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RESEARCH PAPER

Positive Feelings at School: On the Relationships Between Students' Character Strengths, School-Related Affect, and School Functioning

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Abstract The present study was designed to examine the relationships between students' character strengths, school-related affect, positive school functioning (i.e., motivation to learn, interest, and engagement at class), and school achievement following the "engine model of well-being" that is focusing on inputs (e.g., personality traits), processes (e.g., moods, emotions), and outcomes (e.g., engagement, accomplishments) within the context of well-being research. A sample of 196 children completed the Values in Action Inventory of Strengths for Youth, which assesses 24 character strengths, and the PANAS-C that assesses school-related positive and negative affect. Additionally, homeroom teachers rated students' positive school functioning (i.e., motivation, engagement, and interest at school) and their overall school achievement. The character strengths of zest, love of learning, perseverance, and social intelligence showed the strongest positive correlations with school-related positive affect. Teamwork, hope, self-regulation, and love were substantially negatively correlated with school-related negative affect. Certain character strengths showed positive relationships with positive school functioning and overall school achievement. A path model, testing the "engine model of well-being", found—additionally to direct effects—indirect relationships between character strengths and positive school functioning (through school-related positive affect), which in turn leads to higher school achievement. The presented findings show character strengths as meaningful resources in the schooling context. Character strengths emerge to be crucial for students to experience school-related positive affect, which in turn supports students' positive school functioning and their overall school achievement. The results demonstrate the complex interplay between students' personality traits, affect, school functioning, and achievement at school.

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1 Introduction

There was, and still is, a prevailing view in psychology in general but also in specific psychological domains like school psychology that is mostly based on a deficit-oriented understanding of individuals. However, from the perspective of positive psychology (Seligman and Csikszentmihalyi 2000), this deficit-oriented model fails to provide a complete picture of school children (e.g., Gilman and Huebner 2003). Positive psychology completes this view by studying conditions like positive feelings (e.g., affect, emotions) and positive traits (e.g., character strengths) that make life most worth living (e.g., Peterson 2006; Peterson and Seligman 2004). Students' feelings are seen as a crucial factor in schooling because they are very closely linked to the teaching and learning process (Schutz and Lanehart 2002), but there is little known about the interplay between feelings at school and other schooling-related aspects (e.g., motivation to learn) (e.g., Meyer and Turner 2002). Moreover, less is known about a more complex model that focuses, next to feelings, also on both roots and consequences of feelings in the context of schooling.

Therefore, the present study is aimed to unravel roots and consequences of students' feelings (operationalized as affect) at school. To do this in a sophisticated way, we followed the theoretical framework of the "engine model of well-being" (Jayawickreme et al. 2012) that distinguishes between (1) inputs, (2) processes, and (3) outcomes of well-being. *Inputs* can be represented as exogenous and endogenous factors. Exogenous factors are, for example, individuals' income or education. Endogenous factors are, for example, individuals' or communities' personalities, strengths, values, etc. (cf. Jayawickreme et al. 2012). This is in line with Lyubomirsky et al. (2005, p. 846) who described positive affect to be "rooted in personality and in past successes" leading to "approach behaviors that often lead to further success". *Processes* include internal states or mechanisms like affect, emotions, and cognitive evaluations. Such processes in turn lead individuals to specific intrinsically valuable behaviors (i.e., *outcomes*) (cf. Jayawickreme et al. 2012). Possible outcomes in the engine of well-being approach are, for example, engagement, meaningful activity, and positive accomplishment (cf. Jayawickreme et al. 2012).

Within the context of the present study we investigated students' personality (i.e., a set of 24 character strengths) as inputs in relation to their school-related affects as processes, and how this in turn is related to their positive school functioning (e.g., engagement and meaningful activities as approach behaviors leading to success) and overall school achievement (positive accomplishment) as outcomes (see Fig. 1 for an illustration).

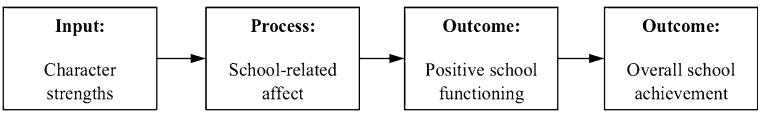

Fig. 1 A model combining both the components of the "engine model of well-being" and the research variables

1.1 Character Strengths and Schooling

Character strengths are positive, trait-like personality characteristics. They are cross-culturally valued in their own right and not for the tangible outcomes they may produce, although character strengths do produce desirable outcomes. Furthermore, their existence does not diminish others (cf. Peterson and Seligman 2004). Character strengths manifest in individual *behaviors* (e.g., working well in a group), *thoughts* (e.g., appreciating excellent performances), and *feelings* (e.g., being happy while helping others). They are seen as the inner determinants of a satisfied, happy, and successful life (cf. Peterson 2006), in addition to external factors like a good education, stable social environment, or financial security. This definition supports their status as inputs in an "engine model of well-being" (cf. Jayawickreme et al. 2012). Peterson and Seligman (2004) presented 24 distinguishable character strengths in their Values in Action (VIA) classification of strengths. This classification contains six different sets of character strengths (cf. Peterson and Seligman 2004): *First*, the character strengths of wisdom and knowledge (i.e., creativity, curiosity, judgment, love of learning, and perspective) entail the acquisition and use of knowledge. *Second*, the character strengths of courage (i.e., bravery, perseverance, honesty, and zest) involve the exercise of will to accomplish goals in the face of external or internal opposition. *Third*, the character strengths of humanity (i.e., capacity to love and to be loved [short: love], kindness, and social intelligence) involve tending and befriending others. *Fourth*, the character strengths of justice (i.e., teamwork, fairness, and leadership) underlie a healthy community life. *Fifth*, the character strengths of temperance (i.e., forgiveness, humility, prudence, and self-regulation) protect against excess. *Sixth*, the character strengths of transcendence (i.e., appreciation of beauty and excellence [short: beauty], gratitude, hope, humor, and spirituality) build connections to a larger universe and provide meaning.

Research on character strengths' role at school showed certain character strengths to be positively correlated with school-related satisfaction (e.g., love of learning, zest, gratitude), and with academic self-efficacy (e.g., hope, love of learning, perseverance). Specific character strengths were positively related to school success, mediated through positive classroom behavior (e.g., being diligent, cooperative) (Weber and Ruch 2012a). Research with students in different educational settings (e.g., secondary school, college) provided promising initial evidence that character strengths seem to matter in the schooling context (e.g., Lounsbury et al. 2009; Park and Peterson 2006; Weber and Ruch 2012a).

Prior research found specific character strengths to be positively related to different aspects of subjective well-being, like global life satisfaction or happiness (e.g., Park and Peterson 2006; Ruch et al. 2014; Toner et al. 2012), and to general, domain-free positive affect, and negatively related to general, domain-free negative affect (e.g., zest, hope, love, gratitude) (e.g., Van Eeden et al. 2008; Weber et al. 2013), and to a list of discrete positive emotions (Güsewell and Ruch 2012). The present study has been designed to examine character strengths' relation to school-related affect by hypothesizing students' character strengths to be positively related to school-related positive affect, and negatively to school-related negative affect.

1.2 Affect and Schooling

Positive affect and negative affect are defined as being closely related to the dispositions to experience certain sets of feelings and moods (e.g., Watson et al.1988). Higher levels of

positive affect go along with high energy, full concentration, and pleasurable engagement, and lower levels of positive affect with sadness and lethargy (Watson et al. 1988). On the other hand, higher levels of *negative affect* are linked to anger, contempt, disgust, guilt, fear, and lower levels of negative affect to calmness and serenity (Watson et al. 1988). Based on these definitions, higher levels of positive affect are expected to play an especially supportive role in schooling.

There is no empirical agreement about the directionality of the relationships between positive affect and positive outcomes in life, but there is often the silent agreement that positive life outcomes, like success, lead to positive affect (Lyubomirsky et al. 2005). The latter might be true, but the reverse (that positive affect leads to successes or other positive outcomes) should also be taken into consideration (cf. Lyubomirsky et al. 2005). Also the "engine model of well-being" views aspects like affect, emotions, life satisfaction etc. rather as process variable than as outcome variable (cf. Jayawickreme et al. 2012). Within the scope of the present study we hypothesize students' feelings (i.e., affect) to be predictive of positive outcomes at school.

Research showed feelings (i.e., affect, emotions) to be meaningfully related to different aspects that might be helpful in describing functioning at school. Positive feelings were found to be substantially positively related to students' *motivation* (e.g., effort in learning), and negative feelings were negatively related to motivational aspects at school (e.g., Mega et al. 2014; Pekrun et al. 2002). Furthermore, positive feelings were substantially positively related to students' *interest* at school (e.g., study interest), whereas negative affect was negatively related to interest (e.g., Pekrun et al. 2002). Moreover, positive feelings were positively, and negative feelings were negatively, correlated with aspects of *engagement* at school, respectively (e.g., Lewis et al. 2009; Reschly et al. 2008). Finally, both positive feelings (positively) and negative feelings (negatively) were related to students' academic achievement (e.g., Lewis et al. 2009; Mega et al. 2014).

As there is no common definition of *positive school functioning* yet, within the scope of the present study positive school functioning is seen as teacher-perceived levels of students' motivation to learn, students' interest in the contents, and students' engagement in class. According to "engine model of well-being", higher levels of positive affect and lower levels of negative affect will lead to higher degrees of such intrinsically valuable behaviors (cf. Jayawickreme et al. 2012) in the schooling context. We therefore hypothesize high levels of students' positive affect at school to be a helpful, success-leading resource, and therefore, to be positively related to positive school functioning. We also hypothesize low levels of school-related negative affect to be supportive for functioning at school.

1.3 The Present Study

We investigated students' character strengths in relation to their school-related affect, and how this in turn is related to their positive school functioning and overall school achievement. In doing so, we followed the steps listed below:

(1) We examined the relationships between students' character strengths and (a) school-related affect, (b) positive school functioning (motivation to learn, interest in content, engagement in class), and (c) overall school achievement. Character strengths were expected to be positively correlated with school-related positive affect, positive school functioning, and overall school achievement as well as negatively correlated with school-related negative affect.

(2) Students' school-related affect was examined with respect to its relationship with (a) positive school functioning, and (b) overall school achievement. School-related positive affect was expected to be positively correlated with positive school functioning and overall school achievement. School-related negative affect was expected to be negatively related to these outcomes.
(3) Although this study was exploratory in nature, in a path analysis we examined the interplay between certain character strengths, school-related affect, positive school functioning, and overall school achievement. Compared to negative affect, positive affect showed stronger relationships with positive outcomes at school (e.g., Lewis et al. 2009; Mega et al. 2014; Pekrun et al. 2002); we therefore focused only on school-related positive affect. We expected indirect effects of specific character strengths (i.e., those that were most strongly related to positive affect), through school-related positive affect, on positive school functioning, and finally on school achievement.

2 Method

2.1 Participants

We collected both *students' self-reports* and *teacher-ratings*. A total of 196 *students* (52.0 % boys; 48.0 % girls) from 10 classrooms of three primary schools (90.3 %; grades 5 and 6) and one secondary school (9.7 %; grade 7) completed the self-reports. They had a mean age of 11.68 years ($SD = .84$; ranging from 10 to 14 years).

Teacher-ratings of the 196 students were completed by a sample of 10 homeroom *teachers* (8 male, 2 female) with a mean age of 37.80 years ($SD = 8.96$; ranging from 23 to 52 years). On average, the teachers had known the students they were rating for 17.60 months ($SD = 11.30$; ranging from 4 to 43 months).

2.2 Instruments

2.2.1 Self-Reports

The *Values in Action Inventory of Strengths for Youth* (*VIA-Youth*; Park and Peterson 2006; adapted to German by Ruch et al. 2014), was used for the self-assessment of the 24 character strengths of the VIA classification (Peterson and Seligman 2004). The VIA-Youth consists of 198 items. Seven to nine items are used to assess each of the 24 character strengths, with about one-third of the items being reverse keyed. The VIA-Youth uses a 5-point Likert-style answer format (from 1 = *not like me at all* to 5 = *very much like me*). A sample item is "I believe that things will always work out no matter how difficult they seem now" (hope). The VIA-Youth proved to be a reliable and valid measure (e.g., Park and Peterson 2006; Ruch et al. 2014). In the present study, most of the 24 VIA-Youth scales showed satisfactory reliabilities (i.e., 17 scales showed alpha coefficients >.70); only humility ($\alpha = .51$), curiosity ($\alpha = .55$), and judgment ($\alpha = .63$) showed reliabilities below .65. All in all, the internal consistencies of the 24 scales yielded a median of $\alpha = .72$.

The *Positive and Negative Affect Schedule for Children* (*PANAS-C*) used in the present study is a German translation of the PANAS-C (Laurent et al. 1999). The PANAS-C

consists of 27 items, which assess the intensity of positive affect (PA) and negative affect (NA) of children. The PA scale includes 12 items reflecting affects like interested, happy, and proud. The NA scale includes 15 items reflecting affects like hostile, guilty, and nervous. The PANAS-C uses a 5-point Likert-style answer format (from 1 = *not at all* to 5 = *extremely*). To assess positive and negative affect at school, we adapted the instructions to specifically measure school-related positive and negative affect. It read: "This scale consists of a number of words that describe different feelings and emotions that you can have *at school*. Read each item and then circle the appropriate answer next to that word. Indicate to what extent you have felt this way *at school* during the past few weeks."). The PANAS-C proved to be a reliable and valid measure (e.g., Laurent et al. 1999; Lewis et al. 2009). The two scales showed high internal consistencies of $\alpha = .86$ (PA) and $\alpha = .89$ (NA) in the present study.

2.2.2 Teacher-Ratings

The *Positive School Functioning Scale* (PSFS) has been developed as a teacher rating for the purposes of this study to briefly estimate students' positive school functioning considering different schooling-relevant aspects. The PSFS consists of 6 items assessing students' *motivation to learn and perform* (2 items: he/she is very motivated to learn the material; he/she is motivated to understand all the contents), *interest in contents* (1 item: he/she is interested in all of the contents), and *engagement in learning* (3 items: he/she shows high degrees of engagement in class; he/she likes to use all of his/her abilities and knowledge in class; he/she is engaged to perform very well on exams). The PSFS uses a 5-point Likert-style answer format (from 1 = *not like him/her at all* to 5 = *very much like him/her*). The dimensionality of the PSFS (all 6 items) was tested utilizing principal component analysis. One eigenvalue exceeded unity and the scree plot indicated unidimensionality (eigenvalues were 4.62, 0.38, 0.32, 0.26, etc.). This single factor explained 76.94 % of the variance. The mean of all corrected item-total correlations was .82, and the PSFS showed a high internal consistency of $\alpha = .94$ in the present study.

Teachers also rated the students' *overall school achievement* utilizing a 7-point answer scale (from 1 = *unsatisfactory* to 7 = *excellent*). Since all teachers were homeroom teachers, they were familiar with the students' achievement levels in all subjects (e.g., math, language arts, sports etc.).

2.3 Procedure

Before we started the data collection the institutional ethic board approved this study. All students provided evidence of informed consent from their parents or legal guardians and also gave their assent before taking part in the study. Subsequently, data were collected in schools in the German-speaking part of Switzerland. An instructor trained in psychological assessment directly instructed all participants in the classrooms and guided them through the survey. None of the participants was paid for their service and all participated voluntarily. Students received written individualized feedback on the rank order of their character strengths as well as descriptions of the meaning of each of the character strengths of the VIA classification.

2.4 Data Analysis

Analyses on means, standard deviations, Cronbach's alpha, correlations, hierarchical regressions, and factor structure were computed using the statistical software package SPSS 22. The path model has been analyzed using AMOS 22 (e.g., Arbuckle 2012). Because 24 different character strengths were investigated, we used a corrected level of significance (i.e., .05/24 = .002) whenever interpreting our results.

Table 1 Self-reported and teacher-rated variables: means, standard deviations, and correlations with students' age and sex

Variables	*M*	*SD*	Correlations with	
			Age	Sex
Self-reports				
VIA-Youth				
Creativity	3.60	0.54	−.05	−.16
Curiosity	3.40	0.48	−.10	−.11
Judgment	3.46	0.45	−.01	−.05
Love of learning	3.52	0.65	−.22	.08
Perspective	3.53	0.53	−.03	.13
Bravery	3.53	0.52	.03	.12
Perseverance	3.67	0.58	−.17	−.04
Honesty	3.62	0.55	.04	.16
Zest	3.68	0.55	−.13	−.05
Love	3.98	0.49	−.11	.15
Kindness	3.94	0.50	.06	.43*
Social intelligence	3.68	0.50	.04	.13
Teamwork	3.88	0.51	.00	.06
Fairness	3.47	0.51	−.07	.11
Leadership	3.26	0.62	−.08	−.07
Forgiveness	3.85	0.60	−.14	.09
Humility	3.44	0.43	−.09	.10
Prudence	3.33	0.55	−.18	.01
Self-regulation	3.47	0.56	−.08	.02
Beauty	3.71	0.65	−.03	.34*
Gratitude	4.11	0.45	−.08	.07
Hope	3.72	0.52	−.11	−.13
Humor	3.81	0.58	−.14	−.03
Spirituality	3.85	0.82	−.04	.02
PANAS-C				
PA	3.80	0.55	−.15	.01
NA	1.86	0.51	.08	−.04
Teacher ratings				
PSFS	3.70	0.83	−.26*	.11
OSA	4.78	1.44	−.19	.10

$N = 196$. *Age* 10–14 years. *Sex* *1* male, *2* female

VIA-Youth VIA Inventory of Strengths for Youth, *PANAS-C* Positive and Negative Affect Schedule for Children, *PA* School-related positive affect, *NA* School-related negative affect, *PSFS* Positive School Functioning Scale, *OSA* Overall school achievement

* $p < .002$

3 Results

3.1 Preliminary Analyses

We examined means and standard deviations of the variables of interest, and we tested whether participants' age and sex were correlated with any variables analyzed for the research questions (by computing zero-order correlations). Results are reported in Table 1.

Table 1 shows that means of *character strengths* were numerically highest for gratitude ($M = 4.11$) and lowest, albeit still above the scale midpoint, for leadership ($M = 3.26$), which is comparable with earlier findings (cf. Ruch et al. 2014). Participants were more likely to report high levels of *school-related positive affect*, and lower levels of *school-related negative affect*, which is also in line with earlier findings (e.g., Lewis et al. 2009). Means of the PSFS and overall school achievement indicated that most students showed moderate to high levels of positive school functioning and school achievement. Table 1 further shows that younger students were more likely to receive higher teacher ratings in positive school functioning. Girls were more likely to report higher levels of beauty and kindness, which goes along with earlier findings (cf. Ruch et al. 2014). As some of the

Table 2 Partial correlations between 24 character strengths and school-related positive affect, school-related negative affect, positive school functioning, and overall school achievement

Self-reports			Teacher ratings	
Character strengths	PA	NA	PSFS	OSA
Creativity	.46*	−.18	.23	.19
Curiosity	.44*	−.02	.23	.17
Judgment	.37*	−.15	.19	.15
Love of learning	.61*	−.21	.36*	.28*
Perspective	.55*	−.29*	.36*	.35*
Bravery	.35*	−.08	.16	.11
Perseverance	.63*	−.28*	.40*	.27*
Honesty	.44*	−.26*	.27*	.21
Zest	.70*	−.20	.39*	.21
Love	.41*	−.32*	.19	.09
Kindness	.42*	−.19	.22	.20
Social intelligence	.56*	−.30*	.31*	.26*
Teamwork	.54*	−.43*	.26*	.21
Fairness	.39*	−.16	.23	.11
Leadership	.46*	−.22	.29*	.30*
Forgiveness	.39*	−.24	.17	.14
Humility	.04	−.17	.09	.17
Prudence	.42*	−.26*	.32*	.25*
Self-regulation	.45*	−.36*	.27*	.19
Beauty	.35*	.05	.13	−.02
Gratitude	.52*	−.26*	.27*	.20
Hope	.55*	−.39*	.36*	.27*
Humor	.31*	−.15	.14	.25*
Spirituality	.43*	.04	.15	−.02

$N = 196$. Correlations are controlled for influences of students' age and sex

PA School-related positive affect, *NA* School-related negative affect, *PSFS* Positive School Functioning Scale, *OSA* Overall school achievement

* $p < .002$

variables appeared to be affected by participants' demographics, we decided to control subsequent analyses for such influences.

3.2 Analyses of Research Questions

To examine the relationships among character strengths, school-related positive and negative affect, positive school functioning, and students' overall school achievement, partial correlations (controlling for age and sex) were computed (see Table 2). Additionally, to examine the predictive power of character strengths on the above-listed variables, we computed four sets of hierarchical multiple regression analyses (controlling for age and sex in the first step) and testing the incremental effect of the 24 character strengths entered in the second step. The specific results are presented in the following paragraphs.

3.2.1 Relationships Between Character Strengths and School-Related Positive Affect (PA) and Negative Affect (NA)

Character strengths emerged to be strong correlates of PA, as all character strengths (except humility) were significantly positively related to PA; they explained 61.80 % of the variance in PA ($F_{\text{change}}[24, 169] = 12.16$, $p < .001$). The specific character strengths of zest, perseverance, love of learning, social intelligence, perspective, hope, teamwork, and gratitude were the numerically strongest correlates of PA with correlation coefficients higher than |.50| ($rs = .70$–$.52$; see Table 2).

Character strengths were also predictive of NA (negatively related), but at a lower amount (numerically compared to the coefficients for PA), explaining 40.50 % of the variance in NA ($F_{\text{change}}[24, 169] = 4.86$, $p < .001$). Teamwork, hope, self-regulation, and love yielded the numerically highest relationships with NA with correlation coefficients higher than |.30| ($rs = -.43$ to $-.32$; see Table 2).

3.2.2 Relationships Between Character Strengths and Positive School Functioning

Character strengths were substantially positively correlated with positive school functioning and explained 24.40 % of the variance in positive school functioning ($F_{\text{change}}[24, 169] = 2.54$, $p < .001$), which is a very noteworthy result, especially due to the fact that we analyzed two different sources of data (i.e., self-reports and teacher-ratings). Perseverance, zest, love of learning, perspective, hope, prudence, and social intelligence yielded the numerically highest relationships with students' positive school functioning with correlation coefficients greater than |.30| ($rs = .40$–$.31$; see Table 2).

3.2.3 Relationships Between Character Strengths and Overall School Achievement

Character strengths explained 29.70 % of the variance in overall school achievement ($F_{\text{change}}[24, 169] = 3.19$, $p < .001$). Perspective and leadership, followed by love of learning, perseverance, hope, social intelligence, prudence, and humor showed significant positive relationships with overall school achievement ($rs = .35$–$.25$; see Table 2).

3.2.4 Relationships Among School-Related Affect (PA, NA), Positive School Functioning, and Overall School Achievement

PA (positively) and NA (negatively) were correlated with positive school functioning ($r = .43$; $r = -.27$), and overall school achievement ($r = .23$; $r = -.32$). Positive school functioning shared a substantial amount of variance with overall school achievement ($r = .71$).

3.2.5 The Interplay Between Character Strengths, School-Related Positive Affect (PA), Positive School Functioning, and Overall School Achievement

To test our expectation that specific character strengths are predictive of PA, which in turn leads to positive school functioning, which in turn leads to higher overall school achievement, a path model was computed using structural equation modeling procedures (see Fig. 2). Due to the exploratory nature of the present study, we have chosen a cautious strategy to select character strengths for this model. In order to reduce the long list of potent predictors (see Sect. 3.2.1), we identified a subset of character strengths that showed the highest correlations with PA. Therefore, we utilized significance tests for the difference between dependent correlation coefficients (cf. Steiger 1980). We compared the numerically highest correlation coefficient (i.e., zest; $r = .70$) with the 23 remaining coefficients. We selected those character strengths that showed correlations with PA that were not statistically different from .70. In doing so, we identified zest, perseverance, love of learning, and social intelligence being the most substantial correlates of PA (i.e., the process variable in the "engine model of well-being" of the present study); therefore, these four character strengths entered our path model as *affect-favoring* character strengths (i.e., the input). As positive school functioning (i.e., the outcome) has been found to be affected by students' age, in this analysis we used the standardized residual of a regression analysis with students' age as the predictor variable and positive school functioning as the criterion variable.

The model presented in Fig. 2 showed a satisfying fit to the data ($\chi^2/df = 1.79$; AGFI = .92; CFI = .98; RMSEA = .06 (90 % confidence interval .02–.10)]. There were direct effects from the latent variable affect favoring character strengths (defined by the manifest variables of zest, perseverance, love of learning, and social intelligence) on PA, as well as from PA on positive school functioning. Moreover, positive school functioning was

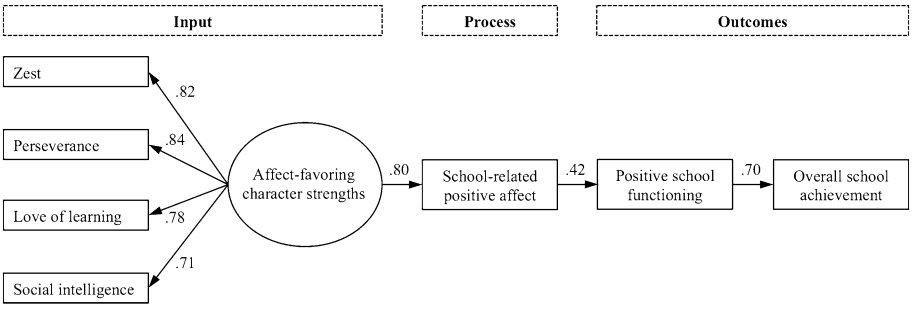

Fig. 2 Standardized coefficients for a path model describing the interplay between certain character strengths, positive affect, functioning, and achievement at school ($N = 196$); latent constructs are shown in *ellipses*, and observed variables are shown in *rectangles*. All coefficients were significant at $p < .002$

directly related to overall school achievement. We found a highly significant indirect effect from affect favoring character strengths through PA on positive school functioning (standardized indirect effect = .34; $p < .001$; with a bias corrected 95 % confidence interval ranging from .23 to .44 using 5,000 bootstrap samples). Affect favoring character strengths were also significantly indirectly related to overall school achievement (standardized indirect effect = .24; $p < .001$; with a bias corrected 95 % confidence interval ranging from .16 to .32 using 5,000 bootstrap samples). Furthermore, PA was significantly indirectly related to overall school achievement (standardized indirect effect = .30; $p < .001$; with a bias corrected 95 % confidence interval ranging from .20 to .39 using 5,000 bootstrap samples).

To sum up, this model showed a possible pathway on how positive personality traits (i.e., affect-favoring character strengths) led, through higher levels of positive affect at school, to a higher degree of positive school functioning, which in turn led to better overall achievement at school. As this model combined different sources of data including self-reported data and teacher-rated data, the findings were especially meaningful.

4 Discussion

The present study followed the theoretical framework of the "engine model of well-being" (cf. Jayawickreme et al. 2012) by examining input variables, process variables, and outcome variables within the context of well-being and flourishing at school. This study extends earlier research on character strengths' contributions to more global indicators of a good life in children and adolescents (e.g., general self-efficacy, global life satisfaction; e.g., Park and Peterson 2006; Ruch et al. 2014; Weber and Ruch 2012b; Weber et al. 2013) by examining character strengths in the specific context of schooling. We investigated character strengths' role in students' school-related affect, and in turn for their positive school functioning and their school achievement. In the following we discuss the four main results.

First, we expected character strengths to be related to school-related affect, and we found that character strengths seem to matter, especially for *positive affect at school* and, to a lesser extent, for negative affect. Although most of the character strengths showed a positive relationship, zest, perseverance, love of learning, and social intelligence showed the highest associations with school-related positive affect. Zest seems to be extremely crucial for individuals to be able to experience positive feelings in general (e.g., Güsewell and Ruch 2012; Van Eeden et al. 2008; Weber et al. 2013), but also in the specific context of schooling. Zestful students approach schooling with vitality, energy, and alertness, that is, in a fully functioning way (cf. Peterson and Seligman 2004). School is a place with several short term and long term goals that need to be accomplished although they are challenging. Perseverant students show a "voluntary continuation of a goal-directed action in spite of obstacles, difficulties, and discouragements" (Peterson and Seligman 2004, p. 229). Students possessing love of learning are expected to experience positive feelings whenever they can learn new things (cf. Peterson and Seligman 2004). School is, beyond any debate, a place where students can and should learn new things, day by day. As daily schooling consists of interactions with other individuals (e.g., classmates, teachers), social intelligence seems to be a meaningful factor for experiencing positive affect at school. Students who possess higher levels of social intelligence understand their own feelings to a better degree, but they also better understand the feelings of others and can react more appropriate to them (cf. Peterson and Seligman 2004). This might lead to fewer conflicts,

which in turn leads to more positive affects. To sum up, zest, perseverance, love of learning, and social intelligence are personality characteristics that lead to approach behavior at school, which in turn yields higher degrees of positive affect.

Although to a lesser degree, certain character strengths seem to be protective against *negative affect at school*. The specific character strengths of teamwork, hope, self-regulation, and love are the most substantial correlates. Working in groups (teams) has become a common teaching method in schooling. Lonely pondering about challenging tasks that need to be solved might lead to higher levels of negative affect (e.g., fear to fail in exams), hence, solving such tasks in groups could lead to lower levels of negative affect. Hope was among the strongest predictors for general, domain-free negative affect (e.g., Van Eeden et al. 2008; Weber et al. 2013). Acting in ways supposed to make desired outcomes (e.g., passing a test) more likely is a core aspect of hope (Peterson and Seligman 2004); therefore, hope seems to be helpful in protecting against negative affects at school. Students who possess higher levels of self-regulation are more likely to control their own feelings in order to reach their goals congruent with existing standards (e.g., norms, expectations of others; cf. Peterson and Seligman 2004). This is crucial in an environment that is packed with norms and expectations of others (e.g., teachers, parents). Finally, love, the capacity to love and be loved (cf. Peterson and Seligman 2004), buffers against negative affect at school. Students who possess higher levels of love value close relations with others (cf. Peterson and Seligman 2004). Meaningful close relationships might serve as resources (i.e., social support) to tackle challenges at school, which reduces the level of negative affect.

All in all, character strengths explained more variance in school-related *positive* affect than in its negative counterpart. This result is fully in line with findings on the relationships between character strengths and domain-free positive and negative affect (e.g., Weber et al. 2013). Character strengths are primarily seen as factors contributing to individuals' positive, proactive, and morally valued feelings, thoughts, and actions (e.g., Peterson and Seligman 2004); they are only secondarily seen to reduce individuals' negative feelings like anger and anxiety. Hence, character strengths a more likely to show clearer relationships to positive affect at school, and to show more vague relationships to negative affect in this context.

Second, we expected school-related positive affect to be a crucial factor for students' positive school functioning in the sense of being motivated to learn and perform, being interested in the contents at class, and being engaged at class and in exams (perceived by teachers). In line with earlier results (e.g., Mega et al. 2014; Reschly et al. 2008), we found school-related positive affect positively associated with positive school functioning. This underlines Schutz and Lanehart's (2002) assumption that positive feelings at school are crucial for the learning process.

Third, character strengths, school-related affect, and positive school functioning were examined with respect to their relation with overall school achievement. With respect to the character strengths perspective, leadership, love of learning, perseverance, hope, social intelligence, prudence, and humor emerged to be linked to students' achievement at school. This is in line with earlier research that found perseverance, love of learning, prudence, and perspective to be related to college students' self-reported school success (e.g., Lounsbury et al. 2009). School-related positive affect and negative affect were meaningfully related to school achievement, which is also in line with earlier research (e.g., Lewis et al. 2009). Finally, teacher-perceived positive school functioning was strongly related to their evaluations of students' overall school achievement, highlighting the importance of students' positive school functioning for success in school. Beside the direct links between the

examined variables and school achievement, we were interested in possible mechanisms between personality and affect-related aspects, and learning and success-related aspects.

Therefore, *fourth*, we successfully tested a model that postulates certain character strengths to be favoring, enabling factors for positive affect at school. In turn, school-related positive affect appeared to be a crucial source of students' positive school functioning, which in turn led to higher overall school achievement. This is in line with our hypothesis. These results are compatible with the idea that positive affect is not necessarily the outcome (cf. Jayawickreme et al. 2012; Lyubomirsky et al. 2005) as we could show that it is a necessary factor for positive functioning in school. Furthermore, the degree of positive affect a student is able to experience is based on their personality as represented by the students' character strengths.

4.1 Limitations and Future Research

Although the results of the present study are promising, in the following we will discuss some limitations. *First*, due to slight restraints in the variance of three of the VIA-Youth scales those three scales yielded unsatisfactory internal consistencies; however, this fact did not impact the main results of the present study. *Second*, the German translation of the PANAS-C, which has been adapted to German language for the present study, showed very promising psychometric properties; nevertheless, it needs to be further validated in future studies. *Third*, we chose teacher ratings of students' overall school achievement; to eliminate a possible method bias (i.e., data from the same source), and to allow for subject-specific analyses, future studies should also focus on grades retrieved from students' school records. Future studies should also consider different age groups, nations, and cultures to provide knowledge about the generalizability of such findings. *Fourth*, the present study is based on a cross-sectional design for an initial examination of the interplay between character strengths, affect, functioning, and achievement at school. Therefore, we were not able to study causality, and hence, future studies should consider longitudinal designs. This would also open up the opportunity to study another effect of positive affect at school, namely its broaden-and-built effect (e.g., Fredrickson 2001). According to Fredrickson (2001, p. 220), positive feelings "broaden the scopes of attention, cognition, and action and […] they build physical, intellectual, and social resources." Therefore, we strongly assume that positive affects at school, which are seen as rooted in character strengths, should definitely lead to desired aspects of schooling (e.g., good grades), which in turn should enhance students' positive affects at school. This should lead to a positive, success-leading, upward spiral in the context of schooling. *Finally*, future research should also consider designing character strengths-based intervention programs that focus on the most relevant character strengths in the schooling context (e.g., zest, perseverance). Creating environments and situations that specifically allow the use and expression (and in doing so the development) of character strengths that are associated with school-related positive affect (e.g., zest, perseverance, love of learning, and social intelligence) is expected to enhance positive feelings at school resulting in an enhancement of students' positive school functioning.

4.2 Conclusions and Implications

Students' personalities matter at school and students differ in their character strengths profiles. Certain character strengths emerged to be necessary in order to experience positive affect at school. Therefore, aspects like students' character strengths and their

school-related affect should be considered in the schooling context. Practitioners in schools (e.g., school psychologists, teachers) mainly focus on mastering deficits of their students to enhance, for example, students' success at school. Managing students' deficits is without any doubts very important and they need to be addressed in the schooling context. But, characteristics like students' character strengths and feelings at school are often neglected. The present study shows that certain character strengths (e.g., zest, love of learning, perseverance, social intelligence) are crucial for students' positive feelings at school, but also for students' school achievement. Schools might think about incorporating the topic of character strengths (incl. their assessment) into the school life. More knowledge about students' character strengths might be supportive for school psychologists, but also (and maybe to a higher degree) for teachers as well. It would help the practitioners to interact adequately with the students, and in doing so, to support and foster the students' character strengths, which in turn is expected to lead to more positive feelings in students, what on the other hand is very likely to lead to positive school functioning (e.g., motivation to learn) resulting in school success. Additionally, school psychologists, teachers, and other school-related staff might consider cultivating positive feelings at school. This could be achieved, for instance, by savoring positive interactions or moments, or by highlighting (also small) accomplishments.

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References

Arbuckle, J. L. (2012). *IBM SPSS Amos 21 user's guide*. Chicago, IL: IBM.

Fredrickson, B. (2001). The role of positive emotions in positive psychology. *American Psychologist, 56*, 218–226. doi:10.1037//0003-066X.56.3.218.

Gilman, R., & Huebner, E. S. (2003). A review of life satisfaction research with children and adolescents. *School Psychology Quarterly, 18*, 192–205. doi:10.1521/scpq.18.2.192.21858.

Güsewell, A., & Ruch, W. (2012). Are emotional strengths emotional? Character strengths and disposition to positive emotions. *Applied Psychology: Health and Well Being, 4*, 218–239. doi:10.1111/j.1758-0854.2012.01070.x.

Jayawickreme, E., Forgeard, M. J. C., & Seligman, M. E. P. (2012). The engine of well-being. *Review of General Psychology, 16*, 327–342. doi:10.1037/a0027990.

Laurent, J., Catanzaro, S. J., Joiner, T. E., Rudolph, K. D., Potter, K. I., Lambert, S., et al. (1999). A measure of positive and negative affect for children: Scale development and preliminary validation. *Psychological Assessment, 11*, 326–338. doi:10.1037/1040-3590.11.3.326.

Lewis, A. D., Huebner, E. S., Reschly, A. L., & Valois, R. F. (2009). The incremental validity of positive emotions in predicting school functioning. *Journal of Psychoeducational Assessment, 27*, 397–408. doi:10.1177/0734282908330571.

Lounsbury, J. W., Fisher, L. A., Levy, J. J., & Welsh, D. P. (2009). An investigation of character strengths in relation to the academic success of college students. *Individual Differences Research, 7*, 52–69. doi:10.1016/j.lindif.2009.03.001.

Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin, 131*, 803–855. doi:10.1037/0033-2909.131.6.803.

Mega, C., Ronconi, L., & De Beni, R. (2014). What makes a good student? How emotions, self-regulated learning, and motivation contribute to academic achievement. *Journal of Educational Psychology, 106*, 121–131. doi:10.1037/a0033546.

Meyer, D. K., & Turner, J. C. (2002). Discovering emotion in classroom motivation research. *Educational Psychologist, 37*, 107–114. doi:10.1207/S15326985EP3702_5.

Park, N., & Peterson, C. (2006). Moral competence and character strengths among adolescents: The development and validation of the Values in Action Inventory of Strengths for Youth. *Journal of Adolescence, 29*, 891–909. doi:10.1016/j.adolescence.2006.04.011.

Pekrun, R., Goetz, T., Titz, W., & Perry, R. P. (2002). Academic emotions in students' self-regulated learning and achievement: A program of qualitative and quantitative research. *Educational Psychologist, 37*, 91–105. doi:10.1207/S15326985EP3702_4.

Peterson, C. (2006). *A primer in positive psychology*. New York, NY: Oxford University Press.

Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. New York, NY: Oxford University Press.

Reschly, A. L., Huebner, E. S., Appleton, J. J., & Antaramian, S. (2008). Engagement as flourishing: The contribution of positive emotions and coping to adolescents' engagement at school and with learning. *Psychology in the Schools, 45*, 419–431. doi:10.1002/pits.20306.

Ruch, W., Weber, M., Park, N., & Peterson, C. (2014). Character strengths in children and adolescents: Reliability and initial validity of the German Values in Action Inventory of Strengths for Youth (German VIA-Youth). *European Journal of Psychological Assessment, 30*, 57–64. doi:10.1027/1015-5759/a000169.

Schutz, P. A., & Lanehart, S. L. (2002). Introduction: Emotions in education. *Educational Psychologist, 37*, 67–68. doi:10.1207/S15326985EP3702_1.

Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*, 5–14. doi:10.1037/0003-066X.55.1.5.

Steiger, J. H. (1980). Tests for comparing elements of a correlation matrix. *Psychological Bulletin, 87*, 245–251. doi:10.1037//0033-2909.87.2.245.

Toner, E., Haslam, N., Robinson, J., & Williams, P. (2012). Character strengths and wellbeing in adolescence: Structure and correlates of the Values in Action Inventory of Strengths for Children. *Personality and Individual Differences, 52*, 637–642. doi:10.1016/j.paid.2011.12.014.

Van Eeden, C., Wissing, M. P., Dreyer, J., Park, N., & Peterson, C. (2008). Validation of the Values in Action Inventory of Strengths for Youth (VIA-Youth) among South African learners. *Journal of Psychology in Africa, 18*, 145–156.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063–1070. doi:10.1037/0022-3514.54.6.1063.

Weber, M., & Ruch, W. (2012a). The role of a good character in 12-year-old school children: Do character strengths matter in the classroom? *Child Indicators Research, 5*, 317–334. doi:10.1007/s12187-011-9128-0.

Weber, M., & Ruch, W. (2012b). The role of character strengths in adolescent romantic relationships: An initial study on partner selection and mates' life satisfaction. *Journal of Adolescence, 35*, 1537–1546. doi:10.1016/j.adolescence.2012.06.002.

Weber, M., Ruch, W., Littman-Ovadia, H., Lavy, S., & Gai, O. (2013). Relationships among higher-order strengths-factors, subjective well-being, and general self-efficacy—The case of Israeli adolescents. *Personality and Individual Differences, 55*, 322–327. doi:10.1016/j.paid.2013.03.006.