Toward Assessing Character Development:

Validation of the Character Growth Index

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Abstract

To date, character development cannot be quantitatively assessed. Theoretically this task might be achieved if a measure designed with this purpose was first created and initially validated, then subjected to confirmatory factor analysis, and finally evaluated for its summative outcomes through an experimental study as a pre- and posttest with a character training intervention. This study pursued the first task. Researchers built a construct using Positive Psychology, character education, and Positive Youth Development theory. Items created to assess each of the resulting sixteen character strengths were designed to factor together. Two field tests with samples of Midwest US adolescents resulted in a reliable measure of 11 strengths called the *Character Growth Index* (CGI). A validation study produced 11 factors easily interpreted as the 11 character strengths. CGI correlated at .851 with 52 items from the 96-item *VIA Youth Survey*. These results indicate *Character Growth Index* is a reliable, valid assessment of character.

Key Words: character assessment; character development; Character Growth Index; CGI; valid; character measure; character strength; VIA Youth Survey; factor analysis

Toward Assessing Character Development:

Creation and Validation of the Character Growth Index

Character may be defined as multiple strengths providing individuals durable motivation and capacity for virtuous action (Berkowitz, 2012; Shubert, Wray-Lake, Syvertsen, & Metzger 2018). Though a hallmark of US educational philosophy in the past, less character education occurs in US schools today (Heckman & Kautz, 2014; Tough, 2012). Educators report this is partially due to the dearth of studies showing efficacy of character development practices and programs (Duckworth, Peterson, Matthews, & Kelly, 2007).

Assessing outcomes and effectiveness of character training programs has been limited (Hanson, Dietsch, & Zheng, 2012) in large part by the absence of both a consensual conceptualization and psychometrically sound measures of the complex construct of character. While there is a growing but small body of evidence for the effectiveness of character education (Berkowitz & Bier, 2006; Heckman & Kautz, 2013), the outcome measures have not adequately targeted character. In 2009, the US House Committee on Education defunded character education stating,

> "The Partnerships in Character Education program has not received funding since FY 2009. The program has an extremely limited impact… The [USDE] conducted a review of more than 40 Character Education programs (Person, Moiduddin, Hague-Angus, & Malone, 2009) … and found only two with positive results" (USHR, 2012, p. 17).

Ideally, the evaluation of a program intended to develop student character should include the multidimensional assessment of participants' character both pre- and post-intervention (Card, 2017). Of the 36 evaluated programs in the Person et al. report (2009), only one used a

multidimensional character assessment that was based on a rudimentary construct and was never validated (Bulach, 1996, 2000). The report's recommendation was that character education needed (a) a conceptual basis including a unified character construct or taxonomy and (b) quantitative assessment tools to measure character and its development. Positive Psychology's construct (Peterson & Seligman, 2004) is the most established and robust effort while Harvard's Taxonomy Project holds promise (https://easel.gse.harvard.edu/news/what-same-and-what-different). Quantitative, multidimensional character assessments are rare.

Need for a multidimensional construct and assessment. Park and Peterson (2006b) conclude, "Character strengths are complex constructs that require comprehensive measures" (p. 902). Unidimensional assessments of individual strengths do not meet this requirement (Peterson & Seligman, 2004). Measuring a multidimensional concept (character) by identifying its multidimensional components (virtues or strengths) in order to construct a valid multidimensional test is both necessary and challenging (Diener et al., 2010). Peterson, Seligman, and Park (2003) developed an ordinal measure that was the first such assessment but more work is needed (Card, 2017).

Need for criteria-based assessment. By definition, psychological development involves human growth and changes across the lifespan, including physical, cognitive, social, intellectual, perceptual, personality and emotional growth (Bandura, 1977). Theoretically, character development happens in or is affected by all these domains. Specifically, character development:

- Occurs when character strengths develop over time and reflect growth as they increase in quantity and quality (Baumeister, 2012; Peterson and Seligman, 2004);

- Can be measured (Peterson and Seligman, 2004; Shubert, Wray-Lake, Syvertsen, & Metzger 2018);

- Is developed with individual intent and effort (Park, July 26, 2011);

- May be gradual or rapid (Lerner & Callina, 2014);

- Is often influenced by one's environment (Lerner & Callina, 2014); and

- Is both stable and variable with potential to regress as well as progress (Baumeister, 2012).

These concepts define character development. While qualitative measures might better capture moral reasoning development, they have been available for decades (Card, 2017) but their use has been severely limited by their high cost in time and human capital (Diener et al., 2010). Quantitative psychosocial measures have proven a valid means of assessments (Haldane, 2014; Toner, Haslam, Robinson, & Williams, 2012). A primary concern of this study was to produce a practical assessment that schools could use to quickly test hundreds of students. A quantitative measure meets this need.

Character growth in this paper is defined as positively assessed character development. Collectively, character experts provide criteria for a measure of character development that:

- Is based on a multidimensional character construct developed from multiple sources of expert opinion (Duckworth & Quinn, 2009; Park and Peterson, 2006b)

- Measures intent and effort in multiple environments to do the right thing as defined by thought, words, and actions (Berkowitz, 2012; Peterson and Seligman, 2004)

- Is developmentally appropriate to those being assessed (Shubert, Wray-Lake, Syvertsen, & Metzger 2018)

- Is sensitive to change while reflecting stable patterns of behavior (Baumeister, 2012; Haldane, 2014)

- Is a valid numeric measure (Hanson & Roberts, 2006).

  Goals. This study's goals were:

  1. To discover the primary character strengths based on expert opinion in order…

  2. To construct the Character Growth Index (CGI) as a multidimensional character measure based on expert criteria; and

  3. To validate CGI.

The measure's name indicates the goal of assessing development over time but such a goal was not included here. The procedures of creating items and answer sets sensitive to change and tests to indicate whether this was accomplished will be provided in a later article. This study is based on the assumption that first a measure must be created and validated.

Adolescents were chosen due to (a) the rapid development occurring during these years (Park & Peterson, 2006b); (b) schools and juvenile justice's need for such a measure (Person, Moiduddin, Hague-Angus, & Malone, 2009); and (c) the linguistic and cognitive capacities of adolescents (rather than younger students) to understand such an instrument and engage in self-reflection and self-assessment (Toner, Haslam, Robinson, & Williams, 2012).

Conceptualizing character through its primary strengths. To establish clear theory and conceptualization that defines character's domain (Bailey, 1994), the opinion of acknowledged experts can be a basis indicating what is to be assessed. This can then be organized and conceptualized into a construct (Gierl, 1997).

Beginning with Aristotle, character theory has focused on defining character by its components or strengths (Peterson & Seligman, 2004). While other areas of psychology have broad acceptance of a taxonomy (The Big Five personality construct; John & Naumann, 2010), historically no such construct is widely accepted for character (Peterson & Seligman, 2004).

This study sought to generate a construct of primary character strengths by 1) literature review of expert opinion and 2) construction of a grid to determine the strengths they consider most essential for character development.

Literature review. The literature review indicated three fields produced the greatest emphasis on and study of character in the past 30 years: Character Education (Bulach, 1996; Davidson & Lickona, 2005; Josephson, 2011); Positive Youth Development (Leffert et al., 1998; Scales & Leffert, 2004; Search Institute, 1997); and Positive Psychology (Peterson & Seligman, 2004). Though researchers in each are aware of the others, collaboration seems uncommon until recently (Lerner, Vandell, & Tirrell, 2017).

Character education. Despite the Person et al. report (2009) quoted above, character education has been shown in numerous studies to have positive outcomes in student behavior, academic achievement, and school culture (Berkowitz & Bier, 2006; Tatman, Edmonson, & Slate, 2009). As a field of research, character education has seen multiple efforts to conceptualize character (e.g., Davidson, Lickona, & Khmelkov, 2010; Lickona, Schaps, & Lewis, 2003).

In 1992, the Josephson Institute sponsored the Aspen Declaration, which created a list of "shared ethical values..." (Josephson, 2009). Thirty scholars and advocates crafted by consensus six "...pillars that transcend cultural, religious, and socioeconomic differences" (see Table 1;

Josephson, 2011). The six pillars of Character Counts serve as meta-traits that encompass 24 character strengths (Josephson, 2011).

Lickona and Davidson developed Character Education's most extensive and nuanced conceptualization with three dimensions (see Table 1). These "represent a conceptual progression": the broad categories of Moral Character and Performance Character (Davidson & Lickona, 2009); ten essential virtues that are intrinsic qualities (Lickona, 2004); eight primary "Strengths of Character" that operationalize the virtues (Lickona & Davidson, 2005); and 65 strengths representing facets of the eight primary strengths (Davidson & Lickona, 2009).

Bulach developed a character construct and one of the only multidimensional tests called *Character Traits* to measure 16 "character dimensions" gathered from scores of secondary teachers (Bulach, 1996, 2002). Rather than assessing the student's own character, items ask the student's perceptions of peers' behavior. The instrument tested 462 students grades 3, 4, 7, and 10, and achieved .96 reliability but was never validated.

Positive Youth Development. Positive Youth Development (PYD) scholars have contributed numerous studies regarding youth development conceptualization and character (Gestsdottir & Lerner, 2008; Lerner & Callina, 2014). The Search Institute is a PYD think tank that created 40 Developmental Assets including 20 "internal developmental assets" as "personal characteristics and behaviors" (p.2). These 20 could be considered character strengths or indications of the presence of strengths (Leffert et al., 1998; Scales, Benson, Leffert, & Blyth, 2000; Search Institute, 1997, n.p.)

Positive Psychology. Positive Psychology has arguably the most extensive theory of character with 11 explicit criteria, detailed conceptualization, and a system of classification. In

Character Strengths and Virtues (2004), Peterson and Seligman analyzed "many dozens of virtues and strengths" (p.53) gathered from philosophers, religions, and various cultures world-wide. Peterson and Seligman defined character strengths as "the psychological ingredients – processes or mechanisms – that define the virtues" (p. 13).

In comparing the three, certain weaknesses to this approach appeared. Character education focuses on teaching and applying character to life but is weak on conceptualization and assessment (Card, 2017). Positive Youth Development promotes good research and assessment but takes a broad perspective that includes character with other factors in youth development (Bowers et al., 2010). Neither conceptualizes character with the rigor of Positive Psychology or has developed a valid multidimensional scale to assess character.

Researchers determined to use Positive Psychology as the primary source of the study's (a) integrated construct of these three fields and (b) guide to evaluate results of the created items' exploratory factor analysis. When a decision was made regarding a character strength's definition or item construction, input from Positive Psychology scholarship would be pre-eminent though not independent of the others.

Primary Strengths Grid. The second step was to enter strengths from each list on a grid. Positive Psychology's 24 were the initial organizing list to which the other four expert's lists were compared to determine homogeneity. Literature review of the criteria for inclusion, concepts, and definitions of each expert's list were carefully examined to determine the homogeneity with other experts. Peterson, Seligman, Lickona, Bulach, and a representative from the Josephson Institute were personally contacted regarding specific questions unanswered in their publications.

Through this process, twenty-nine strengths were identified and a name was chosen for each that best represented the five experts' definitions. A simple point system based on the experts' level of emphasis of each strength provided an assignment of observed frequency as illustrated in Table 1, Grid of Primary Character Strengths.

INSERT TABLE ONE HERE

Then the grid's 29 strengths were evaluated for synonymy. If strengths are conceptually similar, items created to measure each could double-factor, weakening construct validity. Additional expert opinions were considered (A. Duckworth, personal communication, February 23, 2013; Ashton et al., 2004; T. Lickona, personal communication, March 7, 2012; Worthington & Scherer, 2004). These processes resulted in determinations that (a) twelve strengths were retained as listed in the grid: Courage, Creativity, Forgiveness, Gratitude, Honesty, Humility, Kindness, Love, Peace, Self-Control, Spirituality, and Wisdom; (b) certain remaining strengths were combined:

- Optimism, Zest, and Confidence were represented by Optimism (Rashid, 2011).

- Social Intelligence was determined to include numerous aspects of Leadership (

- Citizenship, Teamwork, and cooperative aspects of Fairness and Leadership were best represented by Cooperation (Davidson & Lickona, 2005; Josephson, 2011; Park & Peterson, 2006b).

- All aspects of Diligence were best represented by Perseverance and Responsibility (Davidson & Lickona, 2005; Duckworth et al., 2007; Josephson, 2011)

- Open-mindedness, Respect, and the justice aspects of Fairness were best represented by Respect (Davidson & Lickona, 2005; Peterson & Seligman, 2004).

(c) Love of Learning and Leadership were dropped due to expert opinion questioning if these were character strengths or broader concepts (Cameron, 2011; Linley et al., 2007); and d) Wonder/Excellence and Humor were removed because they were only listed by Positive Psychology.

Though Positive Psychology (PP) was the most prominent of the five expert sources, the 19 strengths selected differ significantly from PP's 24. Four PP strengths were eliminated, five more were combined with other strengths, and three strengths omitted from PP's 24 were added (Peace, Respect, and Responsibility). Each of the five expert lists contributed significantly though to varied degrees.

This procedure produced 19 strengths that were hypothesized to cover the primary dimensions of character. Shubert, Wray-Lake, Syvertsen, and Metzger conclude, "… it is implausible, if not impossible, to comprehensively assess the development of all character strengths within any single study" (2018, p. 5). This study attempted to assess these Primary Dimensions of Character (Table 2) and accomplish this study's first goal.

INSERT TABLE TWO HERE

Test Development. This study's second goal was to construct the Character Growth Index (CGI) as a multidimensional character measure based on expert criteria that operationalizes and tests the conceptualization.

Validation Study. This study's third goal was to validate the Character Growth Index. Criteria to evaluate a measure's construct validity vary among metric experts (Clark & Watson, 1995; Costello & Osborne, 2005; Wolf, Harrington, Clark, & Miller, 2013). Eight criteria from numerous sources were gleaned to provide an assessments' construct validity. Table 3 identifies these criteria that this study deems rigorous, essential, and sufficient.

Exploratory factor analysis (EFA) was employed in the field tests and validation study in perhaps a novel manner. Rather than attempting to reduce factors to the smallest total, the hope was to create such strong items that they would factor with their hypothesized character strength. This is consistent with EFA's purpose as a procedure for inductive theory construction (Byrne, 2005; Fabrigar, Wegener, MacCallum, & Strahan, 1999; Mulaik, 1987). These studies created items based on the best available concepts of strengths and let EFA produce insight regarding the strengths' cohesion and structure (Costello & Osborne, 2005; Garson, 2008).

Some researchers view the factor criterion of an Eigenvalue > 1.0 to be inferior to a scree plot. The complication of the latter is that the number of data points near the plot's curve can be unclear. The fix for this is to run multiple factor analyses with specified numbers of factors (Costello & Osborne, 2005). These studies used the multiple factor analyses approach to establish the number of factors while including the additional criteria in Table 3. Due to criteria 5-8, numerous factors with Eigenvalues over 1.0 were eliminated in each study. The combination of all 8 criteria have sufficient scholarly support to validate factorial structure.

INSERT TABLE THREE HERE

Method

Creating the Character Growth Index. This study's second goal was to construct the Character Growth Index (CGI) as a multidimensional character measure based on the Primary Dimensions of Character. The design criteria include creating items that:

- Are based on a character construct developed from multiple sources of expert opinion (Bailey, 1994; Gierl, 1997) that provide precise strength definitions

- Measure intent and effort in multiple environments to do the right thing (Berkowitz, 2012)

- Ask about self-perceptions and behavior that is "… stable… but also malleable" (Peterson & Seligman, 2004, p. 12)

Two field tests were conducted to create the Character Growth Index (CGI). They involved an iterative process of creating criteria-based items to measure the primary dimensions, field testing those items, analyzing the results with exploratory factor analysis and rigorous criteria (detailed below), redefining strengths that came close to factoring or proved difficult to measure as defined (Honesty, Humility, Wisdom), improving the items, and repeating the process (Clark & Watson, 1995).

The first field test involved 798 students from three Missouri middle schools. Of these, 402 respondents were female, 73% Caucasian, 12% Hispanic, 6% African American, 2% Asian/Pacific Islander, and 7% Other. An indication of socioeconomic status is that 48% received free or reduced prices for school meals.

The initial test assessed 19 strengths with 4+/- items per strength and was subjected to exploratory factor analysis using Promax oblique rotation. Alpha is a reliable measure (.901) with strong sampling adequacy (Kaiser-Meyer- Olkin .968), and sphericity (.000). Exploratory factor analysis indicated 11 of the 19 primary dimensions of character factored with 57 items meeting or approximating the criteria. These items were improved, new items added, and became the second field test.

The second field test, named the Character Growth Index (CGI), was taken by 483 seventh and eighth grade students from a Midwest US middle school. 251 respondents were female, 244 were in seventh grade and 239 were in eighth grade. Students were 92.9% Caucasian, 1.8% Hispanic, 2% African American, 1.2% Asian, 0.6% Native American, and 1.5% Other. The percentage of students receiving Free and Reduced Lunch was 42.3%.

CGI produced ten strengths that factored and met criteria, one strength (Honesty) that approximated criteria and was retained and refined, and eight strengths that did not factor. Of the latter, Respect and Responsibility were hypothesized to be meta-strengths and six showed promise to factor in future CGI development (Table 2). The 11 factors had 45 items that met or approximated criteria. It was decided that the study should focus on these to construct, implement, and validate the Character Growth Index (CGI).

To refine CGI, all items were reviewed. Additional expert opinion was received from R. Biswas-Diener, A. Duckworth, P. Heppner, R.M. Lerner, T. Lickona, and W. Rowatt (personal communication) and further literature review conducted to refine primary strength definitions (Biswas-Diener, 2012; Duckworth, 2011; Lee & Ashton, 2006; Worthington & Scherer, 2004). Ten new items were created based on the existing items that scored their factor's highest

coefficient alphas. These included three additional items to measure Honesty, determined by expert opinion to be essential for a multidimensional character measure (Lickona, 2004).

Participants. A convenience sample of 835 grades 6-8 students from a Midwest US public middle school completed the 107 items. Data screening produced 784 valid tests and 396 were females. Student diversity was 12% African-American, 12.8% Asian, 49% Caucasian, 4.3% Hispanic, 1% Native American, 13.7% Other, and 7.2% two races. The percentage of students receiving Free and Reduced Lunch was 51.7%.

Measures. Measures were available on the Qualtrics platform for computer administration (www.qualtrics.com). The Character Growth Index contained 55 items to assess 11 primary character strengths with 5 items each and using a 5-point Likert scale ('Strongly agree' to 'Strongly disagree')

A validation study requires administering the new assessment with an existing validated measure to the same subjects and preferably at the same time. The best brief, valid, multidimensional character measure is the 96-item *VIA Youth Survey* (VIA-YS; Park, 2005; Park & Peterson, 2006a; 2006b; 2007).

Of the 24 VIA strengths, 13 were considered conceptually related to the 11 CGI strengths. Nine CGI factors matched VIA-YS strengths: Bravery (for CGI Courage), Kindness, Love, Spirituality, Forgiveness, Humility, Honesty, Perseverance, and Self-Regulation (for CGI Peace). Two CGI factors were hypothesized to correlate and factor with more than one VIA-YS strength: CGI Wisdom with VIA Judgment and Prudence and CGI Optimism with VIA Zest and Hope. The 52 VIA items (four to measure each strength) were chosen to be the measure used in the validation study. With CGI's 55, the test had 107 items.

The 13 subscales of the VIA-YS had not been previously subjected as a unit to reliability and validity measurement. Due to previous validation of the VIA-YS (Park & Peterson, 2006b; Toner, Haslam, Robinson, & Williams, 2012), we determined that, if exploratory factor analysis of the 13 subscales met this study's eight criteria for construct validity, the VIA-YS 13 subscales' validity would be confirmed.

Results

Some students had special needs and could not finish the test while others failed to complete it. With 784 finished surveys, sample size met criteria of greater than 500. Average administration time was 17 minutes. Cronbach's alpha for the 55 CGI items was .944 and test/retest at 9 weeks (due to administrative delay) correlated at .720 indicating CGI is a reliable measure (Diener, Inglehart, & Tay, 2012; Gay & Airasian, 2000). Sampling adequacy (.943) and sphericity (significant at .000) were good. Results from exploratory factor analysis using Promax oblique rotation and correlations follow.

CGI factor analysis. Of 55 CGI items, 52 factored (95%) and the other three almost factored with coefficient alphas of .367, .366, and .353. Items that grouped with their intended factor totaled 51 (93%). Eight of the 11 factors included all 5 of their hypothesized items. These data indicate CGI item construction was strong (Hanson & Roberts, 2006).

Multiple factor analyses were conducted with specified numbers of factors (Costello & Osborne, 2005). The best fit of these produced all 11 hypothesized factors with Eigenvalues > 1.0 and explained 58.5% of the total variance. Coefficient alphas for six were > .8, four were .769-.791, and the eleventh (Honesty) was .684.

Of 55 CGI items, 52 factored (95%) and the other three almost factored with coefficient alphas of .353, .367, and .397. All items within each factor had communalities nearing or >.4 without double-factoring. Only four items failed to group with their intended factor. Each factor has two or more qualifying items.

Construct validity. The eight criteria for construct validity (Table 2) were met. Inter-scale correlations were significant and acceptable. CGI item construction proved strong with 52 of 55 items factoring (95%), none double-factoring, and the three remaining items approximated criteria at >.353. Significantly, 51 of the 55 items factored with their hypothesized character strength. The 11 CGI character strengths with structure coefficients and number of items are in Table 4.

INSERT TABLE FOUR HERE

Intra-scale correlations. Intra-scale correlations (comparing one CGI strength with another) ideally are a mix of non-correlating, low correlating, and moderate correlating strength pairs. Intra-scale correlations are non-correlating if below .3, low if .3-.5, and moderate if .5-.7 (Garson, 2008; Hanson & Roberts, 2006). Of 55 paired correlations, CGI had six moderate and 20 low correlations with 29 non-correlating pairs (Table 5).

INSERT TABLE FIVE HERE

VIA-YS analytics. Exploratory factor analysis of the 52 VIA-YS items showed strong reliability (.937) and produced 11 factors (ten that were easily interpreted as identical to CGI factors), and had acceptable structural coefficients. Two factors had alphas of .689 and .692, approximating the .7 criteria. Of its 52 questions, ten VIA-YS questions didn't factor and two questions double-factored (76.9% factored).

The two combined pairs of Positive Psychology strengths (Judgment + Prudence and Hope + Zest) factored together as hypothesized. Each pair comprises one factor similar, respectively, to CGI Wisdom and Optimism. Results indicate these combined 13 VIA-YS subscales met or approximated all 8 criteria for factorial structure and are a valid multidimensional measure of character (Costello & Osborne, 2005).

Concurrent validity. CGI correlation with the 52 items of the 96-item *VIA Youth Survey* using Spearman's *rho* was high at .851 (Garson, 2008; Hanson & Roberts, 2006). All CGI items in each subscale were compared to all items in all 13 VIA subscales and the combined Judgment+Perspective and Hope+Zest subscales. All of the corresponding sample correlations (CGI strength paired with VIA strength) were significant, ranging from .405-.806 (Table 5). Nine were .5 -.599, six were .6 -.699, four were .7-.799, and Optimism was .806.

Paired sample correlations show two of CGI's 11 factors are correlated with their paired VIA concept >.4, five are moderately correlated at >.5, and four are strong at >.7 (Gay & Airasian, 2000; Haynes, Richard, & Kubany, 1995; Meyers, Gamst, & Guarino, 2006). These reflect strong concurrent validity. Results indicate the 11 CGI subscales met or approximated all 8 criteria for factorial structure and are a valid multidimensional measure of character (Costello & Osborne, 2005).

INSERT TABLE SIX HERE

Discussion

Construct validity. The eight criteria for construct validity (Table 2) were met. Inter-scale correlations were significant and acceptable. CGI item construction proved strong with almost all items factoring with their hypothesized character strength.

Arguably the greatest indication of CGI's construct validity is the success of EFA to indicate all 11 factors were easily interpretable as the hypothesized character strengths. A number of researchers reported this was unique in their readings of multidimensional assessment. These data illustrate the effect of EFA as a procedure for inductive theory construction (Byrne, 2005; Fabrigar, Wegener, MacCallum, & Strahan, 1999; Mulaik, 1987).

Concurrent validity. VIA Youth Survey is not only the best but the only assessment to establish CGI's concurrent validity. CGI's high correlation with VIA does not mean the tests are the same or even measure the identical construct (Salkind, 2010). First, CGI is conceptualized from three distinct fields of research and has at least three of its eleven strengths that are distinct from VIA-YS. Second, certain CGI strength items factor differently than VIA-YS. For example, VIA Bravery items factored with VIA Kindness while CGI Courage items factored separately from CGI Kindness and did not correlate with it (.233). The high CGI-VIA correlation could indicate that the three character fields (Positive Psychology, character education, and Positive Youth Development) are conceptually similar.

This study also indicated the combined 13 subscales of the 96-item *VIA Youth Survey* (VIA-YS13) are a valid instrument. While originally intending to validate one character assessment, this study validated two. The VIA-YS13 provide a psychometrically sufficient measure for this validation study. The fact that VIA-YS's factors were almost identical to CGI factors is another illustration of the ability of exploratory factor analysis to assist inductive theory construction (Byrne, 2005; Fabrigar, Wegener, MacCallum, & Strahan, 1999; Mulaik, 1987).

Review of the study's goals. The first goal was to determine the primary character strengths from the three notable character fields: Positive Psychology, character education, and

Positive Youth Development. These were identified and items created for their assessment. The two field tests were

This study's data analysis and interpretation indicate its second and third goals were achieved. CGI performed as hypothesized:

- CGI with 55 items can measure 11 character strengths reliably with 11 distinct yet correlated factors; and
- CGI is a valid instrument to measure these 11 dimensions of adolescent character.

The research question is: *Can a valid, reliable measure of multi-dimensional adolescent character be developed?* The results answer the question affirmatively. Those looking for a means to measure these eleven strengths in young adolescents have a valid assessment option in the CGI.

Since these studies concluded, CGI was translated into Turkish, administered to 604 high school students, and a confirmatory factor analysis was performed (Kaya & Eksi, 2017). Their study demonstrated that 11 factor model fitted the data well and they concluded CGI in Turkish is a reliable and valid instrument. This indicates CGI's cross-cultural assessment ability.

Additionally, CGI has been translated into Spanish and Urdu, and a UK adaptation is available. Norms for gender, age, nation, and language are being developed. The answer set has been changed to better reflect growth and address the ceiling effect common in developmental measures.

Conceptually, better definitions and stages of adolescent character development are needed. Questions to answer include: What defines normal character development? What is character regression and what are its causes? Is regression a normal part of the developmental

process? Are there observable, measurable, predictable stages of progression? How do we assess a variable trajectory with a linear, quantitative assessment?

Future CGI studies could seek: (a) to conduct additional confirmatory factor analysis to discover second-order factors and measure discriminant, convergent, and predictive validity; (b) to add observer reports by teachers, parents, peers, and mentors; (c) to add context and relational evaluation that includes family, school, and community; (d) to develop a structural equation model (Steyer, Eid, & Schwenkmezger, 1997) such as the integrated state-trait model (Hamaker, Nesselroade, & Molenaar, 2007) to determine CGI's ability to measure character growth; (e) provide measurement invariance testing across demographic groups and time; and (f) to examine if CGI predicts behavioral improvement (aspects of school performance and behavioral measures).

CGI provides a new tool for researchers to use in pursuit of quantitatively measuring character growth. CGI may have potential to be used as pre- and posttests in a longitudinal study with character training interventions. The most interesting question that remains is whether, in a longitudinal study with a character training intervention, CGI can show multidimensional character growth. Overall, this study provides a strong, positive replication of the technical adequacy of the CGI, suggesting that it is a psychometrically sound measure for school psychological research and, potentially, practice.

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TABLES

Table 1: Grid of Primary Character Strengths

Authorities >	Positive Psychology	Character Counts	Lickona & Davidson	Bulach's 16 Traits	Search Institute's 20 Internal Assets	Total
Primary Strengths:						
Love/Care	x	x	x	x	x	5
Responsibility	Prudence	x	x	x	x	5
Fairness	x	x	Justice	x	Equality/justice*	4.5
Honesty	x	#	Integrity	x	x	4.5
Self-control	x	#	x	x	Restraint	4.5
Kindness	x	Knd/Gnrsty	Knd/Mercy	x	Intrprsnl cmptnc *	4.5
Social Intelgc.	Social intelg	Trustworthy	Soc-emo skill	Crtsy/polite	Intrprsnl cmptnc *	4.5
Citizenship	#	x	x	x	School Bond*	4
Open-minded	x	#	Ethical thinker	Toler/divers	Equality/justice*	4
Perseverance	Persistence	#	Hard work	x	Homework*	4
Teamwork	#	#	x	Sportsmnshp	Cultural comptnce*	3.5
Humility	x	#Srving/Obdc	x	x		3.5
Diligence		#	x	x	Achievement	3.5
Courage	Bravery	#	Fortitude		Intgrty*,Resistance*	3.5
Respect		x	x	x	Cultural comptnce*	3.5
Spirituality	x		Spirit'l, Purps.		Purpose	3
Forgiveness	x	#	^^	x		3

Learning	Love lrn'g		Life learner		Engage.*, Read*	3
Optimism	Hope		Pos. Attitude		Positive Future	3
Wisdom	x		x		Plan'g/ decsnmkg	3
Gratitude	x	#	x			2.5
Leadership	x	#Initiative	x			2.5
Peace		#Patience	^^		Pers Pwr,* Cnfl Rs*	2
Curiosity	x		^^		School Engage*	2
Confidence			^^		Self-esteem	1.5
Creativity	x		^^			1.5
Zest	x		^^			1.5
Wonder/Excel	x					1
Humor	x					1

Coding Explanation: Some cells contain similar words the expert used to represent that strength.

If the cell is blank, the expert did not include the strength.

x means the expert's strength name is similar or identical to the collective name (1 point).

means the strength is taught as an aspect of one of the Six Pillars (½ point).

^^ means the strength is on Lickona and Davidson's larger list of over 65 strengths (½ point).

* means the strength is an aspect of one of the 20 Search Institute Assets (½ point).

Table 2: Primary Dimensions of Character

Cooperation+	**Courage**	Creativity+	Curiosity+
Forgiveness	Gratitude+	**Honesty**	**Humility**
Kindness	**Love**	**Optimism**	**Peace**
Perseverance	Respect*	Responsibility*	Self-Control+
Social Intelligence+	**Spirituality**	**Wisdom**	

Bold = Dimensions that factored in CGI

* Dimensions that failed to factor and were hypothesized to be meta-strengths

+ Dimensions that showed promise to factor and had one or two qualifying items

Table 3. Criteria to Evaluate CGI Factorial Structure

Criterion	Reference
1. Sample size (N) > 500	MacCallum, Widaman, Zhang, & Hong, 1999; Wolf, Harrington, Clark, & Miller, 2013
2. Exploratory factor analysis using Promax oblique rotation and maximum likelihood extraction	Fabrigar, Wegener, MacCallum, & Strahan, 1999
3. Reliability & sampling adequacy >.90; sphericity .000; test/retest >.7 for adolescent sample	Cronbach & Meehl, 1955
4. Factors have Eigenvalue > 1.0	Comrey & Lee, 1992
5. Factor's structural coefficients are near or exceed .7	Thompson & Daniel, 1996
6. Factors are easily-interpretable	Clark & Watson, 1995
7. Each item within a factor has item communalities nearing or >.4 without double-factoring	Hanson & Roberts, 2006; Humphreys & Montanelli, 1975
8. Each factor must have two or more qualifying items	Costello & Osborne, 2005

Table 4. Validated CGI Factors, Definitions, Alphas, and Item Totals

CGI Factor	Definition of Factor	Structure Coefficient and # of Items
F1 Kindness	Charitable, compassionate, and protective consideration and treatment of others	.843 6
F2 Spirituality	Awareness of transcendence or Divinity that influences mood, thought, and behavior	.871 5
F3 Perseverance	Continuing effort to complete one's goal despite difficulty and delay	.845 5
F4 Forgiveness	Overcoming reactivity to perceived injustice	.806 5
F5 Optimism	Hopefulness, positivity, confidence, and enthusiasm	.808 5
F6 Wisdom	Perception, foresight, and awareness of consequences that enable good decision-making	.829 7

F7 Courage	Brave, reasoned choices to act despite fear or danger	.791 4
F8 Peace	Calmness despite agitation and stress	.771; 5
F9 Love	Close-knit relationship marked by enjoyment, endearment, and trust	.769 4
F10 Honesty	Truthful overtly and covertly; authentic, creditable; without duplicity or deceit; choosing not to lie, cheat, or steal	.684 4
F11 Humility	The willingness to admit mistakes, enjoy other's success, and know one's strengths and weaknesses without need for acclaim	.786 2

Table 5. Intra-scale Correlations of CGI's 11 Factors

Component	1	2	3	4	5	6	7	8	9	10
1 Kindness										
2 Spirituality	.504**									
3 Perseverance	.406*	.390*								
4 Forgiveness	.216	.253	.397*							
5 Optimism	.390*	.505**	.501**	.373*						
6 Wisdom	.375*	.405*	.380*	.138	.547**					
7 Courage	.355*	.293	.547*	.231	.320*	.269				
8 Peace	.423*	.372*	.399*	.295	.548**	.485*	.286			
9 Love	.287	.272	.288	.193	.270	.178	.103	.287		
10 Honesty	.369*	.438*	.369*	.139	.359*	.257	.257	.226	.233	
11 Humility	.216	.300*	.266	-.019	.216	.190	.244	.177	.259	.416*

* Low correlation

** Moderate correlation

Table 6. Paired Sample Correlations of CGI Factors to VIA Subscales

Strengths beginning with V are from the VIA subscales and those with C from CGI.

CGI Strength VIA Correlates	CSpir	CHon	CHum	CFor	CPer	CLove	COpt	CKin	CPea	CCou	CWis
VSpirituality	.785***	.240	.219	.252	.299	.276	.341*	.199	.199	.201	.276
VHonesty	.305*	.405*	.373*	.334*	.427*	.362*	.378*	.347*	.387*	.282	.493*
VHumility	.442**	.379*	.523**	.368*	.308*	.334*	.318*	.389*	.354*	.201	.356*
VForgiveness	.266	.312*	.333*	.676**	.300*	.308*	.389*	.350*	.447*	.197	.405*
VPerseverance	.316*	.532**	.429*	.365*	.740***	.444*	.516**	.368*	.428*	.318*	.621**
VLove	.280	.359*	.337*	.388*	.422*	.560**	.584**	.337*	.342*	.261	.405*
VOptimism#	.354*	.332*	.391*	.466*	.493*	.517**	.806***	.407*	.531**	.466*	.522**
VHope	.334*	.318*	.374*	.444*	.492*	.468*	.728***	.343*	.537**	.452*	.500**
VZest	.316*	.292	.343*	.411*	.412*	.479*	.748***	.401*	.438*	.403*	.458*
VKindness	.316*	.377*	.400*	.391*	.401*	.497*	.422*	.730**	.298	.233	.428*
VSelf-Control	.248	.279	.419*	.358*	.297	.227	.317*	.241	.505**	.268	.316*
VCourage	.261	.387*	.452*	.353*	.407*	.362*	.440*	.698**	.397*	.426*	.485*
VWisdom+	.340*	.413*	.498*	.398*	.516**	.324*	.484*	.363*	.509**	.349*	.650**
VJudgment	.338*	.450*	.481*	.408*	.547**	.338*	.492*	.365*	.504**	.345*	.654**
VPrudence	.284	.296	.432*	.317*	.389*	.251	.391*	.298	.427*	.293	.533**

All correlations are statistically significant

VOptimism combines VIA subscales Hope and Zest

+ VWisdom combines VIA subscales Judgment and Prudence

* Low correlation (.3-.5)

** Moderate correlation (.5-.7)

*** High correlation (.7-.9)