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What is This?
Measures of Emotional Intelligence and Social Acceptability in Children: A Concurrent Validity Study

Sunny Windingstad¹, R. Steve McCallum¹, Sherry Mee Bell¹, and Patrick Dunn¹

Abstract
The concurrent validity of two measures of Emotional Intelligence (EI), one considered a trait measure, the other an ability measure, was examined by administering the Emotional Quotient Inventory: Youth Version (EQi:YV; Bar-On & Parker, 2000), the Mayer-Salovey-Caruso Emotional Intelligence Test: Youth Version (MSCEIT:YV; Mayer, Salovey, & Caruso, in press), and a sociometric measure to 102 upper elementary students in the U.S. Pearson product-moment correlation coefficients across various scores of the EI instruments ranged from −.02 (p > .05) to .39 (p < .01), suggesting the instruments are measuring somewhat different constructs. Scores on two sets of theoretically similar scales across instruments yielded significant correlation but others did not. Results from dependent t tests showed no significant difference between overall mean scores of the EQi:YV and MSCEIT:YV (p < .05). Only the Interpersonal and General Mood scales of the EQi:YV correlate significantly with the sociometric (p < .05). Implications for further research in EI are discussed.

Résumé
La validité concourante de deux mesures d'intelligence émotive (E-I), un a considéré une mesure de trait, l'autre par mesure de capacité, a été examinée en administrant l'inventaire de quotient émotif: Version de la jeunesse (EQi:YV; Bar-On & Parker, 2000), le test d'intelligence émotif de Mayer-Salovey-Caruso: Version de la jeunesse (MSCEIT:YV; Mayer, Salovey, & Caruso, en cours d'impression) et une mesure sociométrique à 102 étudiants élémentaires supérieurs aux États-Unis. Les
coefficients de corrélation de produit-moment de Pearson à travers de divers points des instruments d’E-I se sont étendus de −.02 (p > .05) à .39 (p < .01), suggérant les instruments mesurent les constructions quelque peu différentes. Les points sur deux ensembles d’échelles théoriquement semblables à travers des instruments ont rapporté la corrélation significative mais d’autres n’ont pas fait. Les résultats des essais dépendants de t n’ont montré aucune différence significative entre les points de moyen global de l’EQi:YV et MSCEIT:YV (p < .05). Seulement les échelles interpersonnelles et générales d’humeur de l’EQi:YV ont montré des corrélations significatives avec les mesures sociométriques (p < .05). Des implications pour davantage de recherche dans l’E-I sont discutées.

Keywords
emotional intelligence, emotional quotient, sociometric, validity

The first time the term emotional intelligence (EI) appears in an English language treatise is in an unpublished doctoral dissertation by Payne in 1986 (Matthews, Zeidner, & Roberts, 2007), but the concept generated little interest until it was popularized by Goleman in 1995. Primarily because of Goleman’s work, the concept of EI has captured the attention of the lay public and has become the focus of significant attention from researchers and test developers as well. Stough, Saklofske, and Parker (2009) estimated growth of EI-based theoretical, research, and application-oriented papers published since 1990. In 1998, there were 14 publications on EI. Based on the steady increase (145 publications by 2006), they projected publication of a total of 1300 EI-focused papers between the years 2006 and 2010. Based on their analysis, the most papers focused on the workplace (35.4%), and the least on sports (6%). Although not the largest category, a significant number focused on education (ranked 5th at 14.1%). Some investigators have addressed how EI training can help children and adults become better leaders, achieve better physical and mental health, and become more effective learners (see chapters in the edited book by Bar-On, Maree, & Elias, 2007). Similarly, Parker, Saklofske, Wood, and Collin (2009) provide linkages between EI and scholastic variables including achievement, retention, and student failure, and conclude that EI interventions have the potential to improve a range of outcomes for students and educational institutions.

In spite of its popularity, the construct is not without controversy (e.g., see Austin, Parker, Petrides, & Saklofske, 2008; Locke, 2005); for example, some question the extent to which EI is related to cognitive intelligence versus personality. Matthews et al. (2007) provide a critical analysis of the literature in their aptly named book Emotional Intelligence: Science and Myth, addressing the extent to which commonly occurring definitions, models, or characterizations are compatible, too inclusive, supported by research, capable of being addressed using scientific methodology, applied prematurely, and so on. They begin by asking the question, “is EI simply an old wine, which has been well marketed in a new bottle?” (p. 12). In spite of the controversy, the
concept of EI continues to garner attention, and has been operationalized via a number of instruments for adults; two of the most popular now have downward extensions for children. Stough et al. (2009) note that although measures of EI are at a fairly preliminary stage of development, research focusing on the applications of EI scores is growing rapidly. During this period of rapid development, practitioners will need access to independent data to help them determine the relative applicability of the various commercially available EI instruments and, in particular, how scales relate to each other, and to real-world criteria of social/emotional success. This study was designed to explore the relationships among aspects of EI as operationalized by two different general measures of EI (and their subordinate scales), and upper elementary students’ ratings of classmates’ actual social skills in the classroom as assessed by a sociometric measure.

Models of EI: State of the Art/Science

The most widely acknowledged characterization of EI may be that of Mayer and Salovey, perhaps due to its inclusion in Goleman’s popular books, for example, Emotional Intelligence: Why It Can Matter More than IQ (1995, 2005) and Working with Emotional Intelligence (1998). According to Goleman’s interpretation of Mayer and Salovey’s definition (1995), EI is the ability to recognize and manage one’s own emotions and relationships, and acknowledge the emotions of others. Goleman (1995) pays tribute to the earlier work of Mayer and Salovey and colleagues and notes that they were among the first to publish work conceptualizing and assessing EI in the peer-reviewed literature. Goleman goes on to create an even more sweeping definition of EI, noting that it includes abilities that allow the individual to motivate oneself, to control impulses, persist in the face of frustrations, delay gratification, regulate moods, empathize, hope, and keep distress at bay. According to Goleman, EI is presumably a good thing, beneficial to the individual and to those with whom he/she interacts, and others agree (e.g., Austin, Farrelly, Black, & Moore, 2007). In addition to the educational implications mentioned above, EI has been positively associated with psychological health (Austin, Saklofske, & Egan, 2005) and tendency to engage in physical exercise (Saklofske, Austin, Rohr, & Andrews, 2007), and negatively associated with stress, depression, loneliness, and Machiaveleeniasm (Austin et al., 2007; Saklofske, Austin, & Minski, 2003).

In addition to explicating models of EI functioning, researchers have begun to operationalize these models. For example, Salovey and Mayer’s (1997) model has been referred to as an ability model because it defines EI as the ability to perceive accurately, appraise and express emotion; the ability to access and/or generate feelings . . . ; the ability to understand emotion . . . ; and the ability to regulate emotion. It has been operationalized via the Mayer-Salovey-Caruso Emotional Intelligence Test: Youth Version (MSCEIT:YV; Mayer, Salovey, & Caruso, in press). However, the MSCEIT instruments have been criticized because the items require knowledge about EI, as opposed to requiring actual behaviors illustrative of EI (e.g., Brody, 2004).
Other characterizations and models have been influential, particularly Bar-On’s; he describes EI as “an array of noncognitive capabilities, competencies, and skills that influence one’s ability to succeed in coping with environmental demands and pressures” (1997, p. 14). This conceptualization has been characterized as a trait model, primarily because it is typically operationalized via a self-report format. Importantly, “the choice of measurement method has a defining impact on the operationalization of the construct” (Petrides, Sangareau, Furnham, & Frederickson, 2006, p. 537). Some have characterized Bar-On’s model as mixed because it contains elements of both intellect and personality traits—not because it confounds the trait-ability distinction (see Austin et al., 2008). According to Sternberg et al. (2000), Bar-On’s definition of EI is a set of “noncognitive abilities, skills, and competencies” (p. 88). The inclusion of “mental abilities (e.g., problem solving) and . . . personality traits (e.g., optimism)” (p. 88) earns it the label of “mixed model” because it incorporates multiple constructs. Despite these differences, the models have significant theoretical overlap. Table 1 presents the scales of the EQi:YV and the MSCEIT:YV and their theoretical relationships, adapted from Sternberg et al. However, other interrelationships among scales are plausible, so comparisons should be considered approximate.

<table>
<thead>
<tr>
<th>Table 1. Descriptions of Corresponding Bar-On Emotional Quotient Inventory: Youth Version (EQi-YV) and Mayer-Salovey-Caruso Emotional Intelligence Test: Youth Version MSCEIT:YV Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bar-On EQi:YV: Trait model</td>
</tr>
<tr>
<td>Intrapersonal Scale: Ability to understand emotions, express, and communicate feelings and needs</td>
</tr>
<tr>
<td>Interpersonal Scale: Ability to have satisfying interpersonal relationships through good listening, understanding, and appreciating feelings of others</td>
</tr>
<tr>
<td>Adaptability Scale: Ability to be flexible, realistic, and effective in managing change through finding positive ways to deal with everyday problems</td>
</tr>
<tr>
<td>Stress-Management Scale: Ability to work well under pressure, resist impulsivity, and respond to stressful events without emotional outbursts</td>
</tr>
<tr>
<td>General Mood Scale: Ability to remain optimistic and pleasant to associate with</td>
</tr>
</tbody>
</table>

Source: Adapted from Sternberg et al. (2000).
A significant body of research has emerged exploring relationships between ability and trait measures of EI, and among measures of EI and other constructs, in older adolescents and adults, (e.g., Brackett & Mayer, 2003; Petrides, Frederickson, & Furnham, 2004; Stough et al., 2009). For example, EI as measured by the MSCEIT (Mayer, Salovey, & Caruso, 2002) has been correlated with a number of characteristics in adults, such as empathy, $r = .43$ ($p < .005$); parental warmth, $r = .15$ ($p < .025$); life satisfaction, $r = .28$ ($p < .005$); extraversion, $r = .26$ ($p < .005$); openness to feelings, $r = .24$ ($p < .005$); and self esteem, $r = .31$ ($p < .005$; Ciarrochi, Chan, & Caputi, 2000). The MSCEIT Managing Emotions Scale correlated positively with quality of relationship with peers, $r = .33$ ($p < .01$) and positive emotional support, $r = .26$ ($p < .05$), as reported by peers in a sample of college students (Lopes et al., 2004).

Warwick and Nettelbeck (2004) explored relationships between an ability measure of EI (the MSCEIT) and a trait measure of EI (Trait Meta-Mood Scale), and personality, affiliation, abstract reasoning, extraversion, and agreeableness. These authors found differential performance between the two EI measures and the other variables included in the study, indicating some independence of these measures for Australian college students. In a study of 312 Bahraini adolescents aged 13 to 15, Alumran and Punamäki (2008) found significant relationships between various measures of coping style and emotional intelligence as measured by Bar-On’s Emotional Quotient Inventory, a trait measure. Warwick, Nettelbeck, and Ward (2010) explored efficacy of a new ability measure (Ability Emotional Intelligence Measure) of EI in undergraduates in Australia and reported significant predictive relationships between EI and stress and loneliness, independent of other personality variables.

Recently, experts have begun to explore EI relationships within children. Petrides et al. (2006) investigated the relationship between a self-report trait measure of EI, the Trait Emotional Intelligence Questionnaire-Adolescent Short Form (TEIQue-ASF), and social ratings by teachers and peers in 160 sixth graders in London. Teachers rated students with high EI as more cooperative and stronger leaders and those with low EI as more disruptive, less likely to share, more controlling, more aggressive, more dependent on peers, more willing to give up, and more willing to request help. A study conducted by Parker, Duncan, Woon, Eldridge, Wood, and Eastabrook, (as cited in Austin et al. 2008) revealed that high (academic) functioning elementary school students in Canada scored better than their average and below average peers on the Interpersonal, Adaptability, and Total scales on Bar-On’s scale.

Williams, Daley, Burnside, and Hammond-Rowley (2009) note that “... studies looking at preadolescent children are only just beginning to emerge (e.g., Mavroveli, Petrides, Rieffe, & Bakker, 2007; Mavroveli, Petrides, Sangareau, & Furnham, 2009; Mavroveli, Petrides, Shove, & Whitehead, 2008; Petrides et al., 2006, p. 316).” Most of these studies have originated in the United Kingdom, Australia, and Canada, and focus on investigating the relationship between EI operationalizations of trait versus ability, and between EI measures and other social/emotional outcomes. In general, the trait measures seem to be modestly to moderately related to other trait measures, and ability measures to other ability measures, but only minimally related to each other.
Trait measures of EI seem to be more strongly related to psychopathology such as anxiety, depression, and anger than are ability measures of EI (Williams et al., 2009), at least as defined by the Beck Youth Inventories of Emotional and Social Impairment (Beck, Beck, & Jolly, 2005). Similarly, Mavroveli and colleagues (2009) found statistical (though generally modest) relationships between trait EI measures and positive peer ratings obtained via a sociometric technique (e.g., peer nominations of peers who are leaders, cooperative, kind, etc.).

Literature describing the relationship between trait and ability measures of EI and between EI measures and other operationalizations of emotional/social skills in children comes primarily from the United Kingdom and commonwealth countries (e.g., Canada, Australia), and have used primarily experimental measures of EI. In fact, a 2011 perusal of Mental Measurements Yearbook revealed only one instrument specifically designed to assess EI in children, the EQi:YV; however, the MSCEIT:YV was in development at the time of this study. We found only one empirical investigation comparing the two EI instruments for children that are likely to be used in applied settings: the EQi:YV and the MSCEIT:YV. Peters, Kranzler, and Rossen (2009) examined relationships among them along with other measures such as coping skills (Coping Inventory for Stressful Situations; CISS; Endler & Parker, 1990) and discipline referrals in 50 U.S. students from one state in Grades 4 through 12 (aged 10–18). Interestingly, Peters et al. (2009) do not report mean scores for the two measures; rather, they simply note all scores were in the average range and not restricted in range. Nonetheless, they report that mean scores on the MSCEIT:YV were significantly higher than mean scores on the EQi:YV. However, global scores on the two measures were significantly correlated ($r = .42, p < .05$), and scores of scales on the MSCEIT:YV correlated “moderately” with similar scales on the EQi:YV (at the .05 level), with the exception of the Facilitating Thought scale. MSCEIT:YV scores correlated negatively with a coping stress scale and discipline referrals and positively with measures of IQ. In this study, the strength of the relationship between the ability (MSCEIT:YV) and trait (EQi:YV) measures was medium (Cohen, 1998) and the MSCEIT:YV showed stronger correlations with external measures than did the trait measure, though the authors did not report whether the differences in correlations were significant.

In general, the popular literature describing the utility of measures of EI is optimistic (see Goleman, 1998); however, the scholarly literature is much more controversial and more research is needed. Some experts caution against accepting the construct without more rigorous investigation (e.g., Brody, 2004). Nonetheless, school psychologists and other practitioners already have begun to use some of the available instruments. Relationships among these measures vary as a function of the model adopted by the various test authors (i.e., trait versus ability) and method of assessment employed (self-report versus rating scales versus more direct assessment). Best practice dictates that practitioners become aware of the relationships among the global and scale scores within and across EI measures and between those measures and other social/emotional outcomes, and that data describing these relationships be generated by independent investigators. Consequently, this study was conceptualized to investigate the relationships within and between the scales of two promising measures of EI in children (i.e.,
EQi:YV and MSCEIT:YV). Because some of the scales of the EQi:YV and the MSCEIT:YV appear to be measuring similar subconstructs of EI, even though one is best characterized as a trait measure and one an ability measure, we expected the relationships to be higher between scales assessing similar subconstructs than between scales assessing less similar subcontracts. A secondary purpose is to compare the relationship between these measures of EI to an important real-world outcome—peer-rated acceptability/popularity. Because relationships between trait measures of EI and external indicators of social and emotional success have been stronger than between ability operationalizations and these external variables, we expected the sociometric to be more robustly related to the EQi:YV than to the MSEIT:YV.

Method

Participants included 102 students in Grades 3 through 5 from three rural elementary schools in the United States, one in North Central South Dakota (1), and two in East Tennessee (2, 3). Students from 11 classes participated, four from School 1, two from School 2, and five from School 3. Socioeconomic level, as determined by percentage of students receiving free lunches, was 43% (School 1), 68% (School 2), and 85% (School 3). Student mean age was 10.25 years \( (SD = 1.29) \); 41% \( (n = 42) \) were male; 59% \( (n = 62) \) were female; 79% \( (n = 82) \) were White; 11% \( (n = 12) \) were Hispanic; 5% \( (n = 5) \) were Native American; 0% \( (n = 0) \) were African American; and 4% \( (n = 4) \) were multiracial. Participant demographics approximate data from the 2006 Census (U.S. Census Bureau, n.d.), with the exception of African Americans. Data were collected during the spring semester ensuring peers knew each other well.

Instruments

Two standardized EI instruments and a sociometric were administered. The first, the Emotional Quotient Inventory, Youth Version (EQi:YV; Bar-On & Parker, 2000), is based on a five-dimensional trait model and yields the following quotients: (a) Intrapersonal EQ, (b) Interpersonal EQ, (c) Stress Management EQ, (d) Adaptability EQ, and (e) General Mood EQ. The second instrument used, the Mayer, Salovey, Caruso Emotional Intelligence Test, Youth Version (MSCEIT:YV), is often referred to as an ability measure and is based on the Mayer and colleagues model; it yields the following four scales: (a) Perceiving Emotion; (b) Facilitating Thought (c) Understanding Emotions, and (d) Managing Emotions (Mayer, Salovey, & Caruso, in press). Brief definitions of the scales of the EQi:YV and the MSCEIT:YV are presented in Table 1.

The EQi:YV (Bar-On & Parker, 2000) is a 60-item self-report instrument designed to assess emotional and social functioning of youths aged 7 to 18. Readability, as determined by Dale-Chall, is fourth-grade level. In addition to a Total Emotional Quotient (Total EQ) score, students receive a Positive Impression score and an Inconsistency Index. Individual scales include the five scales presented in Table 1. In
their review, Ballard and Leong (2000) conclude that EQi:YV is psychometrically sound. Internal consistency estimates of reliability for scales ranged from .65 to .90 with most in the .80s range. Test–retest reliability, for an interim of 3 weeks, ranged from .77 to .88. According to the manual, the normative sample includes more than 9,000 children aged 7 to 18 with a mean age of 11.63 (SD = 3.07); though the sample size is large, representativeness of the U.S. population is not addressed, one reason for conducting independent studies with children from the United States.

Authors of the EQi:YV have conducted various studies to demonstrate validity, including factor analyses (Ballard & Leong, 2000). Items loaded moderately well on their matched factors with no major cross-loadings across factors. Bar-On and Parker present evidence of concurrent validity with the original adult version of the EQI (Bar-On, 1997), though some correlations (e.g., Intrapersonal; $r = .56$ and Adaptability, $r = .63$) were lower than desirable. Therefore, Ballard and Leong (2000) suggest caution when using these scales with younger students. Further, they report that females scored significantly higher than males on the Interpersonal, Intrapersonal, and Total EQ scales ($p < .001)$. The manual contains other concurrent and discriminant validity data, for example, the global EQi:YV score correlated highly with the Conners-Wells Adolescent Self-Report Scale (Conners, 1997) global score ($r = .85$). Further, correlations with the short form of the NEO Personality Inventory (NEO-FFI; Costa & McCrae, 1992), Children’s Depression Inventory (CDI; Kovacs, 1992), and Conners Parent Rating Scale-Revised (CPRS-R; Connors, 1997) were as anticipated.

The MSCEIT:YV (Mayer et al., in press) is a 184-item youth version of the Mayer-Salovey-Caruso Emotional Intelligence Test (2002) for children and adolescents aged 8 through 19 with estimated readability level at fifth grade. This instrument is considered ability based because it measures the extent to which examinees’ responses to emotionally relevant tasks/problems match those of experts, and are judged correct and incorrect on that basis. This instrument yields a single Total Emotional Intelligence (EIQ) score in addition to two composite scores, Experiential Emotional Intelligence (EEIQ) and Strategic Emotional Intelligence (SEIQ). The two area scores encompass the four central branches of Mayer and Salovey’s model presented in Table 1.

The MSCEIT:YV was still in development when this study was conducted; little psychometric information was available. As discussed above, Peters et al. (2009) examined relationships between the MSCEIT:YV, the EQi:YV, and several variables (i.e., intelligence, achievement, coping skills, and discipline referrals). Correlations were in the expected direction. Further evidence of psychometric adequacy of the MSCEIT:YV is based on reliability and validity data for the adult version. According to the MSCEIT manual, test–retest reliability was .82 ($n = 62$), but time interval was not reported, nor were test–retest reliabilities for the scales (Leung, 2002). Cook-Cottone and Meier (2002) assert that additional evidence of the MSCEIT’s stability is needed given the argument that EI is a stable ability. Split-half reliability estimates for the global, composite, and scale scores ranged between .79 and .93. Internal consistency reliabilities for the eight task scores ranged from .56 to .88. The authors present
evidence that MSCEIT scale scores were not related to scales with little conceptual relationship to emotional intelligence (e.g., SAT scores, scores on depression and suicidal ideation). However, Brackett and Mayer (2003) found a significant relationship between the MSCEIT and the Verbal ACT score. Reported correlations between MSCEIT scores and tests of intelligence were modest to moderate, ranging from $r = .05$ (Raven’s Progressive Matrices; Raven, Raven, & Court, 1998) to $r = .38$ (Army Alpha Vocabulary Scale; Yerkes, 1921). Correlations of MSCEIT scores and scores from personality measures were also in the modest to moderate range, for example, significant but modest correlations were obtained between scales of the MSCEIT and the NEO-PI-R (Costa & McCrae, 1992) ($r = .33$ with Agreeableness and $r = .25$ with Conscientiousness) and between the MSCEIT and the Personal Growth scale of the Ryff’s Scales of Psychological Well-Being (Ryff, 1989; $r = .35; p < .001$). Based on their review, Cook-Cottone and Meier (2002) conclude that evidence for construct validity of the MSCEIT is supportive but preliminary, and encourage more research.

In accordance with the call for more research, Roberts et al., (2006) examined the relationship between scores on the MSCEIT, measures of emotion, and measures of intelligence; their “results provide mixed support for the model hypothesized to underlie the MSCEIT” (p. 663). In a subsequent study, Follesdal and Havtget (2009) report the results of generalizability theory methodology to determine reliability of the MSCEIT, and found indices considerably lower than those reported previously; they question the validity of the MSCEIT scales and call for better EI measures.

The sociometric measure employed in this study was based on the sociometric technique described by Coie, Dodge, and Coppotelli (1982), who reported test–retest data ($r = .65$) over a 12-week interval for 311 third and fifth-grade students. Students were asked to rank the three peers they most and least like. A Social Preference (SP) score was obtained by collecting students’ peer nominations and adding the scores for each question to determine Liked Most (LM) and Liked Least (LL) scores for each student in the class. The SP was then calculated by subtracting LL from LM (LM−LL). Once raw scores for SP, LM, and LL were determined for each student, they were converted to z scores.

**Procedure**

Students with appropriate consent forms on file were administered the EQi:YV, MSCEIT:YV, and sociometric measure by grade level in counterbalanced order by the first author using a script to deliver instructions. Students from different classes but within the same grade at each school were grouped together to complete the assessments. Students who did not have permission completed an unrelated activity with their teacher in another location. Students completed the EI and sociometric assessments in one session lasting approximately one and one-half hours. When completing the sociometric, students were told to consider only those peers in the testing session; they were given a list of participant names.
Results

Descriptive statistics, means, and standard deviations of the various scales of the EQi:YV, the MSCEIT:YV, and the sociometric are displayed in Table 2. In addition, correlational results (Table 3) and mean difference analyses are reported to determine concurrent validity of the measures. In general, mean scores are slightly below population parameters for the EQi:YV, and MSCEIT:YV, whereas standard deviations are slightly larger. For these measures, the population means are set to 100 (SD = 15). For this study, mean standard scores for scales and the overall EQi:YV range from 93.71 on the General Mood Scale to 95.82 on the Intrapersonal Scale with a mean of 94.21 for the Overall score. Standard deviations range from 14.61 for the Intrapersonal Scale to 17.42 on General Mood. The standard score means and standard deviations for the MSCEIT:YV scales, composites, and overall score reflect a similar pattern with the lowest mean (87.25) from the Perceiving Emotions Scale and highest (96.43) from the Managing Emotions Scale. Standard deviations on the MSCEIT:YV range from 15.01 on the Managing Emotions Scale to 19.66 on the Perceiving Emotions Scale. Z scores were calculated for the sociometric SP score and the mean (−.01) and standard deviation (.98) were not significantly different than expected.

Skewness and kurtosis values were calculated for overall scores of each instrument. The skewness of the EQi:YV is .21 with a standard error of .24, and the skewness of the MSCEIT:YV is −.41, with a standard error of .24. The kurtosis for the measures were also acceptable, ranging from −.56 on the EQi:YV to .50 for the MSCEIT:YV Perceiving Emotions Scale.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bar-on EQi:YV Total EQ</td>
<td>94.21</td>
<td>16.34</td>
</tr>
<tr>
<td>Bar-on EQi:YV Intrapersonal Scale</td>
<td>95.82</td>
<td>14.61</td>
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<td>Bar-on EQi:YV Interpersonal Scale</td>
<td>94.70</td>
<td>17.09</td>
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<td>Bar-on EQi:YV Stress Management Scale</td>
<td>95.65</td>
<td>15.44</td>
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<td>Bar-on EQi:YV Adaptability Scale</td>
<td>94.28</td>
<td>16.50</td>
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<tr>
<td>Bar-on EQi:YV General Mood Scale</td>
<td>93.71</td>
<td>17.42</td>
</tr>
<tr>
<td>MSCEIT:YV Total Emotional Intelligence Quotient (EIQ)</td>
<td>93.62</td>
<td>15.94</td>
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<tr>
<td>MSCEIT:YV Perceiving Emotions Scale (PEIQ)</td>
<td>87.25</td>
<td>19.66</td>
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<td>MSCEIT:YV Facilitating Thought Scale (FEIQ)</td>
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<td>MSCEIT:YV Understanding Emotions Scale (UEIQ)</td>
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<td>MSCEIT:YV Managing Emotions Scale (MEIQ)</td>
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<td>MSCEIT:YV Strategic Emotional Intelligence Area (SEIQ)</td>
<td>93.08</td>
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<td>Sociometric Social preference</td>
<td>−.01</td>
<td>.98</td>
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<td>Sociometric Most Liked</td>
<td>2.59</td>
<td>2.00</td>
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<tr>
<td>Sociometric Least Liked</td>
<td>2.57</td>
<td>2.84</td>
</tr>
</tbody>
</table>
Table 3. Correlations Among the Bar-On Emotional Quotient Inventory: Youth Version (Bar-On EQi:YV), the Mayer, Salovey, Caruso Emotional Intelligence Test: Youth Version (MSCEIT:YV), and a Sociometric Measure

| EQi:YV(EQI) Scales   | EQi:YV (Total) | EQi:YV Intra | EQi:YV Inter | EQi:YV SM | EQi:YV Adapt | EQi:YV GM | EQi:YV EIQ | EQi:YV PEIQ | EQi:YV FEIQ | EQi:YV UEIQ | EQi:YV MEIQ | EQi:YV EEIQ | EQi:YV SEIQ | SP | ML |
|----------------------|---------------|--------------|--------------|-----------|-------------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|---|---|
| Intrapersonal (Intra) | .69*          |              |              |           |             |           |           |            |            |            |            |            |            |   |   |
| Interpersonal (Inter) | .78*          | .37*         |              |           |             |           |           |            |            |            |            |            |            |   |   |
| Stress Management (SM) | .64*          | .32*         | .28*         |           |             |           |           |            |            |            |            |            |            |   |   |
| Adaptability (Adapt) | .77*          | .42*         | .62*         | .28*      |             |           |           |            |            |            |            |            |            |   |   |
| General Mood (GM)     | .72*          | .49*         | .65*         | .41*      | .56*        |           |           |            |            |            |            |            |            |   |   |
| MSCEIT:YV (MSC) Scales|              |              |              |           |             |           |           |            |            |            |            |            |            |   |   |
| EIQ (Total EIQ)       | .36*          | .06          | .38*         | .26*      | .26**       | .36*      |           |            |            |            |            |            |            |   |   |
| Perceiving Emotions (PEIQ) | .12        | .02          | -0.02        | .24**     | .04         | .07       | .45*      |            |            |            |            |            |            |   |   |
| Facilitating Thought (FEIQ) | .28*        | .06          | .29*         | .18       | .20**       | .31**     | .60*      | .04        |            |            |            |            |            |   |   |
| Understanding Emotions (UEIQ) | .24**       | -0.05        | .31*         | .21*      | .17         | .24**     | .76*      | .34*       | .36*       |            |            |            |            |   |   |
| Managing Emotions (MEIQ) | .29*         | .02          | .36*         | .22**     | .20**       | .29*      | .81*      | .28*       | .36*       | .60*       |            |            |            |   |   |
| Experiential Emotion (EEIQ) | .30*        | .05          | .24**        | .28*      | .19         | .30*      | .74*      | .52*       | .88*       | .48*       | .45*       |            |            |   |   |
| Strategic Emotion (SEIQ) | .31*         | -0.02        | .39*         | .23**     | .22**       | .31**     | .88*      | .35*       | .41*       | .89*       | .90*       | .52*       |            |   |   |
| Sociometric            |              |              |              |           |             |           |           |            |            |            |            |            |            |   |   |
| Social Preference (SP) | .16          | .08          | .25**        | .00       | .12         | .17       | .11       | -1.16      | .02        | .14        | .16        | -0.06      | .18        |   |   |
| Most Liked (ML)       | .14          | .08          | .24**        | .03       | .11         | .10       | .09       | -1.16      | .01        | .14        | .16        | -0.07      | .17        | .78*      |   |   |
| Least Liked           | -1.18        | -0.08        | -0.23**      | -0.03     | -1.14       | -2.02*    | -1.13     | .09        | -0.09      | -1.14      | -1.14      | -0.03      | -1.17      | -0.88*    | -0.43* |   |

Note: n = 102.
*p < .05 level, two-tailed. **p < .01, two-tailed.
Correlation coefficients in Table 3 show relationships among overall and scale scores of the EQi:YV, the MSCEIT:YV, and the sociometric. Although not the primary focus of the study, there are several significant within-test coefficients. For example, the highest correlation is between the MSCEIT:YV Standard Experiential Emotional Intelligence Composite (EEIQ) and MSCEIT:YV Standard Strategic Emotional Intelligence Composite (SEIQ) \( (r = .90, \ p < .01) \) whereas the lowest significant correlation is between the MSCEIT:YV Perceiving Emotions Scale (PEIQ) and EIQ \( (r = .45, \ p < .05) \). As is obvious, within-scale relationships are strong, showing overlap among subconstructs.

Across the EQi:YV and MSCEIT:YV, there are several significant correlations, ranging from .20 to .39, at the scale level (see Table 3). The highest correlation across measures is between the EQi:YV Interpersonal Scale and the MSCEIT:YV MEIQ \( (r = .36, \ p < .01) \) whereas the lowest significant correlations across measure are between the EQi:YV Adaptability Scale and the MSCEIT:YV Facilitating Thoughts Scale (FEIQ) and the EQi:YV Adaptability Scale and the MSCEIT:YV MEIQ, \( (r = .20, \ p < .05 \text{ for both}) \). Strength of the correlations between global scores across instruments is in the low end of the medium range generally (Cohen, 1988). For example, the EQi:YV Total EQ score correlates significantly with the MSCEIT:YV EIQ \( (r = .36, \ p < .01) \). Composite scores from the MSCEIT:YV also correlate significantly with the EQi:YV Total EQ; EEIQ, \( r = .30, \ p < .05; \) and SEIQ, \( r = .31, \ p < .05 \).

The primary correlations of interest are those of corresponding scales featured in Table 1. However, only two of the four coefficients are significant. As can be seen in Table 1, neither the EQi:YV Intrapersonal Scale and the MSCEIT:YV PEIQ nor the EQi:YV Adaptability Scale and the MSCEIT:YV Understanding Emotions Scale (UEIQ) correlate significantly. In addition, the significant correlations are modest in magnitude. The EQi:YV Stress Management Scale and the MSCEIT:YV MEIQ correlate significantly \( (r = .22, \ p < .05) \), as do the EQi:YV Interpersonal Scale and the MSCEIT:YV FEIQ \( (r = .29, \ p < .01) \), though magnitude is small.

To further determine concurrent validity, a paired t-test was conducted to compare means of the EQi:YV Total EQ \( (M = 94.21, \ SD = 16.34) \) and MSCEIT:YV EIQ\( (M = 93.62, \ SD = 15.94) \). The mean difference between these means is not statistically significant \( (p > .05) \); the effect size is small, .04 (Cohen’s \( d \)).

Correlations between the EI measures and the sociometric range from −.20 to .25, suggesting small to nonsignificant relationships. The EQi:YV Interpersonal Scale correlates significantly \( (p < .05) \) with the Social Preference score \( (.25) \), Most Liked score \( (.24) \), and Least Liked score \( (.23) \). The EQi:YV General Mood Scale correlates significantly with the sociometric Least Liked score \( (r = -.20, \ p < .05) \), as well. No other cross-scale coefficients were significant.

**Discussion**

As is apparent in the scholarly literature, there is no consensus on how EI should be defined, and characterizations/models vary by author. Perhaps the most fundamental
controversy focuses on the robustness of the construct itself. Some experts have characterized the most widely accepted definitions as unwieldy and so broad as to be meaningless (e.g., see Locke, 2005; Matthews et al., 2007, for discussions of definitional and psychometric issues). And, the controversies do not stop with definitional differences among the experts. The literature is equally or perhaps more divided regarding acceptability (or not) of the available operationalizations of EI, although some studies show significant and predicted relationships between measures of EI with academic, and social/emotional success (see Austin et al., 2008, for a review).

As Matthews et al. (2007) note, “We cannot even be sure that different measures of EI are assessing the same underlying construct” (p. 28). Furthermore, we do not have agreement on how those measures might relate to real-world perceptions of social success. Some experts have questioned the robustness of the construct and whether or not EI measures can predict social/emotional success beyond well-established constructs that overlap with it, particularly intellectual and personality variables (e.g., see Brody, 2004).

In spite of these controversies mental health professionals such as school psychologists, counselors, vocational practitioners, and others are beginning to explore the extent to which EI measures can inform their practices, particularly given the strong endorsements by articulate authors such as Goleman (1995, 1998, 2005) and some emerging literature showing positive effects of EI-based interventions (e.g., Fletcher, Leadbetter, Curran, & O’Sullivan, 2009). Interest among school psychologists was likely enhanced by a 2002 publication in School Psychology Review describing new roles for school psychologists that defined emotional intelligence and addressed its importance to social and emotional well-being (Ross, Powell, & Elias, 2002). The importance of EI was mentioned by Linda Darling-Hammond, a well known teacher-educator, in her keynote address to the 2011 convention of the National Association of School Psychologists. However, given the controversial literature regarding the quality of currently available EI measures, practitioners need independently generated research exploring relationships among existing scales and between the scales and real-world emotional/social success. Data generated from this study will help further define those relationships and aid practitioners/consumers as they explore potential uses of these instruments.

Although the EQi:YV and the MSCEIT:YV originated within different psychometric traditions, one considered a trait measure and the other an ability measure, practitioners may not find different global scales; that is, global means across the two instruments did not significantly differ for the elementary-age students in our sample. But, this finding is inconsistent with Peters et al. (2009), who reported finding a significantly higher mean score on the MSCEIT:YV for students aged 10 to 18. Interestingly, students in the current study earned scores roughly from one third to half a standard deviation below the mean on both measures and there was variability in the scores in the Peters et al. study. These differences have significance for interpretation and practical use. Based on correlational evidence, relationships among the various scales of EI are modest to moderate, and several are statistically significant. In
particular, the majority of the intercorrelations among scales within instruments are statistically significant, supporting the overlap within those scales, although these relationships are impacted (and likely increased) by method variance. As Matthews et al. (2007) note, the construct validity of a superordinate construct should rely to some extent on the overlap among the constituent parts. That is, the subconstructs should relate more highly among themselves than to entities presumed to be less related or independent.

Significant relationships exist across instruments as well, even though general global scores of the EI measures are more highly related to each other than they are related to scale scores of the other instrument. The two most global scores correlate to a moderate degree, and based on an estimate of overlap defined by the coefficient of determination, share only about 13% of their variance. So, the overlap between the two instruments appears to be minimal, a finding consistent with Peters et al. (2009); they found several significant (but modest) relationships between scores on scales of the EQi:YV and the MSCEIT:YV. This finding is consistent with other studies reporting limited overlap between ability and trait measures (e.g., Warwick & Nettelbeck, 2004).

Some scale pairs, as identified in Sternberg et al. (2000), correlate significantly but modestly. For example, the EQi:YV Stress Management Scale and the MSCEIT:YV MEIQ correlate modestly \( (r = .22, p < .05) \). Both scales are designed to assess “management” of emotion. Although items on the EQi:YV are designed to assess EI traits rather than to assess knowledge of accepted emotional or social mores, they appear to be tapping content similar to items on the MSCEIT:YV MEIQ. That is, they provide examiners with examples of a child in a specified emotional state, then require a rating of how specific activities would impact the exemplar’s mood. Both sets of items rely on the participants’ ability to anticipate, then predict what they would do (or do for someone) to manage a specific mood.

In addition, there is a modest but significant correlation between the EQi:YV Interpersonal Scale and the MSCEIT:YV FEIQ, which also appear to share task demands. On the EQi:YV, examiners answer questions requiring judgment of the way others feel; similarly, the MSCEIT:YV FEIQ requires students to read a sentence describing feelings, then rate different words on a Likert-type scale characterizing how much each term “feels” like the specified emotion. Presumably, examinees who are more adept at understanding feelings in others may be able facilitate relationships/interactions better than those who are less able, a finding consistent with the research of Petrides et al. (2006).

Neither the EQi:YV Intrapersonal Scale and the MSCEIT PEIQ or the EQi:YV Adaptability Scale and the MSCEIT UEIQ correlate significantly even though they have been paired in the literature (Sternberg et al., 2000). This finding is consistent with Paulhaus’ (1991) observation that people may not be skilled at determining the differences in real versus perceived ability. Perhaps the findings of Peters et al. (2009) are relevant; they found that the relationships between theoretically similar scales were significant \( (p < .05) \) except for EQi:YV Interpersonal Scale and MSCEIT: YV Facilitating Thought.
Although there are several significant relationships among the EI measures, those relationships are not robust. Authors of the EQi:YV and MSCEIT:YV ascribe to somewhat different characterizations of EI. As Petrides et al. (2006) point out, different models of EI may dictate both the content and nature of assessment. These two instruments originate from trait versus ability-based measurement traditions. Importantly, there are other salient differences across the two instruments. The MSCEIT:YV purports to use a sequential model of EI, and presumably adherence to this developmental model dictates to some extent item choice for younger versus older examinees. Consequently, content overlap may be influenced (and reduced) by the resulting item selection, particularly for some scales that may be more developmentally sensitive (e.g., MSCEIT: YV UEIQ and MEIQ).

Of particular interest to practitioners who aspire to predict social/emotional success from pencil and paper measures of EI, neither of the EI scales were highly related to a sociometric operationalization of social acceptability, although the relationships between some of the EQi:YV scales (particularly the EQi: Interpersonal Scale) and the sociometric results were statistically significant, and in expected direction. The significant negative correlations between EQi:YV General Mood Scale with the Least Liked score of the sociometric measure is consistent with Brackett and Mayer (2003) results; they found negative correlations between the EQI and socially undesirable traits in adults. In general, the pattern of results is consistent with those of Mavroveli et al. (2009); they found modest but significant relationships between a trait measure of EI and peer-rated pro-social measures. In contrast, Peters et al. (2009) found generally stronger relationships between the MSCEIT:YV and external criteria (e.g., academic achievement and coping skills) than between the EQi:YV and external criteria.

In summary, our results help define several significant relationships, both within and across two measures of EI, the EQi:YV and the MSCEIT:YV, and the relationships between these measures and a real-world operationalization of social/emotional success in school age children from the United States. Although the global scores from the two measures did not differ from each other, several of the subconstructs assessed by the two instruments do not appear to be related to each other, or are related only minimally. These results are not surprising because the authors ascribe to different assessment models of EI. In fact, these results are consistent with other studies showing only limited overlap between ability and trait measures (e.g., Williams et al., 2009) As expected, within-scale measures showed the strongest overlap suggesting scales within measures assess somewhat similar constructs (see Table 3), although this overlap could in part be a function of method variance. So, even though practitioners might find little difference in global scores when these tests are used, they should not assume that these EI measures are assessing highly similar constructs. Results support the need to empirically address relationships among EI measures, as suggested by Matthews et al. (2007); also, they reinforce Petrides et al.’s (2006) observation that measurement strategies and operationalizations can affect outcomes and interpretations. More research is needed to further elucidate relationships among existing instrument and between those instruments and social/emotional success.
The study has several limitations. For example, peer nominations were restricted because only participants could be nominated. In the future, we recommend using a sociometric that allows all peers to be nominated (e.g., by assessing intact classrooms or entire grade levels within a school). Instrument limitations may have influenced the current results. For example, the MSCEIT:YV was in the norming and data collection phase when these data were collected. It may be beneficial to duplicate this study once it is finalized. Limitations inherent in the participant pool restrict generalizability. Participants were from schools serving lower socioeconomic groups, from specific geographical locations, and the ages of participants represented a restricted pool. Students were between ages 9 and 11 but each instrument used is intended for a much wider age span.

Conclusion

These operationalizations of EI show significant independence and modest to negligible relationships to the peer-based sociometric index. They appear to be assessing relatively little in common. Potential users should be aware that the EQi:YV and MSCEIT:YV scales yield higher coefficients between/among themselves than they yield across instruments. In this study, they produced similar mean composites suggesting that the two measures will yield similar scores, at least for this age group (though Peters et al., 2009, reported a difference in mean scores for students with a wider span of ages). Notably, the students in this sample (from two states in the United States) scored about half a standard deviation below the mean on several of the scales from both EI measures. Until further research on the representativeness of the norms of both measures for U.S. students are available, practitioners should interpret scores with caution. In addition, these EI measures may not be strong predictors of real-world social success, at least as operationalized within this study.

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References


**Bios**

**Sunny Windingstad** is currently a practicing school psychologist in the Sunnyside School District in Tucson, Arizona at Desert View High School. He continues to pursue interests in the areas of assessment and emotional intelligence as well as reading intervention and interventions for students with emotional disabilities.
R. Steve McCallum is professor and head of the Department of Educational Counselling and Psychology at the University of Tennessee. A fellow of APA, consulting editor of the *Journal of Psychoeducational Assessment* and school psychology trainer and practitioner, he has authored three books (*Handbook of Reading Assessment, Essentials of Nonverbal Assessment, Handbook of Nonverbal Assessment*), numerous book chapters and tests (including the Universal Nonverbal Intelligence Test), and over 100 papers presented at national/international conferences. Research interests include assessment of cognition and reading disabilities, and the link between assessment and intervention.

Sherry Mee Bell is an associate professor of special education, interim department head of Theory and Practice of Teacher Education at the University of Tennessee, and a former special educator and school psychologist. Her research interests include effective assessment and instructional practices, learning disabilities, particularly reading disabilities, and attribution theory. She is coauthor of *Handbook of Reading Assessment* and author/coauthor of several book chapters and numerous scholarly articles and presentations.

Patrick Dunn, CRC, is an associate professor of Counsellor Education and coordinator of Rehabilitation Counsellor Education at the University of Tennessee-Knoxville. He pursues research in the areas of workplace injury and vocational forensics.