenly split between males (38.3%, $n = 223$) and females (37.0%, $n = 216$). Thirty-eight individuals who did not complete entire subscales were excluded from data analyses. The average GPA of the entire sample was 3.06 ($SD = 0.90$). The mean GPA for the two subgroups large enough to use in group-specific analyses was 2.86 ($SD = 0.85$) for African American students and 3.14 ($SD = 0.93$) for European American students. Students were not asked to provide information on socioeconomic status, but the county that the school's students come from is middle-class to upper middle-class (median family income = \$97,000).

2.2 Procedure

Data collection occurred in the 2017–2018 school year. The study was approved by the county school district's Office of Research. Informed consent was obtained by an online signature. Confidentiality was accomplished by having students' IDs on the survey linked to their school GPA by school administrators; this identifier was removed prior to surveys being sent to the researchers. The online survey was administered to students during class counseling sessions. Students were informed that they would be participating in a study aimed at understanding more about their well-being and were asked to complete the online survey. The timing of the surveys depended on when during the year each grade level had their counseling session. The senior class completed the survey in September, and participants in the other grade levels (9th, 10th, and 11th) in February and March. Some classrooms in each grade were not administered the survey by counsellors because of limited time. Missing data were more frequent for questions at the end of the survey than at the beginning. Missing data were imputed using the expectation maximization algorithm, with the percentage of missing data ranging from zero to 3.6%.

2.3 Measures

As noted previously, the social emotional well-being framework used in this study includes seven constructs:

empathy, global self-concept, happiness, prosocial behavior, optimism, anxiety, and depression. The instrument was a modified version of the MindUp survey developed at the University of British Columbia. This survey was originally developed to measure several aspects of child wellbeing and includes questions on thirty constructs, and we keep items relevant to the seven social emotional constructs and academic motivation construct discussed above. Questions on the survey are drawn from a variety of instruments in the extant literature. We present validity information for each of the constructs below. We also validate the scores for students in this particular sample as some of these instruments have not been used with adolescents previously.

Empathy was assessed using the Interpersonal Reactivity Index (Davis, 1980, 1983) modified for children (Schonert-Reichl et al., 2012). This 14-item index measures both empathetic concern and perspective taking. For the present study, only the seven questions relating to empathetic concern were used. The empathy questions assess the feeling of concern for other people (e.g., “Sometimes I feel very sorry for other people when they are having problems”). Students rate each item on a 5-point Likert scale (1 = *not at all like me*, 5 = *always like me*). An average empathy score was computed with higher scores representing higher levels of empathy. Schonert-Reichl et al. (2012) reported Cronbach’s alphas of .80 and .86 for empathetic scores.

Happiness was measured using the 5-item Satisfaction with Life Scale (Diener et al., 1985) adapted for adolescents (Gadermann et al., 2010). A sample question is, “In most ways, my life is close to the way I would want it to be.” Respondents rated their level of agreement on a 5-point Likert scale (1 = *disagree a lot*, 5 = *agree a lot*). Ratings on the 5 items are averaged to create a general happiness score where higher numbers indicate greater levels of happiness. Cronbach’s alpha estimates for scores have been in the .83 to .90 range for middle and high school students (Gadermann et al., 2010; Guhn et al., 2018; Lang & Schmitz, 2020).

Prosocial Behavior was measured using the prosocial questions on the Social Goals Questionnaire (Wentzel, 1993). Prosocial questions (e.g., “How often do you try to share what you’ve learned with your classmates?”) are rated on a 5-point Likert scale (1 = *never*, 5 = *always*) and ratings are averaged to create a total prosocial score, with higher scores representing higher levels of prosocial behavior. This scale is comprised of two subscales—a 3-item peer prosocial subscale ($\alpha = .82$) and a 3-item academic prosocial subscale ($\alpha = .78$; Wentzel, 1994). In this study, we used the total score based on the six items.

Optimism was measured using the Resiliency Inventory (Noam & Goldstein, 1998; Song 2003). The nine optimism items (e.g., “Even if there are bad things, I’m able to see the good things about me and my life”) assess thoughts on the future and perspectives on the world. Participants respond on a 5-point Likert scale (1 = *not at all like me*, 5 = *always like me*). Higher scores represent higher levels of optimism. A study using the optimism subscale score yielded a Cronbach’s alpha of .69 (Oberle et al., 2010).

Global self-concept was measured using the subscale from Marsh’s (1984) Self-Description Questionnaire-II. This questionnaire assesses several aspects of self-concept, but only global self-concept items were used. The eight questions assess self-described abilities (e.g., “I do lots of important things”), rated on a 5-point Likert scale (1 = *never*, 5 = *always*). Responses were averaged to create a general average score for self-concept with higher scores representing higher global self-concept. There is extensive reliability and validity evidence for these scores in students. Gilman et al. (1999) reported internal consistency alpha estimates of in the .80 range for global self-concept scores and reported a test-retest reliability coefficient of .70.

Anxiety and depression were measured using the seven anxiety and 11 depression items on the Seattle Personality Questionnaire (Asher & Wheeler, 1985; Kusché et al., 1988; Ladd, 1990). Items for both anxiety (e.g., “Do you worry what other kids might be saying about you?”) and depression (“Do you feel upset about things”) were measured on a 4-point Likert scale (1 = *not at all*, 4 = *always*). Ratings of the items are averaged so that higher scores represented higher levels of anxiety and depression. Oberle et al. (2010) reported a Cronbach’s alpha estimate of .69 for anxiety scores, and Gadermann et al. (2010) reported an alpha estimate of .85 for depression scores.

Academic motivation was measured using the Academic Goals Questionnaire (Roeser et al., 1996). The scale consists of nine items (e.g., “I’m certain I can learn the skills taught in school this year”) assessing academic motivation and participants respond to the items on a 5-point Likert scale (1 = *not at all like me*, 5 = *always like me*). Ratings are averaged, and higher scores represent higher levels of academic motivation. Cronbach’s alpha for these scores was found to be .86 (Roeser et al., 1996).

Information relating to demographics and academic performance was obtained from school administrators, who matched student data in school records with student survey responses using student identification numbers. Demographic data included race and gender. Cumulative GPA was used as the indicator of academic performance

in the study.

3. Results

3.1 Preliminary Analyses

We began by examining the structural validity, internal consistency, and convergent validity of all the scores to assure that valid inferences could be drawn from the analyses. The structural validity of the scores was assessed using confirmatory factor analyses with Mplus 8 (Muthén & Muthén, 2012–2017). One-factor models using the weighted least squares estimator, recommended for ordinal data, were run, with fit criteria including the comparative fit index (CFI), Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA). Based on recommendations for scales using item-level indicators (e.g., Marsh et al., 2004; Perry et al., 2015), CFI and TLI values $\geq .90$ and RMSEA values $\leq .08$ were used as indicative of acceptable fit. Results for the final models are presented in Table 1. CFI and TLI values were in the excellent range for the empathy, global self-concept, happiness, and anxiety scores and in the acceptable range for prosocial behavior, academic motivation, and depression scores. RMSEA values were in the poor range.

The model for optimism scores had poor fit on all indices. Subsequent analyses indicated that models including only the positively worded or negatively worded items fit well. Thus, we kept the four positively worded items, and, as can be seen in Table 1, CFI and TLI values for scores based on these four items were in the excellent range and the RMSEA value was in the acceptable range. Factor coefficients for items on all the scales were in the good to excellent range (Comrey & Lee, 1992). As at least two of the three indicated good fit and the items all had strong factor coefficients, the models were accepted.

Table 1. Fit Indices for the AATI-TA Scores from Confirmatory Factor Analyses

Variable (# of items)	χ^2	df	CFI	TLI	RMSEA	(90% C.I.)	Range of Coefficients
Empathy (7)	140.40*	14	.984	.976	.124	.106, .144	.587 – .880
Global self-concept (8)	223.58*	20	.970	.958	.132	.117, .148	.633 – .846
Happiness (5)	21.59*	5	.997	.994	.075	.045, .109	.707 – .873
Prosocial Behavior (7)	383.90*	14	.947	.920	.213	.195, .232	.690 – .879
Optimism (4) ^a	5.71*	2	.998	.993	.056	.000, .113	.704 – .790
Academic Motivation (9)	835.16*	27	.947	.929	.227	.214, .240	.682 – .910
Anxiety (7)	122.27*	14	.993	.990	.115	.097, .134	.707 – .959
Depression (11)	576.78*	44	.932	.915	.144	.134, .155	.556 – .904

Note. Models run with weighted least squares robust. Number of items in parentheses.

^a This model is based on the four positively worded items.

* $p < .001$.

Internal consistency estimates are presented in Table 2. Alpha estimates are presented for scores in the total sample and for subgroups with more than 100 individuals. Omega estimates were also calculated for scores on the total sample using the coefficients from the confirmatory factor analyses. The estimates for all variables were acceptable (i.e., $> .70$); only the estimates for optimism were less than .85.

Table 2. Internal Consistency Estimates by Subgroup Examined Separately in Analyses

Variable (# of items)	Males <i>n</i> = 223	Females <i>n</i> = 216	African Americans <i>n</i> = 206	European Americans <i>n</i> = 242	Total Sample <i>N</i> = 583 α/ω
Empathy (7)	0.90	0.88	0.88	0.90	0.90/0.92
Global self-concept (8)	0.91	0.89	0.89	0.91	0.90/0.92
Happiness (5)	0.86	0.88	0.82	0.91	0.88/0.91
Prosocial Behavior (7)	0.90	0.90	0.89	0.91	0.91/0.93
Optimism (4)	0.78	0.80	0.78	0.83	0.81/0.82
Academic Motivation (9)	0.93	0.92	0.91	0.93	0.92/0.95
Anxiety (7)	0.92	0.92	0.91	0.93	0.92/0.94
Depression (11)	0.89	0.88	0.88	0.91	0.89/0.93

Means and standard deviations are presented in Table 3. The distributions had low skewness (-0.55 to -0.06) and kurtosis (2.05 to 3.09). Females had a higher mean GPA ($d = 0.41$) than males and reported meaningfully higher empathy ($d = 0.48$) and anxiety scores ($d = 0.45$) than males, in keeping with extant literature. Females also had higher scores on prosocial behavior, global self-concept, optimism, academic motivation, and depression, but the effect sizes were small (d s $< .28$). European American students had higher scores on GPA ($d = 0.28$), happiness ($d = 0.18$), and prosocial behavior ($d = 0.21$) than African American students, but the effect sizes were small. All other differences between these two groups had even smaller effect sizes (d s $< .12$, $p > 0.006$).

Table 3. Descriptive Statistics

Variable (# of items)	<i>N</i>	<i>Range</i>	<i>M</i>	<i>SD</i>
Cumulative GPA	574	0-4.64	3.06	0.90
Empathy (7)	583	0-5	3.43	0.92
Global self-concept (8)	583	0-5	3.74	0.76
Happiness (5)	583	0-5	3.46	0.99
Prosocial Behavior (7)	583	0-5	3.55	0.87
Optimism (4)	583	0-5	3.95	0.91
Academic Motivation (9)	583	0-5	3.55	0.90
Anxiety (7)	583	0-4	2.04	0.89
Depression (11)	583	0-4	2.23	0.74

Intercorrelations among the variables are reported in Table 4. Meaningful correlations (i.e., $> .20$; C. J. Ferguson, 2009) tended to be in keeping with theory and provided convergent validity evidence in support of the study constructs. Happiness, optimism, and academic motivation had strong correlations with global self-concept, and prosocial behavior was associated with empathy and academic motivation. Anxiety and depression were positively correlated and had moderately strong to strong negative correlations with optimism, prosocial behavior, and happiness. Finally, academic motivation had a moderate correlation with GPA.

Table 4. Correlations Among the Constructs

	1	2	3	4	5	6	7	8	9
1. GPA	-								
2. Empathy	0.26*	-							
3. Gen. SC	0.11	0.22*	-						
4. Happiness	0.05	0.19*	0.58*	-					
5. Pro. Beh.	0.22*	0.65*	0.34*	0.29*	-				
6. Optimism	0.19*	0.14*	0.54*	0.57*	0.27*	-			
7. Anxiety	0.10	0.23*	-0.37*	-0.28*	0.07	-0.41*	-		
8. Dep.	-0.04	0.11	-0.44*	-0.47*	-0.02	-0.59*	0.64*	-	
9. Ac. Mot.	0.33*	0.37*	0.53*	0.39*	0.53*	0.39*	-0.16*	-0.23*	-

Note. SC = self-concept; Pro. Beh. = prosocial behavior; Dep. = depression; Ac. Mot. = academic motivation. Coefficients $\geq |.20|$ are bolded.

* $p < 0.001$.

3.2 Predicting GPA

Table 5 presents a regression analysis on cumulative GPA. Although the equation was significant ($p < .001$) and five coefficients made statistically significant contributions to GPA ($p \leq .006$), only optimism, anxiety, and academic motivation had betas $> .20$, with academic motivation being largest. Based on the adjusted R^2 , the model accounted for 19% of the variance in achievement. The models for African Americans and European Americans yielded similar results. The model for African Americans accounted for 19.5% of the variance and five coefficients had betas $> .20$: empathy ($\beta = .21$), optimism ($\beta = .26$), academic motivation ($\beta = .35$), happiness ($\beta = -.33$), and anxiety ($\beta = .21$). The variables with meaningful betas in the equation for European Americans were optimism ($\beta = .27$), academic motivation ($\beta = .39$), and anxiety ($\beta = .24$), accounting for 18% of the variance.

Table 5. Regression Results Predicting Grade Point Average

Model	B	SE	β	p
(Constant)	1.222	0.363		0.001
Empathy	0.159	0.058	0.162	0.006
Global self-concept	-0.041	0.073	-0.034	0.578
Happiness	-0.168	0.052	-0.192	0.001
Prosocial Behavior	-0.076	0.064	-0.075	0.238
Optimism	0.286	0.074	0.241	0.000
Academic Motivation	0.325	0.056	0.333	0.000
Anxiety	0.237	0.060	0.237	0.000
Depression	-0.135	0.080	-0.113	0.087

Note. Practical significance indicated by bolded coefficients.

4. Discussion

In this study, we investigated the association between eight constructs (seven social and emotional variables plus academic motivation) and academic performance in adolescents. We hypothesized that the social and emotional variables would predict a practically significant amount of variance in academic performance. We also examined this hypothesis in the African American and European American students in our sample. As hypothesized, the social and emotional variables did indeed predict a meaningful percentage of variance in academic performance, with academic motivation contributing the most variance. The results were mostly similar for the two ethnic-racial

groups we looked at, with empathy and happiness contributing to GPA for African Americans but not European Americans.

Broadly, these findings are in line with studies across many age groups that have indicated, for example, that academic achievement is associated with several dimensions of emotional intelligence in high school students (Parker et al., 2004); that constructs drawn from positive psychology can help explain academic motivation and achievement in middle school students (Pajares, 2001); that social and emotional interventions can improve academic achievement in middle school students (Borman et al., 2019); and that social-emotional variables are associated with academic achievement in elementary school students (Berger et al., 2011).

4.1 Psychometric Properties of Scores on Subscales

Given the increased emphasis on replicability and the fact that the reliability and validity of scores are specific to a sample, we examined both the internal consistency and structural validity of the scores on all the subscales. The results supported the psychometric integrity of most of the scores, suggesting that they could be used in this sample. However, scores on optimism had poor fit driven in part by the fact that half of the items must be reverse-coded. There is a growing literature indicating that reverse-coded items may compromise the scores in adolescent samples, suggesting that it may be useful to reduce response set by means other than negatively worded items. In addition to looking at internal consistency and factor structure, we also examined the intercorrelations among the social and emotional variables as a way to examine convergent and discriminant validity of the scores. The intercorrelations were in keeping with theory, providing further support for the utility of the constructs in the current sample.

4.2 Associations of Social Emotional Constructs with GPA

We found that although five of the variables made statistically significant contributions to GPA, only optimism, anxiety, and academic motivation made practically significant contributions. These results generally support results of other studies examining the effect of social and emotional learning programs on children (Durlak et al 2011; Schonert-Reichl et al. 2015; Ashdown & Bernard 2011) that have shown that participants receiving social and emotional learning programming reflect greater gains in academic achievement relative to peers who do not receive such programming. Additionally, our results parallel the findings put forward by Datu and Wang (2019) where motivation in Filipino high school students was found to be a potential mechanism through which academic buoyance—which refers to students' capability of dealing with routine obstacles in various school contexts—could be associated with academic achievement.

In this study, anxiety and GPA had no meaningful bivariate association. Some researchers have found that better self-concept is indicative of greater *test* anxiety in high school students (e.g., Hyseni Duraku & Hoxha, 2018), but other studies looking at general anxiety have revealed negative relationships between the two (Putwain et al., 2020). One possible explanation for the differences across studies is the anxiety-performance association, which contends that performance peaks when arousal is neither very low nor very high, represented by an inverted U-shaped curve (Sweeney et al., 1970).

One interesting difference that we found in patterns of association between the variables and GPA was that for European Americans, optimism, academic motivation, and anxiety were meaningful predictors of GPA, whereas for African Americans, happiness and empathy were as well. A plausible explanation could be that the two groups experience broadly different social environments in the US and in schools in particular—a hypothesis worthy of further study. Many reports have discussed the racial gap in GPA. R. F. Ferguson et al. (2001) concluded that for Black students, the negative racial messages they often face and the poorer preparation they may receive in comparison to their White peers may contribute to this gap. In terms of happiness, Iceland and Ludwig-Dehm (2019) found that although the Black-White gap narrowed between 1972 and 2014, it still remains substantial. For prosocial behavior, Voight et al. (2014) found that the racial “behavior gap” may be conditional on school environment and that levels of prosocial behavior by racial group vary with the racial composition of the school. Additionally, Lozada et al. (2017) found that an oppression analysis and school-based discrimination had direct effects on prosocial behavior. These findings point to the fact that the achievement and well-being gap between African Americans and European Americans is still substantial. Many current social and emotional resources do not take race into account, so it may be beneficial for future programs to consider how best to account for this gap.

4.3 Implications for Practice

Can the results of this study be used in high schools, and will they be useful to school psychologists? The answer to these questions is clearly in the affirmative and has implications for school psychology practice moving beyond the assessment of students for special education services to greater roles in intervention and consultation. School psychologists can work with administrators and teachers to develop and conduct whole-school assessments of

social-emotional factors to identify possible areas for intervention. Interventions can then be targeted to specific grade levels or subgroups or can be instituted school-wide. In some states, such as California, these data are already collected (e.g., the California Healthy Kids Survey) and school psychologists can help administrators interpret and act on the data from the site-specific reports.

For example, in the current study, academic motivation was important in predicting GPA. There are several interventions that can be used to increase levels of academic motivation. Yeager et al. (2014) showed that an intervention that promoted a self-transcendent purpose for learning increased high school mathematics and science grades via deeper learning of materials and self-transcendent purpose was associated with a lower likelihood of dropping out of college years later. Rozek et al. (2017) helped parents convey the value of mathematics and science courses to their high school children, resulting in not only increases in course taking in those fields, but also increased scores on standardized tests. Interventions to increase motivation have also benefitted students from elementary school to college, and importantly, these interventions can be scaled up (Pauneski et al., 2015). A recent school psychology handbook contains chapters on increasing sense of belonging, facilitating cross-ethnic friendships, delaying gratification, and cultivating hope in students from diverse backgrounds (Worrell et al., 2020).

Studies such as this one are important for the field for several additional reasons. First, they highlight for school psychologists the importance of interventions from the educational and social psychological literature that are not typically published in the school psychology literature (McKevitt, 2012). Second, they provide a data-based rationale for school psychologists to pay attention to social emotional learning and psychosocial constructs more generally (Bernard et al., 2017; Ross et al., 2002). Third, they focus the attention of practicing school psychologists on theories and groups that should receive greater attention in school psychology, given the ongoing achievement and opportunity gaps (Worrell, 2014).

4.4 Limitations

This study had several limitations. First, taking the survey was voluntary; moreover, as the survey was administered by school counselors based on whether they had time at the end of their session, it is possible that entire classes of students did not get the chance to take the survey. The data are from only about 30% of the school population. Thus, the results may not be representative of the school population. Second, the study was conducted at only one high school due to limitations imposed by the school district's office of research. Thus, the sample does not represent the school district. Future studies should include a representative sample of district.

Third, data was collected within one school, and even though students may have had the same classroom or teacher, those data weren't collected as part of the study. So, we were not able to examine the contributions across levels.

Fourth, this study was cross-sectional, limiting our conclusions to only associative relationships between GPA and well-being. Longitudinal studies would be needed to make causal inferences. Fifth, we used cumulative GPA as the measure of academic performance. The cumulative GPA of a freshman and a senior encompass one year and four years of information on academic performance, respectively. These differences could explain the associations being detected for students of different years. A way to address this in the future could be to use the GPA of the most recent semester. Sixth, as is the case with many samples, the conclusions of this study are not generalizable to the entire American high school population without replications. The results are applicable in the context this study was performed in, which may make the results more useful in the local context.

Lastly, previous literature points to availability of resources to families as a driver of student well-being (e.g., Jagers et al., 2016). Also, greater perceptions of racial/ethnic discrimination have also been linked to greater psychological distress and lower academic motivation and academic achievement (Benner et al., 2018). We did not measure either socioeconomic status or perceptions of discrimination but doing so may have yielded additional insights in comparing ethnic-racial groups.

5. Conclusion and Future Directions

We examined the relationship between social and emotional well-being and motivation and academic performance in adolescents and found that social emotional variables are indeed associated with academic performance. Consequently, social emotional learning programs may be useful in affecting the trajectory of academic functioning in high schoolers, a direction for high schools to explore further. The study also calls for more research on the causal relationship between well-being and academic performance in high school students to determine whether intervention methods for well-being are different in this age group than for younger age groups, whether the nature of the relationship changes by age group, and how best to address the race gap in achievement and well-being, in line with comments from researchers who have said more rigorous research is still needed to

“identify the most potent strategies for social and emotional skills development” (Barry et al., 2017, p. 434).

Funding Statement

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Ethics Statement

Approval for the study was granted by the Office of Research of the public school district for the county in which this study was conducted. There was no approval number but there was an approval given via an approval letter.

Declaration of Interest Statement

We have no competing interests to declare.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author.

References

- American Psychological Association. (n.d.). Anxiety. In *APA dictionary of psychology*. Retrieved October 16, 2022, from <https://dictionary.apa.org/anxiety>
- American Psychological Association. (n.d.). Depression. In *APA dictionary of psychology*. Retrieved October 16, 2022 from <https://dictionary.apa.org/depression>
- Ashdown, D. M., & Bernard, M. E. (2012). Can explicit instruction in social and emotional learning skills benefit the social-emotional development, well-being, and academic achievement of young children? *Early Childhood Education Journal*, 39(6), 397-405. <http://dx.doi.org/10.1007/s10643-011-0481-x>
- Asher, S. R., & Wheeler, V. A. (1985). Children's loneliness: A comparison of rejected and neglected peer status. *Journal of Consulting and Clinical Psychology*, 53(4), 500-505. <https://doi.org/10.1037/0022-006X.53.4.500>
- Bagdi, A., & Vacca, J. (2005). Supporting early childhood social-emotional well being: The building blocks for early learning and school success. *Early Childhood Education Journal*, 33(3), 145-150. <https://doi.org/10.1007/s10643-005-0038-y>
- Bakosh, L. S., Snow, R. M., Tobias, J. M., Houlihan, J. L., & Barbosa-Leiker, C. (2016). Maximizing mindful learning: Mindful awareness intervention improves elementary school students' quarterly grades. *Mindfulness*, 7(1), 59-67. <http://dx.doi.org/10.1007/s12671-015-0387-6>
- Barry, M. M., Clarke, A. M., & Dowling, K. (2017). Promoting social and emotional well-being in schools. *Health Education*, 117(5), 434-451. <https://doi.org/10.1108/HE-11-2016-0057>
- Baumeister, R. F. (1999). Self-concept, self-esteem, and identity. In *Personality: Contemporary theory and research*, (2nd ed., pp. 339-375). Nelson-Hall Publishers.
- Benner, A. D., Wang, Y., Shen, Y., Boyle, A. E., Polk, R., & Cheng, Y.-P. (2018). Racial/ethnic discrimination and well-being during adolescence: A meta-analytic review. *American Psychologist*, 73(7), 855-883. <https://doi.org/10.1037/amp0000204>
- Berger, C., Alcalay, L., Torretti, A., & Milicic, N. (2011). Socio-emotional well-being and academic achievement: Evidence from a multilevel approach. *Psicologia: Reflexão e Crítica*, 24(2), 344-351. <https://doi.org/10.1590/S0102-79722011000200016>
- Bernard, M. E., Elias, M., Bell, P., Ferrito, J., & Langione, K. (2017). Social and emotional learning: Role of school psychologists in Australia. In: M. Thielking & M. D. Terjesen (Eds.), *Handbook of Australian school psychology* (pp. 503-519). Springer International Publishing. https://doi.org/10.1007/978-3-319-45166-4_25
- Borman, G. D., Rozek, C. S., Pyne, J., & Hanselman, P. (2019). Reappraising academic and social adversity improves middle-school students' academic achievement, behavior, and well-being. *Proceedings of the National Academy of Sciences*, 116(33), 16286-16291. <https://doi.org/10.1073/pnas.1820317116>
- Carey, E., Devine, A., Hill, F., & Szűcs, D. (2017). Differentiating anxiety forms and their role in academic performance from primary to secondary school. *PLoS ONE*, 12(3). e0174418. <https://doi.org/10.1371/journal.pone.0174418>
- Coffey, J. K. (2019). Cascades of infant happiness: Infant positive affect predicts childhood IQ and adult educational attainment. *Emotion*. <http://dx.doi.org/10.1037/emo0000640>

- Comrey, A. L., & Lee, H. B. (1992). *A first course in factor analysis*. Erlbaum.
- Core SEL Competencies. (2020). CASEL. <https://casel.org/core-competencies/>
- Datu, J. A. D., & Yang, W. (2019). Academic buoyancy, academic motivation, and academic achievement among Filipino high school students. *Current Psychology*. https://doi.org/10.1007/s12144-019-00358-y_
- Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology*, 10. <https://fetzer.org/sites/default/files/images/stories/pdf/selfmeasures/EMPATHY-InterpersonalReactivityIndex.pdf>
- Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology*, 44(1), 113-126. https://doi.org/10.1037/0022-3514.44.1.113_
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment*, 49(1), 71-75. https://doi.org/10.1207/s15327752jpa4901_13_
- Dixon, D. D. (2019). Incorporating hope and positivity into educational policy. *Policy Insights from the Behavioral and Brain Sciences*, 6(2), 130-137. <https://doi.org/10.1177/2372732219863137>
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions: Social and emotional learning. *Child Development*, 82(1), 405-432. <https://doi.org/10.1111/j.1467-8624.2010.01564.x>
- Ferguson, C. J. (2009). An effect size primer: A guide for clinicians and researchers. *Professional Psychology: Research and Practice*, 40(5), 532-538. <https://doi.org/10.1037/a0015808>
- Ferguson, R. F., Ludwig, J., & Rich, W. (2001). A diagnostic analysis of black-white GPA disparities in Shaker Heights, Ohio. *Brookings Papers on Education Policy*, 4, 347-414.
- French, M., Homer, J. F., Popovici, I., & Robins, P. (2015). What you do in high school matters: High School GPA, educational attainment, and labor market earnings as a young adult. *Eastern Economic Journal*, 41(3), 370-386. <https://doi.org/10.1057/ej.2014.22>
- Froiland, J. M., Davison, M. L., & Worrell, F. C. (2016). Aloha teachers: Teacher autonomy support promotes Native Hawaiian and Pacific Islander students' motivation, school belonging, course-taking and math achievement. *Social Psychology of Education: An International Journal*, 19(4), 879-894. <https://doi.org/10.1007/s11218-016-9355-9>
- Gadermann, A. M., Schonert-Reichl, K. A., & Zumbo, B. D. (2010). Investigating validity evidence of the Satisfaction with Life Scale Adapted for Children. *Social Indicators Research*, 96(2), 229-247. <https://doi.org/10.1007/s11205-009-9474-1>
- Gamble, A. (2021). Deficit thinking, self-concept and teacher-student racial congruency as factors contributing to the achievement gap within high school math and science [ProQuest Information & Learning (US)]. In *Dissertation Abstracts International Section A: Humanities and Social Sciences* (Vol. 82, Issues 5-A). <http://www.proquest.com/psycinfo/docview/2483888978/C63BA33B85534C85PQ/2>
- Gerbino, M., Zuffianò, A., Eisenberg, N., Castellani, V., Luengo Kanacri, B. P., Pastorelli, C., & Caprara, G. V. (2018). Adolescents' prosocial behavior predicts good grades beyond intelligence and personality traits. *Journal of Personality*, 86(2), 247-260. https://doi.org/10.1111/jopy.12309_
- Gilman, R., Laughlin, J. E., & Huebner, E. S. (1999). Validation of the Self-Description Questionnaire-II with an American sample. *School Psychology International*, 20(3), 300-307. <https://doi.org/10.1177/0143034399203005>
- Guhn, M., Ark, T. K., Emerson, S. D., Schonert-Reichl, K. A., & Gadermann, A. M. (2018). The Satisfaction with Life Scale Adapted for Children: Measurement invariance across gender and over time. *Psychological Assessment*, 30(9), 1261-1266. <https://doi.org/10.1037/pas0000598>
- Hamedani, M. G., & Darling-Hammond, L. (2015). Social emotional learning in high school: How three urban high schools engage, educate, and empower youth. *Stanford Center for Opportunity Policy in Education Research Brief*, 15.
- Human Early Learning Partnership. (n.d.). <http://earlylearning.ubc.ca/>
- Hyseni Duraku, Z., & Hoxha, L. (2018). Self-esteem, study skills, self-concept, social support, psychological distress, and coping mechanism effects on test anxiety and academic performance. *Health Psychology Open*,

- 5(2), 2055102918799963. <https://doi.org/10.1177/2055102918799963>
- Iceland, J., & Ludwig-Dehm, S. (2019). Black-White Differences in Happiness, 1972-2014. *Social Science Research*, 77, 16-29. <https://doi.org/10.1016/j.ssresearch.2018.10.004>
- Jagers, J. W., Richardson, E. A., Aalsma, M., & Hall, J. A. (2016). Resources, race, and placement frequency: An analysis of child well-being. *Child Welfare*, 94(6), 105-128.
- Jones, T. M., Fleming, C., & Williford, A. (2020). Racial equity in academic success: The role of school climate and social emotional learning. *Children and Youth Services Review*, 119. <https://doi.org/10.1016/j.childyouth.2020.105623>
- Keith, T. Z., & Cool, V. A. (1992). Testing models of school learning: Effects of quality of instruction, motivation, academic coursework, and homework on academic achievement. *School Psychology Quarterly*, 7(3), 207-226. <http://dx.doi.org/10.1037/h0088260>
- Kusché, C. A., Greenberg, M. T., & Beilke, R. (1988). *Seattle Personality Questionnaire for Young School-Aged Children* [Unpublished scale]. Department of Psychology, University of Washington.
- Ladd, G. W. (1990). Having friends, keeping friends, making friends, and being Liked by peers in the Classroom: Predictors of children's early school adjustment? *Child Development*, 61(4), 1081-1100. <https://doi.org/10.2307/1130877>
- Lang, J., & Schmitz, B. (2020). German translation of the Satisfaction with Life Scale for children and adolescents. *Journal of Psychoeducational Assessment*, 38(3), 291-304. <https://doi.org/10.1177/0734282919849361>
- Langevin, E. L. (2013). *Undergraduate student happiness and academic performance: A correlation study* (Publication No. 3570067) [Doctoral dissertation, University of Phoenix]. *ProQuest Dissertations and Theses*. <https://search.proquest.com/docview/1373430866/abstract/BE83256DD9414897PQ/1>
- Leath, S., Mathews, C., Harrison, A., & Chavous, T. (2019). Racial identity, racial discrimination, and classroom engagement outcomes among Black girls and boys in predominantly Black and predominantly White school districts. *American Educational Research Journal*, 56(4), 1318-1352. <https://doi.org/10.3102/0002831218816955>
- Lozada, F. T., Jagers, R. J., Smith, C. D., Bañales, J., & Hope, E. C. (2017). Prosocial behaviors of black adolescent boys: An application of a sociopolitical development theory. *Journal of Black Psychology*, 43(5), 493-516. <https://doi.org/10.1177/0095798416652021>
- MacCann, C., Jiang, Y., Brown, L. E. R., Double, K. S., Bucich, M., & Minbashian, A. (2020). Emotional intelligence predicts academic performance: A meta-analysis. *Psychological Bulletin*, 146(2), 150-186. <https://doi.org/10.1037/bul0000219>
- Malecki, C. K., & Elliott, S. N. (2002). Children's social behaviors as predictors of academic achievement: A longitudinal analysis. *School Psychology Quarterly*, 17(1), 1-23. <https://doi.org/10.1521/scpq.17.1.1.19902>
- Marsh, H. W. (1990). *SDQ II manual: Self-Description Questionnaire - II*. University of Western Sydney, Macarthur.
- Marsh, H. W., Hau, K., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling: A Multidisciplinary Journal*, 11, 320-341. https://doi.org/10.1207/s15328007sem1103_2
- Marsh, H. W., & O'Mara, A. (2008). Reciprocal effects between academic self-concept, self-esteem, achievement, and attainment over seven adolescent years: Unidimensional and multidimensional perspectives of self-concept. *Personality and Social Psychology Bulletin*, 34(4), 542-552. <https://doi.org/10.1177/0146167207312313>
- McGrew, K. S. (2008, January 7). Beyond IQ: A model of academic competence & motivation (MACM). <http://www.iapsych.com/acmcewok/Academicmotivation.html>
- McKevitt, B. C. (2012). School psychologists' knowledge and use of evidence-based, social-emotional learning interventions. *Contemporary School Psychology*, 16, 33-45. <https://doi.org/10.1007/BF03340974>
- MindUP Program. (n.d.). *Helping children thrive in school, work and life!* <https://mindup.org/>
- Muthén, B. O., & Muthén, L. K. (2012). *Mplus user's guide* (8th ed.). Muthén & Muthén.

- National Institute for Health and Care Excellence. (2009, September 23). *Social and emotional wellbeing in secondary education*. <https://www.nice.org.uk/guidance/ph20/chapter/1-Recommendations>
- Noam, G. G., & Goldstein, L. S. (1998). *The Resilience Inventory* [Unpublished scale]. McLean Hospital.
- Oberle, E., Schonert-Reichl, K. A., & Thomson, K. C. (2010). Understanding the link between social and emotional well-being and peer relations in early adolescence: Gender-specific predictors of peer acceptance. *Journal of Youth and Adolescence*, 39(11), 1330-1342. <https://doi.org/10.1007/s10964-009-9486-9>
- Optimism. (n.d.). *Psychology Today*. <https://www.psychologytoday.com/us/basics/optimism>
- Pajares, F. (2001). Toward a positive psychology of academic motivation. *The Journal of Educational Research*, 95(1), 27-35. <https://doi.org/10.1080/00220670109598780>
- Parker, J. D. A., Creque, R. E., Barnhart, D. L., Harris, J. I., Majeski, S. A., Wood, L. M., ... & Hogan, M. J. (2004). Academic achievement in high school: Does emotional intelligence matter? *Personality and Individual Differences*, 37(7), 1321-1330. <https://doi.org/10.1016/j.paid.2004.01.002>
- Pauneski, D., Walton, G. M., Romero, C., Smith, E. N., Yeager, D. S., & Dweck, C. S. (2015). Mind-set interventions are a scalable treatment for academic underachievement. *Psychological Science*, 26(6), 784-793. <https://doi.org/10.1177/0956797615571017>
- Perry, J. L., Nicholls, A. R., Clough, P. J., & Crust, L. (2015). Assessing model fit: Caveats and recommendations for confirmatory factor analysis and exploratory structural equation modeling. *Measurement in Physical Education and Exercise Science*, 19(1), 12-21. <https://doi.org/10.1080/1091367X.2014.952370>
- Prosocial Behavior. (n.d.). *Ethics unwrapped*. <https://ethicsunwrapped.utexas.edu/glossary/prosocial-behavior>
- Putwain, D. W., Wood, P., & Pekrun, R. (2020). Achievement emotions and academic achievement: Reciprocal relations and the moderating influence of academic buoyancy. *Journal of Educational Psychology*. Advance online publication. <https://doi.org/10.1037/edu0000637>
- Quiroga, C. V., Janosz, M., Bisset, S., & Morin, A. J. S. (2013). Early adolescent depression symptoms and school dropout: Mediating processes involving self-reported academic competence and achievement. *Journal of Educational Psychology*, 105(2), 552-560. <https://doi.org/10.1037/a0031524>
- Roeser, R. W., Midgley, C., & Urdan, T. C. (1996). Perceptions of the school psychological environment and early adolescents' behavioral functioning in school: The mediating role of goals and belonging. *Journal of Educational Psychology*, 408-422. <https://doi.org/10.1037/0022-0663.88.3.408>
- Ross, M., Powell, S., & Elias, M. (2002). New roles for school psychologists: Addressing the social and emotional learning needs of students. *School Psychology Review*, 31, 43-52. <https://doi.org/10.1080/02796015.2002.12086141>
- Rozek, C. S., Avoboda, R. C., Harakiewicz, J. M., Hulleman, C. S., & Hyde, J. S. (2017). Utility-value intervention with parents increases students' STEM preparation and career pursuit. *Proceedings of the National Academy of Sciences*, 114(5), 909-914. <https://doi.org/10.1073/pnas.1607386114>
- Sande, M. C. E. van de, Fekkes, M., Kocken, P. L., Diekstra, R. F. W., Reis, R., & Gravensteijn, C. (2019). Do universal social and emotional learning programs for secondary school students enhance the competencies they address? A systematic review. *Psychology in the Schools*, 56(10), 1545-1567. <https://doi.org/10.1002/pits.22307>
- Schonert-Reichl, K. A. (2011). *Middle Childhood Inside and Out: The Psychological and Social Worlds of Canadian Children Ages 9-12—Full Report* [Report for the United Way of the Lower Mainland]. University of British Columbia. <http://earlylearning.ubc.ca/documents/247/>
- Schonert-Reichl, K. A., Oberle, E., Lawlor, M. S., Abbott, D., Thomson, K., Oberlander, T. F., & Diamond, A. (2015). Enhancing cognitive and social-emotional development through a simple-to-administer mindfulness-based school program for elementary school children: A randomized controlled trial. *Developmental Psychology*, 51(1), 52-66. <https://doi.org/10.1037/a0038454>
- Schonert-Reichl, K. A., Smith, V., Zaidman-Zait, A., & Hertzman, C. (2012). Promoting children's prosocial behaviors in school: Impact of the "Roots of Empathy" program on the social and emotional competence of school-aged children. *School Mental Health*, 4(1), 1-21. <https://doi.org/10.1007/s12310-011-9064-7>
- Schonfeld, D. J., Adams, R. E., Fredstrom, B. K., Weissberg, R. P., Gilman, R., Voyce, C., Tomlin, R., & Speese-Linehan, D. (2015). Cluster-randomized trial demonstrating impact on academic achievement of

- elementary social-emotional learning. *School Psychology Quarterly*, 30(3), 406-420. <http://dx.doi.org/10.1037/spq0000099>
- Sheard, M. K., Ross, S. M., & Cheung, A. (2013). Social-emotional learning championing freedom, education and development: A vehicle for at-risk students to succeed. *Cypriot Journal of Educational Sciences*, 8(1), 1-18.
- Song, M. (2003). *Two studies on the resilience inventory (RI): Toward the goal of creating a culturally sensitive measure of adolescence resilience*. Harvard University, Graduate School of Education.
- Sweeney, C. J., Smouse, A. D., Rupiper, O., & Munz, D. C. (1970). A test of the inverted-U hypothesis relating achievement anxiety and academic test performance. *Journal of Psychology*, 74(2), 267-273. <https://doi.org/10.1080/00223980.1970.9923738>
- Tetzner, J., & Becker, M. (2018). Think positive? Examining the impact of optimism on academic achievement in early adolescents. *Journal of Personality; Durham*, 86(2), 283-295. <http://dx.doi.org/10.1111/jopy.12312>
- Tyson, R. L. (1996). The good boy syndrome and malignant academic failure in early adolescence. *The Psychoanalytic Study of the Child*, 51, 386-408. <https://doi.org/10.1080/00797308.1996.11822437>
- VandenBos, G. R. (Ed.). (2007). *APA dictionary of psychology*. American Psychological Association.
- Voight, A. M., Geller, J. D., & Nation, M. (2014). Contextualizing the “behavior gap”: Student prosocial behavior and racial composition in urban middle schools. *The Journal of Early Adolescence*, 34(2), 157-177. <https://doi.org/10.1177/0272431613482043>
- Weissberg, R. P., & Cascarino, J. (2013). Academic learning + social-emotional learning = national priority. *Phi Delta Kappan*, 95(2), 8-13. <https://doi.org/10.1177/003172171309500203>
- Wentzel, K. R. (1993). Motivation and achievement in early adolescence: The role of multiple classroom goals. *The Journal of Early Adolescence*, 13(1), 4-20. <https://doi.org/10.1177/0272431693013001001>
- Wentzel, K. R. (1994). Relations of social goal pursuit to social acceptance, classroom behavior, and perceived social support. *Journal of Educational Psychology*, 86(2), 173-182. <http://dx.doi.org/10.1037/0022-0663.86.2.173>
- What Is Depression?* (n.d.). <https://www.psychiatry.org/patients-families/depression/what-is-depression>
- What Is Empathy.* (n.d.). *Greater Good Magazine*. <https://greatergood.berkeley.edu/topic/empathy/definition>
- What Is Happiness.* (n.d.). *Greater Good Magazine*. <https://greatergood.berkeley.edu/topic/happiness/definition>
- Wilson, T. D., & Buttrick, N. R. (2016). New directions in social psychological interventions to improve academic achievement. *Journal of Educational Psychology*, 108(3), 392-396. <https://doi.org/10.1037/edu0000111>
- Wong, M. M., & Csikszentmihalyi, M. (1991). Motivation and academic achievement: The effects of personality traits and the quality of experience. *Journal of Personality*, 59(3), 539-574. <https://doi.org/10.1111/j.1467-6494.1991.tb00259.x>
- Wood, J. (2006). Effect of anxiety reduction on children’s school performance and social adjustment. *Developmental Psychology*, 42(2), 345-349. <https://doi.org/10.1037/0012-1649.42.2.345>
- Worrell, F. C. (2014). Theories school psychologists should know: Culture and academic achievement. *Psychology in the Schools*, 51(4), 332-347. <https://doi.org/10.1002/pits.21756>
- Worrell, F. C., & Andretta, J. R. (2019). Time attitude profiles in American adolescents: Educational and psychological correlates. *Research in Human Development*, 16(2), 102-118. <https://doi.org/10.1080/15427609.2019.1635860>
- Worrell, F. C., Hughes, T. L., & Dixson, D. D. (Eds.). (2020). *The Cambridge handbook of applied school psychology*. Cambridge University Press. <https://doi.org/10.1017/9781108235532>
- Yeager, D. S., Henderson, M. D., Pauneski, D., Walton, G. M., D’Mello, S., Spitzer, B. J., & Duckworth, A. L. (2014). Boring but important: A self-transcendent purpose for learning fosters academic self-regulation. *Journal of Personality and Social Psychology*, 107(4), 559-580. <https://doi.org/10.1037/a0037637>
- Zorza, J. P., Marino, J., de Lemus, S., & Mesas, A. A. (2013). Academic performance and social competence of adolescents: Predictions based on effortful control and empathy. *The Spanish Journal of Psychology*, 16. <https://doi.org/10.1017/sjp.2013.87>

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).