Displaying Character Strengths in Behavior Is Related to Well-Being and Achievement at
School: Evidence from Between- and Within-Person Analyses

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Abstract

In two studies, we establish the association between different assessments of character strengths (i.e., traits, habitual and daily behavior at school) with school-related well-being and achievement. Study 1 ($N = 414$, mean age = 14.14 years) demonstrated that habitual strengths-related behavior at school accounted for unique variance in well-being at school and in achievement beyond the influence of the respective character strength trait. Further, the desirability of certain strengths (e.g., perseverance, fairness, forgiveness, and humor) at the classroom level accounted for additional variance in students' well-being. Study 2 ($N = 186$, mean age = 14.27 years) used a diary design across five days to replicate the between-person associations and study within-person associations. Results revealed that daily strengths-related behavior predicted well-being on the following day. Overall, the results underline the importance of strengths-related behavior at school and suggest that all 24 character strengths are relevant for well-being at school.

Keywords: Character Strengths, VIA-Youth, Positive Education, Adolescence, School Satisfaction, Achievement, Accomplishment, Strengths Use

Displaying Character Strengths in Behavior Is Related to Well-Being and Achievement at School: Evidence from Between- and Within-Person Analyses

How often do schools allow students to display their curiosity? Do students see humorous behavior as desired in the classroom? Are students who show kindness in the classroom more satisfied and more successful at school? The present study seeks to address these questions by investigating how frequently students display strengths-related behavior in the classroom and how displaying strengths-related behavior at school is related to well-being and achievement at school.

School-related well-being

Parents generally want their children to like to go to school and to feel happy, connected, and engaged at school; one might say that well-being at school is valued in its own right. In addition, well-being at school is linked to highly valued life outcomes (for an overview, see Furlong et al., 2014). For instance, Baker (1998) found that already in third grade, students with higher school satisfaction had better mental health and a more positive academic self-concept than those with lower satisfaction. Positive education was originally described as “education for both traditional skills and well-being” (Seligman et al., 2009, p. 293) – this definition also implies a positive link between academic achievement and positive experiences or well-being at school.

Most studies assessing well-being at school have focused on broader evaluations of the experiences a student has at school, such as the quality of school life or school satisfaction (e.g., Furlong et al., 2014). Also, the affective quality of school experiences was studied using various approaches (e.g., Weber et al., 2016). In the present study, we operationalized well-being at school following Tian et al. (2013) as consisting of both cognitive (school satisfaction) and affective aspects (positive and negative affect at school).

Contextual factors (such as class size) were found to influence students' perceptions of the quality of their school life. Less attention, however, was paid to the role of stable individual differences or personality traits. Nonetheless, research has demonstrated that personality traits are highly relevant for well-being at school (e.g., Weber & Huebner, 2015). In the present study, we focus on individual differences in character strengths and their associations with school-related well-being and school achievement. Specifically, we study character strengths on different levels, as broad traits and as behavior displayed in the school context, both habitually and daily.

Character Strengths

Character strengths represent a family of traits that are positively valued (Peterson & Seligman, 2004). Peterson and Seligman (2004) developed the VIA classification to further the empirical investigation of such positive characteristics. It describes 24 character strengths that are organized under six more abstract virtues. These character strengths can be characterized by several basic properties (see Arbenz et al., 2022), such as their conceptual breadth (i.e., whether their content domain is relatively narrow or relatively broad) and their emergence (i.e., whether the display of a character strength is relatively independent of situational characteristics or whether it requires specific situations to be displayed). *Tonic* character strengths can be displayed in many situations, whereas *phasic* character strengths that are more frequently displayed in response to specific situational characteristics (Peterson & Seligman, 2004). Expert ratings of this dimension showed that only the character strengths of bravery and forgiveness were perceived as clearly phasic, whereas most character strengths were seen as relatively tonic in nature (Arbenz et al., 2022).

Since the classification's publication, numerous studies have demonstrated that character strengths are linked to many desirable outcomes in life, including positive experiences, such as well-being (e.g., Wagner, Gander et al., 2020), and achievement, such as

job performance (e.g., Harzer & Ruch, 2014). In children and adolescents aged 10 to 17, character strengths can be assessed reliably and validly using a self-report measure, called the VIA-Youth (Park & Peterson, 2006). Studies using the VIA-Youth showed that character strengths related positively to subjective well-being (Gillham et al., 2011; Ruch, Weber et al., 2014; Weber et al., 2013) and negatively to psychopathology (Park & Peterson, 2006).

Character Strengths in Schools

Park and Peterson (2009) argued that ‘for centuries, building and strengthening good character among children and youth have been universal goals for parenting and education’ (p. 65). Given the importance of school in and for adolescents’ lives, understanding the role of character strengths in the context of schooling seems to be of particular relevance. Since the development of the VIA-Youth, several empirical studies have addressed this topic.

Weber and Ruch (2012) reported positive associations between character strengths and school satisfaction, academic self-efficacy, school achievement, and teacher-rated positive classroom behavior. They suggested an indirect effect of the strengths of love of learning, perseverance, and prudence on grade point average (GPA) via positive classroom behavior. This indirect effect was replicated for a number of strengths in two samples from different age groups (Wagner & Ruch, 2015). Wagner and Ruch (2015) also showed that several associations between character strengths and school-related outcomes were robust across the two age groups (i.e., primary and secondary school): Love of learning, perseverance, zest, gratitude, hope were consistently positively related to school achievement and perspective, perseverance, self-regulation, prudence, social intelligence, and hope were consistently positively related to classroom behavior. Weber et al. (2016) suggested an additional mechanism by which character strengths (zest, love of learning, perseverance, and social intelligence) fostered the experience of positive school-related affect. The experience of positive affect, in turn, was related to positive school functioning (i.e., motivation,

engagement, and interest at school), which was positively associated with school achievement. Character strengths were also found to positively relate to both school achievement and different facets of teacher-rated school adjustment (cognitive, emotional, behavioral, and social) following transitions between different schools in two studies using an earlier version of the VIA-Youth (Shoshani & Aviv, 2012; Shoshani & Slone, 2013).

Taken together, these findings demonstrate that some character strengths showed consistent associations with positive experiences and achievement at school. Those are primarily the character strengths of perseverance, love of learning, and hope. However, concluding that teachers, parents, and schools should foster these three character strengths, in particular, would be premature; the most relevant strengths differed strongly depending on the outcomes considered. When school achievement was studied, primarily perseverance and love of learning showed consistent positive associations (e.g., Wagner & Ruch, 2015; Weber & Ruch, 2012). When emotional experiences at school were studied (e.g., Weber et al., 2016), zest and hope were particularly relevant. When classroom behavior was studied, strengths relating to the virtue of temperance, such as self-regulation or prudence, were of particular importance (e.g., Ruch, Platt et al., 2014; Shoshani & Aviv, 2012; Shoshani & Slone, 2013; Wagner & Ruch, 2015). Thus, the number of strengths that were substantially related to any of these outcomes is rather large, suggesting that potentially all 24 character strengths in the VIA classification might be linked to some aspect of positive experiences and achievement at school.

Furthermore, Linkins et al. (2015) distinguished two character education approaches. The first, more traditional, *prescriptive* approach aims at promoting a fixed set of character strengths in all students. The second, *descriptive* approach focuses on the students' individual configurations of character strengths and encourages them to "reveal and effectively engage" (Linkins et al., 2015, p. 65) their character strengths. Based on theoretical ideas, Linkins et al.

(2015) argue in favor of the descriptive approach and conclude it would be beneficial for adolescents “well beyond their school years” (p. 68). While this idea is in line with the VIA classification’s theoretical assumptions (e.g., Park & Peterson, 2009), very little is known about how students actually display character strengths at school. In the present study, we aim at addressing this gap by investigating strengths-related behaviors at school, which might serve as a basis for studying the effects of prescriptive vs. descriptive character education.

Display of Character Strengths in Different Domains of Life

The influence of character strengths is assumed to be pervasive across many domains in an individual’s life as character strengths are expressed in thoughts, feelings, and behaviors (Peterson & Seligman, 2004). However, the degree to which individuals display behavior in accordance with their character strengths varies because of different factors—both external environmental factors and internal factors that may represent the individual’s perception of their environment across different life domains (Harzer & Ruch, 2013). For instance, they might perceive that displaying creativity is not desired in their work as accountants, and therefore display it less frequently than during their free time. Studies used different methods to assess the degree to which character strengths are displayed. The Applicability of Character Strengths Rating Form (Harzer & Ruch, 2013) acknowledges external and internal influences. It is the only scale that measures the display of each of the 24 strengths in the VIA classification separately in a given context.

To date, research on the display (also referred to as “application”) of character strengths mainly focused on the domain of work (Harzer & Ruch; 2012, 2013, 2014; Hausler et al., 2017). A recent study (Wagner et al., 2021) compared the application of character strengths across different life domains and found the character strengths of curiosity, love of learning, prudence, and self-regulation to be more frequently displayed in the context of (university) education than in other life domains, and the character strengths of curiosity,

judgment, love of learning, perseverance, and self-regulation to be perceived as particularly relevant in this context. Displaying love of learning and perceiving it as relevant in the context of education was also related to overall flourishing, which was not the case for displaying love of learning and perceiving it as relevant in other life domains.

From a theoretical perspective, Bakker and van Woerkom (2018) demonstrated that applying strengths can be viewed as a ‘crucial behavioral mechanism in the gain cycle’ (p. 42) that is proposed in the Job-Demands-Resources theory (Bakker & Demerouti, 2017). In other words, applying strengths is both a predictor and a consequence of high engagement, thus allowing the development of further resources, contributing to an upward spiral. We can also apply these theoretical ideas to students at school: We hypothesize that displaying one’s character strengths at school predicts different aspects of school engagement, resulting in both positive experiences at school and school achievement.

To the best of our knowledge, there is no research examining the application of character strengths in samples of children and adolescents, neither in general nor across different life domains. Thus, we do not know which character strengths are displayed most frequently in behavior—whether in or outside school. We also do not know the correlates of the application of adolescents’ character strengths. The present study aims to address this gap by studying the application of character strengths at school and its relations with important outcomes at school, such as positive experiences at school and school achievement.

Different classrooms share defining features, such as a fixed structure based on lesson plans. These shared features potentially make them more homogeneous than workplaces. Still, we can assume some degree of variability across classrooms in the extent to which the environment allows behavior in accordance with an individual’s strengths. For instance, some schools or teachers might aim to foster creativity more strongly than others (whether explicitly or implicitly), thus providing more opportunities to display creativity in everyday

school life. Applying one's character strengths at school—that is, displaying them in one's behavior and also perceiving them as desired—may be one way to achieve a fit between the “needs of students and the affordances of the school environment” (Baker et al., 2003, p. 209), which makes schools “likely to exert a positive influence” (Baker et al., 2003, p. 209.) One might argue that when students perceive character strengths-related behavior as desired at school, schools are more likely to act as *positive institutions*, that is, institutions that enable the experience of positive experiences and the development of positive traits, such as character strengths (Seligman & Csikszentmihalyi, 2000). This idea is also supported by findings on the role of classroom climate both for achievement and well-being at school (for an overview, see Wang et al., 2020).

Overview and Aims of the Present Studies

In this set of two studies, we investigate whether displaying character strengths at school is related to school-related well-being and achievement. Study 1 used a cross-sectional approach to study the between-person associations between the habitual application of character strengths at school and school-related well-being and achievement. Study 2 used a daily-diary design to replicate the findings of Study 1 and to study the associations between the display of character strengths at school and school-related well-being at the within-person level. Across both studies, the overarching research questions were:

- (1) Which character strengths are displayed most frequently in behavior at school, and which character strengths are perceived as most desired at school?
- (2) Does the display of character strengths at school (i.e., showing strengths-related behavior at school) account for variance in well-being and achievement at school, also when controlling for the level of the respective character-strength trait?
- (3) Does the desirability of character strengths at school (i.e., the shared perception of classmates about how desirable it is to show strengths-related behavior in the

classroom) account for variance in well-being at school beyond the respective strength trait and strengths-related behavior?

Study 1: Cross-sectional study

The first aim of Study 1 was to address the question regarding which character strengths are displayed most frequently in behavior and are most frequently perceived as desired at school. We expected that character strengths previously identified as being particularly relevant for school achievement (i.e., love of learning and perseverance; e.g., Weber & Ruch, 2012; Wagner & Ruch, 2015) would be frequently displayed in the context of schooling because they should show a strong fit with the demands of the situation. Additionally, we expected that the strengths of kindness, honesty, and hope would be frequently applied at school since they can be displayed mostly independently of situational demands (i.e., so-called *tonic* strengths; Arbenz et al., 2022, Peterson & Seligman, 2004).

The second aim was to investigate whether the frequency of displaying strengths-related behavior is associated with higher well-being at school, that is, with higher school satisfaction as well as higher positive and lower negative affect at school. Building on previous findings on the associations of character strengths with school-related well-being (Weber & Ruch, 2012; Weber et al., 2016), we assumed that displaying creativity, curiosity, love of learning, perseverance, zest, leadership, gratitude, and hope would be positively related to school satisfaction and positive affect at school. We also expected displaying love, social intelligence, teamwork, self-regulation, and hope in the classroom to serve a protective role and be negatively related to negative affect at school (see Weber et al., 2016). In a further step, we also tested whether these associations exist even beyond the influence of the level of the respective character-strengths traits.

The third aim was to study the associations of the frequency of habitual strengths-related behavior school with school achievement (assessed both subjectively and objectively).

We expected that the display of perseverance and love of learning in school would be associated with both a subjective sense of accomplishment at school and with higher grade point average (GPA), even when controlling for the influence of the level of the respective character-strengths traits.

The fourth aim was to investigate the role of the classroom environment, more specifically of the perceived desirability of the character strengths in the classroom, with regard to the outcomes. This aim was addressed in an exploratory manner by testing to what extent the perceived desirability of a given strength in a classroom can predict well-being and achievement at school when controlling for the influence of both the level of the respective character-strengths traits and the frequency of strengths-related behavior.

Method

Participants

We collected data from 468 students in eight secondary schools in different areas of German-speaking Switzerland. We excluded data from 54 participants from further analyses either because they were not present at one of the two data collection sessions ($n = 9$), had missing values in more than 20% of the items ($n = 18$), their responses showed implausible response patterns as identified by a consensus among the first author and two research assistants ($n = 24$), or they had been speaking German less than 3 years ($n = 4$).¹ Thus, the final sample comprised $N = 414$ students (50.5% boys and 49.5% girls) from 30 different classrooms. They had a mean age of 14.14 years ($SD = 1.06$; ranging from 12 to 18 years), and most participants (86.0%) were between 13 and 15 years old. In terms of educational level, 54.6% attended schools with basic requirements (which would qualify them for an

¹ The participants that were excluded from the analyses did not differ from the ones included regarding age or gender ($p \geq .524$). However, excluded participants were more likely to attend schools with basic requirements ($\chi^2 = 56.45, p < .001$) and to be non-native speakers ($\chi^2 = 4.84, p = .029$).

apprenticeship after graduation), and 45.4% attended schools with augmented requirements (which would qualify them for higher education after graduation). Participants typically spent all or almost all school lessons together with their classmates.

Instruments

The Values in Action Inventory of Strengths for Youth (VIA-Youth; Park & Peterson, 2006), adapted to German by Ruch, Weber et al. (2014), was used for the self-assessment of the 24 character strengths of the VIA classification (Peterson & Seligman, 2004). The VIA-Youth consists of 198 items, and it uses a 5-point answer format (from 5 = *very much like me* to 1 = *not like me at all*). A sample item is “When I start a project, I always finish it” (perseverance). Numerous studies have used the VIA-Youth and demonstrated its reliability and validity (e.g., Park & Peterson, 2006; Ruch, Weber et al., 2014). In this study, the internal consistency coefficients of the 24 scales yielded a median of $\alpha = .75$ (see online supplementary Table S1 for all coefficients).

We used the Applicability of Character Strengths at School-Rating Scale (ACSS-RS)—an adapted version of the Applicability of Character Strengths-Rating Scale (ACS-RS; Harzer & Ruch, 2012, 2013)—to assess the degree to which each of the 24 character strengths was a) perceived as desirable in the classroom and b) shown by the students in their behavior at school. It consists of a short behavior-based description and two items for each strength, assessing a) the normative demands and the appropriateness of a certain behavior at school (“This behavior is desired at school”), referred to as desirability, and b) the students’ behavior in the specific situation of school (“I behave this way at school”), referred to as strengths-related behavior. We adapted the answer scale from the original ACS-RS to range from 1 (= *never or rarely*) to 5 (= *always*), with the midpoint of 3 (= *frequently*). By choosing this asymmetrical scale with a relatively high midpoint, we aimed to avoid ceiling effects. The correlations between the VIA-Youth scales and the respective ACSS-RS item regarding

behavior at school ranged between $r = .20$ (humility) and $r = .66$ (spirituality), with an average correlation of $r = .45$, while the off-diagonal correlations yielded an average of $r = .21$. This pattern of correlations supports the convergent validity of the ACSS-RS. The items are provided in the online repository (<https://osf.io/hcjbg/>).

We used the school scale of the Multidimensional Students' Life Satisfaction Scale (MSLSS; Huebner, 1994) to assess school satisfaction. This scale consists of eight items, three of which are reverse coded. It uses a 6-point Likert-style format (from 1 = *completely disagree* to 6 = *completely agree*). A sample item is "I wish I didn't have to go to school" (reverse coded). The school satisfaction scale of the MSLSS has been widely used, and its reliability and validity were supported in previous research (see, e.g., Elmore & Hueber, 2010). The scale was translated into German using a standardized translation-backtranslation procedure (International Test Commission, 2017). In this study, the internal consistency of this German version was $\alpha = .86$.

We used the shortened version of the Positive and Negative Affect Schedule for Children (PANAS-C; Ebesutani et al., 2012) to assess positive and negative affect at school. A German translation with instructions adapted to affect habitually experienced at school, as used in Weber et al. (2016), was employed ("In school, I usually feel..."). The scale consists of ten items overall, with five items capturing positive affect (PA; e.g., "cheerful") and five items capturing negative affect (NA; e.g., "sad"). It uses a 5-point Likert-style response format (from 1 = *very slightly or not at all* to 5 = *extremely*). In the present study, the scales yielded internal consistency coefficients of $\alpha = .80$ (PA) and $\alpha = .74$ (NA).

Additionally, we obtained the students' grades from the school records for a subsample of $n = 208$ students from 17 classrooms. Grades in Switzerland range from 1 = "inadequate" to 6 = "very good", with 4 = "satisfactory" denoting an achievement sufficient to pass the subject. We computed a GPA across all academic grades, that is, mathematics,

German language, foreign languages (English and French language), social studies (history and/or geography), and science (biology, chemistry, and/or physics).

We also assessed subjective accomplishment at school with three items similar to those used in previous research (Platt et al., 2016). The three items were: “I am able to master the demands at school”, “I feel competent at school”, and “I often have a sense of achievement at school”, using a 5-point answer format (from 5 = *very much like me* to 1 = *not like me at all*). The items yielded an acceptable internal consistency of $\alpha = .68$ and a medium-sized correlation with GPA when controlling for age, sex, and educational level, $r(203) = .39, p < .001$. All items are provided in the online repository (<https://osf.io/hcjbg/>).

Procedure

The institutional ethics board at the University of Zurich approved this study before we started collecting data. After receiving a description of the study, all participants gave their written consent to participate. Participants under the age of 14 years also provided written permission from a parent or legal guardian, as required by local guidelines. None of the students were paid for the participation, and all participated voluntarily.

Teachers received instructions on how to oversee the completion of the questionnaires and how to respond to questions. The data collection took place in two sessions that were on average 29.90 days apart ($SD = 7.71$; range: 8 to 55 days). In the first session (around 90 minutes) students completed the VIA-Youth and the ACSS-RS. In the second session (30 to 45 minutes), students completed the measures of school-related well-being and other measures not relevant to this study. After the data collection, students received individual feedback on their character strengths.

Data analysis

We tested whether demographic variables like sex, age, or educational level were associated with any variables analyzed for the research questions in preparatory analyses. The

results are displayed in Tables S1 and S2 in the online supplementary material. Overall, there were small but meaningful correlations with sex, age, and educational level, so we decided to include these variables as control variables in the analyses regarding the research questions.²

For the main analyses, we used mixed models to account for the data's nested structure (students in classrooms). First, we computed the ICC(1), which quantifies the proportion of variance explained on the classroom level, and the ICC(2), which indicates the extent to which classrooms can be distinguished. The coefficients were ICC(1) = .11, $F(30,383) = 2.58, p < .001$, for school satisfaction, ICC(1) = .10, $F(30,383) = 2.44, p < .001$, for PA at school, ICC(1) = .05, $F(30,383) = 1.67, p = .017$, for NA at school, ICC(1) = .03, $F(30,383) = 1.41, p = .08$, for subjective accomplishment, and ICC(1) = .11, $F(16,191) = 2.48, p = .002$, for GPA. Thus, the outcome measures of students in one classroom were interdependent; that is, classroom membership explained between 3% and 11% of the variance. Consequently, we employed multilevel random coefficients modeling using the lme4 package (Bates et al., 2015) in R (R Core Team, 2020). To test whether character strengths, strengths-related behavior at school, and the desirability of character strengths in the classroom were associated with school-related well-being and achievement, we tested the expected relations in random-intercept models, in which the intercepts were allowed to vary between the classrooms (with age, sex, and educational level as control variables). We also added random slopes to the models, which did not yield an increase in explained variance, and we, therefore, report the results of the random-intercept models in the results section.

We ran a relatively large number of analyses and we are – of course – aware of the increased likelihood of type I-error due to running multiple tests, and thus, mainly relied on those results that were consistently found for multiple outcome measures or that we were able

² However, none of the conclusions were altered when these variables were not controlled for.

to replicate in Study 2 when interpreting the results. In addition, we decided to use an α level of .01 throughout the analyses to account for the effects of multiple comparisons.

Results

Strengths-related behavior and desirability of character strengths at school.

Descriptive statistics for the frequency of strengths-related behavior and the desirability of strengths at school are displayed in Table 1.

Insert Table 1 about here

Results of paired-samples *t*-tests revealed that four character strengths (judgment, kindness, gratitude, and spirituality) were shown more frequently in behavior than they were perceived to be desirable at school (all $p < .01$). For the remaining 20 character strengths, the frequency of strengths-related behavior was significantly lower than the frequency with which they were perceived desirable at school and this difference was significant at $p < .01$ except for social intelligence. Independent samples *t*-tests revealed that female and male participants did not differ in most ratings regarding behavior and desirability. Girls reported showing perspective, $d = -0.34$, $p < .001$, and love, $d = -0.63$, $p < .001$, more frequently in behavior than boys. Boys perceived kindness to be more desirable at school than girls did ($d = 0.27$, $p = .007$). Age was mostly unrelated to the ratings, only showing creativity in behavior at school was reported as slightly more frequent by younger students, $r(412) = -.13$, $p = .008$.

Multilevel analysis.

Separately for each character strength, we computed random-intercept models with covariates (age, sex, educational level) predicting school satisfaction, PA, and NA at school (descriptive statistics and intercorrelations of the dependent variables are given in online supplementary Table S2). Predictor variables were the frequency of displaying strength-

related behavior (level-1 predictor; at the individual student level), and the mean desirability of the respective strength in the classroom (level-2 predictor; at the classroom level), which were both entered in a first step (Model 1) and the respective scale of the VIA-Youth (level-1 predictor, entered in the second step, Model 2). The standardized coefficients of the respective predictors are displayed in Table 2.

Insert Table 2 about here

Table 2 shows that when controlling for the respective strength's trait level, strengths-related behavior at school was positively related to school satisfaction for 12 character strengths, positively related to PA at school for 10 character strengths, and negatively related to NA at school for four character strengths. After accounting for both the individual's character strengths level and strengths-related behavior at school, the desirability (as rated by all members of one classroom) of honesty was positively related to school satisfaction, the classroom-level desirability of forgiveness was positively related to PA at school, and the classroom-level desirability of perseverance was negatively related to NA at school.

The same analyses were conducted with subjective accomplishment and GPA as dependent variables. The results are displayed in Table 3.

Insert Table 3 about here

As shown in Table 3, when controlling for the respective strength's trait level, strengths-related behavior at school was positively related to subjective accomplishment for 16 character strengths. For nine strengths, the classroom-level desirability of the respective strength was positively related to the individual's subjective accomplishment beyond the predictors at the individual level. GPA was positively related to displaying perseverance, and kindness at school (after controlling for demographics, the level, and the desirability of the

respective strength). There were no significant effects of classroom-level desirability on GPA (all $p > .09$).

Discussion

Study 1 provides initial evidence that displaying character strengths at school is related to both well-being and achievement at school. In line with our expectations, strengths-related behavior predicted the outcomes beyond the influences of the level of the respective strength. In particular, as expected, showing creativity, curiosity, love of learning, perseverance, zest, leadership, gratitude, and hope at school was positively related to either school satisfaction or PA at school or both. Also as expected, showing social intelligence at school was negatively related to experiencing NA at school, while strengths-related behavior with respect to love, self-regulation, and hope did not show the expected incremental relationship with NA at school. Regarding achievement, both showing love of learning and perseverance in school was positively related to subjective accomplishment, and perseverant behavior at school also showed the expected positive associations with GPA.

Overall, school satisfaction, PA at school, and subjective accomplishment were positively related to strengths-related behavior for many of the strengths while there were fewer strengths for which strengths-related behavior showed associations with (lower) NA at school and with GPA. Displaying leadership in behavior at school was related to all three aspects of well-being at school and with subjective accomplishment (beyond the influences of demographics, the level of the respective strength trait, and its classroom-level desirability). In addition, displaying perseverance and kindness at school was positively related to both subjective accomplishment and GPA. While subjective accomplishment and GPA showed a decent relationship in the present study, they are not assumed to measure the same construct. We argue that next to achievement as documented in terms of grades, also subjective accomplishment is relevant to positive functioning at school: Feeling satisfied with

one's own achievements (as measured by individual, not necessarily general, standards) taps into academic self-efficacy, which has been shown to be of central importance to positive functioning (see, e.g., Schunk & DiBenedetto, 2014).

Notably, also the desirability of character strengths in the classroom, as perceived by all classmates, explained additional variance in well-being at school. For instance, irrespective of a student's own level of honesty or honest-related behavior at school, school satisfaction increased with higher desirability of honesty at the classroom level. With the exception of perseverance, the character strengths for which the desirability in the classroom accounted for additional variance in well-being and subjective accomplishment at school were not necessarily those that previously showed the strongest relations to school-related outcomes at the individual level. Rather, predominantly strengths that are seen as conducive to positive relations (e.g., Wagner, 2019; Wagner, Gander et al., 2020) showed the strongest associations. These strengths include honesty, kindness, fairness, teamwork, leadership, forgiveness, humility, and humor. Consequently, focusing on these strengths may be particularly suitable for creating an atmosphere that fosters individual well-being at school, potentially through facilitating positive relationships.

Study 1 also provided first data on how frequently character strengths are shown in students' behavior at school and how often they are perceived as desired. In agreement with our expectations, both tonic strengths (such as honesty, kindness, and hope) and strengths previously found to be related to school outcomes (such as perseverance and self-regulation) received high ratings. However, against our expectations, the frequency of love of learning was not among the highest. In addition, when considering the results of the VIA-Youth scales, the results of Study 1 also replicated previous findings on the associations of character strengths with well-being and achievement at school (e.g., Wagner & Ruch, 2015; Weber & Ruch, 2012, Weber et al., 2016).

This study was the first to investigate the application of character strengths in the classroom. However, its conclusions need to be interpreted in light of some limitations; in particular, the cross-sectional design and the fact that it might be difficult for students to report on their general behavior at school, given the variability of school days. Thus, in Study 2, we used a daily-diary design, which allows studying the day-to-day dynamics of strengths-related behavior at school.

Study 2: Daily-Diary Study

Study 2 aimed at investigating the relations between strengths-related behavior and well-being at school as experienced by students on a daily basis. Using a daily-diary design to address our overarching research questions provides several advantages (see e.g., Reis, 2012), such as reducing cognitive biases that might result from generalization and allowing the analysis of within-person processes. Specifically, we can investigate whether displaying character strengths at school predicts well-being at school on a day-to-day basis in addition to predicting whether students who typically display more strengths-related behavior at school also report higher well-being at school.

In studying daily displays of character strengths in the context of school, we relied on the whole trait theory (Fleeson & Jayawickreme, 2015), which conceptualizes personality traits as density distributions of personality states. Personality states are defined by the same contents as the respective personality traits, but refer to a shorter time frame (e.g., a given moment or a given day) instead of a longer time frame (e.g., months or years) that a trait typically refers to. This idea of assessing personality states, that is, what “the individual is actually doing (...) in real situations” (Jayawickreme et al., 2014, p. 12) can also be applied to virtues and character strengths, as suggested by Jayawickreme et al. (2014).

Thus far, only a handful of studies empirically assessed character strengths states. For instance, an experience-sampling study (Bleidorn & Denissen, 2015) demonstrated that virtue

states (bipolar adjectives which were based on the VIA classification, e.g., ‘authentic-artificial’ to represent the virtue of courage) varied considerably within persons over the course of 10 days; part of this variability could be explained by individuals taking up different social roles. Virtue states were also substantially related to affective experiences.

General strengths use, which is not assessed in relation to specific strengths, was found to predict work engagement and pro-active behavior on a week-to-week-basis (van Woerkom et al., 2016). Another study (Lavy et al., 2014) measured daily strengths-related behavior in relation to all 24 character strengths of the VIA classification, but only used the label of the strength for assessment and a sum score across all 24 strengths for analysis. Overall strengths-related behavior on the previous day was positively related with a one-item rating of current mood on the following day. Lavy et al. (2014) also suggested studying daily strengths-related behavior for specific strengths in future studies.

Capitalizing on the benefits of a daily-diary design, Study 2 had two main goals. First, we aimed to replicate the results of Study 1 on the between-person relations of strengths-related behavior with habitual well-being at school. We expected that the results reported in Study 1 would be largely replicated when assessing strengths-related behavior on a daily basis across the course of a school week (i.e., five days) instead of assessing habitual strengths-related behavior at one point in time. Second, Study 2 investigated the within-person relations between daily strengths-related behavior, daily well-being, and daily subjective accomplishment at school. We expected the within-person associations to be similar to the between-person associations. Figure 1 illustrates the study design and the research questions of Study 2.

Insert Figure 1 about here

Method

Participants

For this study, we collected data from 277 students attending secondary schools in rural and urban areas in the canton of Zurich, Switzerland. We only included data of participants who completed at least six of the ten diary entries and at least two of the morning and two of the afternoon diaries, resulting in an exclusion of $n = 77$ participants. We further excluded data from two participants who had been speaking German for less than three years and from 12 participants who showed implausible response patterns³. This resulted in a final sample of $N = 186$ participants from 13 classrooms. About half were girls (54.3%) and they had a mean age of 14.27 years ($SD = 0.88$; ranging from 13 to 16 years). The sample was almost evenly distributed between schools with basic requirements (46.8%) and schools with augmented requirements (53.2%). Overall, 55 participants attended the seventh grade, 86 the eighth grade, and 45 the ninth grade.

Instruments

Instruments used in diary questionnaires. We used an adapted version of the ACRS-RS from Study 1 to assess the degree to which each of the 24 character strengths was a) perceived as desirable at school and b) shown by the students in their behavior at school *on the present day*. The behavior-based descriptions of the character strengths were slightly modified to refer to daily behavior (e.g., “I was curious and had a lot of questions. I was interested in many things and wanted to know more.”). The correlations between the VIA-Youth scales and the average frequency with which the student displayed the respective character strength at school across the five days ranged between $r = .15$ (curiosity and teamwork) and $r = .60$ (spirituality), with an average correlation of $r = .33$, while the off-

³ In most cases, the participants dropped out from the diary part of the study because the teacher was not able to administer the diaries (i.e., three out of 16 classrooms were excluded). The participants that were excluded from the analyses did not differ from the ones included in age, gender, or in speaking German as a native language ($p > .264$). They were, however, more frequently attending schools with basic requirements ($\chi^2 = 56.45, p < .001$).

diagonal correlations yielded an average of $r = .14$. The items are provided in the online repository (<https://osf.io/hcjbq/>).

The school satisfaction subscale of the MSLSS (Huebner, 1994) was slightly adapted to assess both current school satisfaction (in the mornings) and daily school satisfaction (in the afternoons). The morning assessment captured the degree to which students looked forward to school on the present day and expected positive experiences, while the afternoon assessment asked them to reflect on the school day. For instance, the item “School is interesting” was adapted to “School will be interesting today” for the morning assessments and to “School was interesting today” for the afternoon assessments. The original answer scale, a 6-point Likert-style format (from 1 = *completely disagree* to 6 = *completely agree*), was used. The adapted scales yielded internal consistency coefficients ranging from $\alpha = .78$ to $\alpha = .88$. The items are provided in the online repository (<https://osf.io/hcjbq/>).

To assess daily affective experiences, we used the PANAVA-KS (Schallberger, 2005), an instrument specifically designed for diary studies. It uses bipolar adjectives on a 7-point scale to measure positive activation (PAc, 4 items, sample item: “bored–excited”), negative activation (NAc, 4 items, sample item: “relaxed–stressed”), and valence of the affective experiences (VA, 2 items, “unhappy–happy” and “dissatisfied–satisfied”). The internal consistency coefficients were high for PAc (ranging between $\alpha = .83$ and $\alpha = .88$) and acceptable to high for NAc (ranging between $\alpha = .65$ and $\alpha = .83$), and the Spearman-Brown coefficient (as recommended to determine the reliability of a two-item scale, see Eisinga, et al., 2013) of the two VA items was high (ranging from .73 to .85).

To assess daily subjective accomplishment, we used the item “I was able to master the demands at school today”, which we also used in Study 1 (in the wording assessing typical behavior) and which had yielded the highest correlation with GPA, $r(197) = .40, p < .001$.

Instruments used at baseline assessment. As in Study 1, we used the German adaptation of the VIA-Youth (Ruch, Weber et al., 2014) to assess students' character strengths. Descriptive statistics, correlations with demographic variables, and internal consistencies are displayed in the online supplementary Table S1. In this study, the internal consistencies of the 24 scales yielded a median of $\alpha = .74$.

We also used the school subscale of the MSLSS (Huebner, 1994) again to assess habitual school satisfaction. In Study 2, the internal consistency was $\alpha = .81$. To assess habitual affective experiences at school, we adapted the PANAVA-KS (Schallberger, 2005) used in the diary part of the study to assess habitual experiences ("How do you typically feel at school?"). These scales yielded internal consistencies of $\alpha = .78$ for PAc and $\alpha = .54$ for NAc. The two items assessing VA reached a Spearman-Brown coefficient of .73.

Procedure

The study procedures were approved by the institutional ethic board before the start of the data collection. All participants provided written informed consent and those younger than 14 years provided additional written permission from a parent or legal guardian. Questionnaires were completed in classrooms using a paper/pencil format. A research assistant oversaw the completion of the baseline questionnaires, which included the assessment of character strengths, and instructed the teachers to oversee the completion of the daily-diary questionnaires. The daily questionnaires consisted of two parts (see Figure 1). Students completed the morning questionnaires (assessing current well-being at school) within the first two lessons of the school day, and the afternoon questionnaires (assessing the daily application of character strengths, daily well-being, and daily accomplishment at school) within the last two lessons of the day. Participants completed on average 9.18 ($SD = 1.32$) of the 10 diary entries, with $M = 4.76$ ($SD = 0.51$) entries in the mornings and $M = 4.41$ ($SD = 0.93$) entries in the afternoons.

Data analysis

Some of our variables of interest again showed correlations with sex and age (see Tables S1 and S3 in the online supplementary material), so we decided to include these variables as control variables in the main analyses. We again computed the ICC coefficients for the dependent variables to determine the proportion of variance explained on each level. For the between-person analyses (two levels), the coefficients ranged between ICC = .03 (habitual NAc at school) and .11 (habitual PAc at school); thus the classroom membership explained between 3% and 11% of the variance in the dependent variables. For the within-person analyses (three levels), the coefficients ranged between ICC = .38 (school satisfaction on the next day) and .51 (PAc on the next day) between level 1 and 2 (days nested in individual students) and between ICC = .01 (accomplishment) and .19 (school satisfaction on the next day) between level 2 and 3 (students nested in classrooms). Consequently, we again used multilevel random coefficients modeling to account for the nested structure of the data, with one level added to account for the repeated measurements in the analyses of within-person associations (days in students in classrooms). The analyses were performed using the lme4 package (Bates et al., 2015) in R (R Core Team, 2020). We used an α level of .01 across the analyses to account for the effects of multiple comparisons.

To address the first aim of Study 2, replicating the associations between strengths-related behavior and well-being at school, we tested the relations in random-intercept models, in which the intercepts were allowed to vary between the classrooms (with age, sex, and educational level as control variables). To address the second aim of Study 2, we used random-intercept multilevel models including an additional level for the day of the data collection. As in Study 1, the addition of random slopes did not yield an increase in explained variance in any of the analyses.

Results

Frequency of strengths-related behavior and desirability

Averaged ratings across the five days for the frequency with which character strengths were displayed in behavior at school and perceived as desirable at school are shown in Table 1. Results of paired-samples *t*-tests revealed that three character strengths (humility, humor, and spirituality) were shown more frequently in behavior than they were perceived to be desirable at school and seven character strengths (curiosity, judgment, love of learning, perspective, perseverance, zest, and leadership) were displayed less frequently in behavior than they were perceived to be desirable at school (all $p < .01$). Results of independent samples *t*-tests showed that boys reported displaying five character strengths more frequently in behavior than girls did (curiosity, judgment, bravery, perseverance, and leadership; all $p < .01$), while there were no differences for the desirability of the character strengths. Age was again mostly unrelated to the ratings. Only for the strengths of curiosity, $r(184) = -.23, p = .001$, and perseverance, $r(184) = -.20, p = .005$, strengths-related behavior was reported as more frequent by younger participants.

Replication of the between-person associations between strengths-related behavior and well-being at school

In a first step, we aimed at replicating the results found in Study 1 using a different method for assessing strengths-related behavior, that is, by averaging the daily assessments across five days as an approximation for habitual behavior. To test whether character strengths and strengths-related behavior at school in the classroom were associated with habitual well-being at school (school satisfaction, PAc, NAc, and VA at school), we used random-intercept models (intercorrelations among the dependent variables are given in online supplementary Table S3). For each character strength, the predictor variables represented the average of the items regarding the strengths-related behavior at school across the five days (Model 1) and the respective VIA-Youth scale (Model 2). These analyses presumably

represent a strict test of the relations with strengths-related behavior since the VIA-Youth scale and the scales assessing habitual school-related well-being share common method variance (both were assessed at the baseline and both assess habitual behavior), while strengths-related behavior was assessed using a different method (i.e., daily diary). The standardized coefficients of the respective predictors are displayed in Table 4.

Insert Table 4 about here

Table 4 shows that strengths-related behavior at school across the five days was positively related to general school satisfaction for seven character strengths, to PAc for 16 character strengths and to Valence for 14 character strengths. Strengths-related behavior at school across the five days was also negatively related to NAc at school for seven character strengths. The strengths of forgiveness, humility, prudence, gratitude, and spirituality were the only ones for which no significant associations of strengths-related behavior with well-being at school were found.

Overall, we found that for 11 character strengths, ratings of strengths-related behavior at school were related to at least one of the well-being variables even when controlling for the respective character-strengths traits. These strengths were: Curiosity (Pac), perspective (NAc, valence), bravery (PAc, valence), honesty (PAc, valence), zest (PAc), love (valence), kindness (PAc, NAc, valence), teamwork (PAc, valence), fairness (PAc, valence), hope (valence), and humor (PAc, valence).

We also tested these relations using the averages across the daily well-being assessments as dependent variables. Overall, these analyses showed similar results with generally weaker influences of the character-strengths traits and stronger influences of strengths-related behavior.

Within-person analyses

In a second step, we aimed at investigating the within-person associations between strengths-related behavior and well-being at school. For this purpose, we studied whether strengths-related behavior on one day (assessed in the afternoon before the end of the school day) was associated with well-being at school on the next morning. In these analyses, we controlled for age, sex, and educational level, as well as for levels of well-being at school on the previous morning (when the same assessment was used). Again, we computed both models with only the covariates and (daily) strengths-related behavior as predictors (level-1 predictor; Model 1) and models that also included the level of the respective character strength (VIA Youth scale, level-2 predictor; Model 2). The standardized coefficients of the respective random-intercept models are displayed in Table 5.

Insert Table 5 about here

Table 5 shows that ratings of strengths-related behavior on one day were positively related to next-day school satisfaction for seven strengths, to PAc at school for two strengths, and to valence for three strengths as well as negatively related to NAc at school for one strength. After controlling for the level of the respective character strengths three strengths showed an incremental association of strengths-related behavior with well-being at school: Love of learning (school satisfaction), zest (school satisfaction), kindness (valence), appreciation of beauty and excellence (school satisfaction, PAc, VA).

For studying the within-person associations between strengths-related behavior and subjective accomplishment, we investigated whether ratings of strengths-related behavior were associated with the level of subjective accomplishment on the same afternoon, while controlling for the previous-day level of subjective accomplishment. The results of these analyses are displayed in Table 6.

Insert Table 6 about here

As shown in Table 6, ratings of strengths-related behavior at school were positively related to subjective accomplishment for 12 character strengths. These relations all remained significant after controlling for the level of the respective character strength.

Discussion

Study 2 replicated the main findings of Study 1 and offered insights into the day-to-day relations between strengths-related behavior and well-being at school. We found that daily strengths-related behavior was also associated with the daily experiences at school, specifically subjective accomplishment on the same day (when controlling for the previous-day level of subjective accomplishment) and well-being at school on the next morning. In other words, displaying strengths such as love of learning, zest, kindness, or appreciation of beauty and excellence in behavior during a school day goes along with the feeling that one is able to master school demands on this day (subjective accomplishment), and with looking forward to school (school satisfaction), and feeling happy (valence), motivated (PAc), and relaxed (low NAc) on the next morning at school.

Despite its advantages, the daily-diary design also had some limitations. For instance, it is possible that the completion of the daily diaries might have resulted in reactivity effects. An inspection of the means on the well-being measures throughout the five days, however, did not reveal any obvious trends. It should also be noted that the internal consistency of the scale assessing habitual negative activation at school was low, suggesting that the adaptation was not successful for this scale. Nonetheless, the results regarding this scale were similar to the results obtained for the association with NA in Study 1.

General Discussion

School represents an important life context for adolescents, and the present studies demonstrate that it allows displaying many character strengths. The results further indicate that strengths-related behavior at school is robustly related to higher well-being and, in some cases, to higher achievement at school.

First, taking the results from both studies together, we can draw conclusions about which character strengths are displayed most frequently in school and which character strengths are perceived as most frequently desired at school. Despite different assessment methods, the general pattern of results was similar across the two studies. Most strengths were rated on average as at least “frequently” desired at school, with the exception of judgment, bravery, leadership, and spirituality. Further, students indicated displaying all strengths at least more than “sometimes” and most even more than “frequently” in behavior at school. Seven strengths stood out by receiving high ratings (above the respective median) for both frequency of behavior and desirability across both studies: perseverance, honesty, love, fairness, self-regulation, hope, and humor. In addition, kindness, social intelligence, and gratitude received high ratings regarding behavior in both studies, and curiosity and zest received high desirability ratings in both studies. By contrast, creativity, judgment, bravery, leadership, and spirituality were consistently rated as less desired in the school setting.

These ratings can also be interpreted in light of the distinction between tonic and phasic character strengths in terms of their emergence (Arbenz et al., 2022; Peterson & Seligman, 2004). Many of those strengths that rated as frequently displayed can be characterized as tonic strengths (e.g., honesty, kindness, and hope), whereas many of those with low ratings could be described as either phasic or balanced strengths (e.g., bravery and leadership). However, it is also clear that the frequency ratings were not only influenced by the emergence (ranging from tonic to phasic) of a character strength, but also by other factors. For instance, expert ratings indicated that self-regulation is not seen as a tonic

strength (Arbenz et al., 2021). However, it received high ratings across the two studies, suggesting that many situations in school require self-regulation; an interpretation that is supported both by the high desirability ratings in the present study and the finding that self-regulation was seen as more relevant in education than in other life domains (Wagner et al., 2021). Generally, we conclude that future research would benefit from taking differences in the emergence of character strengths into account. Park and Peterson (2003) argue that the display of phasic strengths depends more strongly on the context. Overall, there is very little research looking at how situational cues elicit strength-related behavior (both between and within individuals). First evidence regarding different learning situations (i.e., teacher-centered learning, individual tasks, and group work; Wagner, Holenstein et al., 2020) support the notion that specific contexts within the school setting might differ with regard to which character strengths are most relevant.

In the present study, we also observed a general tendency of the desirability ratings exceeding the strength-related behavior ratings in frequency. Given that character strengths represent positively valued traits, this tendency is expected. However, there were also a few exceptions from this tendency (kindness, gratitude, and spirituality in Study 1, and humility, humor, and spirituality in Study 2). This suggests that students do not always feel that their strengths-related behavior is appropriate at school. One example of such situations is class clown behavior, as discussed by Ruch, Platt et al. (2014).

Second, the present studies demonstrate that the displaying character strengths in behavior at school accounts for variance in well-being and, to some extent, in (objective and subjective) achievement at school. Even though these effects were found across a large number of strengths, there were seven strengths which stood out in terms of the most consistent relations of strengths-related behavior with the outcomes assessed across the different samples and analyses: Love of learning, perspective, honesty, perseverance,

kindness, and fairness. Three of these (love of learning, perspective, perseverance) can be found among those strengths that were identified as relevant in previous studies on the role of character strengths for school outcomes. Honesty, kindness, and fairness, however, were not among the character strengths previously known to be particularly relevant in the school context.

Further, different strengths might also foster different outcomes. While strengths-related behavior tended to relate more strongly to the cognitive aspect of well-being (school satisfaction) and achievement-related outcomes for some of the character strengths, it was most often associated with emotional aspects of well-being at school for other strengths. This suggests that, many strengths are relevant to the outcomes assessed, they might contribute to somewhat different aspects and might also do so through different mechanisms (see Wagner, Gander et al., 2020), which will need to be addressed in future studies. These findings imply that the character strengths related to well-being at school are not limited to only a few “school-related” strengths.

We found that in many cases, showing strengths-related behavior explained additional variance beyond the level of the character strength trait, in line with what has been reported for general flourishing (Wagner et al., 2021). This is especially noteworthy as strengths-related behavior was only assessed by one item for each strength, and therefore had a limited reliability. Still, we found medium-sized correlations between the level of a strength and strengths-related behavior at school (average correlation in Study 1 $r = .46$ and in Study 2 $r = .33$). Thus, strengths-related behavior at school is not independent of the level of a character strength (as assessed by the VIA-Youth), but is also not simply a function of it. Overall, these results suggest that it is worthwhile to go beyond investigating the traits of character strengths in general and to also consider strengths-related behavior in a specific context. However, our method of assessing strengths-related behavior inherently combined two

aspects: Displaying strengths-related behavior and doing so at school. Further studies are needed to separate these two aspects. In addition, strengths-related behavior outside school might also affect school-related well-being.

In the present studies, we implied that strengths-related behavior positively affects well-being by studying whether showing strengths on one day was related to well-being at school on the next day. This assumption was based on the idea that the expression of character strengths is fulfilling (Peterson & Seligman, 2004). Nonetheless, there might also be effects from well-being to strengths-related behavior, as suggested for instance by Lavy et al. (2014) and in the theoretical model by Bakker and van Woerkom (2018). Unfortunately, our design was not well-suited to test such paths because we only assessed strengths-related behavior in the afternoon. Experimental studies will be needed in the future to gain a clearer understanding of these associations.

Third, the present set of studies aimed at addressing the role of the desirability of character strengths at school. Study 1, which involved more classrooms and was therefore better suited to address this question, found that the shared perception of classmates about how desirable it is to show strengths-related behavior in the classroom explains variance in well-being at school in some cases, beyond the influences of the respective strength and strengths-related behavior.

Overall, the desirability of three strengths was related to at least one of the three facets of well-being at school (high school satisfaction, high PA, and low NA), even after accounting for the character strengths traits and strengths-related behavior at school. These strengths included honesty (school satisfaction), forgiveness (PA) and perseverance (low NA). In addition, while desirability had no effect on GPA (which might be partially explained by the lower statistical power for these analyses given the smaller sample size), there were nine strengths for which desirability in the classroom was positively related to

subjective accomplishment: perseverance, honesty, teamwork, fairness, forgiveness, humility, appreciation of beauty and excellence, hope, and humor. When looking at these results, it is remarkable that none of the strengths assigned to the virtue of wisdom and knowledge appear, and that only a few of the strengths were associated with relevant educational outcomes in previous studies (e.g., perseverance and hope), while the majority was not. This finding suggests that cultivating character strengths at school, also those that are not commonly viewed as “school strengths”, might be conducive to students’ well-being. Consequently, it supports a descriptive rather than a prescriptive approach (see Linkins et al., 2015) to character education in schools.

At this point, we can only speculate which factors influence the perceived desirability of character strengths at school. The construct might be similar to perceived support for strengths use that has been studied in relation to the workplace (van Woerkom et al., 2016). However, the question regarding the factors leading to the perception that certain character strengths are more or less desirable in the context of schooling will need to be addressed more explicitly in future research. Despite these open questions, it can be concluded that the joint perception of desirability of character strengths in the classroom is related to the individual’s well-being at school. Or, to put it more generally, the extent to which students perceive school as a place where character strengths can be shown in behavior goes along with both cognitive and emotional aspects of well-being at school. Thus, the present results might offer an alternative starting point for school-based interventions—promoting the perception that all character strengths are desired at school, with the aim of school serving the function of a positive institution.

It has to be noted that many of the 24 character strengths (as assessed by the VIA-Youth) showed substantial intercorrelations (though not more than 9.4% in Study 1 and 9.1% in Study 2 of the 276 possible intercorrelations exceeded $r = .50$). Past research suggested

several different solutions for deriving factor scores from the VIA-Youth (e.g., McGrath & Walker, 2016; Park & Peterson, 2006; Ruch, Weber et al., 2014; van Eeden et al., 2008).

However, we have decided to use the 24 scales instead of factor scores of the VIA-Youth for a number of reasons—most importantly three. First, no agreement on the number (i.e., ranging from one to five factors) and nature of the factors has been reached. Second, those strengths that were considered particularly relevant for this study typically load onto different factors; reporting results on the level of factors would thus obscure the results. Third, the character strengths were established to enable different fulfillments that constitute the good life. Thus, it is expected that each individual strength predicts different outcomes (see Wagner, Gander et al., 2020) and criterion validity for each scale needs to be established separately. Thus, reducing individual strengths to factors might lead in a loss of this specificity, although it is still worthwhile to study the relations to virtues (e.g., Ruch & Proyer, 2015; Ruch et al. 2020). Finally, one of the overarching aims of our studies is to provide results that can be used in practice, in particular for interventions that typically work at the level of character strengths.

Limitations

While the present studies have several strengths (e.g., the use of different methods, replication of Study 1's main results in Study 2, the use of samples including different educational levels), the conclusions drawn from their results should consider limitations of the study design and methods. First, to limit participant burden, we used a single-item measure to assess the frequency with which character strengths were shown in behavior. Many of the character strengths' definitions include several aspects, which might not always go along with each other (such as honesty and authenticity), making the rating on a single item more difficult – even though considerable convergence between single-item ratings of character strengths with multi-item scales has been reported (see Ruch, Martínez-Martí et al,

2014). In addition, a one-item measure is bound to be less reliable than a multi-item measure. Second, many of the variables used in the analyses were self-reported, making the results vulnerable to a potential common method bias. However, we also took measures to reduce this bias, for instance by using the desirability of strengths as rated by all classmates, by including an objective measure of school achievement in Study 1, and by analyzing data collected at different time points whenever possible. Future studies might aim at including even more data sources, such as parent-reported character strengths, which might lead to an even stronger prediction of school achievement (see MacCann et al., 2015). Third, we had to exclude a relatively substantial number of participants in both studies, mainly because they did not complete all relevant parts of the study. This might have introduced some bias in the results. Notably, in both studies, students attending school with basic (vs. advanced) requirements were more likely to be excluded. One might conclude that the burden associated with completing the study was too high in some cases, and future research should aim at reducing the number of items on each assessment. Finally, while the samples used represented different types of secondary schools and both urban and rural areas in German-speaking Switzerland, we do not know whether the present findings can be transferred into other cultures and age groups yet. Future studies will thus be needed to replicate the current findings, ideally in larger samples of classrooms.

Conclusions

The present results demonstrate that displaying strengths at school is relevant for well-being and achievement at school and suggest that promoting the display of character strengths at school might be a way to enhance student well-being. It is noteworthy that the associations found are not limited to certain “school strengths” but that all 24 character strengths seem to contribute to flourishing at school.

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Table 1

Descriptive Statistics of the ACS-RS Items (Strengths-related Behavior at School and Desirability of Showing the Strength at School) for Both Studies

	Study 1: Ratings of habitual behavior (<i>N</i> = 406-414)					Study 2: Mean daily rating (<i>N</i> = 185-186)				
	Behavior		Desirability		Comparison	Behavior		Desirability		Comparison
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>d</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>d</i>
Creativity	3.24	0.88	3.87	1.01	-0.59*	3.18	0.90	3.19	1.06	-0.02
Curiosity	3.35	0.95	4.10	1.12	-0.55*	2.64	0.72	3.32	0.89	-0.80*
Judgment	3.31	0.92	2.93	1.32	0.26*	2.96	0.88	3.15	1.06	-0.25*
Love of learning	3.15	1.01	3.94	1.02	-0.57*	2.71	0.85	3.49	0.93	-0.88*
Perspective	3.55	0.91	3.79	1.21	-0.18*	3.06	0.91	3.21	1.06	-0.19*
Bravery	3.15	1.07	3.43	1.21	-0.18*	2.80	1.01	2.94	1.20	-0.16
Perseverance	3.43	0.87	4.43	0.87	-0.91*	3.45	0.80	3.88	0.82	-0.54*
Honesty	3.61	0.92	4.57	0.75	-0.86*	3.79	0.92	3.76	1.06	0.04
Zest	3.28	0.93	4.38	0.83	-0.92*	3.03	0.83	3.74	0.90	-0.77*
Love	3.38	1.13	4.43	0.86	-0.75*	3.54	0.93	3.42	1.09	0.13
Kindness	3.71	0.91	3.13	1.24	0.42*	4.04	0.74	4.00	0.88	0.05
Social intelligence	3.61	0.87	3.75	1.18	-0.10	3.25	0.97	3.12	1.14	0.17
Teamwork	3.31	0.88	3.91	0.98	-0.49*	3.32	0.92	3.21	1.05	0.15
Fairness	3.42	0.94	4.35	0.96	-0.75*	3.81	0.88	3.86	0.99	-0.06
Leadership	3.29	0.92	4.03	1.07	-0.60*	2.19	0.93	2.45	1.10	-0.33*
Forgiveness	3.42	0.98	4.16	0.94	-0.58*	3.13	1.11	3.03	1.22	0.12
Humility	3.00	1.16	4.01	1.05	-0.72*	3.47	0.95	3.31	1.06	0.23*
Prudence	3.37	0.99	4.14	1.05	-0.59*	3.24	0.96	3.30	1.12	-0.09
Self-regulation	3.61	0.94	4.33	0.94	-0.58*	3.82	0.80	3.80	0.96	0.02
Beauty	2.97	1.08	4.26	0.97	-0.96*	3.24	1.00	3.17	1.19	0.08
Gratitude	3.59	0.95	3.17	1.24	0.30*	3.67	0.88	3.59	1.02	0.10
Hope	3.69	0.98	4.04	1.00	-0.26*	3.41	0.73	3.52	0.94	-0.14
Humor	3.67	1.01	4.08	0.99	-0.33*	3.81	0.84	3.56	0.98	0.36*
Spirituality	2.74	1.40	2.53	1.36	0.14*	2.99	1.27	2.70	1.35	0.28*

Note. Comparison = Comparison between strengths-related behavior and desirability (effect size and significance of paired samples *t*-tests). Beauty = Appreciation of beauty and excellence. Ratings on a five-point scale (1 = *rarely or never*, 2 = *sometimes*, 3 = *frequently*, 4 = *almost always*, 5 = *always*).

* $p < .01$ (two-tailed)

Table 2

Results of Multilevel Models Predicting Well-Being at School (Controlled for Age, Sex, and Educational Level): Standardized Coefficients for the Fixed Effects of the Predictors (Strengths-Related Behavior at School, Desirability at School, and VIA-Youth Scale) of the Respective Random-Intercept Models

	School Satisfaction					PA at School					NA at School				
	Model 1		Model 2			Model 1		Model 2			Model 1		Model 2		
	Beh	Des	VIA	Beh	Des	Beh	Des	VIA	Beh	Des	Beh	Des	VIA	Beh	Des
Creativity	.25*	.10	.14*	.18*	.09	.23*	.03	.05	.20*	.02	.01	-.02	-.07	.05	-.02
Curiosity	.25*	.09	.20*	.16*	.08	.20*	.09	.06	.17*	.09	-.05	-.05	-.04	-.03	-.05
Judgment	.29*	.06	.26*	.17*	.02	.23*	.07	.09	.19*	.06	-.14*	.03	-.15*	-.07	.05
Love of learning	.42*	.02	.37*	.22*	-.02	.25*	-.02	.23*	.13	-.04	-.18*	-.03	-.17*	-.09	-.02
Perspective	.24*	.11	.19*	.17*	.10	.21*	.16	.22*	.13	.16	-.15*	.02	-.18*	-.08	.02
Bravery	.14*	.12	.15*	.05	.11	.17*	.00	.11	.11	-.01	-.11	.00	-.13	-.03	.01
Perseverance	.34*	.14	.38*	.14*	.14	.16*	.02	.29*	.01	.02	-.11	-.17*	-.29*	.04	-.17*
Honesty	.26*	.21*	.24*	.14*	.20*	.18*	.11	.14	.11	.10	-.18*	-.12	-.25*	-.06	-.11
Zest	.34*	.11	.47*	.11	.07	.35*	.05	.36*	.17*	.03	-.18*	-.11	-.31*	-.02	-.09
Love	.06	.17*	.33*	-.02	.13	.20*	.10	.25*	.14*	.07	-.05	-.09	-.32*	.02	-.06
Kindness	.19*	-.01	.18*	.11	.00	.16*	.03	.15*	.10	.04	-.25*	.03	-.14	-.18*	.02
Social intelligence	.19*	.11	.33*	.07	.11	.21*	.08	.18*	.15*	.07	-.24*	.00	-.30*	-.13*	.01
Teamwork	.18*	.15	.34*	.06	.12	.19*	.09	.27*	.09	.07	-.11	-.08	-.31*	.01	-.05
Fairness	.31*	.11	.26*	.19*	.12	.20*	.06	.07	.17*	.06	-.25*	-.13	-.11	-.19*	-.13
Leadership	.23*	.15	-.03	.25*	.15	.26*	.09	.13	.19*	.10	-.21*	-.02	-.05	-.18*	-.03
Forgiveness	.20*	.16	.17*	.11	.15	.17*	.18*	.07	.14	.18*	-.13	-.13*	-.13	-.06	-.12
Humility	.10	.17	.10	.08	.17	.08	.09	.01	.08	.09	-.06	-.10	-.08	-.04	-.10

Prudence	.24*	.09	.29*	.12	.09	.14*	.06	.13	.09	.06	-.17*	-.09	-.21*	-.08	-.09
Self-regulation	.27*	.08	.34*	.13*	.08	.24*	.02	.14*	.18*	.02	-.17*	-.12	-.25*	-.07	-.12
Beauty	.14*	.16	.30*	.02	.12	.11	.09	.14	.06	.07	.02	-.14*	-.14	.08	-.12
Gratitude	.29*	.13	.39*	.15*	.10	.24*	.14	.37*	.10	.11	-.11	-.06	-.35*	.02	-.04
Hope	.32*	.16	.28*	.19*	.15	.27*	.15	.21*	.17*	.14	-.25*	-.07	-.25*	-.13	-.06
Humor	.06	.12	-.01	.06	.12	.19*	.15	.16*	.13	.13	-.12	-.01	-.10	-.08	.00
Spirituality	.07	-.01	.26*	-.10	-.01	.15*	.00	.07	.11	.00	-.03	.06	-.14	.06	.06

Note. $N = 410-414$. Beauty = Appreciation of beauty and excellence. VIA = VIA-Youth scale (level 1-predictor). Beh = Strengths-related behavior at school (ACSS-RS, level-1 predictor). Des = Desirability of the strength in the classroom (ACSS-RS; mean across all ratings of students in one classroom, level-2 predictor).

* $p < .01$ (two-tailed)

Table 3

Results of Multilevel Models Predicting Subjective Accomplishment and GPA (Controlled for Age, Sex, and Educational Level): Standardized Coefficients for the Fixed Effects of the Predictors (Strengths-Related Behavior at School, Desirability at School, and VIA-Youth Scale) of the Respective Random-Intercept Models

	Subjective Accomplishment (<i>N</i> = 410–414)					GPA (<i>n</i> = 204–208)				
	Model 1		VIA	Model 2		Model 1		VIA	Model 2	
	Beh	Des		Beh	Des	Beh	Des		Beh	Des
Creativity	.28*	.08	.13	.22*	.07	.16	-.07	-.04	.18	-.07
Curiosity	.27*	.09	.11	.22*	.08	.17	.03	.09	.13	.02
Judgment	.33*	.04	.23*	.23*	.01	.03	.09	.15	-.04	.06
Love of learning	.39*	.05	.29*	.23*	.02	.11	-.07	.35*	-.08	-.10
Perspective	.32*	.10	.29*	.21*	.09	.05	.08	.08	.02	.08
Bravery	.16*	.05	.14	.09	.04	-.03	.02	-.05	-.01	.03
Perseverance	.37*	.15*	.34*	.19*	.14*	.33*	.03	.10	.28*	.02
Honesty	.30*	.19*	.17*	.22*	.18*	.02	-.01	.12	-.04	-.04
Zest	.35*	.14*	.35*	.17*	.11	.04	.06	.12	-.01	.06
Love	.09	.16*	.22*	.04	.13	-.16	-.06	.01	-.17	-.06
Kindness	.22*	.04	.14	.16*	.05	.15	.10	-.21	.25*	.10
Social intelligence	.27*	.12	.29*	.16*	.12	-.01	.01	.04	-.02	.01
Teamwork	.26*	.17*	.31*	.14*	.14*	.12	.02	.10	.08	.01
Fairness	.21*	.14*	.16*	.14	.14*	.04	.13	.14	-.04	.12
Leadership	.25*	.12	.20*	.15*	.13	.01	.09	.03	-.01	.09
Forgiveness	.20*	.21*	.09	.15*	.21*	.11	.04	.17	.03	.05
Humility	.12	.18*	.12	.10	.18*	-.01	.08	.08	-.02	.07

Prudence	.24*	.12	.29*	.12	.12	.13	-.06	.16	.06	-.05
Self-regulation	.28*	.13*	.22*	.19*	.13	.06	.03	.15	-.01	.02
Beauty	.12	.17*	.16*	.06	.15*	-.02	.10	.10	-.06	.08
Gratitude	.24*	.14	.28*	.14*	.12	.07	.00	.18	.01	-.03
Hope	.40*	.15*	.26*	.28*	.14*	.12	.02	.17	.05	.01
Humor	.11	.18*	.10	.08	.17*	-.01	.04	-.08	.01	.06
Spirituality	.07	-.02	.27*	-.10	-.02	-.05	.11	.17	-.15	.11

Note. Beauty = Appreciation of beauty and excellence. VIA = VIA-Youth scale (level-1 predictor). Beh = Strengths-related behavior at school (ACSS-RS, level-1 predictor). Des = Desirability of the strength in the classroom (ACSS-RS; mean across all ratings of students in one classroom, level-2 predictor).

* $p < .01$ (two-tailed)

Table 4

Results of Multilevel Models Predicting Habitual Well-Being at School (Controlled for Age, Sex, and Educational Level): Standardized Coefficients for the Fixed Effects of the Predictors (Averaged Strengths-Related Behavior at School Across Five Days and VIA-Youth Scale) of the Respective Random-Intercept Models

	School Satisfaction			Pac at School			Nac at School			Valence		
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	Beh	VIA	Beh	Beh	VIA	Beh	Beh	VIA	Beh	Beh	VIA	Beh
Creativity	.10	.13	.04	.17	.21*	.08	-.17	-.15	-.10	.19*	.13	.13
Curiosity	.22*	.13	.20	.33*	.09	.31*	-.13	.04	-.14	.18	.12	.16
Judgment	.16	.16	.11	.21*	.17	.14	-.05	-.17	.01	.15	.16	.09
Love of learning	.22*	.41*	.05	.36*	.48*	.16	-.09	-.20	.00	.25*	.28*	.13
Perspective	.16	.22*	.11	.23*	.22*	.18	-.24*	-.13	-.21*	.27*	.25*	.20*
Bravery	.17	.14	.13	.37*	.20*	.31*	-.19	-.17	-.13	.29*	.16	.23*
Perseverance	.30*	.31*	.19	.30*	.56*	.09	-.17	-.15	-.11	.22*	.47*	.04
Honesty	.22*	.15	.17	.31*	.23*	.23*	-.19	-.27*	-.10	.31*	.22*	.24*
Zest	.28*	.29*	.14	.51*	.51*	.28*	-.23*	-.27*	-.10	.34*	.49*	.11
Love	.15	.12	.12	.25*	.22*	.18	-.24*	-.16	-.19	.41*	.20*	.35*
Kindness	.23*	.23*	.15	.31*	.26*	.23*	-.25*	-.09	-.23*	.40*	.26*	.32*
Social intelligence	.13	.13	.09	.22*	.13	.18	-.05	-.29*	.04	.22*	.19*	.16
Teamwork	.11	.16	.08	.30*	.27*	.26*	-.12	-.24*	-.08	.28*	.27*	.23*
Fairness	.21*	.18	.12	.33*	.18	.24*	-.21*	-.13	-.14	.32*	.05	.30*
Leadership	.06	.20*	.00	.21*	.26*	.14	-.11	-.18	-.05	.11	.23*	.04
Forgiveness	.04	.13	.00	.12	.26*	.05	-.13	-.22*	-.07	.14	.22*	.08
Humility	.08	-.01	.08	.06	.08	.04	-.14	-.17	-.11	.10	-.06	.12

Prudence	.11	.25*	.02	.17	.39*	.03	-.02	-.16	.04	.17	.19	.10
Self-regulation	.15	.19	.06	.28*	.46*	.05	-.22*	-.25*	-.10	.18	.30*	.04
Beauty	.14	-.05	.16	.20*	.09	.18	-.10	-.05	-.08	.17	.13	.13
Gratitude	.10	.25*	.04	.14	.40*	.06	.00	-.29*	.06	.18	.41*	.09
Hope	.12	.22*	.06	.18	.34*	.10	-.20*	-.24	-.14	.30*	.34*	.22*
Humor	.13	-.01	.13	.16	-.14	.21*	-.16	.04	-.17	.28*	-.06	.30*
Spirituality	.04	.10	-.02	.02	.14	-.06	.02	-.07	.06	.03	.12	-.04

Note. $N = 177$ – 183 . Beauty = Appreciation of beauty and excellence. VIA = VIA-Youth scale. Beh = Strengths-related behavior at school, averaged across five days (ACSS-RS). PAc = Positive activation. NAc = Negative activation.

* $p < .01$ (two-tailed)

Table 5

Results of Multilevel Models Predicting Well-Being at School on the Following Day: Standardized Estimates for the Main Predictors (Strengths-Related Behavior at School and VIA-Youth Scale) of the Respective Random-Intercept Models, Controlling for Age, Sex, Educational Level, and Previous-Day Levels of Well-Being at School

	School Satisfaction			PAC at School			NAC at School			Valence		
	Model 1	Model 2		Model 1	Model 2		Model 1	Model 2		Model 1	Model 2	
	Beh	VIA	Beh	Beh	VIA	Beh	Beh	VIA	Beh	Beh	VIA	Beh
Creativity	.01	.11	-.02	-.03	.15*	-.06	.00	-.05	.01	-.01	.08	-.03
Curiosity	.09	.03	.08	.01	.07	.00	-.05	.06	-.05	.04	.01	.03
Judgment	.07	.12*	.04	.04	.19*	.02	.01	-.06	.02	.02	.07	.00
Love of learning	.17*	.21*	.12*	.12*	.22*	.08	-.06	-.02	-.06	.05	.12	.02
Perspective	.09	.07	.08	.05	.11	.04	-.05	-.03	-.05	.05	.06	.04
Bravery	.11*	.08	.09	.06	.11	.05	-.06	-.01	-.06	.07	.03	.06
Perseverance	.11*	.26*	.06	.03	.29*	-.01	-.03	-.10	-.02	.06	.20*	.03
Honesty	.06	.14*	.03	.02	.19*	-.01	-.02	-.14	.00	.08	.10	.06
Zest	.15*	.19*	.11*	.07	.26*	.04	-.02	-.10	-.01	.09	.20*	.04
Love	.04	.11	.01	.00	.10	-.01	-.09	-.06	-.08	.09*	.08	.07
Kindness	.11*	.16*	.09	.09	.15*	.07	-.10*	-.06	-.10	.14*	.10	.12*
Social intelligence	.07	.11*	.04	.06	.12	.04	-.05	-.16*	-.03	.06	.11	.04
Teamwork	.02	.12*	.01	-.01	.12	-.02	.02	-.13	.03	.01	.09	.01
Fairness	.08	.17*	.03	-.01	.20*	-.04	-.06	-.07	-.05	.06	.10	.03
Leadership	.10	.06	.09	.02	.10	.01	-.08	.01	-.08	.02	-.01	.03
Forgiveness	.09	.12*	.07	.08	.19*	.05	-.06	-.16*	-.04	.07	.18*	.03
Humility	.07	.00	.07	.01	.09	.00	.01	-.08	.01	.02	-.01	.02

Prudence	.08	.21*	.04	.01	.31*	-.03	-.09	-.13	-.07	.07	.17*	.04
Self-regulation	.11*	.20*	.06	.03	.29*	-.02	-.10	-.17*	-.07	.07	.17*	.03
Beauty	.11*	.00	.11*	.12*	.02	.12*	-.03	.02	-.03	.11*	-.03	.11*
Gratitude	.08	.15*	.06	.03	.17*	.01	-.04	-.13	-.03	.08	.15*	.06
Hope	.06	.12*	.04	.04	.16*	.02	-.07	-.14	-.06	.09	.14*	.07
Humor	.06	-.07	.07	-.01	-.06	.00	-.07	.05	-.08	.08	-.08	.09
Spirituality	.08	.06	.05	.06	.04	.04	-.08	.01	-.09	.06	.03	.05

Note. $N = 186$ (level 2). Beauty = Appreciation of beauty and excellence. VIA = VIA-Youth scale. Beh = Strengths-related behavior at school (ACSS-RS). PAc = Positive activation. NAc = Negative activation.

* $p < .01$ (two-tailed)

Table 6

Results of Multilevel Models Predicting Subjective Accomplishment (Controlled for Age, Sex, and Educational Level): Standardized Coefficients for the Fixed Effects of the Predictors (Strengths-Related Behavior at School and VIA-Youth Scale) of the Respective Random-Intercept Models, Controlling for Levels of Accomplishment on the Previous Day

	Model 1	Model 2	
	Beh	VIA	Beh
Creativity	.10*	-.01	.10*
Curiosity	.08	.06	.08
Judgment	.02	.02	.02
Love of learning	.09	.08	.06
Perspective	.12*	.01	.12*
Bravery	.06	-.03	.07
Perseverance	.13*	.07	.12*
Honesty	.15*	-.04	.16*
Zest	.23*	.03	.22*
Love	.11*	.01	.11*
Kindness	.11*	-.01	.12*
Social intelligence	.10	-.03	.11*
Teamwork	.01	.02	.01
Fairness	.07	.05	.05
Leadership	-.02	.01	-.02
Forgiveness	.08	.05	.07
Humility	.09	.04	.08
Prudence	.03	.06	.02
Self-regulation	.18*	-.03	.19*
Beauty	.10*	-.02	.11*
Gratitude	.18*	.04	.18*
Hope	.15*	.08	.14*
Humor	.16*	-.07	.18*
Spirituality	.03	.07	.00

Note. $N = 177$ (level 2). Beauty = Appreciation of beauty and excellence. VIA = VIA-Youth scale. Beh = Strengths-related behavior at school (ACSS-RS).

* $p < .01$ (two-tailed)

Figure 1. Design and research questions (RQ) of Study 2. Study 2 included a baseline assessment (i.e., habitual well-being at school and covariates) and five daily assessments in the mornings (i.e., current well-being at school) and in the afternoons (i.e., daily strengths-related behavior, daily desirability of strengths, daily well-being at school, and daily subjective accomplishment).