Structural Evidence of the Strengths Self-Efficacy Scale among University Students

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Strengths-based education has increasingly gained attention among colleges and universities (Schreiner, 2010; Stebleton, Soria, & Albecker, 2012). This is in part because of its connectedness of talent awareness to overall well-being (Proctor, Maltby, & Linley, 2011). For example, Dalton and Crosby (2009) suggest “positive aspects of personality such as talents, feelings, interests, and strengths have salutary effects on individuals’ search for happiness, the good life, and personal fulfillment” (p. 4). Strengths or talent awareness may also help to foster hope during challenging times (Dalton & Crosby, 2009). Additionally, understanding one’s strengths has been shown to be predictive of attendance, achievement, credits earned, and student retention (Lopez & Louis, 2009), suggesting value for both character development and educational success.

A widely used assessment for identifying one’s talents is the Clifton StrengthsFinder, “developed by Gallup and typically administered through StrengthsQuest” (Lopez & Louis, 2009, p. 3). StrengthsQuest is an educational model that provides students with the knowledge and awareness of their individual talents, promotes individual growth and has been used by more than 600 campuses and 850,000 students in North America (The Gallup Corporation, 2011). Potential benefits of this model have been reported in scholarly literature (Lane & Chapman, 2011; Wisner, 2012) including the Journal of College and Character (Bowers & Lopez, 2010; Synder & Lopez, 2002; Stebleton, Soria, & Albecker, 2012).

Given the purported value of talent awareness to well-being and student success, there has been a call for the exploration of experiences that foster strengths’ development (Lopez & Louis, 2009). However, the principles of strengths-based education (Lopez & Louis, 2009), which include “deliberate application” and “intentional development” of individual talents, may rely in part on one’s belief in them. Without such evidence, the ability to explore the
effectiveness of strengths-based education as an intervention may be limited. A strengths self-efficacy scale exists (Zhao, Tsai, Chaichanasakul, Flores, & Lopez, 2010) and has been used in at least one prior study examining its relationship with individual values of the Social Change Model of Leadership (Lane & Chapman, 2011). However, the ability of strengths’ self-efficacy to predict hope, well-being, and meaning in life has not been previously examined. This study reexamines the strengths self-efficacy scale within a multi-institutional independent sample and its relationship among college students to the constructs above.

**Strengths-Based Education**

Identifying and developing individual talents to maximize one’s potential has received considerable attention in recent years. Grounded in positive psychology, the idea is that talent identification should move away from deficit preoccupation to building upon positive qualities such as well-being, hope and optimism, flow and happiness, future mindedness, perseverance and high talent at both the individual and subjective levels (Seligman & Csikszentmihalyi, 2000). Institutionally, this focus can be applied such that it “move[s] individuals toward better citizenship: responsibility, nurturance, altruism, civility, moderation, tolerance, and work ethic” (p. 5).

The Clifton StrengthsFinder assessment is a popular instrument to help identify individual talents and was developed on the idea that individuals perform at higher levels when they build upon their dominant talents and make similar efforts to remediate their areas of lesser talents (Clifton & Harter, 2003). When people become aware of each other’s talents and strengths, there is an increased understanding of others and increased interpersonal closeness and cooperation and a greater sensitivity to social barriers that would otherwise traditionally limit individuals from reaching their potential (Clifton, Anderson, & Schreiner, 2006).
From an individual perspective, an awareness of individual talents brings about greater self-confidence and a sense of identity and direction (Clifton, Anderson, & Schreiner, 2006). This awareness is important because it relates to self-efficacy which has been show to aid in task performance, persistence and psychosocial outcomes (Bandura, 1997; Hagedoorn & Molleman, 2006; Multon, Brown, & Lent, 1991). As such, individuals should design a plan to gain control and implement one’s strengths across different roles and situations, measured through the concept of strengths self-efficacy – an individual’s beliefs in their capability to apply personal strengths in their daily lives in order to maximize one’s potential (Zhao, Tsai, Chaichanasakul, Flores, & Lopez, 2010).

**Strengths Self-Efficacy**

Strengths self-efficacy is grounded in hope, which serves “an activating force that enables people, even when faced with the most overwhelming obstacles, to envision a promising future and to set and pursue goals” (Helland & Winston, 2005). Creating positive change could not be envisioned without “the process of thinking about one’s goals along with the motivation to move toward those goals (agency), and the ways to achieve those goals (pathways)” (Synder, 1995, p. 355). Therefore, hope should be considered given its positive relationship with psychological well-being, self-esteem, optimism, positive affect, and persistence (Snyder et. al, 2002).

However, StrengthsQuest is an educational tool that provides only one’s identified talents and does not directly measure the belief in those talents. As such, Zhao, Tsai, Chaichanasakul, Flores and Lopez (2010) developed a strengths self-efficacy scale to assess individuals’ perceived self-efficacy in the utilization of their personal strengths. A strength is the ability to provide consistent, near-perfect performance in a specific task using a set of individual talents.
As such, strengths self-efficacy is defined as an awareness and belief in one’s individual talents and is grounded in positive psychology (Zhao et al., 2010). Literature on the broader construct of self-efficacy suggests this improves in task performance and persistence and has the potential to assist people in addressing psychological, physical, and social challenges more effectively and with more confidence (Bandura, 1997; Hagedoorn & Molleman, 2006; Multon). Therefore, Zhao et al., (2010) suggest devising plan to gain control of and implement one’s strengths across different roles and situations.

The purpose of this study was to test the stability of that factor structure in an independent sample of individuals.

**Methodology**

**Sample**

Data ($N = 139$) was collected from undergraduate students attending a private mid-size urban institution in the southwest with a total population of approximately 7,640. Students at this university are primarily traditional age and live on-campus (46%). Approximately, 75% of the sample were white/Caucasian, 8.6% Asian American, 9.4% Latino/a, 3% African American, and 4% other. Students in the study were generally high achieving ($M_{gpa} = 3.48, SD = .402$) and engaged in the community ($M = 7.35, SD = 5.841$). Approximately 69% ($N = 96$) were women, which was slightly above the university demographic where women constitute 59% of the undergraduate student population.

**Procedure**

In the current study, students enrolled in 10-week co-curricular classes who had previously taken the Clifton StrengthsFinder inventory were invited to respond to a paper survey
about their individual talents. Classes were open to all students at the institution. Students were informed that participation was voluntary and that their responses would be kept confidential. No compensation or incentives were provided for their participation in the study. The entire survey contained 130 items and took approximately 30 minutes to complete. Sixteen items from the original strengths self-efficacy scale (SSES) were used to test the factorial validity of the instrument. The remaining items were used to test the convergent validity of this scale to theoretically related constructs.

**Instruments**

*Strength’s Self-Efficacy Scale (SSES).* The SSES is a 16-item scale designed to measure individual beliefs in their top 5 strengths (Zhao, Tsai, Chaichanasakul, Flores, & Lopez, 2010). First, participants identify five of their strengths which is defined as a combination of talent, knowledge, and skills. Participants then rate their level of agreement to each item, measured on a 10-point Likert scale (1 = do not agree, 10 = strongly agree), about their belief in their ability to use those identified strengths. Exploratory findings of the instrument’s factorial validity identified a two-factor solution accounting for 59.4% of the total variance within the items. Latent factors of the instrument include a person’s ability to build on their individual talents (Strengths Building) and their ability to apply these strengths in everyday settings (Strengths Application). Both latent factors and the total test score were found to have strong internal consistency. (Strengths Application: $\alpha = .96$; Strengths Building: $\alpha = .91$; Total scale $\alpha = .97$).

*Adult Trait Hope Scale (ATH).* The adult hope scale is designed to measure Snyder’s cognitive model of hope which is "a positive motivational state that is based on an interactively derived sense of successful (a) agency (goal-directed energy), and (b) pathways (planning to meet goals)" (Snyder, Irving, & Anderson, 1991, p. 287). The ATH scale consists of twelve
items measured on an 8-point likert scale (1 = definitely false, 8 = definitely true) and represent two latent factors. Four items measure pathways thinking, four items measure agency thinking, and four items are used as noise. The instrument has been shown to have strong internal consistency with alpha coefficients ranging between .74 - .84 and test-retest reliability of .80 or higher (Snyder et al., 1991). Hope is positively correlated with dimensions of psychological well-being including self-esteem, optimism, and positive affect (Snyder et al., 2002). Academically, hope predicts resilience (Worrel & Hale, 2001), academic success (GPA), and persistence (Snyder et al., 2002). Hope is assumed to have a moderate positive correlation with strengths self-efficacy as those who have high energy and commitment toward goal attainment should also have confidence in their abilities to use their talents (Clifton, Anderson, & Schreiner, 2006).

**Meaning in Life Questionnaire (MLQ).** The Meaning in Life Questionnaire (MLQ) was developed to operationalize Steger et al. (2005) theoretical construct of purpose and to improve on previously existing meaning in life measures. The instrument is a two dimensional scale measured across 10 items and uses a 7 point likert scale (1 = Absolutely Untrue; 7 = Absolutely True). The presence of meaning latent factor measures how full respondents feel regarding a sense of meaning & purpose in their lives and is positively related to well-being, extraversion and agreeableness, and negatively related to anxiety and depression. The search for meaning latent factor measures how engaged and motivated respondents are with regard to finding meaning in their lives and is positively related to negative affect, depression, and neuroticism, while negatively related to future time perspective and well-being. The MLQ has been shown to demonstrate good reliability and factor validity (Stenger, Fraiser, Oishi, & Kaler, 2006). Self-
efficacy beliefs in individual talents should be positively correlated to the search dimension of the MLQ while negatively related to presence.

*Satisfaction with Life Scale (SWLS).* The SWLS is a 5-item measure of life satisfaction designed to measure subjective well-being and is commonly used when testing the convergent validity of new instruments (Oishi 2006). Higher scores on the SWLS indicate higher levels of life satisfaction and well-being. Strength’s self-efficacy is directly connected to an individual’s belief in their talents and how those talents are used toward goal development and attainment. Therefore, satisfaction with life should be positively related to increased strengths self-efficacy.

*Academic Self-Efficacy Scale (ASES).* Self-efficacy is grounded in social cognitive theory and based on an individual’s belief in their ability to perform at a specific level (Bandura, 1986). Academic self-efficacy scale measures participant agreement regarding confidence in their ability to perform optimally on academic tasks. The measure has been found to have an internal reliability estimate of $\alpha = .81$ and is positively correlated with other constructs such as optimism and self-concept. Longitudinal data suggest academic self-efficacy has direct and indirect positive relationships with academic performance and personal adjustment and is affected by personal and situational influence (Chemers, Hu, and Garcia, 2001; Schunk & Pajares, 2002). Talent identification and strengths self-efficacy should be positively to academic self-efficacy given that academic success and career goal attainment are primary foci of post-secondary education.

**Data Analysis**

An exploratory factor analysis (EFA) was conducted in SPSS v. 18.0 to test the factor structure of the instrument. A number of recommendations exist in the literature concerning sample size adequacy for exploratory factor analysis. Samples of 150 are adequate when factor
loadings are > .80 (Tabachnick & Fidell, 2007) or a ratio of 5 participants to each variable can also be considered sufficient (Keiffer, 1999). The current study employed a ratio of approximately 8:1 using a sample of 139 participants and was considered suitable for factor analysis.

Factors were extracted using a principle components analysis (PCA) and obliquely rotated using Promax criteria with a delta of 0. Previous studies have examined these latent factors orthogonally (Zhao, Tsai, Chaichanasakul, Flores, & Lopez, 2010). However, rotation decisions should consider both theory and interpretability. While orthogonal rotations may be easier to interpret, they can fail to accurately account for the relationship between latent variables. Given that the two factors in the literature share a great deal of variance (r = .85), factors were initially specified to correlate with one another.

Multiple criteria were used in determining the number of factors to retain as recommended in the literature (Henson & Roberts, 2006; Henson, Capraro, & Capraro, 2004; Keiffer, 1999; Zwick, & Velicer, 1986). Both minimum average partial and parallel analysis have been shown to be the most accurate in evaluating component retention, (Zwick & Velicer, 1986). Therefore, Eigenvalue > 1.0, the scree plot, minimum average partial, and parallel analysis were all used in the analysis. Additionally, factor pattern and structure coefficient loadings along with communality coefficients were used to aid in the interpretation of results. After a suitable structure was identified, convergent validity of the SSES was examined using 5 measures of hope, well-being, and student engagement to empirically ground the instrument in both positive psychology and college student development literature. Correlation coefficients were examined using factor scores obtained from the EFA process given that this has been shown to be more accurate than other non-refined methods (DiStefano, Zhu, Minkrla, 2009).
Results

Descriptive statistics were examined among the variables in the analysis and items included in the final solution are reported below (Table 1). Both skewness and kurtosis values were found to be within acceptable ranges suggesting a reasonably normal distribution of data. Cronbach’s alpha coefficients were calculated for items on a priori factors specified previously in the literature (StrengthsBuilding $\alpha = .871$; Strengths Application $\alpha = .945$). Both were found to be above recommended values of 0.8 for new instruments (Henson, 2001). The internal consistency of the Strengths Application factor was consistent with previous findings ($\alpha = .96$) but lower than that found by Zhao, Tsai, Chaichanasakul, Flores, & Lopez (2010) for Strengths Building ($\alpha = .91$). No questions were identified in the current data which could be removed to improve the overall reliability of the instrument. Therefore, no modifications were made based on internal consistency estimates of the data.

Table 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSES1</td>
<td>8.06</td>
<td>1.575</td>
<td>-.662</td>
<td>-.290</td>
<td>Use your strengths at work</td>
</tr>
<tr>
<td>SSES2</td>
<td>7.16</td>
<td>1.680</td>
<td>-.244</td>
<td>-.320</td>
<td>Identify ways to build on existing strengths</td>
</tr>
<tr>
<td>SSES4</td>
<td>6.78</td>
<td>1.692</td>
<td>.013</td>
<td>-.688</td>
<td>Track the growth of your strengths overtime</td>
</tr>
</tbody>
</table>
### Exploratory Factor Analysis (EFA)

Two factors were initially extracted using the Kaiser-Guttman rule (Eigenvalue >1) explaining approximately 67% of the variance in the items. Examination of the scree plot suggested 1 factor within the data. Parallel analysis (O'Connor, 2000) indicated 1 factor using the 95th percentile of randomly generated eigenvalue means. Minimum average partial (Velicer, 1976; Velicer, Eaton, & Fava, 2000) suggested 2 factors be retained. Therefore, two subsequent principle component analyses were performed for both 1 and 2 factors constraining for factor pattern coefficients > .40 in order to identify the most interpretable structure. The one factor model explained 59.5% of variance among the items while the 2 factor model explained approximately 11% additional variance. Given that the two factors were found to be moderately correlated ($r = .603$), a decision was made to use two factor model.

When examining the 2 factor model, item 3 appeared problematic given its low communality coefficient ($h^2 < .40$). Further investigation seemed to suggest that perhaps this was the result of a method effect based on item wording and was removed from the analysis. A
second PCA was then performed using the remaining 15 items. Item 8 was found to have a factor pattern coefficient slightly above .40 on both dimensions but failed to highly saturate any one latent factor relative to the other items. Given that the similar wording of items 8 and 14 but with item 14 performing better overall, a decision was made to remove item 8 from the analysis. Lastly, item 5 was equally represented by both factors but was retained based on its high factor pattern coefficients (> .50) and a high communality ($h^2 = .75$).

The final model consisted on 14 items across two factors explaining 70.76% of the variance within items (Table 2). Factor 1 was defined by items 1, 5, 6, 7, 9, 13, 15, and 16 and labeled *Strengths Application*. Factor 2 was best represented by items 2, 4, 5, 10, 11, 12, and 14, and was labeled *Strengths Building*. Reliability estimates were then re-calculated for the revised scale and found to be an improvement from initial estimates and more closely equivalent to the initial scale validation. Items on the *Strengths Application* factor decreased slightly to $\alpha = .946$, while alpha was increased for *Strengths Building* to and $\alpha = .904$. Total scale reliability was considered strong with an $\alpha = .952$.

<table>
<thead>
<tr>
<th>Variable</th>
<th><strong>Strengths Building</strong></th>
<th><strong>Strengths Application</strong></th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Factor Pattern</strong></td>
<td><strong>Structure</strong></td>
<td><strong>Factor Pattern</strong></td>
</tr>
<tr>
<td>SSES7</td>
<td><strong>.951</strong></td>
<td>.876</td>
<td>-.125</td>
</tr>
</tbody>
</table>

*Table 2*

*Factor Pattern & Structure Matrix Coefficients Rotated to Promax Criterion.*
Participants reported generally high levels of life satisfaction, were socially & academically engaged, and appeared to have a high perception of their academic ability. Engagement scores were consistent with findings from institutional research data and MLQ scores were at or near normed sample means. These scores were then used to estimate the Pearson $r$ coefficients and test the convergent validity of the strengths self-efficacy scale (Table 3). Strengths self-efficacy was found to be most highly correlated with hope ($r = .541$) which was consistent with the instruments underlying theoretical framework and philosophy. Strengths self-efficacy was also positively related to engagement ($r = .249$), life satisfaction ($r = .340$), academic self-efficacy ($r$...
= .245), and the search dimension of the MLQ \((r = .302)\). Only the presence dimension of the MLQ \((r = .062)\) was found to be neither statistically or practically significant.

Table 3.  

<table>
<thead>
<tr>
<th></th>
<th>ASE</th>
<th>MLQ (Search)</th>
<th>MLQ (Presence)</th>
<th>SWLS</th>
<th>ATH</th>
<th>CSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Search</td>
<td>.293**</td>
<td>--</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presence</td>
<td>.078</td>
<td>-.157</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SWLS</td>
<td>.328**</td>
<td>.424**</td>
<td>-.124</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATH</td>
<td>.501**</td>
<td>.374**</td>
<td>.085</td>
<td>.452**</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>CSES</td>
<td>.194</td>
<td>.063</td>
<td>.094</td>
<td>.287**</td>
<td>.231*</td>
<td>--</td>
</tr>
<tr>
<td>SSES</td>
<td>.245*</td>
<td>.302**</td>
<td>.062</td>
<td>.340**</td>
<td>.541**</td>
<td>.249*</td>
</tr>
<tr>
<td>(M)</td>
<td>44.94</td>
<td>26.70</td>
<td>27.03</td>
<td>26.36</td>
<td>25.85</td>
<td>41.87</td>
</tr>
<tr>
<td>(SD)</td>
<td>9.47</td>
<td>5.73</td>
<td>5.53</td>
<td>5.14</td>
<td>3.20</td>
<td>6.76</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level.
**Correlation is significant at the 0.01 level.

Discussion

Purpose in one’s life represents the highest level of comprehension and organization.

People derive purpose when opportunities are given to them to support their views on life (Stenger, 2009). The strengths-based model is designed to provide such an opportunity by creating a self-awareness of their individual talents. Scores from the strengths self-efficacy scale in this study appear to demonstrate that empirical relationship.

Many theories have also been proposed with regard to individual happiness and well-being. Subjective well-being is a personal evaluation of one’s life and can also be influenced by engagement, life events and the attainment of life goals (Diener, Oshi, Lucas, 2009). College can
be a time of significant growth in individual’s self-awareness as students participate in a wide range of social and academic experiences designed to stimulate knowledge and direction. As students engage in these activities, their personal satisfaction should grow. The relationships identified in this data between strengths self-efficacy, satisfaction with life, academic self-efficacy and student engagement seem to also support that prior theory.

Strength-based assessment tools, such as the Clifton Strengths Finder inventory, can be useful tools for practitioners. However, their benefit must me empirically measured so that it linked to institutional outcomes so that effective strategies can be developed to maximize their potential. This requires the development of psychometrically sound instruments to capture those beliefs in the very talents these inventories seek to help identify. Our findings appear to support the validity and reliability of the strengths self-efficacy scale as an instrument to accomplish just that. As strength-based inventories continue to increase in their use, it’s our hope that these findings will better enable the evaluation of strength based interventions to growth self-efficacy beliefs and affect other domains within psychology and student development literature.

References


American Psychologist, 55, 5-14.


