



Empirical study

## A tripartite taxonomy of character: Evidence for intrapersonal, interpersonal, and intellectual competencies in children



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### ABSTRACT

Other than cognitive ability, what competencies should schools promote in children? How are they organized, and to what extent do they predict consequential outcomes? Separate theoretical traditions have suggested interpersonal, intrapersonal, and intellectual dimensions, reflecting how children relate to other people, manage their own goals and impulses, and engage with ideas, respectively. However, very little work has examined character empirically. In the current investigation, we partnered with middle schools that had previously identified character strengths relevant in their communities. Across three longitudinal, prospective studies, we examined the factor structure of character, associations with intelligence and Big Five personality traits, and predictive validity for consequential outcomes like peer relations, class participation, and report card grades. In Study 1, teachers rated their students on behaviors exemplifying character strengths as they played out in students' daily lives. Exploratory factor analyses yielded a three-factor structure consisting of interpersonal (interpersonal self-control, gratitude, social intelligence), intellectual (zest, curiosity), and intrapersonal (academic self-control, grit) factors of character. In Study 2, children rated their own behavior and completed a test of cognitive ability. Confirmatory factor analyses supported the same three-factor structure, and these factors were only weakly associated with cognitive ability. In Study 3, teachers provided character ratings; in parallel, students completed measures of character as well as Big Five personality factors. As expected, intellectual, interpersonal, and intrapersonal character factors related to Big Five openness to experience, agreeableness, and conscientiousness, respectively. Across studies, positive peer relations were most consistently predicted by interpersonal character, class participation by intellectual character, and report card grades by intrapersonal character. Collectively, our findings support a tripartite taxonomy of character in the school context.

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“Intelligence plus character—that is the goal of true education.”  
[Martin Luther King Jr.]

### 1. Introduction

Character strengths refer to dispositions to act, think, and feel in ways that benefit the individual and society (Peterson & Seligman, 2004). Sometimes referred to by other terms—including character skills, virtues, life skills, soft skills, social and emotional learning

competencies, learning mindsets, developmental assets, and non-cognitive skills—character strengths have long been considered an essential aspect of healthy human development (Aristotle, 1925; Damon, 1997; Duckworth & Yeager, 2015; Kamenetz, 2015; Lerner et al., 2005). While relatively stable in the absence of exogenous forces, character is malleable (Heckman & Kautz, 2014). For instance, targeted interventions can increase perseverance (Eskreis-Winkler et al., in press; Yeager & Dweck, 2012), self-control (Duckworth, Kirby, Gollwitzer, & Oettingen, 2013), emotional intelligence (Brackett, Rivers, Reyes, & Salovey, 2012), and gratitude (Froh, Sefick, & Emmons, 2008) in youth.

Recently, character strengths have attracted the attention of educators who consider character development to be an important goal, both as an end in itself and also as a means of promoting other positive outcomes (Tough, 2011). In parallel, a growing body

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of empirical research confirms that character strengths predict objectively measured life outcomes (Borghans, Duckworth, Heckman, & ter Weel, 2008; Heckman, Humphries, & Kautz, 2014; Jackson, Connolly, Garrison, Leveille, & Connolly, 2015). For example, the predictive validity of self-control rivals IQ and family socioeconomic status in predicting academic performance in adolescence, as well as health, wealth, and civic behavior in adulthood (Duckworth & Seligman, 2005; Moffitt et al., 2011). Moreover, character is arguably the most important determinant of the overall impressions people form of others (Brambilla & Leach, 2014; Goodwin, Piazza, & Rozin, 2014; Wojciszke, Bazinska, & Jaworski, 1998).

Increasingly, thought leaders and policymakers are asking educators to contribute to character development (e.g., Collaborative for Academic Social, and Emotional Learning [CASEL], 2003; Pellegrino & Hilton, 2012; Shechtman, DeBarger, Dornsife, Rosier, & Yarnall, 2013; Tough, 2011). For many educators, the question is not *whether* they want to develop character in students but, instead, *which* aspects of character they should prioritize. The current investigation asks how character strengths are organized into broader factors and examines the extent to which these factors uniquely predict consequential outcomes in schools.

### 1.1. Taxonomies of character in school-age children

There is broad agreement that character is plural (Peterson & Seligman, 2004). In other words, character comprises not one thing, but many. For instance, self-control is not the same thing as gratitude, which is in turn distinct from curiosity, and so on. Empirical studies have tended to focus on one character strength at the exclusion of others. As a result, it has been difficult—if not impossible—to aggregate and synthesize findings on character more generally. In response, several researchers have attempted recently to develop taxonomies of character strengths in children. We reviewed these proposed classifications and found striking commonalities. Independently, these proposals identified three separate dimensions of moral character: interpersonal, intrapersonal, and intellectual character. Because these frameworks emerged from distinct theoretical traditions, similarities among them are all the more notable.

Character scholars Lickona and Davidson (2005) have conceptualized character as two related but distinct factors: *performance character* and *moral character*. Performance character refers to the “qualities needed to realize one’s potential for excellence” (p. 18) including diligence, perseverance, work ethic, and self-discipline. Moral character, in contrast, refers to the “qualities needed for successful interpersonal relationships and ethical behavior” (p. 18), including integrity, justice, caring, and respect (Berkowitz & Puka, 2009; Davidson & Lickona, 2008; Seider, Novick, & Gomez, 2013). In the social cognition literature, a similar distinction has been drawn between *value commitment* traits, such as dedication, drive, and commitment, and *core goodness* traits, such as honesty, benevolence, and trustworthiness (Piazza, Goodwin, Rozin, & Royzman, 2014). Likewise, moral philosophers have contrasted *strength of character* with *goodness of character* (see Kupperman, 1991; Slote, 1983). And most recently, *New York Times* columnist and social commentator David Brooks (2015) has distinguished *resume virtues* from *eulogy virtues*.

Baehr (2013) and Ritchhart (2002) have highlighted a third and conceptually distinct dimension, *intellectual character*, which enables fertile and independent thinking. Intellectual character strengths include curiosity, open-mindedness, and wonder. Importantly, intellectual character is conceptualized as distinct from cognitive ability: “A person can be very knowledgeable and intellectually ‘gifted’ while also being intellectually hasty, lazy, dishonest, arrogant, servile, distracted, superficial, careless, or closed-

minded” (Baehr, 2016). How so? Whereas cognitive ability refers to the *capacity* to learn easily or quickly, intellectual character strengths specify a *disposition* toward lifelong learning.

In parallel, the social and emotional learning (SEL) community has identified five critical competencies. Two of these competencies are interpersonal: *social awareness*, which refers to empathy and tolerance for diverse perspectives, and *relationship skills*, which enable children to relate positively to other people. Two other competencies are intrapersonal: *self-awareness*, which entails accurately evaluating one’s feelings, interests, and values; and *self-management*, which refers to setting goals and self-control. Finally, *responsible decision-making* is an intellectual competency and refers to making constructive and responsible life choices. A recent meta-analysis found that SEL programs indeed improve academic achievement, social outcomes, and emotional well-being (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). However, neither the theoretical framework of SEL competencies (i.e., the five competencies) nor the distinct relations between each of the SEL competencies and outcomes have been empirically tested.

Separately, the National Research Council (NRC) has identified dimensions of “twenty-first century” skills. Specifically, the NRC commissioned a blue-ribbon committee to review the “large research base in cognitive, developmental, educational, organizational, and social psychology, and economics for purposes of clarifying and organizing concepts and terms” (Pellegrino & Hilton, 2012, p. 2). In the final report, the committee identified three “competency clusters” of ascendant importance in the modern economy. *Interpersonal competencies* consist of collaboration, teamwork, responsibility, and conflict resolution. *Intrapersonal competencies* include work ethic, conscientiousness, self-control, and grit. Finally, *cognitive competencies* encompass reasoning, critical thinking, and creativity. The NRC recommended that all three competencies be intentionally cultivated in schools (i.e., enabling children to transfer lessons learned in the classroom to real life situations; Pellegrino & Hilton, 2012). As with SEL competencies, the NRC’s tripartite taxonomy so far lacks empirical validation.

To date, empirical research on the organization of character in school-age children has centered upon the Values in Action-Youth Inventory (VIA-Y; Park & Peterson, 2006). The VIA-Y assesses 24 character strengths identical to those in the more widely-used adult version from which it was adapted (Peterson & Seligman, 2004). Published studies that examine the factor structure of this inventory have so far yielded conflicting results, but most have suggested either four or five different factors (Gillham et al., 2011; Park & Peterson, 2006; Ruch, Weber, Park, & Peterson, 2014; Toner, Haslam, Robinson, & Williams, 2012; Weber, Ruch, Littman-Ovadia, Lavy, & Gai, 2013). Notably, all of proposed solutions have included factors corresponding to interpersonal, intrapersonal, and intellectual strengths. Furthermore, a recent study with the adult version of this inventory (McGrath, 2015) found an analogous three-factor structure labeled *caring* (e.g., gratitude, forgiveness, social intelligence), *self-control* (e.g., perseverance, self-regulation, prudence), and *inquisitiveness* (e.g., creativity, curiosity, leadership).

### 1.2. Our methodological approach: research-educator partnership

We undertook the current investigation in partnership with educators who shared our interest in the organization and consequences of character. In doing so, we followed both Dewey (1939) and more recent calls for collaborative research partnerships with educators (Glennon, Hinton, Callahan, & Fischer, 2013; Hinton & Fischer, 2008; Tsukayama, Duckworth, & Kim, 2013). It is common sense that research on youth should entail a reciprocal exchange of ideas between academics, who are skilled in theory and research methodology, and educational practitioners, who

better understand the everyday lives of their students. Nevertheless, research on school-age children most often unfolds as a one-way process: Researchers determine the study's goals, design on their own, and then proceed to collect data in schools.

By contrast, leaders of several public and independent middle schools were actively involved in the design of this investigation. These educators were well-acquainted with the VIA-Y but were interested in developing a public domain questionnaire better suited to their needs. In particular, they were *not* eager to assess and organize a complete catalogue of character strengths; instead, they were interested in seven strengths deemed particularly important in their school communities: interpersonal self-control, gratitude, social intelligence, zest, curiosity, academic self-control, and grit.<sup>1</sup>

Our educator partners advocated that all items refer to very specific, ecologically valid behaviors observable in the school context—a criterion they felt was not adequately met by existing questionnaires. Accordingly, we took a bottom-up approach to generate ecologically valid and age-appropriate behavioral indicators of character (Jackson et al., 2010; Tsukayama et al., 2013). As a preliminary, a subset of our educator partners asked their students to describe how the target character strengths played out in their daily lives (see Tough, 2011 for background on the project). Next, these lists of nominated behaviors were collated and, after redundant items were eliminated, presented to teachers at the same schools. Following Tsukayama et al. (2013), teachers discussed items and eliminated those that they collectively deemed relatively infrequent or unimportant.

### 1.3. Current investigation

We undertook three prospective, longitudinal studies to test a tripartite taxonomy of character in the context of school. We hypothesized that character strengths in school-age children are organized into *interpersonal*, *intrapersonal*, and *intellectual* factors. We further hypothesized that these character factors differentially predict theoretically relevant outcomes. Specifically, we expected interpersonal character to predict positive peer relations, intrapersonal character to predict higher report card grades, and intellectual character to predict active participation during class.

Across all studies, students were recruited through an information letter from the principal that contained an opt-out parent consent form. Opt-in student assent forms and online surveys were completed during school hours by researchers and/or classroom teachers. Each survey took approximately 30–45 min to complete. At the end of the school year, we contacted school liaisons for school records including course grades. In Study 1, teachers at two different middle schools rated students on 22 items corresponding to the seven character strengths. The following year, we collected outcome data, including GPA from school records and self-reported class participation and peer-conflict. In Study 2, children rated themselves on an expanded set of 24 items and completed a standard measure of cognitive ability. Three months later, we collected GPA from school records and self-reported class participation and peer-rated popularity. In Study 3, children completed the 24-item questionnaire, as well as a scale assessing Big Five personality traits. Separately, their teachers provided global ratings for each character strength. At the end of the school year we collected the same outcomes as in Study 2.

Our analytic approach was as follows: We first examined the factor structure of character in both exploratory (Study 1) and con-

firmatory (Study 2) factor models. Next, we assessed evidence for the discriminant validity of each factor with respect to the theoretically unrelated construct of cognitive ability (Study 2). We then examined evidence for convergent validity with Big Five personality trait measures (Study 3). Once higher-order factors were identified, we further established their independence by exploring differential relations with a rich array of outcomes (Studies 1, 2, and 3). In establishing predictive validity, we controlled for demographic covariates (Studies 1, 2, and 3) as well as baseline levels of outcomes (Study 3).

## 2. Study 1

### 2.1. Method

#### 2.1.1. Participants

At two urban charter middle schools, 491 fifth through eighth grade students were rated by all of their teachers, who taught them in various subjects (e.g., math, science, language, arts, and social studies). Each student was rated by up to six teachers (5.39 teachers per student on average). Approximately 65% of the students were Hispanic, 33% were Black, and 2% were from other ethnic backgrounds; 55% were female (Table 1).

#### 2.1.2. Procedure and measures

We collected teacher ratings of student character in the fall and spring of the 2011–2012 school year. During the next school year (2012–2013), in the fall and the spring, students completed online questionnaires measuring their school outcomes (peer conflict and class participation). At the end of the 2012–2013 school year, we collected student GPA for each semester from school records.

**2.1.2.1. Character strengths.** Teachers rated their students on items written to represent zest (3 items), academic self-control (4 items), interpersonal self-control (4 items), gratitude (2 items), curiosity (3 items), grit (3 items), and social intelligence (3 items) on a 5-point Likert scale ranging from 1 = *Almost never* to 5 = *Almost always* (see Table 2 for individual items). Across fall and spring, the average teacher-report character subscale alpha was 0.94 (ranging from 0.88 to 0.97). The average intraclass correlation coefficient was 0.95 (ranging from 0.91 to 0.97), indicating that teachers were highly consistent with each other in rating their students.

**2.1.2.2. Outcomes.** In addition to their theoretical relevance, we chose three outcome variables (i.e., peer conflict, class participation, GPA) based on prior research indicating that early adolescence is a marked period for a normative increase in peer conflict and decrease in school engagement and academic gains (Eccles, 2004; Harter, 1998; Simmons & Blyth, 1987; Watt, 2004; Wigfield, Eccles, Mac Iver, Reuman, & Midgley, 1991; Wigfield, Eccles, & Pintrich, 1996). We assessed *peer conflict* with two items: “When was the last time you argued with a friend?” and “When was the last time you were mean to someone?” The response options were “Today or yesterday,” “Within the last week,” “Within the last month,” and “More than a month ago.” Scores were reverse-coded so that higher scores represented more frequent encounters with peer conflict. The correlation between these two items was 0.39 ( $p < 0.001$ ).<sup>2</sup>

We measured *class participation* by two items: “When was the last time you raised your hand in class?” and “When was the last time you volunteered to write something on the board during

<sup>1</sup> Optimism was included in the original list. We ultimately eliminated optimism items from analyses because they were hard to rate as they are not directly observable behaviors. Not surprisingly, therefore, in preliminary exploratory factor analysis models, optimism items did not systematically load on a single character factor.

<sup>2</sup> Although these correlations are not large, moderate inter-item correlations ( $r = 0.15$ – $0.50$ ) are desirable because they indicate that scale items are not overly redundant (see Clark & Watson, 1995 for details). Furthermore, when each item was entered separately as a dependent variable, the pattern of results was unchanged.

**Table 1**

Summary statistics and bivariate correlations between the character factors and the outcomes in Study 1.

Measures	<i>M</i>	<i>SD</i>	1	2	3
Character strengths					
1. Teacher-report interpersonal	3.81	0.53	–		
2. Teacher-report intellectual	3.62	0.51	0.56***	–	
3. Teacher-report intrapersonal	3.77	0.63	0.88***	0.65***	–
Outcomes					
4. Peer conflict	2.46	0.84	–0.24***	–0.02	–0.15*
5. Class participation	3.25	0.68	0.02	0.24***	0.14*
6. GPA	0.00	1.00	0.59***	0.52***	0.75***
Demographics					
	<i>M(SD)</i>				
7. Female	55%	3.93(0.45)	3.61(0.52)	3.91(0.55)	
8. Male	45%	3.67(0.56)	3.63(0.47)	3.57(0.65)	
9. Hispanic	65%	3.87(0.49)	3.65(0.47)	3.83(0.58)	
10. Black	33%	3.70(0.55)	3.56(0.56)	3.62(0.68)	
11. Other ethnicity	2%	3.58(0.46)	3.66(0.47)	3.50(0.41)	

<sup>†</sup> $p < 0.10$ .

\*\* $p < 0.01$ .

\*\*\* $p < 0.05$ .

\*\*\* $p < 0.001$ .

class?" The response options were "Today or yesterday," "Within the last week," "Within the last month," and "More than a month ago." These scores were reverse coded; thus, higher scores represent higher levels of class participation. The correlation between these two items was 0.32 ( $p < 0.001$ ).<sup>2</sup>

School records provided *final GPA*. We calculated final GPA by averaging grades from all major academic courses, including math, science, language, arts, and social studies classes. In order to standardize grading systems across schools, we z-standardized GPA scores within each school, standardized across schools, and then combined them into a single standardized GPA variable ( $M = 0$ ,  $SD = 1$ ; see [Galla et al., 2014](#) for a similar method).

**2.1.2.3. Demographic covariates.** We collected data on gender, ethnicity, and grade level from school records based on past research that suggests character strengths may vary depending on these demographics ([Taylor, Liang, Tracy, Williams, & Seigle, 2002](#); [Wilson & Lipsey, 2007](#)).

## 2.2. Results and discussion

### 2.2.1. Analytic strategy

We conducted exploratory factor analyses (EFAs) on the teacher-reported character strength items assessed during the fall and spring semester of the 2011–2012 school year. At the item level, the average test-retest correlation for the teacher-report character strengths from fall 2011 to spring 2012 was  $r = 0.82$ . Thus, we averaged fall and spring scores to increase reliability and validity of the ratings. Student outcomes from fall 2012 to spring 2013 were also significantly correlated ( $r = 0.35$  for peer conflict,  $r = 0.37$  for class participation, and  $r = 0.89$  for GPA, all  $ps < 0.001$ ), so we averaged fall and spring scores for student outcomes in the 2012–2013 school year. To examine the relationship between the character factors and the outcomes in the following year, we first entered each character factor separately to predict outcomes after controlling for demographic covariates (grade level, gender, ethnicity, and school). Next, as a more conservative test, we also examined the unique one-year predictive relationship by regressing each outcome on all three character factors in simultaneous multiple regression models, again controlling for demographic covariates.

**Table 2**

Exploratory factor analysis loadings for teacher-report character strength items in Study 1.

	Factor		
	Interpersonal	Intellectual	Intrapersonal
Keeps his/her temper in check (interpersonal self-control)	1.06		
Remains calm even when criticized or otherwise provoked (interpersonal self-control)	1.02		
Is polite to adults and peers (interpersonal self-control)	0.93		
Demonstrates respect for the feelings of others (social intelligence)	0.92		
Allows others to speak without interruption (interpersonal self-control)	0.83		
Is able to find solutions during conflicts with others (social intelligence)	0.76		
Recognizes and shows appreciation for other (gratitude)	0.60		
Recognizes and shows appreciation for his/her opportunities (gratitude)	0.51		
Shows enthusiasm (zest)		1.08	
Invigorates others (zest)		0.93	
Actively participates (zest)		0.85	
Asks and answers questions to deepen understanding (curiosity)		0.84	
Is eager to explore new things (curiosity)		0.78	
Comes to class prepared (academic self-control)			0.81
Finishes whatever I begin (grit)			0.81
Gets to work right away rather than procrastinating (academic self-control)			0.76
Remembers and follows directions (academic self-control)			0.73
Pays attention and resists distractions (academic self-control)			0.72
Tries very hard even after experiencing failure (grit)			0.49

Note. Factor loadings are from oblique promax solutions (promax  $k = 4$ ) and the pattern matrix. Factor loadings less than 0.40 are not displayed.

"Knows how and when to include others (social intelligence)", "actively listens to others (curiosity)", and "works independently with focus (grit)" were tested but removed in data analyses.

### 2.2.2. Exploratory factor analyses

We used principal axis factor analysis and set the factor loading criterion to 0.40. Because we expected latent dimensions of character to share common variance, we used oblique promax rotation ( $k = 4$ ). To determine the number of factors to extract, we used the scree test ([Cattell, 1966](#)), Kaiser criterion ([Kaiser, 1960](#)), parallel analysis ([Horn, 1965](#)), and minimum average partial test ([Velicer, 1976](#)). These tests suggested extracting two to three factors. We examined both solutions and selected the three-factor solution because it was more psychologically meaningful. In particular, the three-factor solution distinguished between striving toward one's own personal goals and prosocial behaviors, whereas the two factor-solution conflated them. For instance, a gratitude item, "recognizes and shows appreciation for others," and an academic self-control item, "comes to class prepared," double-loaded on the same factor.

We removed one item (i.e., “knows when to include others”) from subsequent analyses because it dual-loaded on the interpersonal and intellectual character factors. We also dropped one item (i.e., “actively listens to others”) because it fell under a conceptually irrelevant domain (intrapersonal character rather than intellectual character). One grit item (“works independently with focus”) was removed because teachers pointed out that it could also be construed as an academic self-control item.

The three-factor solution explained 85.97% of the variance. The extracted three factors corresponded to interpersonal, intellectual, and intrapersonal character strengths.<sup>3</sup>

As shown in Table 2, the items loading on interpersonal character captured traits that facilitate harmonious relationships with other people. These included items from the gratitude, social intelligence, and interpersonal self-control scales. Items loading on intellectual character captured traits that facilitate learning, and included items from the zest and curiosity scales. Items loading on intrapersonal character captured traits that facilitate the achievement of personal goals, and included items from the grit and academic self-control scales.

The subscales for the interpersonal, intellectual, and intrapersonal character ratings demonstrated good internal consistency,  $\alpha = 0.97$  (8 items),  $0.95$  (5 items), and  $0.97$  (6 items), respectively. We created composite scores for each of these three character factors; thus, higher scores indicated higher levels of character strength. The correlations among the three factors were  $r = 0.50$  for interpersonal and intellectual character,  $r = 0.78$  for interpersonal and intrapersonal character, and  $r = 0.63$  for intellectual and intrapersonal character, suggesting that character strengths in these domains are strongly correlated.<sup>4</sup>

### 2.2.3. The relation between teacher-report character factors and student outcomes

As shown in Table 3, when each character factor was entered separately, the interpersonal ( $\beta = -0.25$ ,  $p < 0.001$ ) and intrapersonal ( $\beta = -0.17$ ,  $p = 0.02$ ) character factors predicted less peer conflicts even after accounting for demographic covariates. When all three character strengths were included simultaneously, only the interpersonal character factor remained a significant negative predictor ( $\beta = -0.43$ ,  $p < 0.01$ ), indicating that students who were rated high in interpersonal character by their teachers tended to engage in less peer conflict than their counterparts in the following school year.

When entered separately, intellectual ( $\beta = 0.31$ ,  $p < 0.001$ ) and intrapersonal ( $\beta = 0.15$ ,  $p = 0.035$ ) character factors predicted greater class participation in the following year.<sup>5</sup> Interpersonal character was not related to class participation ( $\beta = 0.02$ ,  $p > 0.80$ ). When all three character factors were included simultaneously, intellectual ( $\beta = 0.33$ ,  $p < 0.001$ ) and intrapersonal ( $\beta = 0.34$ ,  $p = 0.043$ ) character remained positive predictors of class participation a year later, indicating that students who were rated as being high in intellectual and intrapersonal character by their teachers tended to participate actively in school in the following school year. Meanwhile, an unexpected result was observed with the interpersonal character factor. When all three character factors were entered simultaneously, interpersonal character became a negative predictor

<sup>3</sup> The three factor test-retest correlations were 0.88, 0.85, and 0.90 for interpersonal, intellectual, and intrapersonal character, respectively. Further, the pattern of results was the same for the fall, spring, and the averaged fall and spring data. Therefore, we reported the results from the average scores.

<sup>4</sup> These factor correlations differ from the character strength correlations in Table 1, because the factor scores are weighted by the factor loadings whereas the character subscales are unit-weighted (i.e., items are averaged without weights).

<sup>5</sup> The class participation variable was left-skewed. Thus, we conducted sensitivity analyses using Robust Maximum Likelihood estimation (which adjusts for non-normality) and found that the results were virtually identical. Results available upon request.

of student class participation ( $\beta = -0.44$ ,  $p < 0.01$ ). Given the absence of a first-order correlation between these variables, we interpreted this unexpected negative association as a suppression effect (Cohen & Cohen, 1975; Horst, 1941).

Not surprisingly, each of the character factors predicted GPA the following year (all  $\beta$ s  $> 0.50$ ,  $ps < 0.001$ ). However, when all three character factors were included simultaneously, intrapersonal character was the best predictor of student GPA ( $\beta = 1.00$ ,  $p < 0.001$ ), indicating that students who were rated as high in intrapersonal character by their teachers in the previous school year tended to earn higher report card grades the following school year. Again, an unexpected negative relationship between interpersonal character and GPA was observed ( $\beta = -0.30$ ,  $p < 0.001$ ), possibly reflecting a suppression effect (for additional analyses, see Supplementary materials).

The findings from Study 1 suggest that character strengths cluster into interpersonal, intellectual, and intrapersonal factors. While these factors are highly related, they are distinct enough to differentially predict outcomes one year later. Interpersonal character predicted positive peer relations, intellectual character predicted class participation, and intrapersonal character predicted both class participation and academic achievement.

## 3. Study 2

The main goal for Study 2 was to confirm the tripartite taxonomy of character based on student reports. In addition to confirming the tripartite taxonomy of character in self-reported behavior, we aimed to establish the independence of character from cognitive ability. Before doing so, we used feedback from teachers in Study 1 to make slight improvements to the wording of items, chiefly to render them more appropriate for the reading level of middle school students (Table 4). We also used a different measure of positive peer relations: Instead of asking students about negative experiences with their peers, we asked students to nominate up to three of their closest friends. The more a student was nominated by peers, the higher that student's popularity.

### 3.1. Method

#### 3.1.1. Participants

Participants were 420 sixth through eighth grade students in an urban middle school. Of the students, approximately 49% were female; 86% were Hispanic, 13% were Black, and 1% identified as other (i.e., White and Asian).

#### 3.1.2. Procedure and measures

Students completed the character strength questionnaire at the beginning of the spring 2014 semester and the cognitive ability task in the middle of the spring semester. At the end of the spring semester (approximately three months later), student outcome data (i.e., popularity, class participation, GPA) were obtained.

**3.1.2.1. Character strengths.** Students completed a modified version of the character strength measures used in Study 1 (see Table 4). We changed the response scale to a 7-point scale ranging from 1 = *Almost never* to 7 = *Almost always*. The average of student-reported character subscale (i.e., zest, academic self-control, interpersonal self-control, gratitude, curiosity, grit, and social intelligence) alphas was 0.79 (ranging from 0.72 to 0.85).<sup>6</sup>

<sup>6</sup> The primary reason for switching the scale from 5-point to 7-point was to provide students with more choices in their responses; however, prior research has shown that 5- and 7-point Likert scales have shown comparable results in terms of variation, skew, and kurtosis (Dawes, 2008), and so we expect our results would be the same regardless of the scale points.

**Table 3**

Standardized coefficients from longitudinal multiple regression models predicting outcomes from teacher-report interpersonal, intellectual, and intrapersonal character factors in Study 1.

Predictors	Peer conflict		Class participation		GPA	
	Separate	Simultaneous	Separate	Simultaneous	Separate	Simultaneous
Interpersonal character	−0.25***	−0.43** <sup>a</sup>	0.02	−0.44** <sup>a</sup>	0.58***	−0.30*** <sup>a</sup>
Intellectual character	−0.01	0.15 <sup>ac</sup>	0.31***	0.33*** <sup>a</sup>	0.53***	0.04 <sup>b</sup>
Intrapersonal character	−0.17 <sup>†</sup>	0.12 <sup>bc</sup>	0.15 <sup>†</sup>	0.34 <sup>a</sup>	0.77***	1.00*** <sup>c</sup>

Note. Controlling for gender, ethnicity, grade level, and school affiliation.

Separate: Regression coefficients from three separated regression models.

Simultaneous: Regression coefficients from one regression model with all three character factors.

The absolute values of coefficients with different superscripts within a column are significantly different from each other.

<sup>†</sup>  $p < 0.10$ .

<sup>\*</sup>  $p < 0.05$ .

<sup>\*\*</sup>  $p < 0.01$ .

<sup>\*\*\*</sup>  $p < 0.001$ .

**Table 4**

Three-factor item level confirmatory factor analysis for student-report character strength items in Study 2.

Factor	Subscale/item	
Interpersonal	Interpersonal self-control	I remained calm even when criticized or otherwise provoked
		I allowed others to speak without interruption
		I was polite to adults and peers
Social intelligence	Social intelligence	I kept my temper in check
		I was able to find solutions during conflicts with others
		I showed that I cared about other people's feeling
Gratitude	Gratitude	I adapted to different social situations
		I showed appreciation for the good things I have in my life
		I expressed appreciation by saying thank you
Intellectual	Zest	I did something nice for someone else as a way of saying thank you
		I actively participated
		I showed enthusiasm
Curiosity	Curiosity	I approached new situations with excitement and energy
		I was eager to explore new things
		I asked questions to deepen my understanding
Intrapersonal	Academic self-control	I took an active interest in learning
		I came to class prepared
		I remembered and followed directions
Grit	Grit	I got my work done right away instead of waiting until the last minute
		I paid attention and resisted distractions
		I finished whatever I began
		I tried very hard even after experiencing failure
		I stayed committed to my goals even if they took a long time to complete
		I kept working hard even when I felt like quitting

**3.1.2.2. Cognitive ability.** Cognitive competence was measured using the matrices subtest of the Kaufman Brief Intelligence Test (KBIT; Kaufman & Kaufman, 1990). The number of correct answers was converted to age-normed standardized scores.

**3.1.2.3. Outcomes.** Popularity was measured by asking students to nominate up to three of their closest friends (adopted from Paluck & Shepherd, 2012). The distribution of popularity ratings was right-skewed, so we log-transformed the frequency of names

mentioned by other students.<sup>7</sup> *Class participation* was measured using the same items from Study 1. *Student GPA* was collected from school records at the end of school year. As in Study 1, *student GPA* was calculated by averaging grades from all major academic courses (i.e., math, science, language arts, and social studies).

### 3.2. Results and discussion

#### 3.2.1. Analytic strategy

Using *Mplus* (Muthén & Muthén, 2002), we first conducted confirmatory factor analyses (CFAs) using student-reported character strengths to confirm the tripartite taxonomy found in Study 1. Although EFAs are suitable for initial data exploration, CFAs are recommended to define a model and validate a construct (Clark & Watson, 1995). As in Study 1, we next examined the relationship between the three character factors and student outcomes assessed three months later, after accounting for demographic covariates and cognitive ability.

#### 3.2.2. Confirmatory factor analyses

First, we examined whether a three-factor model fit the data better than a one-factor model. In the three-factor model, items were allowed to load freely on their respective factor, the factor loadings with other factors were set to zero, and the covariances between the factors were freely estimated. Importantly, based on past research indicating a correlation between academic and interpersonal self-control (Tsukayama et al., 2013), we allowed these two errors to covary. Factors were scaled by setting the variance equal to 1.0. In the one-factor models, all items were allowed to load freely on a single factor. Mimicking the EFA results from Study 1, CFAs with student report scores confirmed that a three-factor model fit the data better than a one-factor model,  $\Delta\chi^2(3) = 89.23, p < 0.001$ . Given the high correlation between interpersonal and intrapersonal character factors, we also compared the three-factor model with two-factor models. The three-factor model fit the data better than all of the two-factor models (i.e., interpersonal + intrapersonal character vs. intellectual character; interpersonal + intellectual character vs. intrapersonal character; and intellectual + interpersonal character vs. interpersonal character), all  $\Delta\chi^2(2) > 10.00, ps < 0.05$ . The three-factor model fit the data well,  $\chi^2(10) = 19.61, p = 0.033$ , CFI was 0.99, the RMSEA was 0.05, the SRMR was 0.021, and all factor loadings were significant at  $p < 0.001$  (see Table 6).

<sup>7</sup> Because popularity was a count variable (i.e., integers: one nomination, two nominations, etc.), we conducted a sensitivity analysis using a Poisson regression model. Although this model produced the same general pattern of results, we have footnoted the results that yielded differences in significance levels above or below the standard  $p < 0.05$  criterion using this Poisson regression model.

Similar to Study 1, items within each character factor demonstrated good internal consistency: 0.84 (10 items) for interpersonal, 0.86 (6 items) for intellectual, and 0.88 (8 items) for intrapersonal. The correlations among the three factors were  $r = 0.72$  for interpersonal and intellectual character,  $r = 0.94$  for interpersonal and intrapersonal character, and  $r = 0.80$  for intellectual and intrapersonal character, suggesting that these domains are strongly correlated.

Finally, we tested for measurement invariance across gender and grade by estimating a multiple-group CFA model and constraining the factor loadings and intercepts to be equal across groups (i.e., males vs. females, as well as sixth, seventh, and eighth grade dummy variables). Using  $\Delta\text{CFI} \leq 0.01$  as a guideline (see Cheung & Rensvold, 2002), we found that the same factor structure held across gender and grade ( $\Delta\text{CFI} < 0.01$ ).

### 3.2.3. The relation between student-report character factors and outcomes

Table 5 shows descriptive statistics and bivariate correlations among all variables included in our models. Cognitive ability demonstrated weak and generally nonsignificant correlations with each of the character factors ( $r_s = 0.06\text{--}0.15$ ). To replicate the predictive validity of the student-reported character strengths and to examine whether the findings from Study 1 held when controlling for cognitive ability, we regressed student outcomes (i.e., popularity, class participation, GPA) on each of the character factors, along with cognitive ability and demographic covariates (Table 7).

When entered separately, interpersonal and intellectual character each predicted popularity ( $\beta = 0.09$ ,  $p = 0.094$  and  $\beta = 0.10$ ,  $p = 0.053$ , respectively), although neither effect reached statistical significance.<sup>8</sup> When all three character factors were included simultaneously to predict spring popularity, none was a reliable predictor ( $p_s > 0.10$ ).

All three character factors were positively related to class participation ( $p_s < 0.05$ ), even after accounting for demographic information and cognitive ability. However, as with Study 1, when all character factors were included simultaneously in a model predicting class participation, only intellectual character remained a significant positive predictor ( $\beta = 0.31$ ,  $p < 0.001$ ).

Each of the three character factors were positively correlated with GPA at the end of school year ( $p_s < 0.01$ ), over and above demographic covariates and cognitive ability. However, when all three factors were included simultaneously to predict growth in GPA, only intrapersonal character remained significant ( $\beta = 0.31$ ,  $p < 0.001$ ).

In sum, Study 2 confirmed the tripartite taxonomy of character strengths with student ratings. The three factor model—an interpersonal factor encompassing interpersonal self-control, social intelligence, and gratitude; an intellectual factor including zest and curiosity; and an intrapersonal factor consisting of grit and academic self-control—provided a good fit to the student ratings of the character strengths. We further replicated that intellectual character predicted class participation and that intrapersonal character predicted school achievement over and above student's cognitive ability.

Contrary to our hypothesis, however, interpersonal character was not a significant predictor of popularity when all character factors were entered simultaneously. Though the association between interpersonal character and popularity was significant in bivariate correlation ( $r = 0.13$ ,  $p < 0.05$ ) and marginal when interpersonal character was entered separately in a regression model ( $\beta = 0.09$ ,  $p = 0.094$ ), the relation became nonsignificant in the simultaneous

**Table 5**

Descriptive statistics and bivariate correlations between the character factors and the outcomes in Study 2.

Measures	M	SD	1	2	3
<b>Character strengths</b>					
1. Student-report interpersonal	5.72	0.81	–		
2. Student-report intellectual	5.25	1.04	0.54***	–	
3. Student-report intrapersonal	5.61	0.93	0.76***	0.63***	–
<b>Outcomes</b>					
4. Popularity	2.37	1.77	0.13*	0.12*	0.10*
5. Class participation	2.68	0.80	0.17**	0.38***	0.27***
6. GPA	81.96	6.17	0.22***	0.21***	0.30***
7. Cognitive ability (KBIT)	99.28	17.08	0.15**	0.06	0.10 <sup>†</sup>
<b>Demographics</b>					
	M(SD)				
8. Female	49%	5.92(0.73)	5.37(0.99)	5.84(0.83)	
9. Male	51%	5.53(0.84)	5.13(1.08)	5.41(0.96)	
10. Hispanic	86%	5.77(0.78)	5.21(1.06)	5.66(0.89)	
11. Black	13%	5.41(0.94)	5.49(0.89)	5.34(1.09)	
12. Other ethnicity	1%	6.10(0.19)	6.17(0.16)	6.57(0.18)	

<sup>†</sup>  $p < 0.10$ .

\*  $p < 0.05$ .

\*\*  $p < 0.01$ .

\*\*\*  $p < 0.001$ .

**Table 6**

Three-factor scale level confirmatory factor analysis loadings for character strength scales in Study 2.

	Factor		
	Interpersonal	Intellectual	Intrapersonal
Interpersonal self-control	0.60		
Social intelligence	0.76		
Gratitude	0.70		
Zest		0.86	
Curiosity		0.82	
Academic self-control			0.73
Grit			0.84

Notes. Factor loadings are significant at  $p < 0.001$ .

regression model ( $\beta = 0.08$ ,  $p > 0.30$ ). We speculated that this might be due to the relatively small effect size for this relationship and, perhaps, insensitivity of the peer nomination measure as a metric of harmonious social relations (Jarvinen & Nicholls, 1996; Tsukayama et al., 2013). We examine this association with a larger sample in Study 3.

## 4. Study 3

In Study 3, we had two goals. First, we wanted to examine the predictive power of each character factor after accounting for baseline outcomes (i.e., beginning of school year popularity, class participation, and GPA) in order to examine *growth* across the school year. Since baseline outcomes can be associated with character strengths (e.g., high-achieving students tend to be gritty), accounting for the baseline outcomes minimizes the risk of overstating the relation between character strengths and positive outcomes at the end of the school year. In other words, our hypothesis that character strengths are responsible for changes in social and academic outcomes is more conservatively tested by longitudinal studies that take baseline outcomes into consideration (Fredricks & Eccles, 2006).

Second, we extended our current findings by situating the character factors in an existing taxonomy of personality traits, namely the Big Five. While character strengths tend to have a stronger

<sup>8</sup> When using Poisson regression models, intellectual character became a reliable predictor ( $\beta = 0.09$ ,  $p = 0.014$ ).

**Table 7**

Standardized coefficients from longitudinal multiple regression models predicting outcomes from student-report interpersonal, intellectual, and intrapersonal character factors in Study 2.

Predictor	Popularity		Class participation		GPA	
	Separate	Simultaneous	Separate	Simultaneous	Separate	Simultaneous
Interpersonal character	0.09 <sup>†</sup>	0.08 <sup>a</sup>	0.11 <sup>*</sup>	−0.14 <sup>†a</sup>	0.16 <sup>**</sup>	−0.09 <sup>a</sup>
Intellectual character	0.10 <sup>†</sup>	0.09 <sup>a</sup>	0.30 <sup>***</sup>	0.31 <sup>***a</sup>	0.19 <sup>***</sup>	0.05 <sup>a</sup>
Intrapersonal character	0.06	−0.05 <sup>a</sup>	0.20 <sup>***</sup>	0.11 <sup>a</sup>	0.28 <sup>***</sup>	0.31 <sup>***b</sup>

Note. Controlling for gender, ethnicity, grade level, and cognitive ability.

Separate: Regression coefficients from three separated regression models.

Simultaneous: Regression coefficients from one regression model with all three character factors.

The absolute values of coefficients with different superscripts within a column are significantly different from each other.

<sup>†</sup>  $p < 0.10$ .

<sup>\*</sup>  $p < 0.05$ .

<sup>\*\*</sup>  $p < 0.01$ .

<sup>\*\*\*</sup>  $p < 0.001$ .

evaluative meaning than personality traits (which can be neutral in valence), personality traits and character strengths are, theoretically and empirically, more similar than they are different (Noftle, Schnitker, & Robins, 2011). Indeed, character strengths may be seen as a subset of personality traits (Rimfeld, Kovas, Dale, & Plomin, in press). Accordingly, in Study 3, we wanted to explore convergence between character factors and Big Five personality dimensions. We expected the four relations to emerge. Openness to experience, which encompasses interest in aesthetics and novelty, should relate to intellectual character. Conscientiousness, which comprises impulse control and a propensity for goal-directed action, should relate to intrapersonal character. Both Extraversion, which encompasses assertiveness and sociability, and Agreeableness, which includes aspects of both compassion and compliance, should relate to interpersonal character. We did not expect Emotional Stability to have a particularly strong relation with any specific aspect of character (Parks-Leduc, Feldman, & Bardi, 2015).

Study 3 employed a similar procedure to Studies 1 and 2, with a couple of methodological changes. First, at the beginning of the school year (2013–2014), we asked both students and teachers to complete the character strengths measures. Students completed the same items used in Study 2. However, in an attempt to reduce the burden on teachers, teachers were asked to rate their students once, globally, on each of the seven character strengths (e.g., “Please rate John on grit”). Each character strength was illustrated with a set of bulleted items that described its components (e.g., “finished whatever s/he began,” “tried very hard even after experiencing failure,” “stayed committed to his/her goals even if they took a long time to complete,” “kept working hard even when s/he felt like quitting”). Second, we collected student outcome data twice—in fall and spring—to examine growth across the school year. Last, we measured Big Five personality traits to examine the relationship between character factors and basic personality traits in the middle of the school year.

## 4.1. Method

### 4.1.1. Participants

Across six middle schools (four charter schools and two private), we recruited 1507 fourth through eighth grade students. Of the students, approximately 52% were female; 37% were Hispanic, 34% were Black, 21% were White, 4% were Asian, and 4% identified as other.

### 4.1.2. Procedure and measures

At the beginning of the 2013–2014 school year, both teachers and students rated individual students on the character strength measures. We recorded student outcomes twice—at the beginning

and at the end of the school year—to examine growth as a function of the three character factors across the school year. We measured Big Five personality traits in the middle of the school year.

**4.1.2.1. Character strengths.** Students completed a character strength measure that was identical to the one used in Study 2. The average of student-reported character subscale alphas was 0.73 (ranging from 0.69 to 0.77). We asked teachers to provide a single global rating for their students on each of the seven character subscales (as opposed to answering several items within each subscale), based on a set of items that described the relevant character strength. Each student was rated by up to nine teachers (2.7 teachers per student on average). The average intraclass correlation coefficient (1, k) was 0.65 (and ranging from 0.57 to 0.75).<sup>9</sup>

**4.1.2.2. Big Five personality traits.** Students completed items selected from the Big Five Inventory on a 7-point Likert scale ranging from 1 = *Strongly disagree* to 7 = *Strongly agree* (Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism; John & Srivastava, 1999). Specifically, we selected four age-appropriate items for each trait and added words in parentheses to clarify potentially difficult vocabulary.<sup>10</sup> The average subscale reliability alpha was 0.77 (and ranging from 0.66 to 0.83) and student ratings were averaged within each of the personality items.

**4.1.2.3. Outcomes.** Students completed the same popularity measure (i.e., peer nomination) and class participation questions from Study 2. As with Study 2, we log-transformed popularity data. We calculated student GPA by averaging grades from all major academic courses, including math, science, language arts, and social studies. In order to standardize grading systems across schools, we z-standardized GPA scores within each school and then standardized across schools before combining them into a single GPA variable ( $M = 0$ ,  $SD = 1$ ).

## 4.2. Results and discussion

### 4.2.1. Analytic strategy

Teacher and self-report ratings of student character strengths were correlated (avg.  $r = 0.34$ , with  $r$ s ranging from 0.24 to 0.43), which surpasses the published mean correlation of children's

<sup>9</sup> Only 19 students (1.2% of our sample) had ratings from nine teachers. Given that the mean number of teacher ratings per child is close to three (2.7 teachers per student on average) and nearly half of the students (47%) had teacher ratings from at least three teachers, we calculated intraclass correlation coefficients based on ratings from three teachers chosen randomly. The correlations between the mean of the three teacher rating scale and the mean of the full (all available) teacher rating scale were high, average  $r = 0.88$ .

<sup>10</sup> List of items are available upon request.

self-ratings and informant ratings ( $r = 0.22$ ; Achenbach, McConaughy, & Howell, 1987). This allowed us to create composite scores by averaging the teacher- and self-report student character subscales. We first averaged student and teacher ratings of each character strength; we then averaged these scores for corresponding character strengths to create character factor scores. We first examined the relationship between the character factors and Big Five personality traits. Subsequently, we regressed end-of-year outcomes on the three character factors having accounted for demographic covariates (i.e., gender, ethnicity, grade level, and school affiliation) and beginning-of-year outcomes.

#### 4.2.2. The relation between character factors and the Big Five personality traits

Table 8 shows descriptive statistics and bivariate correlations among all variables included in our models. On conceptual grounds, we hypothesized that interpersonal character would be related to Big Five Agreeableness, intrapersonal character would be related to Big Five Conscientiousness, and intellectual character would be related to Big Five Openness to Experience. Results generally supported these hypotheses (Table 9). In simultaneous regression models predicting each Big Five factor from all three character dimensions, interpersonal character was most reliably associated with Agreeableness ( $\beta = 0.47$ ,  $p < 0.001$ ), and intrapersonal character was the strongest correlate of Conscientiousness ( $\beta = 0.44$ ,  $p < 0.001$ ). Intellectual character was the strongest correlate of Openness to Experience ( $\beta = 0.38$ ,  $p < 0.001$ ), but was also a surprisingly robust correlate of Extraversion ( $\beta = 0.47$ ,  $p < 0.001$ ).

#### 4.2.3. The relation between character factors and growth in student outcomes

We next examined whether the three character factors were related to growth in student outcomes across the school year (Table 10). When spring popularity was separately regressed onto the three character factors, demographic covariates, and fall popularity, none of the character factors were statistically significant predictors. However, when controlling for the other character strengths as well as demographic covariates and fall popularity, interpersonal character was a marginally significant positive predictor of popularity ( $\beta = 0.14$ ;  $p = 0.051$ ). That is, students who were high in interpersonal character (e.g., keeping one's temper in check and expressing appreciation) were more likely to be nominated by their peers as a close friend across the school year.

In line with the findings from Studies 1 and 2, intellectual character predicted class participation ( $\beta = 0.12$ ,  $p = 0.01$ ), even after controlling for demographic covariates and class participation in the fall. Thus, given the same level of class participation at the beginning of the school year, students who were high in intellectual character (e.g., enthusiastic about learning and eager to explore new things) were more actively engaged in school work

**Table 8**

Descriptive statistics and bivariate correlations between the character factors and the outcomes in Study 3.

Measures	M	SD	1	2	3
Character strengths					
1. Interpersonal	5.35	0.72	–		
2. Intellectual	5.27	0.75	0.61***	–	
3. Intrapersonal	5.31	0.79	0.82***	0.65***	–
Big Five personality					
4. Openness	6.06	0.89	0.26***	0.37***	0.25***
5. Conscientiousness	5.84	0.93	0.47***	0.47***	0.55***
6. Extraversion	5.85	0.94	0.16***	0.38***	0.15***
7. Agreeableness	5.93	0.93	0.52***	0.35***	0.45***
8. Emotional stability	4.05	1.55	0.09 <sup>†</sup>	0.14***	0.08 <sup>†</sup>
Fall student outcomes					
9. Popularity	2.15	2.02	0.19***	0.13***	0.16***
10. Class participation	3.08	0.70	0.22***	0.32***	0.21***
11. GPA	0.00	1.00	0.44***	0.42***	0.61***
Spring student outcomes					
12. Popularity	1.81	1.88	0.17***	0.06	0.11**
13. Class participation	3.03	0.73	0.10 <sup>†</sup>	0.24***	0.12 <sup>†</sup>
14. GPA	0.00	1.00	0.40***	0.32***	0.53***
Demographics					
	M(SD)				
15. Female	52%	5.47(0.68)	5.30(0.74)	5.49(0.73)	
16. Male	48%	5.23(0.72)	5.24(0.75)	5.13(0.79)	
17. Hispanic	37%	5.34(0.62)	5.16(0.70)	5.31(0.73)	
18. Black	34%	5.03(0.78)	5.11(0.82)	5.06(0.89)	
19. White	21%	5.67(0.50)	5.54(0.62)	5.52(0.60)	
20. Asian	4%	5.72(0.70)	5.47(0.67)	5.77(0.66)	
21. Other ethnicity	4%	5.66(0.73)	5.42(0.71)	5.55(0.82)	

<sup>†</sup>  $p < 0.10$ .

\*  $p < 0.05$ .

\*\*  $p < 0.01$ .

\*\*\*  $p < 0.001$ .

(e.g., raising their hand during class) at the end of the school year than were students who were low in this character strength. Intellectual character remained a significant predictor when controlling for other character factors ( $\beta = 0.17$ ,  $p < 0.01$ ). Interpersonal character became a significant negative predictor of class participation when controlling for other character factors ( $\beta = -0.21$ ,  $p = 0.011$ ). As in Study 2, we interpreted this as a suppression effect.

All three character factors were related to growth in GPA across the school year ( $ps < 0.10$ ), suggesting that the higher these character factors, the greater the gain in GPA across the school year. However, when all three factors were included simultaneously to predict growth in GPA, only intrapersonal character remained a significant predictor ( $\beta = 0.17$ ,  $p < 0.001$ ), indicating that, given the same level of GPA at the beginning of the school year, students high in intrapersonal character (e.g., persistence, paying attention during class, and being optimistic) earned higher grades at the

**Table 9**

Standardized coefficients from multiple regression models predicting personality from interpersonal, intellectual, and intrapersonal character factors in Study 3.

Predictor	Openness		Conscientiousness		Extraversion		Agreeableness		Emotional stability	
	Separate	Simultaneous	Separate	Simultaneous	Separate	Simultaneous	Separate	Simultaneous	Separate	Simultaneous
Interpersonal character	0.26***	0.13 <sup>a</sup>	0.48***	0.03 <sup>a</sup>	0.15***	0.06 <sup>a</sup>	0.52***	0.47*** <sup>a</sup>	0.14***	0.04 <sup>a</sup>
Intellectual character	0.39***	0.38*** <sup>b</sup>	0.45***	0.19*** <sup>b</sup>	0.38***	0.47*** <sup>b</sup>	0.29***	0.03 <sup>b</sup>	0.14***	0.09 <sup>a</sup>
Intrapersonal character	0.22***	-0.11 <sup>a</sup>	0.58***	0.44*** <sup>c</sup>	0.11**	-0.22*** <sup>c</sup>	0.42***	0.05 <sup>b</sup>	0.14***	0.06 <sup>a</sup>

Note. Controlling for gender, ethnicity, grade level, and school affiliation.

Separate: Regression coefficients from three separated regression models.

Simultaneous: Regression coefficients from one regression model with all three character factors.

<sup>†</sup>  $p < 0.10$ .

\*  $p < 0.05$ .

\*\*  $p < 0.01$ .

\*\*\*  $p < 0.001$ .

**Table 10**

Standardized coefficients from longitudinal multiple regression models predicting growth in outcomes from interpersonal, intellectual, and intrapersonal character factors in Study 3.

Predictor	Popularity		Class participation		GPA	
	Separate	Simultaneous	Separate	Simultaneous	Separate	Simultaneous
Interpersonal character	0.07	0.14 <sup>†a</sup>	−0.04	−0.21 <sup>†a</sup>	0.14 <sup>***</sup>	0.04 <sup>ab</sup>
Intellectual character	−0.02	−0.07 <sup>a</sup>	0.12 <sup>†</sup>	0.17 <sup>††a</sup>	0.05 <sup>†</sup>	−0.04 <sup>a</sup>
Intrapersonal character	0.03	−0.02 <sup>a</sup>	0.05	0.08 <sup>a</sup>	0.18 <sup>***</sup>	0.17 <sup>***b</sup>

Note. Controlling for gender, ethnicity, grade level, school affiliation, and fall outcomes.

Separate: Regression coefficients from three separated regression models.

Simultaneous: Regression coefficients from one regression model with all three character factors.

The absolute values of coefficients with different superscripts within a column are significantly different from each other.

<sup>†</sup>  $p < 0.10$ .

<sup>††</sup>  $p < 0.05$ .

<sup>†††</sup>  $p < 0.01$ .

<sup>††††</sup>  $p < 0.001$ .

end of the school year. We found similar results when student and teacher ratings were entered separately to predict the outcomes.

The findings from Study 3 indicate that the three character factors differentially predict changes in outcomes. At the end of the school year, even after accounting for initial status at the beginning of the school year, students high in interpersonal character were more likely to be nominated as a closest friend by their peers, students high in intellectual character were more likely to be actively engaged in school, and students high in intrapersonal character earned higher grades. Additionally, these character factors were related to relevant Big Five personality traits in predictable ways: interpersonal character with Agreeableness, intellectual character with Openness, and intrapersonal character with Conscientiousness.

## 5. General discussion

Across three longitudinal studies, we found evidence for a tripartite structure of character in the context of school: Interpersonal character includes gratitude, social intelligence, and interpersonal self-control. Intellectual character includes curiosity and zest. And, finally, intrapersonal character includes academic self-control and grit.

Exploratory factor analyses of teacher-reported items in Study 1 established initial evidence for these three dimensions. The same factor structure was supported in a confirmatory factor analysis of student-reported items in Study 2. Exploiting the longitudinal design of each study, we demonstrated that dimensions of character correspond to distinct outcomes: interpersonal character predicts positive peer relations,<sup>11</sup> intellectual character predicts class participation, and intrapersonal character predicts report card grades. We further established discriminant validity of the tripartite taxonomy of character by showing that the three factors were only weakly correlated with cognitive ability, and that they predicted relevant outcomes when accounting for cognitive ability (Study 2). Comparing the three factors with Big Five personality traits demonstrated convergent validity. Interpersonal character had the strongest relationship with Agreeableness, intellectual character with Openness, and intrapersonal character with Conscientiousness (Study 3).

Collectively, these findings affirm the supposition that character is plural. Interpersonal character enables children to develop har-

monious, positive relationships with other people. Intrapersonal character facilitates the regulation of behavior, thoughts, and emotion in the service of personally valued goals. And, finally, intellectual character supports active engagement in learning. Importantly, this empirical evidence provides rigorous support for theoretical claims regarding the structure of character in children, affirming the distinction between performance and moral character proposed by Lickona and Davidson (2005), and, in addition, intellectual character, a separate dimension proposed by Baehr (2013) and Ritchhart (2002).

The current investigation was longitudinal in design, enabling us to establish the relationship between dimensions of character and changes in school outcomes over time. In contrast, most prior studies of character in children have been cross-sectional. Furthermore, our results demonstrate that relations between character dimensions and outcomes hold even when accounting for a relatively rich set of covariates, including demographic characteristics and cognitive ability. Of course, we cannot rule out the possibility that unmeasured third variables might have caused changes in *both* character strengths and outcomes. Thus, the present findings pave the way for random-assignment interventions to establish causal relationships between character and life outcomes.

### 5.1. Limitations and future directions

Limitations of the current investigation suggest profitable directions for future research. First, the behaviors we chose to examine were identified as important by our educator partners. While this design decision increased ecological validity, we cannot know whether additional dimensions of character would have been identified. For example, we did not include items assessing spirituality, a factor that has been identified in prior research on character in both children and adults (Jeynes, 2002; Park & Peterson, 2006). Likewise, our school partners did not ask us to assess the character strengths of honesty, trustworthiness, fairness, or loyalty—qualities that have been emphasized in research on personality (e.g., honesty in the HEXACO model of personality structure, Ashton & Lee, 2007) and person perception (e.g., justice in Graham, Haidt, & Nosek, 2009; Walker & Hennig, 2004). In sum, we did not include all possible character strengths in the current investigation. Furthermore, consistent with conventional factor analysis procedures, we removed items that dual-loaded or loaded on conceptually irrelevant factor. As with any factor analysis, these decisions influenced our final solution. So, while our results strongly support the existence of *at least* three important dimensions of character in the context of school, there could be more.

Second, we were surprised to observe a negative relation between interpersonal character and class participation in Studies 1 and 3. When each character factor was entered separately to pre-

<sup>11</sup> Since interpersonal character demonstrated positive associations with subsequently measured peer relations in all three studies but reached statistical significance (two-tailed  $p$ -value  $< 0.05$ ) in Study 1, we used meta-analysis to combine effect sizes across studies. Doing so confirmed that the combined effect was small but reliable analyzed considered separately ( $\beta = 0.11$ ,  $p < 0.001$ ) and also when controlling for intrapersonal and intellectual character ( $\beta = 0.19$ ,  $p < 0.001$ ).

dict class participation, the relationship between interpersonal character and class participation was weak and statistically not significant. However, when the interpersonal character factor was entered with other character factors in the same model, interpersonal character became a negative predictor of class participation, presumably due to its high correlations with the other character factors ( $r_s = 0.76\text{--}0.88$  across all three studies). Because multicollinearity is often due to insufficient information (Berry & Feldman, 1985), we are planning future studies using multi-method assessment to estimate character strengths, including interviews and behavioral measures.

A third concern is that relatively high correlations among character factors may have rendered erroneous conclusions. However, we have several reasons to believe that this is not the case. Even with the highest correlation of 0.88 (between interpersonal and intrapersonal factors in Study 1), about 23% of the total variance accounted for by each factor is unshared. Confirmatory factor analyses also indicated that a three-factor model fit the data better than a two-factor model (i.e., interpersonal + intrapersonal factor and intellectual factor). Finally, the interpersonal factor was a more reliable predictor of peer relations, whereas the intrapersonal factor more reliably predicted GPA.

Finally, although we attempted to sample children from socioeconomically and ethnically diverse backgrounds, the majority of our sample consisted of Black and Hispanic students in urban public schools. Compared to their more advantaged peers, children from disadvantaged backgrounds tend to receive less social support (Anderson, Jacobs, Schramm, & Splittgerber, 2000), and their report card grades and attendance records decline more steeply as they progress from elementary school to high school (Gutman, Sameroff, & Cole, 2003). Relatedly, the current investigation primarily focused on middle school students, a developmental epoch of particular interest because failure at this juncture can instigate a downward spiral in academic performance ending in failure and dropout (Eccles, Lord, & Midgley, 1991). Future research is needed to confirm whether the organization of character, and relations with life outcomes, are similar in older or younger students. Likewise, careful replications involving more racially and socioeconomically diverse samples are needed to broaden the external validity of the results presented here.

## 6. Conclusion

The current investigation suggests that there are at least three different aspects of character, each predicting distinct, consequential life outcomes. School practices and programs targeting these three dimensions of character hold promise for setting children on the path to thriving socially, academically, and intellectually. In sum, while character is plural, it is not infinite. Principally, good character refers to how children relate to other people, manage their own goal-directed effort, and engage with ideas.

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## Appendix A. Supplementary material

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.cedpsych.2016.08.001>.

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