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Construction of a Scale of Contemplative Practice in Higher Education: An Exploratory Study

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Some scholars have formed a more expansive view of knowledge that moves beyond the cognitive notion of intellect. For example, emotional intelligence theory posits that human intelligence encompasses both cognitive and emotional competencies, providing a framework for a relatively new concept known as contemplative practice. The purposes of this study were: (a) to develop a self-report measure, the Scale of Contemplative Practice in Higher Education (SCOPE), and (b) to explore issues of validity and reliability related to the SCOPE. An extensive review of the literature, reference to personal experiences, and consultation with an expert panel were used to generate scale items. The participants were 253 educator preparation graduate students. An orthogonal exploratory factor analysis resulted in a seven-factor scale that accounted for 54.48% of the variance, although four factors evidenced low reliability¹. The 27-item full-scale SCOPE exhibited good internal reliability ($\alpha = .857$) and test-retest reliability ($r = .879$). Future exploration is recommended regarding content and construct validation as to whether contemplative practice is best viewed as a single- or multiple-factor construct.

CONCEPTUAL FRAMEWORK

The concept of emotional intelligence (EI) has been traced back to Socrates (469–399 B.C.) and what we know from the writings of his student, Plato. Noddings (2012) explained that Socrates ex-

¹ For readers who wish to review the definitions and purpose of the statistical terminology used in this article, the authors recommend DeVellis's (2017) *Scale Development: Theory and Applications*.

plored topics concerning self-awareness with his students through a format (now well known as the Socratic method) that consisted of probing them with clarifying questions that prompted a critical thought process until both the teacher and student were confident that they had exhausted their investigation. Noddings (2012) stated: "Socrates insisted that self-knowledge is basic to all knowledge. It accompanies and informs our critical examination of the larger society" (p. 7). What was then viewed as self-knowledge is now viewed as an element of EI (Goleman, 2006). The value of EI has been a point of discussion since the Greek period (Noddings, 2012), illuminating the vitality of emotional life for the human development process. A more expansive concept of knowledge reinforces the importance of affective aptitudes to support human understanding in Western culture.

Emotional Intelligence Theories

Several developmental theories include emotional capabilities, such as Gardner's (1983, 1993) multiple and personal intelligence theories, Sternberg's (1985) triarchic human intelligence theory, Salovey and Mayer's (1990) EI theory, and Goleman's EI theory (2006). EI can be defined as, but not limited to, self-awareness, impulse control, resilience, motivation, empathy, and social skills (Goleman, 2006). Research on EI is beginning to document how positive mental states and emotional well-being may support personal and professional success.

Critiques have revealed potential theoretical flaws in the EI theory. Barrington (2004) argued that EI consists of talents rather than sources of intellect, to which Gardner (as cited in Barrington, 2004, p. 423) responded by suggesting that based on that same rationale all types of intellect (e.g., mathematics) would then be classified as talents. Others have stated that there are many conflicting constructs of EI and, given these multiple views, EI cannot be rationalized as a valid concept (Waterhouse, 2006). Cherniss, Extein, Goleman, and Weissberg (2006) responded that there was no consensus on the definitions of other constructs, such as intelligence, or the best ways to measure them; therefore, expecting the same consensus for EI theory is holding it to a different standard. Lastly, Conte (2005) argued that EI relies on a self-report approach that taints

the reliability and validity of empirical findings. Cherniss et al. (2006) rebutted by stating that EI is in its early stages compared to other developmental theories; hence, further exploration is warranted regarding the validity of EI theory and its components.

The purposes of this article are to examine a construct related to EI theory—contemplative practice—and to provide an exploratory study of a tool designed to measure the construct in higher education. The next section will focus on the premises and understanding of contemplative practice in the literature.

LITERATURE REVIEW

To better understand the notion of contemplative practice (CP), it may be helpful to view it as a product of earlier philosophies. Rendón (2009) described an array of historical belief systems in support of CP: (a) Christian practices in the discernment of spirits, (b) Buddhist exercises in meditation, (c) Jewish Kabbalah strategies for deep pondering, (d) Hindu activities of yoga, and (e) Plato's concept of radical questioning. In sum, CP is rooted in certain spiritual, religious, and philosophical contexts. For this reason, CP is often separated from higher education (Barbezat & Bush, 2014). However, no specific spiritual or religious foundation is needed to engage in these practices. Moreover, CP may benefit a more diverse student population if it is designed as a stand-alone exercise in the spirit of discovery in place of specific religious and/or spiritual foundations (Barbezat & Bush, 2014; Goleman, Langer, David, & Congleton, 2017). For purposes of this paper, we approach CP as a form of secular mental training.

Contemplative Practice

Contemplative practice may be used to identify meta-abilities that determine how well individuals focus their attention on sought-after goals, thereby shaping one's disposition—a tendency to do something or think in a particular way under certain circumstances (Costa & Kallick, 2004). Currently, CP is a working definition in the literature and has been associated with a number of sub-constructs and outcomes. For example,

researchers in the area of CP highlight the following potential outcomes: (a) student improvement regarding instructional strategies (Hammerle, 2015; Im, 2010; Vine, 2012), (b) student connection to course content (Bagshaw, 2014; Im, 2010), (c) enhancement of critical thinking skills (Helber, Zook, & Immergut, 2012; Sable, 2014), (d) reduction in negative emotions (Kemeny et al., 2012), and (e) increased calmness (Beer, 2010; Miller & Nozawa, 2012).

To date, there is no universal consensus on the definition of CP. Barbezat and Bush (2014) offered five constructs that may comprise CP: (a) EI, (b) reflection, (c) listening competency, (d) mindfulness, and (e) compassion/self-compassion. With this framework in mind, we view EI as the theoretical basis that contextualizes CP; further, we view reflection as an interrelated concept with the constructs of mindfulness, listening competency, and self-compassion. For the purposes of this study, the term CP is operationalized using the following constructs: (a) mindfulness, (b) listening competency, and (c) self-compassion. *Mindfulness* is defined as attention focused on a task at hand as well as nonjudgmental attention on the present moment (Congleton, Hölzel, & Lazar, 2017). *Listening competency* is defined as allowing individuals to listen without bias, establish an ethic of care, listen for feelings, ask questions for clarity purposes, and avoid personalization (Brady, 2009). Lastly, *self-compassion* is defined as an awareness of one's pain, kindness toward oneself, and acceptance of failure as part of humanity (Neff, 2003a). Research on mindfulness, listening competency, and self-compassion may provide a continuing point for research related to CP. Further, much of the research in the CP literature is descriptive in nature and has been investigated by means of qualitative methods of inquiry. To advance the research base and our understanding of CP, more attention on quantitative inquiry is warranted to complement the qualitative research.

Scale Development and Measurement

To inform scale construction, we examined three existing scales specific to the sub-constructs in the working definition of CP that we deemed the most useful to inform item pool development for our measure: the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003), the Listen-

ing Competency Scale (LCS; Ford et al., 2000), and the Self-Compassion Scale (SCS; Neff, 2003b). These measures were chosen to inform the SCOPE construction because they evidenced strong psychometric properties and were also widely known in the literature base as having been used in multiple research studies (see Chadwick et al., 2008; Raes, Pommier, Neff, & Gucht, 2011).

Whereas there are theoretical underpinnings provided in the literature that infer an association between CP and emotional well-being, the construct has not yet been empirically examined in the area of scale development. Through utilizing EI theory as the conceptual framework and drawing on the three scales described above, this quantitative study had two main goals: (a) to create the Scale of Contemplative Practice in Higher Education (SCOPE); and (b) to empirically explore issues of validity and reliability related to the SCOPE. The next phase of this article is a detailed report of the methodology and results of this quantitative exploratory study.

METHOD AND PROCEDURE

The SCOPE was designed as a self-report tool to measure students' perceived thoughts and behaviors related to CP. This investigation involved two phases. Phase One included the process of item generation for the SCOPE. Consultation with an expert panel was utilized to validate the SCOPE items. Phase Two applied an exploratory factor analysis (EFA) to assess the factor structure and reliabilities of the SCOPE.

Phase One

To create an item pool for the SCOPE instrument we drew on personal experiences, published scholarship in the area of CP, and the scales described above that assess sub-constructs aligned with the working definition. This aspect of the scale development resulted in 30 items. The next sections describe the expert panel process and exploration of the factor structure of the measure.

Expert panel process. One way to examine whether an instrument adequately covers the domain of the main construct is to use an expert panel with extensive knowledge of the literature regarding the construct

and of scale construction (DeVellis, 2012). Six experts reviewed the SCOPE in the development process for relevance and completeness of the instrument: three university professors knowledgeable in the field of CP, one university administrator who specialized in assessment, and two university professors who specialized in scale development. A working definition of the sub-constructs and assessment criteria were provided. Experts then rated the adequacy of each item using a 3-point scale (Satisfactory, Developing, Unsatisfactory).

The feedback results provided by the expert panel were analyzed in two ways. First, the item ratings were examined to determine whether the panel deemed the item's readability, relatability, and relevance to be adequate. Items with ratings of less than three (Satisfactory) were examined further. The rationale behind this criterion was that those items with lower ratings may be in need of changes or eliminations to enhance the overall instrument. Next, comments from the expert panel were evaluated to ascertain specific perceptions regarding each item. Alterations, additions, and eliminations were based on feedback given by the expert panelists. Suggested edits were included in all of the originally drafted scale items. Such edits consisted of the following: grammar, additions, deletions, rewording items written in negative form so that all items follow a positive direction, and assigning items to a different sub-construct. For example, prior to the expert panel, one scale item for the listening competency subscale read: "I maintain eye contact and good posture when listening to my instructor's lecture." However, post-expert-panel, this item was adjusted to read: "If called upon in class, I am able to repeat the last words of my instructor's lecture." This edit was made in consideration of respondents with a physical disability. Feedback provided by the panelists resulted in rewording of some items but retained the 30-item instrument with three hypothesized subscales intended to measure students' perceived thoughts and behaviors specific to CP (see Table 1).

Table 1

*Post-Expert Panel SCOPE Model***Subscale and Items**

| Self-Compassion | |
|-----------------|--|
| Item 1 | I intentionally take care of my physical, mental, and emotional health when I am struggling in a course |
| Item 2 | In class when I ask a clarifying question, I believe my peers may have the same question |
| Item 3 | I am confident about my academic future even when I earn grades lower than my expectation |
| Item 4 | I am accepting of my mistakes |
| Item 5 | I am patient with myself when I do not understand something the first time new information is presented |
| Item 6 | I remind myself that others may also be experiencing the same feelings when I am struggling with course material |
| Item 7 | I am hopeful about my course grade even when I do not perform as well as my peers on a course assignment |
| Item 8 | I have focused on positive past academic experiences during my academic journey |
| Item 9 | I care about how my education will contribute to the common good |
| Item 10 | I am patient with myself when I am trying to learn a difficult subject |
| Mindfulness | |
| Item 11 | While listening to course lectures I do not engage in off-task activities |
| Item 12 | I focus on learning course content rather than my grade |
| Item 13 | Each semester I make my class assignments my academic priority |
| Item 14 | After the course concludes, I find it easy to remember what I have learned |
| Item 15 | I approach course lectures with curiosity and openness |
| Item 16 | When faced with challenging course material I try to keep my emotions in balance |
| Item 17 | I am able to be present in my current academic term without worrying about future academic experiences |
| Item 18 | I am able to focus on my current coursework without concentrating too much on graduation |
| Item 19 | I am able to block out distractions while reading assigned course material |
| Item 20 | I am able to focus on one academic task at a time |

Table 1, continued

| Listening | |
|-----------|---|
| Item 21 | I recognize how my statements may affect someone's feelings during class discussions |
| Item 22 | I am open to viewpoints that are opposite to my own |
| Item 23 | I welcome constructive feedback when I am collaborating with my peers |
| Item 24 | I am able to support my peers when they need help on challenging assignments |
| Item 25 | I demonstrate support for my peers when they are conducting class presentations |
| Item 26 | I am aware of my biases when participating in course discussions |
| Item 27 | In class I pay attention to my instructors' nonverbal behaviors |
| Item 28 | When I am listening to my peers, I ask questions to better understand their point of view |
| Item 29 | In class I am able to focus even when the course content does not interest me |
| Item 30 | If called upon in class, I am able to repeat the last words of my instructor's lecture |

The Self-Compassion subscale contains 10 items. These items inquire about aspects of classroom conduct, peer interaction, and self-care. According to the literature (Neff, 2003b), it is vital that one offers feelings of self-kindness, provides nonjudgmental understanding toward oneself, and accepts one's experience as part of the larger human condition. Items 1, 4, 5, 8, and 10 inquire about respondents' perceptions of self-kindness. Items 2, 3, and 7 inquire about self-perceptions related to nonjudgmental understanding. Items 6 and 9 inquire about respondents' perceptions of acceptance as part of the larger human experience.

The Mindfulness subscale contains 10 items. These items inquire about aspects of classroom conduct and self-awareness. According to the literature (Barbezat & Bush, 2014; Germer, 2004), it is essential to focus concentrated attention on the task at hand, as well as providing nonjudgmental attention to the present moment. Items 11, 14, and 20 inquire about respondents' perceptions of their ability to concentrate attention

to the task at hand. Items 12, 13, 16, 17, 18, and 19 inquire about self-perceptions specific to nonjudgmental attention to the present moment.

The Active Listening subscale contains 10 items. These items inquire about aspects of classroom conduct and peer interaction. According to the literature (Brady, 2009; Ford, Wolvin, & Chung, 2000; Wolvin & Cohen, 1993, 1994), active listening includes discriminative, critical, comprehensive, appreciative, and attending behaviors. Items 21 and 26 inquire about respondents' perceptions of their ability to listen discriminatively (to understand and differentiate basic sounds). Items 22, 24, and 25 inquire about self-perceptions of appreciative listening abilities (seeking information to help ascertain existing needs and goals). Item 23 inquires about a self-perception related to critical listening competencies, which involve analysis of information. Items 27 and 30 align with attending behaviors (the indication and expression of interest). Items 28 and 29 reflect comprehensive listening attributes (interpreting the general and overall message).

The decision to use a five-point scale anchored by (1) *strongly disagree* and (5) *strongly agree*, with a midpoint of (3) *neutral*, was made to decrease the likelihood of response sets (Chang, 1994) and to increase the internal reliability of the instrument (Bending, 1954). Including *neutral* as a choice was done to avoid incomplete questionnaires due to forced choice (Patten, 2014).

Phase Two

Convenience sampling was used to recruit 253 participants who met the sample criterion of graduate students in educator preparation programs. Participants were solicited from the National Council for Accreditation of Teacher Education (NCATE)-accredited programs in the state of California. Those who were solicited were enrolled in one of 28 accredited master's- or doctoral-level programs listed on the NCATE website (ncate.org). Graduate programs totaled 12 different types of educator preparation (see Table 2). Next, we contacted each program director via email and asked the director to forward a hyperlink to the scale to their graduate students. The data collection period lasted three weeks. The results were factor analyzed using EFA and assessed for internal consistency and

temporal stability. To assess temporal stability, three classes in a private NCATE-accredited university in Southern California were administered the SCOPE in a hard-copy format. Two weeks later the SCOPE was re-administered; 27 graduate students agreed to participate in this aspect of the study. See Table 2 for the combined sample of graduate students who completed the SCOPE (N = 253).

Table 2

Total Participant Demographics (N = 253)

| Characteristics | N | % |
|--|----------|----------|
| Sex | | |
| Female | 208 | 82.2 |
| Male | 44 | 17.4 |
| Prefer not to answer | 1 | .4 |
| Age | | |
| 21-25 | 70 | 27.7 |
| 26-30 | 61 | 24.1 |
| 31-45 | 93 | 36.8 |
| 46-50 | 9 | 3.6 |
| 50+ | 18 | 7.1 |
| Prefer not to answer | 2 | .8 |
| Race/Ethnicity | | |
| African American/Black (not Hispanic) | 17 | 6.7 |
| Asian American or Pacific Islander | 22 | 8.7 |
| European American/White (not Hispanic) | 97 | 38.3 |
| Hispanic/Latino | 77 | 30.4 |
| Multiracial | 28 | 11.1 |
| Other | 5 | 2.0 |
| Prefer not to answer | 7 | 2.8 |
| Institution Type | | |
| Public University/College | 81 | 32.0 |
| Private University/College | 172 | 68.0 |

Table 2, continued

| | | |
|-------------------------|-----|------|
| Academic Program | | |
| Administrator Education | 17 | 6.7 |
| Bilingual Education | 10 | 4.0 |
| Community Counseling | 2 | .8 |
| Counselor Education | 21 | 8.3 |
| Elementary Education | 25 | 9.9 |
| Higher Education | 52 | 20.6 |
| Leadership Studies | 25 | 9.9 |
| Secondary Education | 43 | 17.0 |
| School Counseling | 6 | 2.4 |
| School Psychology | 25 | 9.9 |
| Special Education | 11 | 4.3 |
| Other | 16 | 6.3 |
| Year in Program | | |
| First | 116 | 45.8 |
| Second | 81 | 32.0 |
| Third | 32 | 12.6 |
| Fourth | 8 | 3.2 |
| Fifth | 4 | 1.6 |
| Other | 12 | 4.7 |

RESULTS

The SCOPE instrument's internal reliability was evaluated with Cronbach's alpha, which is appropriate for multiple-response scales. Temporal stability was assessed using Pearson's r . EFA was used to investigate factor structure.

Exploratory Factor Analysis

EFA is used to determine which variables group together (Muijs, 2011). Although we hypothesized a three-factor model, we chose to use EFA (versus a confirmatory factor analysis) to allow the data to "fall as they

may." Apropos, to determine if the data were adequate for factor analysis, we used two standard techniques. The Kaiser-Meyer-Olkin (KMO) test should be at least .70 and Bartlett's test of sphericity should be significant at the $p < .05$ level for a data set to be considered appropriate for factor analysis. The KMO result was adequate (.837) and Bartlett's test of sphericity was significant, $\chi^2(435) = 1935.23, p < .000$ indicating the sample and data were adequate for EFA. Next, given the hypothesized interrelationship of the proposed factors, an oblique rotation (via the oblimin method) was first used for the EFA followed by an orthogonal rotation (varimax). Oblique rotation methods allow a certain degree of correlation between factors, whereas orthogonal rotation assumes no relationship among the factors. The results indicated that the orthogonal approach best fit the data (as outlined below).

Whereas we hypothesized three factors, as aligned to the theoretical understanding of CP's working definition, eight factors initially emerged from the varimax outcomes with an eigenvalue above one (Factor 1 eigenvalue = 6.525; Factor 2 eigenvalue = 1.942), accounting for 55.269% of the variance for the initial EFA (see Table 3 for the factor loadings of the initial EFA).

Table 3
Initial Exploratory Factor Analysis Item Loadings

| Number | Item | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 |
|--------|---|----------|----------|----------|----------|----------|----------|----------|----------|
| 1 | I intentionally take care of my physical, mental, and emotional health when I am struggling in a course | .319 | .562 | -.106 | -.174 | .380 | -.193 | .041 | -.107 |
| 2 | While listening to course lectures I do not engage in off-task activities | .532 | -.075 | -.049 | -.012 | .293 | -.126 | .500 | .089 |
| 3 | I recognize how my statements may affect someone's feelings during class discussion | .006 | .042 | -.028 | .267 | .647 | .108 | .075 | .058 |
| 4 | In class when I ask a clarifying question, I believe my peers may have the same question | .202 | .214 | -.078 | .226 | .085 | .466 | -.125 | .422 |
| 5 | I focus on learning course content rather than my grade | .088 | .241 | .161 | .136 | -.109 | -.015 | .625 | -.064 |
| 6 | I am open to viewpoints that are opposite to my own | .012 | -.077 | .588 | .269 | .012 | .142 | .314 | .073 |
| 7 | I am confident about my academic future even when I earn grades lower than my expectation | .020 | .173 | .146 | .572 | .008 | .107 | .066 | -.203 |
| 9 | I welcome constructive feedback when I am collaborating with my peers | .094 | .080 | .608 | .186 | .401 | .100 | .038 | .015 |
| 10 | I am accepting of my mistakes | .125 | .175 | .784 | -.006 | .087 | -.036 | .064 | .022 |
| 11 | After the course concludes, I find it easy to remember what I have learned | .516 | .161 | .194 | -.061 | .047 | .348 | -.144 | .043 |
| 12 | I am able to support my peers when they need help on challenging assignments | .126 | .135 | .399 | -.038 | .177 | .396 | -.071 | -.006 |
| 13 | I am patient with myself when I am trying to learn a difficult subject | .202 | .492 | .436 | .232 | -.134 | .015 | .179 | .146 |
| 14 | I approach course lectures with curiosity and openness | .166 | -.006 | .340 | -.032 | .272 | .266 | .459 | .084 |
| 15 | I demonstrate support for my peers when they are conducting class presentations | .113 | -.005 | .182 | .052 | .624 | .203 | .127 | .143 |

Table 3, continued (*Initial Exploratory Factor Analysis Item Loadings*)

| Number | Item | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 |
|--------|--|----------|----------|----------|----------|----------|----------|----------|----------|
| 16 | I remind myself that others may also be experiencing the same feelings when I am struggling with course material | -.024 | .689 | -.007 | .168 | .041 | .157 | .055 | .047 |
| 17 | When faced with challenging course material I try to keep my emotions in balance | .137 | .515 | .325 | .228 | .153 | .209 | .145 | -.149 |
| 19 | I am hopeful about my course grade even when I do not perform as well as my peers on a course assignment | -.172 | .496 | .024 | .548 | .145 | -.017 | .090 | -.042 |
| 20 | I am able to be present in my current academic term without worrying about future academic experiences | .176 | .330 | .278 | .440 | .124 | -.008 | -.081 | .052 |
| 22 | I have focused on positive past academic experiences during my academic journey | .109 | .345 | .172 | -.045 | .301 | .015 | -.061 | .490 |
| 23 | I am able to focus on my current coursework without concentrating too much on graduation | .202 | .014 | .041 | .711 | .206 | -.102 | .074 | .117 |
| 24 | When I am listening to my peers, I ask questions to better understand their point of view | .073 | -.015 | .068 | -.004 | .041 | .745 | .156 | .026 |
| 25 | I care about how my education will contribute to the common good | -.260 | .188 | .031 | -.026 | .272 | .312 | .448 | .165 |
| 26 | I am able to block out distractions while reading assigned course material | .729 | .180 | .158 | -.016 | .009 | .082 | .022 | .036 |
| 27 | In class I am able to focus even when the course content does not interest me | .703 | -.007 | .047 | .255 | .150 | .109 | .221 | .013 |
| 28 | I am patient with myself when I do not understand something the first time new information is presented | .288 | .631 | .378 | .163 | -.105 | -.016 | .113 | .171 |
| 29 | I am able to focus on one academic task at a time | .535 | .087 | .188 | .384 | .153 | -.056 | -.013 | -.148 |
| 30 | If called upon in class, I am able to repeat the last words of my instructor's lecture | .393 | .071 | -.012 | .403 | .136 | .254 | -.047 | .284 |

Table 3, continued (*Initial Exploratory Factor Analysis Item Loadings*)

| Number | Item | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 |
|--------|--|----------|----------|----------|----------|----------|----------|----------|----------|
| 8 | Each semester I make my class assignments my academic priority | .224 | .143 | .264 | .112 | .594 | -.096 | -.90 | .038 |
| 18 | I am aware of my biases when participating in course discussions | .089 | .299 | .084 | .087 | .252 | .287 | .186 | -.494 |
| 21 | In class I pay attention to my instructor's non-verbal behaviors | -.017 | .005 | .097 | -.031 | .166 | .156 | .210 | .689 |

Factor item loadings were analyzed further to identify whether an item should be retained and on which factor. Aron et al. (2009) considered an item to be meaningful if it loads at or above .30 or at or below -.30. With consideration to the theoretical framework, we assumed a positive association to be meaningful when identifying factor loadings. Inspection of the item-level statistics indicates one item did not load above .30. Further examination revealed that item 18 indicated a negative association (-.494). Items 8 and 21 loaded above .30 but were extracted because they did not allow for a meaningful factor structure. For this reason, additional investigation was conducted using EFA to explore factor structures. To further investigate factor structure, the following cascading extraction methods were used: (a) Any items loading under 0.3 were eliminated; then (b) any items loading under 0.4 were eliminated; and then (c) any items with loading under 0.5 were eliminated (Muijs, 2011) (see Table 4).

Table 4

Extraction Structure for SCOPE

| Extractions | Items | Eigenvalue Elimination | Variance | Internal Consistency | Temporal Stability |
|-------------|-------|---------------------------|----------|-------------------------|-----------------------|
| Below .5 | 19 | 7 | 54.484% | .789 | $r = 0.856$ |
| Below .4 | 27 | 7 | 54.484% | .857 | $r = 0.879$ |
| Below .3 | 27 | 7 | 54.484% | .857 | $r = 0.879$ |

After investigating multiple-factor structures with consideration of various extraction methods, a .4 extraction method was selected as it provided a meaningful factor structure during the interpretation process. The EFA resulted in a potential 7-factor model, with a model based on the eigenvalue rule of 1 or greater for factor retention. The eigenvalues revealed a discernable gap between the first and remaining factors (Factor 1 eigenvalue = 6.113; Factor 2 eigenvalue = 1.840; see Table 5). The final EFA resulted in a scale of 27-items within seven factors (see Table 6 for the final EFA factor loadings).

Table 5

Exploratory Factor Analysis Eigenvalues

| Factor | Eigenvalue | % of Variance | Cumulative % |
|--------|------------|---------------|--------------|
| 1 | 6.113 | 22.642 | 22.642 |
| 2 | 1.840 | 6.815 | 29.457 |
| 3 | 1.688 | 6.253 | 35.710 |
| 4 | 1.458 | 5.401 | 41.111 |
| 5 | 1.340 | 4.962 | 46.073 |
| 6 | 1.191 | 4.412 | 50.484 |
| 7 | 1.080 | 3.999 | 54.484 |

Table 6
Final Exploratory Factor Analysis Item Loadings

| Number | Item | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 |
|--------|--|-------------|-------------|-------------|-------------|----------|----------|----------|
| 10 | I am accepting of my mistakes | .781 | | | | | | |
| 6 | I am open to viewpoints that are opposite to my own | .651 | | | | | | |
| 9 | I welcome constructive feedback when I am collaborating with my peers | .630 | | | | | .373 | |
| 28 | I am patient with myself when I do not understand something the first time new information is presented | .349 | .662 | | | | | |
| 16 | I remind myself that others may also be experiencing the same feelings when I am struggling with course material | | .654 | | | | | |
| 1 | I intentionally take care of my physical, mental, and emotional health when I am struggling in a course | | .615 | .363 | | | | |
| 13 | I am patient with myself when I am trying to learn a difficult subject | .420 | .500 | | | | | |
| 17 | When faced with challenging course material I try to keep my emotions in balance | .369 | .478 | | | | | |
| 27 | In class I am able to focus even when the course content does not interest me | | | .714 | | | | |
| 2 | While listening to course lectures I do not engage in off task activities | | | .660 | | | | |
| 26 | I am able to block out distractions while reading assigned course material | | | .660 | | | | |
| 29 | I am able to focus on one academic task at a time | | | .537 | .406 | | | |
| 23 | I am able to focus on my current coursework without concentrating too much on | | | | .700 | | | |
| 19 | I am hopeful about my course grade even when I do not perform as well as my peers on a course assignment | | .422 | | .602 | | | |

Table 6, continued (Final Exploratory Factor Analysis Item Loadings)

| Number | Item | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 |
|--------|--|----------|----------|-------------|-------------|-------------|-------------|-------------|
| 7 | I am confident about my academic future even when I learn grades lower than my expectation | | | | .596 | | | |
| 20 | I am able to be present in my current academic term without worrying about future academic experiences | | .313 | | .482 | | | |
| 4 | In class when I ask a clarifying question, I believe my peers may have the same question | | | | | .663 | | |
| 24 | When I am listening to my peers, I ask questions to better understand their point of view | | | | | .604 | | |
| 11 | After the course concludes, I find it easy to remember what I have learned | | | .400 | | .486 | | |
| 30 | If called upon in class, I am able to repeat the last words of my instructor's lecture | | | .315 | .378 | .466 | | |
| 12 | I am able to support my peers when they need help on challenging assignments | .349 | | | | .390 | | |
| 3 | I recognize how my statements may affect someone's feelings during class discussion | | | | | | .729 | |
| 15 | I demonstrate support for my peers when they are conducting class presentations | | | | | | .622 | |
| 22 | I have focused on positive past academic experiences during my academic journey | | .394 | | | | .442 | |
| 5 | I focus on learning course content rather than my grade | | | | | | | .656 |
| 25 | I care about how my education will contribute to the common good | | | | | | .363 | .542 |
| 14 | I approach course lectures with curiosity and openness | .381 | | | | | | .448 |

There are different guidelines as to how variance is determined and accounted for in scale development. Aron et al. (2009) and Muijs (2011) both indicated that a single or combined factor structure should account for 60% of the variance. The seven-model factor for the SCOPE explained 54% of the total variance. This estimate is a minimally acceptable factor structure to explain the variance within the SCOPE. The first factor and second factor variances indicate these are upper-level (stronger) factors as compared with the five lower-level factors. We dubbed the first factor *acceptance of feedback*, accounting for 22.642% of the variance; the second factor *kindness toward self*, accounting for 6.815%; the third factor *focused attention*, accounting for 6.253%; the fourth factor *present awareness*, accounting for 5.401%; the fifth factor *comprehension listening*, accounting for 4.962%; the sixth factor *therapeutic listening*, accounting for 4.412%; and the seventh factor *openness*, accounting for 3.999% of the variance (see Table 7).

Table 7

Final SCOPE Model

| | Factor/Items | Factor Loadings |
|-------------------------------|--|-----------------|
| <i>Acceptance of Feedback</i> | | |
| Item 10 | I am accepting of my mistakes | .781 |
| Item 6 | I am open to viewpoints that are opposite to my own | .651 |
| Item 9 | I welcome constructive feedback when I am collaborating with my peers | .630 |
| <i>Kindness Toward Self</i> | | |
| Item 28 | I am patient with myself when I am trying to learn a difficult subject | .662 |
| Item 16 | I remind myself that others may also be experiencing the same feelings when I am struggling with course material | .654 |
| Item 1 | I intentionally take care of my physical, mental, and emotional health when I am struggling in a course | .615 |
| Item 13 | I am patient with myself when I do not understand something the first time new information is presented | .500 |
| Item 17 | I am hopeful about my course grade even when I do not perform as well as my peers on a course assignment | .478 |
| Item 19 | When faced with challenging course material I try to keep my emotions in balance | .422 |

| Focused Attention | | |
|-------------------------|--|-------|
| Item 27 | In class I am able to focus even when the course content does not interest me | .714 |
| Item 26 | I am able to block out distractions while reading assigned course material | .660 |
| Item 2 | While listening to course lectures I do not engage in off-task activities | .660 |
| Item 29 | I am able to focus on one academic task at a time | .537 |
| Item 11 | After the course concludes, I find it easy to remember what I have learned | .400 |
| Present Awareness | | |
| Item 23 | I am able to focus on my current coursework without concentrating too much on graduation | .700 |
| Item 7 | I am confident about my academic future even when I earn grades lower than my expectation | .596 |
| Item 20 | I am able to be present in my current academic term without worrying about future academic experiences | .482 |
| Comprehension Listening | | |
| Item 4 | In class when I ask a clarifying question, I believe my peers may have the same question | .663 |
| Item 24 | When I am listening to my peers, I ask questions to better understand their point of view | .604 |
| Item 30 | If called upon in class, I am able to repeat the last words of my instructor's lecture | .466 |
| Therapeutic Listening | | |
| Item 3 | I recognize how my statements may affect someone's feelings during class discussion | .729 |
| Item 15 | I demonstrate support for my peers when they are conducting class presentations | .7622 |
| Item 22 | I have focused on positive past academic experiences during my academic journey | .442 |
| Openness | | |
| Item 5 | I focus on learning course content rather than my grade | .656 |
| Item 25 | I care about how my education will contribute to the common good | .542 |
| Item 14 | I approach course lectures with curiosity and openness | .448 |

As indicated in the literature review, the sub-constructs were hypothesized to be interrelated and together comprise the construct of CP. Components of the sub-constructs' definitions were used to name the potential latent variables that emerged from the final EFA. Factor correlations were examined for a more thorough understanding of the factor structure (see Table 8). As indicated in Table 8, although a seven-factor model structure emerged, a single-factor model may be most appropriate given the high inter-factor correlations which indicate potentially excessive multi-collinearity (and low factor internal reliability, as discussed below). Multi-collinearity indicates that separate factors may not adequately address the construct; rather, the full scale may result in the best interpretation.

Table 8

Correlations Between Factors

| Factors | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 |
|---------|----------|----------|----------|----------|----------|----------|----------|
| 1 | | | | | | | |
| 2 | .421 | | | | | | |
| 3 | .364 | .396 | | | | | |
| 4 | .738 | .863 | .785 | | | | |
| 5 | .557 | .824 | .838 | .971 | | | |
| 6 | .558 | .765 | .934 | .963 | .974 | | |
| 7 | .622 | .770 | .865 | .985 | .993 | .987 | |

Internal Consistency

Internal consistency reflects the degree to which scale items are intercorrelated. The internal consistency of the SCOPE was examined with the final 27 items. The Cronbach's alpha of the total scale SCOPE (N = 253) was 0.857, indicating that the full-scale SCOPE possesses good internal consistency. The internal consistencies of the final seven factors were also examined. Three factors indicated an acceptable level (above .6 for research purposes) for three subscales and four factors indicated unacceptable results. The low number of scale items per factor may have influenced the low internal consistency for individual factors (see Table 9).

Table 9
Internal Reliabilities for SCOPE Subscales

| Subscale | Items per scale | Cronbach's alpha |
|--------------------------|-----------------|------------------|
| Acceptance of Feedback | 3 | 0.658 |
| Kindness Toward Self | 6 | 0.738 |
| Focused Attention | 5 | 0.701 |
| Present Moment Attention | 3 | 0.566 |
| Comprehension Listening | 3 | 0.457 |
| Therapeutic Listening | 3 | 0.466 |
| Openness | 3 | 0.424 |

Temporal stability. Temporal stability is assessed with the test-retest method (DeVellis, 2012). The total scores between the first and second administration (two weeks apart) were compared with a Pearson's r (0.879), indicating strong temporal stability. A two-tailed dependent t -test resulted in a non-significant difference, $t(26) = 1.454$, $p = .158$, indicating that the mean difference remained stable (see Table 10).

Table 10
Item Means, Mean Difference, and Standard Deviations for Test-retest (N = 27)

| Scale | Mean | Mean Difference | Standard Deviation |
|--------|--------|-----------------|--------------------|
| Time 1 | 3.8007 | .0748 | .48148 |
| Time 2 | 3.7259 | | .54065 |

The final EFA left the SCOPE with 27 items, with a total score range of 61 to 135. Based on the final scale, the 253 participants' mean score was 103, with a standard deviation of 10.98, a mode of 99, and a median of 103. A score of 98 on the SCOPE placed an individual in the 25th percentile, a score of 103 in the 50th percentile, and a score of 110 in the 75th percentile. Therefore, respondents who scored below 98 may be considered as having lower CP, and those who scored 110 or above may be considered as having higher CP.

DISCUSSION

We introduced background and theoretical premises regarding the potential importance for examining CP. Based on this premise we created a measure we dubbed the SCOPE to attempt to advance our understanding of the CP construct. A two-phased approach was outlined regarding the development of the scale: (a) SCOPE construction, and (b) SCOPE data collection and analyses. The following is a discussion of the results and implications of the exploratory study.

Validity

Whereas there are theoretical reasons provided in the literature suggesting that CP aligns with mindfulness, listening competency, and self-compassion constructs, these alignments have not been empirically evaluated. The SCOPE was reviewed by a panel of six experts in assessment, scale development, and CP. Although an expert panel was used for this study, recommendations include further investigation in the operationalization of key terms and item pool review due to the hypothesized interrelated nature of the construct. To date, universally agreed-upon definitions specific to CP are lacking and empirically supported evidence is needed given these multiple views. Future research is warranted regarding the content validity of the SCOPE.

The assumption for Phase Two was that three SCOPE factors would emerge and theoretically mirror the sub-constructs of CP's working definition. However, a seven-model factor was found through the EFA process. We dubbed the factors within consideration of the CP construct without consultation of an expert panel. That said, professional bias likely impacted the outcome of the factor-naming process.

According to the literature, 60% of the variance should be accounted for in the factor structure. In total, the seven-factor model explained 54% of the variance. This estimate is a minimally acceptable factor structure to explain the variance within the SCOPE. In the social sciences, where concepts may be understood as multifaceted and less precise regarding measurement, it is common to consider a solution that accounts for less than 60% of the total variance as satisfactory.

When conducting factor analysis, it is desired that each identified factor has a minimum of three items with high loadings where each item only loads on one factor and that each factor accounts for its own amount of the variance. The results indicated that several variables loaded on one or more factors. Consequently, items with multiple loadings with lower associations were considered for other factors to make theoretical sense. After the factors were found, correlations between the seven-factors were examined and most of the factors were strongly correlated. This finding may indicate that CP, within our current abilities to measure it, may be best interpreted as a unitary construct. Future research is warranted regarding the construct validation of the SCOPE.

Reliability

The total scale internal consistency and temporal stability indicated the SCOPE possesses good reliability. The small number of items per factor likely influenced the low internal consistency for individual factors. The results of the dependent *t*-test indicates there was no mean difference in the test-retest result, which further indicates the SCOPE possesses strong temporal stability, although the analysis was based on a small, limited sample.

Limitations and Future Implications

There are several limitations in this exploratory study of the SCOPE. The first limitation pertains to using a population of convenience when norming a new instrument. We recruited a population of convenience that resulted in more females (82.2%) than males (although that may be representative of the education profession population), a sub-sample that self-identified as European American (38.3%), and a large sub-sample that self-identified as attending a private university/college (68%). When establishing preliminary norms, it is suggested to recruit a representative population to ensure the most accurate results. Further examination is warranted to sample a more diverse population for future studies of the SCOPE. Relatedly, although the temporal stability results were acceptable and strong, a larger, more representative sample should be gathered to strengthen conclusions regarding temporal stability.

Similarly to most studies that rely on self-reported data, the second limitation relates to participants' potential predispositions to respond in a socially desirable manner on self-reported measures (Fisher & Katz, 2000). Potential extraneous variables (e.g., self-expectations) may have influenced how respondents answered the scale items. The range of the SCOPE scores resulted in restricted variability, as they were not evenly spread and were skewed toward higher scores. Researchers may consider investigating a more diverse participant population to broaden the range of responses and to investigate the potential relationship of the SCOPE with social-desirability biases.

The third limitation is specific to item pool selection. Given the findings, further investigation on the most theoretically meaningful factor structure is encouraged. Researchers may consider investigating a single-factor structure to better understand the construct of CP. It is recommended that items with multiple-factor loadings be removed for future item pool investigation. Moreover, it may be helpful to extract factors reflecting poor reliability results. Future research with a smaller item set may inform future scale development and/or advance the SCOPE to the next validation stage. However, scale construction is an imprecise science and some latent variables and relative constructs such as CP, albeit hypothesized, may not be distinguishable via quantitative methods such as factor analysis.

The next limitation pertains to the lack of criterion-related validity. Our exploratory study did not include a validated criterion (e.g., another scale) to indicate the degree to which the SCOPE measured the stated construct. It is recommended that researchers explore criterion-related validity in the areas of concurrent and divergent validity. Concurrent validity may be investigated by correlating the SCOPE with similar instruments (e.g., a mindfulness scale). Divergent validity may be examined by comparing the SCOPE with scales opposite in meaning (e.g., an impulsive behavior scale). Further investigation with consideration to criterion-related validity is recommended to provide empirical evidence regarding the hypothesized inter-connected nature among sub-constructs outlined in the working definition.

CONCLUSION

Contemplative practice is in its early stages of empirical investigation and warrants further hypothesis testing to explore its validity as to whether it is a concept worthy of exploration. The purpose of this study was to create a cohesive measure of the theoretical components of contemplative practice in response to a potential gap in the literature as it relates to scale development. A review of the literature revealed no empirical study specific to scale construction related to CP as a combined construct. Our findings indicated that, as measured, CP at present may be a unitary construct from a quantitative view, rather than a multiple-factor construct as put forth from the qualitative research. The SCOPE may further the field of CP in quantitative research and was constructed with the intention of contributing to this line of inquiry. The full-scale SCOPE evidenced good internal consistency and strong temporal stability. Further inquiry is recommended specific to the operationalization of CP for construct validity research, given our conclusion that CP at present may be best quantified as a unitary construct within our measurement limitations. Future research on the SCOPE also should include norming of the instrument with a more diverse sample of respondents. All that said, we offer this study as a baseline for further investigation of CP. We invite feedback and debate on the SCOPE to advance our understanding of contemplative practice as a potentially important construct.

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