A Tripartite Taxonomy of Character

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Abstract

In the current investigation, we developed a character growth card for both applied (e.g., formative assessment) and research purposes. In a sample of several hundred students from two middle schools in the Northeast, both teachers (about five per student) and the students themselves rated character skill items developed to represent zest, self-control (schoolwork and interpersonal), gratitude, curiosity, optimism, grit, and social intelligence. Factor analyses indicated a three-factor solution describing social, intellectual, and achievement character. Items loading on social character included items from the gratitude, optimism, social intelligence, and interpersonal self-control scales. Items loading on intellectual character included items from the zest and curiosity scales. Items loading on achievement character included items from the grit, optimism, curiosity, and schoolwork self-control scales. These three factors differentially predicted theoretically-related outcomes assessed one year later, including objective academic performance and self-reported well-being and social functioning.

A Tripartite Taxonomy of Character

Character, the disposition to act, think, and feel in admirable and beneficial ways, is widely recognized as multidimensional (Peterson & Seligman, 2004). Under a variety of designations (character strengths, virtues, life skills, soft skills, social and emotional skills, learning mindsets, developmental assets, non-cognitive factors, etc.), character skills in young people are now attracting new attention from scientists and practitioners alike. By whatever name, character skills long have been considered essential for social, personal, and vocational success. Recently, growing numbers of educators have become convinced that character skills are strongly implicated in academic success (Tough, 2012). In parallel, there has been a surge of interest in the fields of developmental science, social, positive, and personality psychology, and education in assessing and promoting the growth of character skills (see, for example, Damon & Lerner, 2006; Damon, Lerner, Kuhn, Siegler, & Eisenberg, 2011). Collectively, this empirical work suggests that character is largely independent of general intelligence yet as important to academic, social, health, and economic outcomes (Heckman, Humphries, & Kautz, 2014). In the current investigation, we developed a character growth card for both applied (e.g., formative assessment) and research purposes.

Method

Participants

Participants were 357 fifth through eighth grade students at two urban charter middle schools in the Northeast region of the United States. About 51% were female; 65% were Hispanic, were 34% Black, and 1% were from other ethnic backgrounds. About 81% were from low-income families, as indicated by participation in the federal free lunch program.

Procedure and Measures

Teacher ratings of student character were obtained each semester during the 2011-2012 school year. The next school year (2012-2013), students completed online questionnaires administered by school personnel during school hours assessing various aspects of their psychological well-being,

physical well-being, and social functioning. In spring 2013, students also completed a self-report version of the character growth card. At the conclusion of the school year, academic outcome data were collected from school records. Measures included class conduct, attendance, and GPA. See Table 1 for a summary of when the measures were assessed.

Character Growth Card. Teachers (about five per student) and the students themselves rated items chosen to represent zest, self-control (schoolwork and interpersonal), gratitude, curiosity, optimism, grit, and social intelligence (see Tables 2 and 3). The 5-point scale ranged from 1 = *Almost never* to 5 = *Almost always*. Because teacher ratings were consistent (avg. $\alpha = .78$), we averaged teacher ratings at the item level for subsequent analyses.

Life Satisfaction. Students completed a single item assessing life satisfaction, "Overall, how satisfied or unsatisfied are you with your life?" using a 7-point scale where 1 = *Extremely unsatisfied* and 7 = *Extremely satisfied.* Lucas and Donnellan (2012) demonstrated that single-item measures of life satisfaction tend to be reliable (i.e., reliability estimates > .70).

Positive and Negative Affect. Students completed a modified version of the Scale of Positive and Negative Experience (SPANE; Diener et al., 2010). Students were asked to rate "How often do you experience these feelings?" on a 5-point scale, where 1 = *Never* and 5 = *Always*. For positive affect, the items were happy, relaxed, and excited. For negative affect, the items were sad, worried, and angry. The internal reliability coefficients were $\alpha = .78$ and $\alpha = .64$ for positive and negative affect, respectively.

Class participation. Students completed three items assessing class participation: "When was the last time you raised your hand in class?"; "When was the last time you knew the answer, but DIDN'T raise your hand in class?" (reverse scored); and "When was the last time you volunteered to write something on the board during class?" The response options were "*Today or yesterday*," "*Within the last week*," "*Within the last month*," and "*More than a month ago*." The internal reliability coefficient was .28.

Peer conflict. Students completed two items assessing peer conflict: "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*." The internal reliability coefficient was .56.

GPA. We collected final course grades from school records. We calculated GPA for each quarter and for final GPA by averaging grades from all major academic courses, including math, science, language arts, and social studies classes.

Attendance. We collected data on unexcused absences from attendance records.

Conduct grades. As part of regular school practice, teachers rated student homework and conduct in each class using a single 5-point scale, where 1 = unsatisfactory, 2 = needs improvement, 3 = satisfactory, 4 = good, and 5 = excellent. We calculated conduct for each marking period and for final conduct by averaging grades from all major academic courses, including math, science, language arts, and social studies classes.

Socioeconomic status and demographic variables. We obtained data on gender, ethnicity, birthdate, and free lunch status from school records.

Results

Analytic Strategy

We conducted exploratory factor analyses on the teacher-report character growth card items from the 2011-2012 school year, and confirmatory factor analyses on the student-report character growth card items from spring 2013. Factor analyses indicated a three-factor structure. Subsequently, we ran correlations to examine the relationship between the character skills factors and the outcomes. In order to examine the unique one-year predictive relationship between each outcome and the teacher-report character skills factors above and beyond the other character skills factors, we conducted simultaneous multiple regression models for each outcome with social, intellectual, and achievement character factors as well as gender, ethnicity, and SES.

Exploratory Factor Analyses

Exploratory factor analyses on the teacher-report data suggested a three-factor solution describing social, intellectual, and achievement character. The pattern of results was the same for the fall, spring, and the averaged fall and spring data. Therefore, we report the results from the average scores. We set the minimum factor loading criterion to .40. Because we expected domains of character to share common variance and therefore to be correlated, we used oblique promax rotation ($k = 4$). To determine the number of factors to extract, we used scree tests (Cattel, 1966) and the Kaiser criterion (Kaiser, 1960). These tests suggested extracting two to three factors. We examined both solutions and selected the three-factor solution because it was psychologically meaningful. Furthermore, in confirmatory factor analyses not reported here, the three-factor model fit the data significantly better than the two-factor or one-factor models (ps < .001).

The subscales for social, intellectual, and achievement character demonstrated good internal consistency, $\alpha = .98$, .95, and .98, respectively. The correlations among the subscales were $r = .51$ for social and intellectual character, $r = .87$ for social and achievement character, and $r = .65$ intellectual and achievement character, suggesting that these domains are strongly correlated.

As shown in Table 2, items loading on social character seem to facilitate harmonious relationships with other people, taking items from the gratitude, optimism, social intelligence, and interpersonal self-control scales. Items loading on intellectual character seem to facilitate learning, consisting of items from the zest and curiosity scales. Items loading on achievement character seem to facilitate the achievement of personal goals, largely consisting of items from the grit, optimism, curiosity, and schoolwork self-control scales.

Confirmatory Factor Analyses

Confirmatory Factor Analyses (CFAs) on the student-report character growth card items confirmed that the three-factor model fit the data better than a one-factor model, $\Delta\chi^2(3) = 181.55$, $p <$ .001. 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. In the one-factor models, all items were allowed to load freely on a single factor. Factors were scaled by setting the variance equal to 1.0. All factor loadings were significant at $p < .001$ (see Table 3). The hypothesized three-factor model fit the data adequately. Following recommendations suggested by Kline (2004), we considered CFI values greater than .90, RMSEA values less than .08, and SRMR values less than .10 to indicate good fit. Model $\chi^2(206) = 181.55$, $p < .001$, CFI was .86, the RMSEA was .073 (90% confidence interval was .066 to .080), and the SRMR was .063. Allowing one item to dual load ("I recognize and show appreciation for my opportunities" on the intellectual factor in addition to the social factor), and allowing three error covariances ("I keep my temper in check" with "I remain calm even when criticized or otherwise provoked," "I actively participate" with "I am eager to explore new things," and "I pay attention and resist distractions" with "I believe that effort will improve my future") brought the CFI above .90.

Finally, we tested for measurement invariance across gender by estimating a multiple-group CFA model and constraining the factor loadings to be equal across groups (i.e., males vs. females). Using $\Delta CFI \leq .01$ as a guideline (see Cheung & Rensvold, 2002), we found that the same factor structure held across gender ($\Delta CFI = .005$).

Teacher Test-Retest Correlations

At the item level, the average test-retest correlation for the teacher-report character growth card from fall 2011 to spring 2012 was $r = .83$. The subscale test-retest correlations were .89, .85, and .91 for social, intellectual, and achievement character, respectively.

Student-Teacher Correlations

The correlations between teacher-report and self-report ratings were .40, .45, and .34 for social, intellectual, and achievement character, respectively (see Table 4). These associations compare favorably to the meta-analytically derived average correlation of $r = .22$ between child self-report and informant ratings by Achenbach, McConaughy, and Howell (1987).

Longitudinal Teacher-Report Character Skills Prediction of the Outcomes

As shown in Table 5, social character predicted less class participation (β = -.28, p = .045), lower peer conflict (β = -.60, p < .001), and lower GPA (β = -.33, p < .001) one year later when controlling for the other character factors and demographics. Intellectual character predicted more class participation (β = .36, p < .001), and better attendance (β = .17, p = .046) one year later when controlling for the other character factors and demographics. Achievement character predicted more peer conflict (β = .41, p = .016), better GPA (β = 1.05, p < .001), and better conduct (β = .21, p < .01) one year later when controlling for the other character factors and demographics.

Discussion

Exploratory and confirmatory factor analyses supported a three-factor structure for character distinguishing between social, intellectual, and achievement character. These character factors differentially related to a variety of outcomes, including objective academic performance and self-reported well-being and social functioning. For instance, social character had the strongest relationship with peer conflict, intellectual character had the strongest relationship with class participation, and achievement character had the strongest relationship with GPA.

Limitations and Future Directions

As with all empirical studies, the current investigation has several limitations that suggest future directions. First, we were surprised to observe a negative relationship between social character and class participation, a positive relationship between achievement character and peer conflict, and a negative relationship between social character and GPA in multiple regression models controlling for the other character skills. These bivariate relationships (see Table 4) were in the theoretically-predicted direction indicating statistical suppression in the regression models. Although the variance inflation factors (VIFs) in the models were all less than 7, Cohen, Cohen, West, and Aiken (2003) note that “the values of the multicollinearity indices at which the interpretation of regression coefficients may

become problematic will often be considerably smaller than traditional rules of thumb guidelines such as VIF = 10" (p. 425). Because multicollinearity is due to insufficient information in the data (Berry & Feldman, 1985), we plan to collect data on more participants in order to obtain more precise estimates in future studies. Furthermore, we plan to simultaneously assess teacher-report and student-report character in order to create a composite character report card measure. Because the correlations between the student-report character skill factors were lower than those between the teacher-report character skill factors, a composite measure should exhibit less multicollinearity.

Second, as with all correlational studies, we cannot infer causality. Specifically, we do not know if these character skills cause the outcomes. Random-assignment interventions to increase character skills are needed to establish causal relationships with outcomes. To assess interventions, however, valid measures to assess character growth are needed. The current investigation is one step toward generating such measures to assess character growth.

Third, the students in the current investigation were not nationally representative. Indeed, most of the students were ethnic minorities, and from low socioeconomic backgrounds. To address this issue, we are now conducting a study with 12 schools representing a range of socioeconomic and ethnic backgrounds.

Fourth, from an applied perspective, one of the major limitations of the current character growth report card is the number of items. For teachers who have to rate as many as a hundred students, 22 items per student can quickly become unwieldy. With so many items, teacher attention might suffer and validity might decrease. We are currently conducting a study to examine the validity of eight teacher-rated items (one per character skill: gratitude, optimism, social intelligence, interpersonal self-control, zest, grit, curiosity, and schoolwork self-control).

Finally, the low reliability of some of the outcomes presents another limitation of the current study. In the future, we plan to conduct new analyses using structural equation modeling with latent

variables to assess relationships between the character skills factors and outcomes. Future studies should use more reliable outcomes.

Conclusion

These results converge with other classifications of character in current theoretical research. For instance, the same tripartite taxonomy has been identified by the National Research Council of the National Academies (2012) in their review of skills and knowledge necessary to function in the 21st century economy as well as by a taskforce on novel measures of competence in school-age children convened by the Spencer Foundation. This study provides further empirical evidence that such a tripartite model exists, and additionally, that these character skills can contribute to personal achievement. Moreover, the current study adds to existing literature by focusing on an understudied population that may stand to benefit most from the promotion and development of character skills related to positive academic and life outcomes.

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Table 1

	2011-2012 School Year		2012-2013 School Year	
	Fall	Spring	Fall	Spring
Teacher-Report Character Skills	✓	✓		
Student-Report Character Skills				✓
Student-Report Outcomes			✓	✓
Academic Outcomes			✓	✓

Table 2

Exploratory Factor Analysis Loadings for 2011-2012 Teacher-Report Character Growth Card Items

	Factor		
	Social	Intellectual	Achievement
I keep my temper in check	1.06		
I remain calm even when criticized or otherwise provoked	1.03		
I get over frustrations and setbacks quickly	1.00		
I am polite to adults and peers	0.90		
I demonstrate respect for the feelings of others	0.89		
I allow others to speak without interruption	0.79		
I am able to find solutions during conflicts with others	0.76		
I recognize and show appreciation for other	0.57		
I recognize and show appreciation for my opportunities	0.48		
I show enthusiasm		1.10	
I invigorate others		0.95	
I actively participate		0.86	
I ask and answer questions to deepen understanding		0.84	
I am eager to explore new things		0.78	
I finish whatever I begin			0.89
I come to class prepared			0.87
I work independently with focus			0.87
I get to work right away rather than procrastinating			0.78
I remembers and follow directions			0.75
I believe that effort will improve my future			0.59
I try very hard even after experiencing failure			0.54
I actively listen to others			0.41

Note. Factor loadings are from oblique promax solutions (promax $k = 4$). Factor loadings less than .40 are not displayed.

Table 3

Three-Factor Confirmatory Factor Analysis Loadings for Spring 2013 Student-Report Character Growth Card Items

	Factor		
	Social	Intellectual	Achievement
I keep my temper in check	0.66		
I remain calm even when criticized or otherwise provoked	0.55		
I get over frustrations and setbacks quickly	0.44		
I am polite to adults and peers	0.67		
I demonstrate respect for the feelings of others	0.71		
I allow others to speak without interruption	0.64		
I am able to find solutions during conflicts with others	0.60		
I recognize and show appreciation for my opportunities	0.62		
I recognize and show appreciation for others	0.70		
I show enthusiasm		0.71	
I invigorate others		0.42	
I actively participate		0.61	
I ask and answer questions to deepen understanding		0.55	
I am eager to explore new things		0.61	
I finish whatever I begin			0.61
I come to class prepared			0.56
I work independently with focus			0.67
I get to work right away rather than procrastinating			0.53
I remembers and follow directions			0.68
I believe that effort will improve my future			0.60
I try very hard even after experiencing failure			0.71
I actively listen to others			0.67

Notes. Factor loadings are from oblique two-factor models. Factor loadings are significant at $p < .001$.

Table 4

Summary Statistics and Bivariate Correlations between the Character Skills Factors and the Outcomes

Measures	*M*	*SD*	1	2	3	4	5	6
Character Strengths								
1. Teacher-Report Social	3.82	0.55	-					
2. Teacher-Report Intellectual	3.60	0.51	.51***	-				
3. Teacher-Report Achievement	3.75	0.60	.87***	.65***	-			
4. Student-Report Social	3.58	0.70	.40***	.25***	.35***	-		
5. Student-Report Intellectual	3.60	0.75	-.04	.45***	.10	.37***	-	
6. Student-Report Achievement	3.67	0.69	.31***	.33***	.34***	.72***	.54***	-
Student-Report Outcomes								
8. Life Satisfaction	4.85	1.59	.09	.12†	.11	.34***	.27***	.36***
9. Positive Affect	3.50	0.82	-.01	.05	-.04	.36***	.36***	.32***
10. Negative Affect	2.69	0.73	.04	.08	.06	-.14*	-.02	-.08
13. In-Class Participation	2.74	0.61	-.06	.25***	.06	.10	.40***	.25***
14. Peer Conflict	2.49	0.92	-.22**	.01	-.08	-.34***	-.04	-.21***
Academic Outcomes								
16. GPA	77.67	8.20	.55***	.51***	.73***	.28***	.16**	.32***
17. Attendance	38.58	5.32	.38***	.32***	.40***	.24***	.08	.31***
18. Conduct	59.51	19.15	.19***	.22***	.21***	.06	.06	.05
Demographics								
19. Female	51%		.24***	-.03	.26***	-.03	-.01	.06
20. Hispanic	34%		.17**	.10†	.17**	.05	-.08	.06
21. Black	65%		-.17**	-.10†	-.17**	-.13†	.11	-.04
22. Other Ethnicity	1%		-.04	.01	-.04	-.04	-.05	-.02
23. Free Lunch	81%		.05	-.05	.07	.10	.04	.06

Note. † < .10. *p < .05. **p < .01. ***p < .001.

Table 5

Standardized Coefficients from Longitudinal Multiple Regression Models Predicting Outcomes from Teacher-Report Social, Intellectual, and Achievement Character

Predictor	Life Satisfaction	Positive Affect	Negative Affect	Class Participation	Peer Conflict	GPA	Attendance	Conduct
Social Character	.04	.22	-.09	-.28*	-.60***	-.33***	.19	.01
Intellectual Character	.06	.11	.13	.36***	.02	-.01	.17*	.10
Achievement Character	.09	-.26	-.05	.06	.41*	1.05***	.09	.21**

Note. † < .10. *p < .05. **p < .01. ***p < .001.