TEACHER EMOTIONAL INTELLIGENCE AND THE QUALITY OF THEIR

INTERACTIONS WITH STUDENTS

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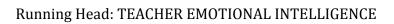THE STATE UNIVERSITY OF NEW JERSEY

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Abstract

Identifying qualities of effective teachers is at the forefront of educational research. Qualities of effective teachers may include their ability to perceive and manage their own and their students' emotions, demonstrate empathy, and manage behavioral challenges, which comprise what some scholars call "Emotional Intelligence." Yet, little research demonstrates the link between emotional intelligence and high quality teacher-student interactions in classrooms. The current study examined whether the Teacher Emotional Intelligence Measure (TEIM), a new measure prompting teachers to respond to a hypothetical vignette of a disciplinary interaction, can measure EI with reliability and validity. In so doing, it also examined whether teachers with greater EI, compared to those with lower EI, had higher quality teacher-student interactions, as measured by the Classroom Assessment Scoring System (CLASS, a validated observational system). Vignette responses and observations of teacher-student interactions were collected from a sample of 74 teachers from within 5 diverse middle and high schools in a school district in Virginia. Intraclass correlations demonstrated that a coding scheme developed from the vignettes can be used to train coders to reliably extract relevant dimensions of EI. Multiple regression analyses further demonstrated that teachers with higher EI (as measured by a composite TEIM score), compared to those with lower EI, were observed (via coded videotaped classrooms) as having greater regard for the adolescents' perspective. A specific item in the TEIM coding manual stood out as a predictor of observed teacher-student interactions: Teachers' management of the disputant's emotions, as coded from their written responses, was associated with greater sensitivity to student needs, more effective behavior management, and improved facilitation of

students' higher order thinking. These relationships persisted when taking into account

the student achievement level, student socioeconomic status, teacher's education level,

and teacher gender. Unexpectedly, the composite TEIM score had a negative association

with behavior management, suggesting that certain EI abilities may be linked to

diminished ability to elicit students' cooperative behavior. The effect sizes of the

significant TEIM dimension (i.e., management of disputant's emotion) on observed

interactions would be considered small given it explained between seven and nine percent

of unique variance in the observed CLASS dimensions. That said, this is the first study to

find a link between EI, as coded from a written response to a vignette, and observed

teacher-student interactions in the classroom. Given the brevity of the vignette

administration, the findings have implications for rapid assessment and data-driven

professional development to improve students' experience in the classroom.

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Introduction

The re-authorization of No Child Left Behind (NCLB), requiring every American classroom to have a "highly qualified" teacher, spurred extensive inquiry into what constitutes an effective teacher. Policy makers and other stakeholders have become increasingly interested in which teacher characteristics promote student achievement (e.g., Hamre, Pianta, Mashburn, & Downer, 2007). While there is compelling empirical evidence establishing a strong relationship between high quality teachers and improved student performance (Commission on Teaching and America's Future, 1996), much of the research until now has focused largely on teachers' training and knowledge (Clotfelter, Ladd, & Vigdor, 2007). However, teacher training and content expertise appears to have little predictive value in distinguishing which teachers have the most successful student outcomes (e.g., Hanushek & Rivkin, 2004; Pianta & Allen, 2008). A promising, yet under-examined teacher characteristic is emotional intelligence (EI).

Jennings and Greenberg (2009) propose a model of prosocial classrooms that demonstrates the critical role teachers' EI has in the creation of a learning environment that is conducive to supportive student-teacher relationships, effective classroom management and positive developmental outcomes. Many studies have established a strong link between EI and effective leaders (Bass & Avolio, 1993; Cooper & Sawaf, 1997; Goleman, 1998a; Ryback, 1998). The current study extends this line of research and examines whether EI predicts observed teachers' high quality interactions with students in their classrooms.

The study also addresses current shortcomings in the field's measurement of EI. Traditional cognitive intelligence tests are somewhat limited. Whereas many measures have shown predictive validity, they do not account for large amounts of variance in performance outcomes (Hunter & Hunter, 1984; Sternberg, 1996). Measures of EI were created to address this void and are commonly expected to predict educational, social, interpersonal, and occupational criteria above and beyond those predicted by conventional cognitive intelligence (Matthews, Zeidner, & Roberts, 2007; O'Boyle, Humphrey, Pollack, Hawver & Story, 2011; Schulze, Roberts, Zeidner, & Matthews, 2005). Yet, current measures have some of the same shortcomings as traditional intelligence tests (e.g., time consuming, expensive). They further reflect a generalized construct without considering contextual factors that can play a significant role in cognitions and behaviors (Cherniss, 2010). The new measure of EI, developed for this study, utilizes open-ended responses to a hypothetical vignette of a classroom disciplinary interaction where EI might be presumed to operate, thus providing an alternative to current measures available that is specific to the context of teaching.

Defining Emotional Intelligence

Several early researchers recognized the importance non-cognitive elements of intelligence have in predicting an individual's success in life. Cherniss (2000) cites Wechsler (1940), stating the importance of "non-intellective elements," including affective, personal, and social factors. Toward the end of the twentieth century, the social and emotional elements of intelligence began to receive more attention among researchers. Howard Gardner (1983) first introduced the idea of multiple intelligences as a result of his conclusion that traditional intelligence fails to fully explain performance

outcomes (Smith, 2000). Prior to the introduction of the concept of EI in the literature, Reuven Bar-On introduced the term "emotional quotient" in his 1988 dissertation.

The term "EI," coined by Peter Salovey and John Mayer (1990), was originally defined as "a form of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and action." Popular interest in EI was spurred by the bestselling book, *Emotional Intelligence: Why It Can Matter More than IQ*, by Daniel Goleman (1995). He defined EI as a set of skills, including control of one's impulses, self-motivation, empathy and social competence in interpersonal relationships. There has been a significant surge in research on EI since that time (Matthews, Zeidner & Roberts, 2002) yet there is still a lack of agreement about what comprises EI and how it should be measured (Mayer, Salovey, & Caruso, 2008).

Substantial disagreements regarding the terminology and operationalization of EI led to the clustering of EI constructs into two basic theoretical models, the trait-based model and the ability-based model (Matthews et al., 2007; Perez, Petrides, & Furnham, 2005; Schulze, Wilhelm, & Kyllonen, 2007). The trait model conceptualizes EI as a collection of behavioral dispositions and noncognitive self-perceived capabilities (Petrides & Furnham, 2001, 2003). The ability model conceptualizes EI as s a type of intelligence or aptitude such as the ability to perceive, use, understand, and manage emotions in self and others (Mayer & Salovey, 1997). Researchers distinguish between traits and abilities, with traits reflecting characteristics or preferred behavior patterns and abilities reflecting skills or efficiency of performance output (Schulze et al., 2005). This

fundamental distinction is reflected in the various measurement tools that aim to capture a range of abilities and skills in this domain.

Measuring Emotional Intelligence

For over two decades, scholars have been developing measures of EI using varying, yet complementary, definitions (Ciarrochi, Chan, & Caputi, 2001). Some researchers accept that the trait model is best evaluated with self-report measures (Petrides & Furnham, 2001, 2003) or observer ratings (Schutte, Malouff & Bhullar, 2009) while the ability model is best evaluated with performance-based measures (Neubauer & Freudenthaler, 2005; Perez, et al., 2005; Rivers, Brackett, Salovey, & Mayer, 2007). Ashkanasy and Daus (2005) however advocate for a distinction between theoretical models as each model can have multiple measurement strategies.   The most commonly referenced measures in the literature are the Emotional Quotient Inventory (EQ-i), the Mayer, Salovey, Caruso Emotional Intelligence Test (MSCEIT), and the Emotional and Social Competence Inventory (ESCI).

Emotional Quotient Inventory (EQ-i). The EQ-i (Bar-On, 1997) was the first measure of EI. The EQ-i is a self-report instrument that measures emotionally and socially competent behavior and provides an estimate of, "a cross-section of inter-related emotional and social competencies that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands and pressures" (Bar-On, 2004, p. 117). The measure yields an overall EQ score as well as scores for five composite areas including Intrapersonal, Interpersonal, Stress Management, Adaptability, and General Mood.

The internal consistency of the overall EQ score varies somewhat from study to study, ranging from .86 to .94, with an overall estimate of .97 (Bar-On, 2000; Bar-On, 2004, Petrides & Furnham, 2001). Test- retest reliability is adequate, at .85 after one month (Bar- On, 1997) and .79 after three months (Conte & Dean, 2006). Reliability for the individual subscales is not as high (such as .6) and thus should not be used individually (Bar-On, 1997). There is some evidence of overall EQ score predictive validity —more effective managers have higher EQ-i scores than less effective managers, and higher EQ-i scores are associated with higher university grades and greater job success (MacCann, Matthews, Zeidner, & Roberts, 2003). Evidence on convergent validity demonstrates that the EQ-i correlates well with other self-report measures (.58 to .69) (Bar-On, 2004). As for divergent validity, there is minimal overlap with measures of cognitive ability (Bar-On, 2006; Van Rooy, Viswesvaran, & Pluta, 2005). Bar-On developed this instrument to be distinct from personality measures, yet MacCann and his colleagues (2003) cite empirical evidence to the contrary. Namely, they show the EQ-i is confounded with personality traits.

Mayer, Salovey, Caruso Emotional Intelligence Test (MSCEIT). Mayer, Salovey, and Caruso (2003) developed the MSCEIT based on a series of emotion-based problem-solving tasks. Mayer and Salovey (1997) define EI as "the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth" (p. 10). The MSCEIT is the only well-known measure that is performance-based and measures EI in a manner similar to traditional intelligence testing (Matthews, Roberts, &

Zeidner, 2004). However, unlike standard intelligence tests the items do not have

objectively correct response and can be scored with expert or consensus scoring (Salovey

& Grewal, 2005). Expert scoring involves determining the correct answer by pooling the

judgment of experts in emotions while consensus scoring determines correctness by

pooling the judgment of several hundred people.

Overall reliability scores for the MSCEIT are good, ranging from .91 to .93

(Mayer, Salovey, & Caruso, 2002). However, subscale reliabilities are lower with an

average of .68 for consensus scoring and 0.71 for expert scoring, which is not optimal

given that this is an ability test (Matthews et al., 2002). Overall test-retest reliability is .86

(Bracket & Mayer, 2003; Mayer, Roberts & Barsade, 2008). Internal consistency is lower

although generally remains above .75 (Conte & Dean, 2006). The MSCEIT correlates

with crystallized measures of intelligence, but not significantly with fluid measures of

intelligence (MacCann et al., 2003) or with established measures of personality (Mayer,

et al., 2008). To date, psychometric analyses are encouraging (Brackett & Mayer, 2003;

Day & Carroll, 2004), although more research is needed to further establish the predictive

validity of the MSCEIT.

Emotional and Social Competence Inventory (ESCI). The Emotional and

Social Competence Inventory (ESCI) was designed to assess emotional competencies and

positive social behaviors (Boyatzis, Goleman, & Rhee, 2000; Goleman, 1995; Sala,

2002). The ESCI provides a promising alternative to self-report measures with its use of

a 360-degree assessment technique that can include self-ratings, peer ratings, subordinate

ratings and supervisor ratings. The ESCI assesses 12 competencies organized into four

clusters: Self-Awareness, Self-Management, Social Awareness, and Social Skills.

Boyatzis and Sala (2004) define EI as an "ability to recognize, understand, and use emotional information about oneself or others that leads to or causes effective or superior performance" (p. 149).

ESCI's predecessor is the Emotional Competence Inventory (ECI). Given the close link between ECI and ESCI, psychometric information about the ECI is relevant. The ECI has an overall average internal consistency of 0.78 and the self-ratings have an overall average internal consistency of 0.63 (Wolff, 2006). Individual subscale reliability generally ranges from poor to fair (.47 to .76). Test-retest reliability for the self-rating is inadequate (such as .36), although it is moderately better for peer ratings and supervisor ratings (.59). Early research suggests that the content of the ECI competencies may overlap with available personality measures and other psychological concepts in the motivation and leadership literatures (Matthews et al., 2002; Van Rooy & Viswesvaran, 2004).

The reliability of the ESCI appears to be comparable with the ECI (Hay Group, McClelland Center for Research and Innovation, & Wolff, 2005). A pilot study provided internal consistency scores ranging from .73 to .87, with an average of .79 for total others ratings (Boyatzis, 2007). This suggests that ratings of an individual's EI can reliably converge across multiple informants. Although the ESCI has proven to be popular, available information about its psychometric properties is lacking. Specifically, there is minimal research providing evidence for discriminant and predictive validity.

Summary of existing measures. In general, research on current EI measures has demonstrated adequate internal consistency of total scores, although the internal consistency and test–retest reliability for most of the individual subscales are only

somewhat acceptable. Conclusions about the convergent and divergent validity of EI measures have shifted in the recent past. Through meta-analyses synthesizing results from numerous studies of EI, Van Rooy and Viswesvaran (2004) found that in most measures (including the three reviewed above), EI correlated more closely with measures of personality than with the behaviors it was intended to predict, suggesting that the measures lacked discriminant validity and may simply be have assessed other previously established constructs. Moreover, early empirical evaluations focused on reliability and psychometric properties of self-report measures (e.g., Davies, Stankov, & Roberts, 1998) contradicted broad claims that EI is a more important predictor of work and academic performance than General Mental Abilities (e.g., Goleman, 1995, 1998). More recent conclusions about the psychometric properties of EI measures are more positive (e.g., Conte, 2005). Research by Joseph & Newman (2010), based on 21 published meta-analytic studies and new meta-analysis of over 171 studies, found that while *ability* EI measures have little incremental validity over and above personality and cognitive ability, measures of *trait* EI showed substantial incremental validity (15.7%) when compared with personality measures (Joseph & Newman, 2010). Additionally, when examining incremental validity for jobs high in "emotional labor" (jobs requiring employees to alter their emotional expression to meet organizational needs) all types of EI measures exhibit meaningful incremental validity over and above both personality and cognitive ability. A newer, comprehensive meta-analysis (O'Boyle, et al., 2011) including 65% more studies and twice the sample size, reached a more robust conclusion. O'Boyle et al. determined that EI measures demonstrated correlations with job performance ranging from .24 to .30 and all measures show incremental validity over mental ability and personality measures.

These findings provide a more optimistic picture of the utility of EI measures and suggest that EI yields predictive validity above and beyond personality and cognitive ability.

Given the wide range of EI measures, it is worth considering the advantages and disadvantages of varying forms of measurement (e.g., self-report, observer). One common approach to EI measurement relies on self-report. The major critique of the self-report method is that the self-perceived abilities and behavioral tendencies based on self-reports cannot be equated with actual emotional abilities (Perez et al., 2005). Self-report measures are vulnerable to a wide range of factors, such as social desirability, response set patterns and lack of self-awareness that limit their ability to fully assess EI. Cherniss (2010) explains a particular challenge with tests of EI as that the weaker an individual's EI is, the greater potential they have for an inaccurate judgment of their emotional abilities. Thus, researchers conclude that the self-report method is appropriate as a subjective assessment of one's own beliefs, attitudes, or degree of emotions (Leahy, 2002, 2003), but does not necessarily reflect emotional abilities (Ciarrochi, Chan, Caputi, & Roberts, 2001; Shulze et al., 2007).

Multi- rater tests or 360-degree tests provide a more comprehensive assessment with a combination of both self-perception and perceptions others have about the individual based on observation of behavior in natural settings. Yet critics maintain that utilizing a multi-rater evaluation system is costly and time consuming and the results reflect others' perception of an individual's EI, but do not provide a "true" index of actual EI ability (Mayer et al., 2000). That said, London and Smither (1995) note that "in the socially constructed world in which employees work, others' judgments about them (no matter how biased they may be) constitute an important reality" (p. 809). Research

examining the level of similarity between raters scores (Church, 1997; Johnstone & Ferstl, 1999) interrater reliability (Greguras & Robie, 1998) and the comparative predictive validity of self vs. other-rated scores (Sala & Dwight, 2002) suggests that multi-rater assessment instruments allow for meaningful comparisons of ratings across traditional rating sources (Facteau & Craig, 2001; Penny, 2003; Scullen, Mount, & Judge, 2003) and provide important performance data (Sala, 2002). A drawback, however, might be the time and cost of gathering and analyzing reports across numerous reports.

Although performance-based EI measures (such as the MSCEIT) seem promising, there remain several unresolved issues. Common critique revolves around their measurement of academic knowledge about emotion instead of the respondents' actual behavioral skills (Matthews, et al., 2006; Zeidner, Matthews, & Roberts, 2009). Consensus scoring with the MSCEIT, which is the recommended scoring method (Mayer et al., 2002), is also "in direct contrast to traditional measures of intelligence where an objective measure of truth is considered" (Matthews et al., 2002, p. 186). Despite the concern about the MSCEIT scoring method, research seems to demonstrate that MSCEIT scores have demonstrated reliability (Mayer et al., 2004). Similar to many intelligence tests, however, a disadvantage of the MSCEIT is that it only measures performance on contrived tasks in a highly controlled and artificial context.

Measurement of EI is a relatively new area of empirical research. Nonetheless, extant research suggests EI can be reliably measured and can predict meaningful job-related outcomes. Recent studies have shown that the most utilized EI measures have better psychometric properties than critics previously believed (O'Boyle, et al., 2011). Some of the remaining weaknesses may reflect the standard process of construct

development, which all rigorously tested measures must undergo (See Jordan,

Ashakansy, & Härtel, 2003). More recently developed ability tests such as Situational

Judgment Tests (SJTs) of Emotional Understanding and Management (MacCann &

Roberts, 2008) seem promising as they addresses some of the earlier tests' shortcomings.

The SJTs are designed to ascertain the capacity of individuals to understand and manage

emotions by presenting the individuals with a situation and prompting them to select

either the most appropriate response or their typical response out of a list of possible

choices. Riggio (2010) further suggests developing more narrow measures of EI abilities

to provide greater clarity of the EI construct which could, in turn, advance its utility in

professional training. In sum, EI measures need more development to ensure they more

uniformly converge on a common construct, more rigorous analysis of psychometric

properties and additional strengthening of internal consistency and test retest reliability.

Available research suggests that EI measures show promise, but as a result of

aforementioned concerns, an efficient assessment, narrowly measuring relevant EI

abilities, is needed to assess teachers' EI in an educational context.

Emotional Intelligence and Teaching Quality

  Hargreaves (1998) asserted that teaching is an emotional practice in which

emotions play an integral role in teacher-student interactions. Although the idea that the

traits associated with high EI are necessary for quality teaching seems logical (Byron,

2001), there is surprisingly little research examining the EI of teachers. The handful of

studies, however, offers compelling evidence that further research in this area is

warranted. Studies have specifically drawn links between effective teachers and a)

qualities of effective leaders, b) teachers' ability to perceive and understand emotions, c)

teachers' emotional competency and self-efficacy, and d) teachers' emotion regulation and effective behavior management (e.g. Chan, 2004; Iordanoglou, 2007; Perry & Ball, 2007; Zembylas, 2007), as described in more detail below

A growing body of research maintains that EI is a required competency for those in leadership positions (e.g., Antonakis, Ashkanasy, & Dasborough, 2009; George, 2000; Goleman, 1998;). Many studies have established significant relationships between EI and effective leaders, specifically those possessing a transformational leadership style – a style describing leaders who inspire, motivate, influence and show individual consideration for subordinates (Polychroniou, 2009; Sunindijo, Hadikusumo, & Ogunlana, 2007; Tang, Yin, & Nelson, 2010). Research demonstrates that emotionally intelligent leaders possess qualities such as self-awareness, social awareness, relationship management (Goleman, Boyatzes & McKee 2002) and self-management (Glasø & Einarsen, 2008), are better able to empathize with others (Kellett, Humphrey, & Sleeth, 2002), display sensitivity to others' needs (Cherniss, 2010), successfully mediate conflicts (Zaccaro, 2002) and embrace cultural diversity (Offerman & Phan, 2002), enabling them to effectively lead others to meet goals. These finding have direct implications for the teaching profession. Effective classroom leaders require many of these same traits to empathically and efficiently guide their students toward fulfilling social and academic goals. In fact, Iordanoglou's (2007) study with 332 primary education teachers in Greece showed that EI, especially the intrapersonal and interpersonal dimensions, has a positive effect on teachers' leadership roles, explaining 51% of variance in their self-reported effectiveness. Thus it appears that emotionally intelligent teachers may function more effectively as leaders by perceiving and managing

their own and their students' emotions, productively dealing with challenges that arise,

demonstrating empathy and recognizing their strengths and weaknesses and adapting

their behavior accordingly. For further review of literature on EI and leadership, see

Appendix A.

Hart (2000) describes the teaching occupation as one with intense emotional

demands. Teachers experience a wide range of positive and negative emotions in

response to their students' performance and behavior (Hargreaves, 2000). Researchers

maintain that effective teachers are aware of the influence of emotions on learning and

recognize their ability to accurately perceive and attend to both their students' emotions

and their own as a critical part of their instructional role (Ahn, 2005; McCaughtry &

Rovegno 2003; Schwartz & Davis 2006; Sutton, 2004). This self-awareness contributes

to the teacher's ability to mobilize an appropriate interpretation of emotional stimuli and

consequently enact an appropriate behavioral response (Cherniss & Goleman, 2001).

Several studies have examined the link between teacher self-reported awareness of

emotions and the quality of their teaching (Golby, 1996; Hargreaves, 2001; Sutton &

Wheatley, 2003; Zembylas, 2007). One study offers the most compelling evidence for the

theorized link. Zembylas (2007) conducted a qualitative case study of four teachers

utilizing a grounded theory method (Glaser & Strauss, 1967; Strauss & Corbin, 1994), a

systematic research method involving the discovery of theory through an examination of

data. Through an analysis of the teacher data including interviews, classroom

observations, journal writing and various documents over a two to three year time period,

he concluded that effective teachers attend to their own emotions as well as those of their

students and can connect their emotional understanding with pedagogical content

knowledge. Thus, according to Zembylas (2007) a teacher's emotional self-awareness, a key feature of EI, has significant implications for teaching effectiveness.

The most thoroughly examined link between EI and teachers relates to their self-efficacy and well being in the profession (e.g., Ciarrochi, Deane, & Anderson, 2002). Several studies have found that teachers' higher EI, as measured on self-report surveys, was predictive of their general self-efficacy and self-efficacy toward others (Chan, 2004; Penrose, Perry, & Ball, 2007). This means that teachers who saw themselves as more emotionally capable also saw themselves as more in control of the outcomes of their teaching. Without such emotional capability, teachers' regular exposure to emotionally provocative situations, according to Jennings and Greenberg (2009), may negatively impact teachers' self-efficacy and motivation, ultimately leading to high burnout and attrition rates. Supporting this theory, several studies suggest that high teacher self-reported EI is linked to a low likelihood of burnout (Akbag & Berberyan, 2011; Brackett, Palomera & Mojsa, Reyes and Salovey, 2010; Ismail, Toa, Tao, Lai-Kuan & Tew, 2010; Mendes, 2003; Platsidou, 2009). Examined from a risk and protection framework, teachers with high EI may be better able to understand their students' and their own emotions (Chang 2009), have greater self-efficacy (Chan, 2004), balance their personal and professional life (Nias, 1996), and rely on an internal locus of control (Gan, Shang & Zhang, 2007; Jude & Grace, 2011), thus decreasing their risk for burnout and contributing to their teaching effectiveness.

Teaching involves regulating many negative emotions, such as frustration, worry, and even anger (Blase, 1994; Carson, 2006; Kyriacou, 2001). Difficulty with regulation of these emotions can interfere with the quality of teaching (Garner, 2010). According to

recent theoretical models, EI is the underlying psychological process that contributes to teachers' emotion regulation. Meta-analytic research suggests that emotion regulation is an important predictor of job performance (Joseph & Newman, 2010) and is particularly relevant to whole classroom behavior management and diffusing emotionally charged situations (Lopes, Nezlek, Extremera, Hertel, Fernández-Berrocal, Schütz, & Salovey, 2011). Teachers' difficulty with regulation of emotion likely affects teacher-student relationships and classroom management, which can then impact the classroom climate (Blase, 1986; Jennings & Greenberg, 2009).

Teachers' ability to facilitate children's classroom competence is likely dependent on their own self-regulatory capability in the face of persistent emotionally provocative situations (Coplan, Hughes, Bosacki, & Rose-Krasnor, 2011). Indeed, Sutton's (2004) qualitative analysis of semi- structured interviews with 30 middle school teachers in Ohio, identified teachers' beliefs about the need to regulate their own emotions and their students' emotions. Teachers reported that emotion regulation helped them achieve academic goals, build high quality social relationships, and maintain good classroom management and discipline practices (Sutton, 2004). From an EI theoretical perspective, this association can be explained with the notion that individuals with better emotion regulation abilities may have a larger repertoire of approaches to preserve desirable emotions and to decrease or modify unwanted emotions in both themselves and other people (Gross & John, 2002; Mayer & Salovey, 1997; Sutton & Harper, 2009).

A recent study, by Nizielski, Hallum, Lopes and Schütz (2012) linked teachers EI and their behavior management skills. They measured the EI of 300 experienced Syrian teachers using the Wong and Law Emotional Intelligence Scale (WLEIS; Wong & Law,

2002), a self-report measure, and showed that teacher-perceived EI was negatively related to student misconduct, as reported by teachers on an abbreviated version of the disrespect subscale of the Pupil Behavior Pattern scale (PBP; Friedman, 1995). Emotionally intelligent teachers paid more attention to their students' needs, which in turn led to lower levels of teacher-reported student misconduct (Nizielski et al., 2012). An earlier study by Perry and Ball (2007) found similar results. They used the *Reactions to Teaching Situations* (RTS; Perry, Ball & Stacey, 2004; Perry & Ball, 2005), a measure of EI expressed in teaching situations, to assess the EI of a sample of 239 experienced elementary and secondary teachers and to investigate the role that EI plays in reactions to a range of situations. The RTS comprises 10 vignettes depicting common teaching situations and provides teachers with four possible responses representing specific EI components. Expert judges measured the EI of the teachers' responses and indicated that teachers who scored high on the tests of EI were more likely to report identifying, using, understanding and managing their emotions in both positively and negatively charged situations (Perry & Ball, 2007). Teachers with higher EI appeared to manage negative situations more effectively and sought positive solutions more frequently.

Taken together, several qualitative, self-report and vignette studies suggest that there is a link between EI and teacher well being, self-efficacy, and skills in managing their classrooms. Yet, reliance on self-report or highly structured response formats and lack of corroboration with observational data is a major limitation. Studies conducted by Perry and Ball (2007) and Nizielski et al. (2012) are further limited by their narrow focus on behavior management, which is *only* one facet of the classroom ecology. Pianta, Hamre, Haynes, Mintz, and La Paro, (2006) explain that effective teachers provide high

quality teaching by fulfilling the instructional, behavioral, and emotional needs of their

students—which reflect a broad range of needs. High quality teaching in the instructional,

behavioral, and emotional domains, according to Pianta et al. (2006) is reflected in how

teachers interact with their students. Research has specifically drawn a link between the

quality of the teacher-student relationships/interactions and student achievement

outcomes (e.g., Wang, Haertel, & Walberg, 1997). According to the National Research

Council (2004), student interactions with teachers in the classrooms are a primary source

of influence on youth and can promote or inhibit student achievement, engagement in

classroom activities and their emotional well being. This suggests research needs to

examine the link between EI and the quality of teacher-student interactions in the

classroom. In addition, rigorous research is needed to more credibly link EI with high

quality teacher-student interactions using direct observations, which Merrel (2008) argues

is considered the "gold standard" of assessment. Specifically, as of yet, no studies have

demonstrated an association between high teacher EI and positive teacher-student

interactions, as measured by outside observers.

Summary

        In sum, researchers are struggling to identify the qualities of effective teachers

(Hamre et al., 2007). An under examined area is teacher EI, given theory suggests that EI

is essential for effective teaching (e.g., Sutton & Wheatley, 2003) and is linked to

effective classroom leadership (Iordanoglou, 2007). In addition, preliminary evidence

shows that teachers' classroom management skills are related to their ability to regulate

emotions (Coplan et al., 2011) and to student behavioral outcomes (Nizielski et al.,

2012). Higher levels of self-reported EI are also related to higher self-reported self-

efficacy (Chan, 2004; Penrose et al., 2007). Teacher self-efficacy has been shown to

predict teacher effectiveness (Tschannen-Moran, Hoy, & Hoy, 1998) and decreased

burnout (Akbag and Berberyan, 2011). Teachers' EI also likely impacts the quality of the

teacher-student relationship (Sutton &Wheatley, 2003), which is crucial for the student's

academic and social-emotional outcomes (Hamre & Pianta, 2001). Despite the well-

developed theory on teacher EI, few rigorous studies have provided empirical support for

the link between teacher EI and high quality classrooms. Only two studies have examined

EI and classroom management (Nizielski et al., 2012; Perry & Ball, 2007); however,

these studies focus primarily on behavior management and have not empirically

measured the quality of teacher-student interactions using objective observers.

Current Study

The current study sought to identify whether secondary teachers' EI, as measured

through a single pen-and-paper vignette response, is associated with observed emotional

and organizational support in the classrooms as seen in teacher-student interactions.

Teacher EI was measured with teachers' responses to the TEIM, a new measure utilizing

a series of open-ended questions following a vignette of a classroom disciplinary

interaction. A qualitative coding system yielded scores reflecting teacher EI abilities

including perception (self, other), use (self), understanding (other) and management (self,

other) of emotions. This vignette is similar to the Perry and Ball (2007) RTS vignettes

with two notable differences. First, given that this measure was added to a larger,

ongoing study, there was a strict limit on how many vignettes could be used, thus this

measure used only one vignette while Perry and Ball used ten. In addition, Perry and Ball

used a forced-choice format for responding to the vignettes while the TEIM employs an

open-ended format, which allows for more variability in teachers' hypothetical responses—such variability could meaningfully distinguish teachers in the high or low EI range.

The quality of classroom interactions was coded using a validated observational system the Classroom Assessment Scoring System (CLASS; Pianta et al., 2006). The CLASS is a reliable and validated observational measure that contains dimensions assessing four factors comprising eleven dimensions as follows: the *Emotional Support* domain includes the dimensions of Positive Climate, Negative Climate (reverse scored), Teacher Sensitivity, and Regard for Adolescent Perspectives). The *Classroom Organization* includes Behavior Management, Productivity, and Instructional Learning Formats dimensions. The *Instructional Support* domain includes Content Understanding, Analysis and Problem Solving, and Quality of Feedback. Finally, the *Student Outcome* domain includes Student Engagement.

The following specific CLASS-S dimensions were examined: Positive Climate, Teacher Sensitivity, Regard for Adolescent Perspective, Behavior Management, Instructional Learning Format and Analysis and Problem Solving. Behavior Management was selected given previous research examining the relationship between teachers' EI and student misconduct (Perry & Ball, 2007; Nizielski et al., 2012) and a theorized link between teachers' EI and their ability to manage their classrooms (Jennings & Greenberg, 2009). The remaining five dimensions of the CLASS-S were selected given results of a recent validity study demonstrating that these dimensions were predictive of higher student achievement test scores at the end of the year (Allen, Gregory, Mikami, Hafen, & Pianta, in press). In addition, Analysis and Problem Solving and Instructional

Learning Format has been linked to increased behavioral engagement (Gregory, Allen, Mikami, Hafen & Pianta, 2013).

Analyses accounted for a range of classroom characteristics (i.e., achievement level and percent low income) and teacher characteristics (i.e., teacher education level and gender) to ascertain their relation to the observed teacher-student interactions. These classroom characteristics were taken into account given past research demonstrating links between students' socioeconomic status, teacher-student interactions, engagement, and achievement (Allen, Gregory, Mikami, Hafen, & Pianta, in press; Fredricks, Blumenfeld, & Paris, 2004; Gregory, Allen, Mikami, Hafen, & Pianta, in press; Shernoff & Schmidt, 2008). Teacher characteristics were also be taken into account given research demonstrating the effects of teacher education (Tout, Zaslow & Berry, 2005) and gender (Einarsson & Granström, 2002) on classroom outcomes. These covariates were included in analyses to help isolate the effects of EI on teacher-student interactions.

Specific Research Questions and Hypotheses

This study proposed to examine whether a single pen-and-paper vignette is a reliable and valid measure of EI. Reliability was tested through an assessment of whether coders reliably rated dimensions of EI from the teacher vignette responses. Predictive validity was examined through an analysis of whether the dimensions of EI were correlated with observations of teacher interactions in the classroom, as measured by CLASS-S. In so doing, the following fundamental question were answered: Do teachers with higher EI, compared to those with lower EI, have higher quality teacher-student interactions, as seen through their fostering a positive classroom climate, demonstrating sensitivity to student needs, recognizing adolescents' perspectives/needs, managing

student behavior, providing effective instructional learning formats and facilitating higher order thinking?

It was foreseen that intraclass correlations would demonstrate that the coding had high internal consistency—evidence for the new measure's reliability. It was further anticipated that teachers with higher EI, compared to those with lower EI, would be observed as having more positive interactions as measured by higher positive climate, greater teacher sensitivity and regard for adolescent perspective, more effective behavior management, dynamic instructional learning formats, and superior analysis and problem solving opportunities thus demonstrating predictive validity. These relationships would hold when taking into account classroom achievement level, percentage of low-income students, teacher's education level, and teacher gender.

Methods

Overview

This study drew participants from a larger research project examining the effects of a web- and video-conferencing based professional development intervention on teacher-student interactions. All data contained within this study was collected at baseline, prior to the implementation of the intervention, so as to not confound the results.

Participants

Participants include 74 teachers from within 5 middle and high schools in a school district in Virginia. The average teacher was 42 years old and had taught for 9.5 years. The majority of the teachers were male and over 30% of the teachers were African American. The average classroom composition consisted of about two-thirds African

American students and one-third low-income students (as measured by those who qualified for free and reduced priced meals).

Procedures

After obtaining Institutional Review Board approval, researchers presented the intervention and research design to the teachers in August, 2010. Teachers were asked if they would voluntarily consent to participate in MyTeachingPartner-Secondary, the randomized controlled trial from which these data were obtained. Interested teachers were administered the Teacher Emotional Intelligence Measure (TEIM) at the introductory workshop in August of the first year of the study. Parents of students in the classrooms provided consent to allow for the videotaping and collection of the de-identified student information. In the fall of that school year, teachers were instructed to video record 40 minutes of an instructional class (before the intervention began).

Measures

Teacher demographics. Teachers completed a demographic survey at the beginning of the study in which they reported their age, gender, race/ethnicity, years of experience teaching, and education level.

Classroom characteristics. School records provided de-identified standardized achievement data on each student through the provision of the student's score on the previous year's Standard of Learning (SOL) end-of-course exam. The SOL exams have demonstrated good test-retest reliability and concurrent validity with other established achievement measures (Hambleton, Crocker, Cruse, Dodd, Plake, & Poggio, 2000). The students' SOL scores were aggregated by classroom and provided a measure of the class achievement level. The district also provided percentage of students qualifying for free

and reduced priced meals in each classroom. This is an indicator of the percentage of

low-income students in each classroom. Finally, class size was obtained from teachers'

enrollment rosters.

Observed teaching quality. Teachers were asked to submit a 40-60 minute

videotapes of a typical classroom instruction during the first few weeks of school, prior to

the implementation of the intervention. Teachers followed a standard taping protocol

including positioning the camera to capture both the teacher and students. The recording

was split into two 20-minute segments, coded independently by two different randomly

selected coders and then double coded by another two coders. Averages across ratings

were used to reduce measurement error and increase accuracy (Mashburn, Downer,

Rivers, Brackett & Martinez, 2013). The team of advanced undergraduate and graduate

student coders participated in a two-day CLASS-S (Pianta, Hamre, Hayes, Mintz, & La

Paro, 2006) training. The training involved watching, coding, and discussing teaching

video segments to assess teaching quality by rating teacher practices and classroom

interactions. Coders learned to rate CLASS-S dimensions along a 1-7 scale, with a 1 or 2

indicating low quality; 3, 4, or 5 indicating mid-range quality; and 6 or 7 indicating high

quality (See Appendix B). A reliability test was conducted at the end of the training and

coders were considered reliable when 80% of their codes were within one scale point of

the "master code." All of the coders met the reliability threshold after training. In addition

coders met for regular reliability meetings to watch and code "master coded" videotapes

to prevent coding drift. The interclass correlation coefficients (ICCs) for the CLASS-S

domains ranged from fair to strong (.48 to .88) based on Cicchetti and Sparrow's (1981)

standards for interpreting ICCs, with only one dimension in the fair range and the rest in the moderate or strong range.

Emotional intelligence. EI was measured using the teacher's responses to the TEIM, a pen and paper vignette created by Drs. Anne Gregory and Cary Cherniss for this study (See Appendix C). The teachers were asked to read a vignette describing an emotionally provocative disciplinary interaction during which a student explicitly challenges the authority of the teacher classroom interaction and describe how they would respond in that situation. Teachers were instructed to answer a series of specific question such as "What (other) feelings might you have." "How would you deal with your feelings about it," "How might the student who told you to mind your own business feel" "How might the other students in the room feel," and "How would you deal with what they are feeling." I developed a coding manual extracting the following eight dimensions of EI from the teachers' written response to the vignette: 1) perception own emotions, 2) manage own emotions, 3) use thoughts to generate emotions, 4) perception group's emotions, 5) manage group's emotions (i.e., students witnessing the disciplinary incident), 6) perception disputant's emotions (i.e., the student challenging the teacher), 7) understand disputant's emotions, 8) manage disputant's emotions (See Table 1).

Table 1
TEIM Variable Key

Variable Name	Question	Description
Perception Own Emotions	What other feelings might you have?	Reflects a teacher's ability to recognize multiple, complex, internal emotions
Manage Own Emotions	How would you deal with your feelings about it?	Reflects a teacher's ability to self-regulate
Use Thoughts to Generate Emotions	What would you be thinking?	Reflects a teacher's ability to use thoughts to generate more constructive emotions
Perception Group's Emotions	How might other students in the room feel?	Reflects the ability to identify accurately a range of emotions the other students might feel
Manage Group's Emotions	How would you deal with how they were feeling?	Reflects a teacher's ability to influence and regulate group social-emotional dynamics
Perception Disputant's Emotions	How might the student who told you to mind his own business feel?	Reflects the ability to engage in perspective taking and recognize emotional experience of other
Understand Disputant's Emotions	Why would he feel that way?	Reflects an ability to empathically understand emotional information
Manage Disputant's Emotions	How would you deal with his feelings?	Reflects a teachers' ability to help the student self-regulate or positively engage in social-emotional interactions

Three graduate students were trained on how to use the coding manual, which contained explanations of the codes and quotes from teacher transcripts as examples (See Appendix D). Training consisted of a review of the manual and several sample responses were coded and reviewed to assess adequate reliability. Items were coded on a scale of one to three, with one global code rated on a Likert scale (low EI, average EI, high EI). Graduate students individually coded each vignette response and met at three additional pre-determined intervals to provide further reliability calibration. Each vignette response was thus coded a total of three times (once by each coder).

Missing Data

A total of 95 teachers participated in MyTeachingPartner-Secondary, the

randomized controlled trial from which the data for the current study was obtained. Six

teachers (6%) did not complete the TEIM, while the remaining eighty-nine teachers

(94%) completed the TEIM. Of these, 15 teachers did not submit recording of classroom

instruction within the first several months of school that were required for the CLASS-S.

Missing data was handled by listwise deletion (Little, 1992), and 77% ($N = 74$) of the

initial sample was included in the analysis. Fifty-six of those teachers had 4 20-minute

video-recorded segments of their instruction, and 18 teachers had 2 recorded segments.

The teachers submitted their record instruction within the first months of the school year.

Data Analytic Plan

Research question 1: Is the TEIM a reliable measure of EI? Reliability was

tested through an assessment of whether coders reliably rated eight dimensions of EI from

the teacher vignette responses.

Tests of intraclass correlations. Reliability of the coding of the TEIM was tested

using Intraclass Correlation Coefficients (ICC). ICCs are used to evaluate the consistency

of measurement made by multiple observers (Shrout & Fleiss, 1979).

Research question 2: Is the TEIM a valid measure of EI? Predictive validity

was examined through an analysis of whether the dimensions of EI were correlated with

observations of teacher interactions in the classroom, as measured by CLASS-S.

Data reduction. Data reduction of the TEIM was done in multiple ways. First a

principle component factor analysis (PCA) was run to find the optimal way of combining

the TEIM variables into smaller subsets by determining if there is a single factor or

multiple factors measuring EI. PCA is a well-established method of condensing the

information into a smaller set of new composite dimensions, while largely preserving the

data (Fukunaga & Koontz, 1970). Next, correlations between each of the TEIM responses

and the CLASS-S dimensions were calculated to examine which TEIM responses had the

largest correlations with the CLASS observations. Finally, codes were also theoretically

grouped into three dimensions of EI including perception of emotions (self, group, and

disputant), management of emotions (self, group, and disputant), and use and

understanding of emotions (self and disputant) and aggregated scores were utilized.

     Descriptives. Descriptive statistics were examined using means, ranges, and

standard deviations. Pearson's correlations were used to assess the relationship between

each of the dependent and independent variables.

     Multiple regression. Statistical analyses were conducted using multiple

regression. All teacher and classroom characteristic covariates were entered in the first

block. Then, the EI variables identified in the data reduction methods were added to the

second block. Estimates and the change in variance accounted for by each block (*R-squared*) were examined for statistical significance. R-squared change yielded a measure

of the percent of variance explained by the EI variables alone—a measure of effect size.

Results

Data Reduction

     To assess the underlying factor structure of the TEIM and reduce the number of

TEIM items into empirically cohesive scales, I conducted a principal component analysis

(PCA) of mean ratings on the eight TEIM variables. This exploratory technique aims to

systematically identify the set of underlying components or factors that most

parsimoniously describes the covariance of TEIM items. Examination of the scree plot

and a parallel analysis (O'Connor, 2010) indicated that the underlying structure was best

described by a two-factor solution explaining 45% of the variance. Rotated factor

loadings (Varimax) for this two-factor solution are displayed in Table 2 and indicated

that the majority of items had reasonably high loadings (>.60) with minimal cross-

loading. The resulting factors appeared to represent identification of emotion and

understanding/managing emotion. However, Cronbach alphas, a measure of internal

consistency, for the resulting scales was low (α = .53 and .61). Given this low level of

internal consistency, summing TEIM items to form scales was not justified, and therefore

the individual TEIM variables were retained for analyses. In addition, despite the factor

analytic results and for the sake of parsimony, a composite TEIM score that averaged

ratings across the eight TEIM variables was created for analytic purposes. Cronbach's

alpha for the composite rating was low (α = .58). Irrespective of the low alpha, separate

regression analyses were run using the composite TEIM ratings.

Table 2
Rotated Factor Loading for TIEM Item Ratings

TEIM Variable	Perception	Management/Understanding
Perception Own Emotions	**0.70**	-0.04
Manage Own Emotions	0.44	0.27
Use Thoughts to Generate Emotions	-0.13	**0.71**
Perception Group's Emotions	**0.69**	0.14
Manage Group's Emotions	0.02	**0.53**
Perception Disputant's Emotions	**0.77**	0.02
Understanding Disputant's Emotions	0.27	**0.67**
Manage Disputant's Emotions	0.21	**0.59**

Reliable Coding of the TEIM

The first research question asked, "Is a single pen-and-paper vignette a reliable measure of EI?" To assess inter-rater reliability for the eight TEIM variables, ICCs were calculated across the three raters for each variable. Following the classic guidelines of Shrout and Fleiss (1979; Case 2) for consistency of ordinal ratings, two-way random correlations for average measures were computed, which quantified the proportion of variance in the final mean rating due to reliable between-subject differences. ICC's are presented in Table 3 and were all in the excellent range (Messick, 1995) indicating that the coding was consistent between raters and highly reliable.

Table 3
Intraclass Correlations among Variables

Variables	ICC
TEIM Variables	
Perception Own Emotions	.96
Manage Own Emotions	.93
Use Thoughts to Generate Emotions	.94
Perception Group's Emotions	.96
Manage Group's Emotions	.87
Perception Disputant's Emotions	.95
Understanding Disputant's Emotions	.93
Manage Disputant's Emotions	.92
CLASS-S	
Positive Climate	.78
Teacher Sensitivity	.68
Regard for Adolescent Perspectives	.70
Behavior Management	.88
Instructional Learning Formats	.68
Analysis and Problem Solving	.48

Descriptive Findings

Descriptive statistics for the TEIM and CLASS-S variables are reported in Table 4. The full range of the scale (one to three points) was utilized for all eight TEIM variables

and they appear normally distributed. On average, the teachers fell close to a two on a

majority of the TEIM variables on a one to three scale. For example, teachers'

perception of their own and others' emotions had a mean of 1.83 suggesting that, on

average, teachers in this sample were able to accurately identify a range of emotions in

others. In response to a TEIM question about how the class may feel after a highly

charged discipline incident with one student, teachers' were coded as a "2" if they

provided answers such as "anger, confusion and embarrassment," "empowered" and

"amused," which reflected these teachers' ability to identify the potentially complex

range of emotions other students would feel if they witnesses a student being explicitly

challenging to the teachers' authority. Additionally, teachers' ability to manage their own

emotions had a mean of 2.02 indicating that most teachers were able to formulate at least

a vague strategy for self-regulating in an emotionally provocative situation. For example,

teachers suggested "Act like it doesn't bother me as much as it really does and give

necessary consequence," "Stay calm and deal with student," and "take a moment to

assess the situation before responding." These kinds of responses suggest a basic

understanding of the importance of inhibiting impulsive emotional responses and

reflecting before deciding on a course of action. On the other hand, teachers' report of

what they would be thinking in the same situation was lower with a mean of 1.5,

demonstrating that teachers in this sample on average, had some difficulty using their

emotions to generate thoughts that likely help modulate negative emotional responses (as

coded on their written responses to the vignette). For examples, teachers responded that

they would think, "About how much I want to tell the kid off," "the child does not respect

authority figures," and "it's rude and should not be tolerated." These are thoughts that

although potentially accurate, do little to restrict an immediate strong emotional response.

Table 4
Descriptive Analysis of TEIM and CLASS-S Variables

Variable	Mean	SD	Min	Max
TEIM Variables				
Perception Own Emotions	1.83	.63	1.00	3.00
Manage Own Emotions	2.02	.78	1.00	3.00
Use Thoughts to Generate Emotions	1.50	.64	1.00	3.00
Perception Group's Emotions	1.83	.62	1.00	3.00
Manage Group's Emotions	1.81	.57	1.00	3.00
Awareness Disputant's Emotions	1.80	.67	1.00	3.00
Understand Disputant's Emotions	1.82	.73	1.00	3.00
Manage Disputant's Emotions	1.96	.63	1.00	3.00
Composite TEIM Score	1.82	.33	1.00	2.50
CLASS-S				
Positive Climate	3.79	.87	2.00	5.88
Teacher Sensitivity	3.92	.70	2.50	5.75
Regard for Adolescent Perspectives	3.00	.71	1.38	4.63
Behavior Management	5.51	.94	2.75	7.00
Instructional Learning Formats	3.86	.72	2.25	5.50
Analysis and Problem Solving	2.02	.56	1.00	3.50

Correlations

Pearson correlations were computed for all control, independent, and dependent

variables and are reported in Table 5. Consistent with the PCA results reported above,

the three TEIM variables measuring perception of emotions were significantly inter-

correlated (r =.30, .32 .41, p <.01) as were the two variables measuring teachers' ability

to use thoughts and understand emotions (r = .26, p <.05). This means that when teachers

were found to perceive their own emotions (as coded from their written responses to a

written vignette), they also accurately perceived other's emotions. Also, teachers who

were coded as being higher on their ability to use thoughts to generate more productive

emotions tended to be higher on their ability to empathically understand emotional

information about others. Unexpectedly, teachers' ability to manage their own emotions

was not significantly correlated with their ability to manage others' emotion, although

their ability to understand others' emotions was associated with their ability to manage

other's emotions ($r = .45$, $p < .01$).

A handful of correlations among the TEIM variables and CLASS dimensions are

noteworthy given they suggested an unexpected relationships. *Higher* perception of own

emotions and greater use of thoughts to facilitate emotions, were associated with *lower*

behavior management ($r = -.31$, $p < .01$; $r = -.28$, $p < .05$) A *Superior* overall TEIM score

was also associated with *lower* behavior management skills ($r = -.29$, $p < .05$). There was

two positive association found, one between teachers ability to manage others' emotions

and the quality of their instructional learning format ($r = .27$, $p < .05$) and one between

teachers' overall TEIM score and their regard for adolescent perspective ($r = .28$, $p < .05$).

This suggests that greater ability to influence and regulate group social-emotional

dynamics was related to improved ability to engage students thorough the provision of

interesting, varied activities and materials. An overall high composite across all the coded

responses TEIM was associated with greater ability to capitalize upon the developmental

needs of adolescents.

Only one demographic covariate was significantly associated with the TEIM

variables. A greater percentage of low income students was associated with teachers'

heightened perception of other's emotions ($r = .25$, $p < .05$). None of the CLASS

dimensions correlated with the covariates.

Table 5
Correlations among Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Perception Own Emotions	—																		
2. Manage Own Emotions	.27*	—																	
3. Use Thoughts to Generate Emotions	.05	.13	—																
4. Awareness Group's Emotions	.32**	.09	-.08	—															
5. Manage Group's Emotions	-.05	.21	.18	.21	—														
6. Perception Disputant's Emotions	.30**	.23	-.06	.41**	-.02	—													
7. Understand Disputant's Emotions	.20	.05	.26*	.22	.09	.13	—												
8. Manage Disputant's Emotions	.03	.07	.09	.11	.04	.09	.45**	—											
9. Composite TEIM Score	.53**	.54**	.39**	.55**	.39**	.53**	.61**	.47**	—										
10. Positive Climate	-.02	.07	.13	.04	.04	.09	.09	.13	.21	—									
11. Teacher Sensitivity	.13	.13	-.03	-.00	.02	-.00	.06	.17	.09	.70**	—								
12. Regard for Adolescent Perspectives	.18	.08	.05	.14	.09	.21	.19	.18	.28*	.69**	.50**	—							
13. Behavior Management	-.31**	-.21	-.28*	-.11	-.15	-.05	-.16	.12	-.29*	.09	.24*	.12	—						
14. Instructional Learning Formats	.08	.10	-.12	.15	-.09	.06	.17	.27*	.18	.53**	.59**	.57**	.30**	—					
15. Analysis and Problem Solving	-.07	-.03	-.16	.14	.10	-.08	.04	.22	.07	.11	.37**	.36**	.21	.59**	—				
16. Teacher Gender	-.22	-.16	.13	-.09	-.08	-.11	.10	.01	-.10	.04	.01	.04	.04	.01	.08	—			
17. Teacher Education Level	-.06	.05	.01	-.09	-.03	.02	-.15	-.00	-.09	.02	.06	.00	.07	-.04	-.06	-.00	—		
18. % Low Income	-.07	.04	-.18	.25*	.14	.05	-.02	-.03	.02	.05	.15	.11	.02	-.01	-.04	-.06	.15	—	
19. Achievement level	.08	-.12	.19	-.10	-.16	-.12	-.17	-.06	-.09	-.12	-.20	.04	-.10	-.01	-.03	.05	-.25*	-.10	—

Multiple Regression

The first series of regression models used the composite TEIM ratings as the predictor of interest. Blocks were entered in succession to identify the unique variance explained by the composite ratings. First, for each of the six dependent variables (Positive Climate, Teacher Sensitivity, Regard for Adolescent Perspective, Behavior Management, Instructional Learning Format and Analysis and Problem Solving), teacher and classroom characteristics were entered as Block 1 and the composite TEIM score was entered as Block 2 (see Table 6). Results indicated that the composite TEIM score significantly predicted higher Regard for Adolescent Perspective ($\beta = .28$, $p = .03$) and lower Behavior Management ($\beta = -.26$, $p = .046$) above and beyond the covariates. All other models were non significant. This suggests that higher teacher EI (as measured by a composite of their coded perception, use, understanding, and management of emotions), was associated with teachers' superior skill at providing leadership, autonomy, and content relevance to students. It was also, unexpectedly, related to their inferior abilities to promote desirable behaviors and inhibit misbehaviors (i.e., behavior management), as observed by outside coders.

Table 6

Relation of Composite TEIM Score to the CLASS dimensions

	Predicting Dimensions of the CLASS					
	PC	TS	RAP	BM	ILF	AP
	β	β	β	β	β	β
Step 1:						
Teacher Gender	-.05	-.10	-.03	.01	-.06	-.04
Teacher Education	.04	-.03	.07	.02	-.01	-.12
% Low Income	.02	.13	.10	.003	-.02	-.04
Achievement Level	-.09	-.18	.08	-.09	.003	-.05
R^2	.02	.07	.02	.01	.004	.02
Step 2:						
Composite TEIM Score	.21	.15	.28*	-.26*	.15	.05
ΔR^2	.04	.02	.08*	.07*	.02	.002

Note: PC = Positive Climate, TS = Teacher Sensitivity, RAP = Regard for Adolescent Perspective, BM = Behavior Management, ILF = Instructional Learning Formats, AP = Analysis and Problem Solving
*p <.05.

The next series of regression models included the TEIM variables in theoretically grouped blocks (perception, use/understanding and management; see Table 1). For each dependent variable (the six CLASS dimensions), teacher and classroom characteristics were entered as Block 1, TEIM perception of emotions was entered as Block 2, TEIM management of emotions was entered as Block 3, and TEIM use and understanding of emotions was entered as Block 4 (see Table 7). Overall, none of the models explained significant variance in the CLASS dimensions (ΔR^2 ranging from .001 to .10, *p's*>.12). However, in three of these models, management of the disputant's emotions significantly predicted a CLASS dimension above and beyond the influence of the covariates (teacher education level, teacher gender, class achievement level, and percentage of low income students) and the other TEIM variables (e.g., perception, use, understanding and management of self/other). Specifically, management of the disputant's emotions

predicted significantly higher Teacher Sensitivity (β = .31, p = .04), Behavior

Management (β = .28, p = .045), and Analysis and Problem Solving (β = .33, p = .03).

The coefficient for Instructional Learning Formats also approached significance (β = .29,

p = .05). Based on their written responses to a hypothetical discipline incident, teachers

who were rated as better able to help a challenging student self-regulate or positively

engage in social-emotional interactions, were observed as more responsive to students'

academic and social-emotional needs, more skilled at encouraging desirable behavior and

redirecting misbehavior and better able to facilitate higher order thinking skills, problem

solving and metacognition.

    Given these results, a series of parsimonious regression models were then tested

that included teacher and classroom characteristics in Block 1 and only the management

of disputant's emotions variable in Block 2. Results indicated that the management of

disputant's emotions TEIM variable explained a significant amount of the variance (7%)

in Teacher Sensitivity (β = .26, p = .04), 8% of the variance in Instructional Learning

Formats (β = .30, p = .02), and 9% of the variance in Analysis and Problem Solving (β =

.29, p = .03) above and beyond the effects of teacher and classroom characteristics.

However, it was not a significant independent predictor of Behavior Management (β =

.14, p = .27).

Table 7

Relation of Management of Disputant's Emotions Variable to the CLASS dimensions

	Predicting Dimensions of the CLASS					
	PC	TS	RAP	BM	ILF	AP
	β	β	β	β	β	β
Step 1:						
Teacher Gender	-.05	-.10	-.03	.01	-.06	-.04
Teacher Education	.04	-.03	.07	.02	-.01	-.12
% Low Income	.02	.13	.10	.003	-.02	-.04
Achievement Level	-.09	-.18	.08	-.09	.003	-.05
R^2	.02	.07	.02	.01	.004	.02
Step 2:						
Managing Disputant's Emotions	.13	.26*	.19	.14	.30*	.29*
ΔR^2	.02	.07*	.04	.02	.09*	.08*

Note: PC = Positive Climate, TS = Teacher Sensitivity, RAP = Regard for Adolescent Perspective,
BM = Behavior Management, ILF = Instructional Learning Formats, AP = Analysis and Problem Solving
*$p <.05$.

Discussion

The purpose of this study was to examine whether the TEIM, a new teacher EI

measure developed for this study, is a reliable and valid measure of EI. The TEIM

presented a hypothetical vignette of a disciplinary interaction, and teachers, in writing,

commented on their perception, use, understanding and management of emotions in

themselves, the student disputant in the disciplinary interaction and other students in the

classroom. The study aimed to determine whether teachers with greater EI, compared to

those with lower EI, based on codes from the teachers' written responses had higher

quality teacher-student interactions, as observed through their fostering a positive

classroom climate, managing student behavior, providing an effective instructional

learning format, facilitating higher order thinking, and demonstrating sensitivity to

student needs and the adolescent perspective. In so doing, the study aimed to test the predictive validity of the TEIM.

Results demonstrated that coders can reliably extract ratings of teachers' EI, as found by high intraclass correlations on the eight TEIM variables measuring emotional perception, use, understanding and management. Findings further provided some evidence for the predictive validity of this new measure. Regression analyses demonstrated an association between higher teacher EI (as measured by a composite TEIM score) and observations of higher Regard for Adolescent Perspective. One specific aspect of EI, management of the disputant's emotion, was positively associated with higher Teacher Sensitivity, Behavior Management, and Analysis and Problem Solving. This means that teachers who wrote responses on the vignette measure that described their skill at managing the emotions of a student who challenges their authority were observed several months later as having higher Teacher Sensitivity, Behavior Management, and Analysis and Problem Solving with the classroom as a whole. Unexpectedly, the remaining TEIM constructs when examined individually (i.e., teachers' perception, and management of their own emotions, use of their thoughts and the perception and management of other students' witnessing a disciplinary incident) were not significantly related to observed quality of student interactions. Also unexpectedly, the composite TEIM score had a negative association with Behavior Management, suggesting that the EI abilities (with the exception of managing the disputants' emotions) may be linked to decreased ability to manage classroom behaviors.

Advantages of the TEIM

Results demonstrate that the TEIM has high inter-rater reliability and can be used to reliably assess eight meaningful dimensions of EI. A review of EI measurement literature demonstrates a gap in the field in terms of the development of a practical, efficient instrument to measure EI in a classroom setting. The TEIM is distinct from the existing EI measures in several areas. First, the respondents are prompted to respond to a conflict vignette instead of simply reporting on self- evaluations of emotional abilities commonly used in the typical self-report method. Second, while current instruments, namely, the MSCEIT and the RTS, use a forced-choice format for responding, the TEIM utilizes a qualitative, more open-ended approach that is designed to tap into skills more closely associated with teachers' EI. Third, this assessment has a targeted focus on EI skills specifically relevant to high quality teaching and thus uniquely functions as a concise measure of teacher EI. In addition, the TEIM skills in identifying, using and managing emotions are examined in the context of a hypothetical conflict, during which these skills may be particularly difficult to perform, yet essential for ensuring high quality classroom interactions.

EI and Teaching Quality

The results of this study suggest a multifaceted and complex connection between EI and high quality teacher-student interactions. Controlling for teacher gender and education level and classroom achievement level and percentage of low-income students, EI functioned differently for different classroom outcomes. The composite EI score was found to be associated with teachers' Regard for Adolescent Perspective. Results further demonstrated that one specific dimension of EI, teacher's ability to manage the

disputant's emotions, predicted significantly higher Teacher Sensitivity, Analysis and Problem Solving and Behavior Management.

Regard for Adolescent Perspective. Results demonstrated that teachers who were rated as higher on EI skills (the composite TEIM score) provided more opportunities for meaningful peer interactions and student autonomy and leadership, were more flexible, and connected the material to students' lives. EI may equip teachers with an ability to structure the environment in a way that meets their students' interactive style and recognizes adolescents' needs for autonomy, independence, and proficiency. Said differently, teachers who are emotionally intelligent may have a greater awareness of their responsibility to acknowledge students' developmental needs and can more easily let go of their own needs (for control, achievement, etc.) and instead allow the students to assume responsibility for their learning and consistently make the information more relevant to students' experiences. It might be the case that the combined ability to perceive, use, understand and manage emotion predicts greater self-awareness that provides teachers' with the confidence to surrender some of their authority in the interest of student needs. High EI may further allow teacher to adjust their behavior in a way that transcend personal interests and to take the students' emotional perspective into consideration.

Teacher Sensitivity. Similar to Nizielski and his colleagues (2012), the current study found that teachers who were rated as high in one aspect of EI, management of others' emotions—specifically of a student challenging their authority, were observed to be more responsive to students' academic and social emotional needs. Teachers who were coded as effective managers of disputants' emotions may be sensitive to students'

individual learning styles, behavioral capacities, and motivational issues. Resource allocation theory suggests that emotion regulation demands our attentional resources and can detract attention from the task at hand (Beal, Weiss, Barros, & MacDermid, 2005). There is a finite resource pool from which emotion regulation is derived (Baumeister, 2002; Vohs & Heatherton, 2000). Teachers who perceived themselves as capable of appropriately responding to a behavioral incident with a high attentional demand, despite the potentially negative emotions they may be experiencing, may have more emotional and cognitive resources for attending to their students and consequently identifying their individual needs. The ability to successfully regulate classroom emotions may further promote a positive classroom environment and teachers' appropriate affective state. In turn, this may help teachers emphasize students' needs, which go beyond a singular focus on imparting knowledge.

Behavior Management. Results of the Behavior Management dimension were complex and seemingly contradictory. One dimension, management of perpetrator's emotions, but not the composite score, was associated with Behavior Management in the expected direction. Teachers who were rated as better able to help the disputant self-regulate were observed as more skilled at encouraging desirable classroom behavior and redirecting misbehavior. In contrast, the composite score was negatively associated with Behavior Management. More specifically, higher teacher EI (as measured by a composite of their coded perception, use, understanding, and management of emotions) was related to diminished abilities to promote desirable behaviors and inhibit misbehaviors (i.e., behavior management), as observed by outside coders.

The findings linking teachers' ability to help the disputant self-regulate (as coded on the TEIM) and observed Behavior Management further validates one construct recorded on the TEIM. Teachers described how they would respond to the disputants' emotions which included their perspective-taking on what it feels like to be in conflict with a person of authority and what is needed to help them regulate those feelings. Teachers who were coded as more skilled in this emotion management were observed as using effective methods to encourage desirable behavior and prevent and redirect misbehavior. These specific findings are in line with previously theorized links between teachers' EI and their ability to effectively manage their classrooms through motivating students intrinsically rather than through the use of external rewards and punishments to control behavior (Jennings & Greenberg, 2009). That said, the broader, seemingly contradictory findings of this study linking the composite TEIM score with *lower* Behavior Management, requires additional theorizing.

It is conceivable the TEIM management of disputant's emotion variable is most sensitive at distinguishing effective classroom managers, given the difficulty for teachers to step back in the moment and understand the emotional experience of a student who is challenging them. The code also picks up on empathizing with the disputant and responding in a way that help him or her self-regulate and proactively work on engaging in positive social-emotional interactions. This means the teacher may be thoughtful about the complexity of students' negative behavior and can respond in a productive, non-punitive manner.

In contrast, the overall composite score was negatively related to student conduct. This means that in certain circumstances, higher EI was associated with diminished

teaching quality. Although this issues calls for further research, one conceivable

explanation for these unexpected results relates to the complex nature of EI and optimal

functioning. High scores on the TEIM might reflect a profound empathy for others and an

excessive preoccupation with perspective taking, which may cause teachers to be too

lenient with students and not consistently enforce classroom rules and manage student

behavior. Schutte and colleagues (2001) similarly found that whereas EI was positively

associated with inclusion (i.e., the degree to which a person associates with others) and

affection (i.e., how emotionally involved with others a person becomes), but not with

control (i.e., the extent to which a person assumes responsibility, makes decisions, and

dominates in relationships). It is possible that there is curvilinear relationship between EI

and ideal classroom management. In other words, effective behavior management may

increase incrementally with EI in the mid-range, but then begins to decrease with higher

levels of EI. Thus a moderate level of EI may be ideal for positive behavioral outcomes.

A high degree of EI may actually inhibit a teachers' capacity to be assertive and

consistently enforce disciplinary actions. Given this theorizing is somewhat speculative,

further research is needed to clarify how EI relates to behavior management. Research

can help identify the complex process by which empathy for students who are acting out

can be harnessed to maintain control and help students develop their social-emotional

skills.

Teachers and Classroom Characteristics, EI and Classroom Interactions

Teacher gender and education level and classroom achievement level were not

associated with EI or with any of the observed teacher-student interaction dimensions of

the CLASS. This corroborates the findings of other studies that reveal no significant

association between teachers' gender and EI level (e.g., Birol, Atamtürk, Silman, Atamtürk & Şensoy, 2009) and between teacher education level and EI (Yarmohammadi &Taghibigloo, 2013). Only one demographic covariate was associated with EI—a higher percentage of low-income students was linked to greater teachers' perception of others' emotions. It may be teachers with greater sensitivity to others' emotions are attracted to working with a more challenging population, or that low-income students, compared to high income students, may enter the classroom with more differentiated emotional, behavioral, and academic needs and require that teachers develop greater skills in detecting those needs.

Limitations and Future Directions

Limitations of test construction. Challenges in interpreting the data may be a reflection of weaknesses in the vignette choice, in the development of the prompting questions following the vignette, in the type of questions administered, and in the restricted response range. The TEIM was examined utilizing teachers' responses to a single vignette depicting a negative, disciplinary interaction with a teacher. Research demonstrates that positive and negative emotions serve distinct and complementary functions. Fredrickson (2003) suggests that "Negative emotions have an intuitively obvious adaptive value, solving problems of immediate survival .... positive emotions solve problems concerning personal growth and development" (p. 332). Thus the addition of a vignette eliciting teachers and student positive emotions induced by a classroom interaction would provide additional information about teachers' ability to effectively leverage emotions.

A more global disadvantage of using vignette responses lies in its assessment of knowledge of emotions and the ability to identify effective emotion regulation strategies, but not teachers' actual propensity to employ this knowledge and to execute these strategies effectively in emotionally arousing interactions. An examination of when and how individuals access and utilize emotional skills is necessary to clarify the processes by which EI impacts optimal performance. Additionally, teachers' literary skills, including their reading comprehension and verbal abilities, may constitute a source of variance in the coding of teachers' written responses to the vignettes. Future studies might account for Verbal IQ, which could help reduce its potential effects on the study findings. Furthermore, the questions themselves were not completely open-ended and may have elicited response bias and prompted teachers to provide more nuanced emotionally-related answers than they would otherwise exhibit (e.g., How might other students in the room feel?). In sum, while responses to vignettes provide valuable information, results are limited in generalizability and scope.

Difficulty with the data reduction of the eight TEIM items indicates another possible shortcoming in the test construction as it may reflect that some of the questions are not as theoretically linked as was originally anticipated. Merrell (2008) warned that employing a rational-theoretical approach when developing items has the potential to create a scale with strong face validity, but which may not be psychologically meaningful or theoretically unified. Garner (2010) suggests that the challenges with understanding teacher emotions is related to a lack of research that is adequately linked to theory, thus additional examination of the teacher EI constructs are a necessary first step to developing a measure of teacher EI. Further development of the coding scheme is

necessary to extract coherent factors that can be examined in a more parsimonious manner (e.g., three factors versus the eight used in the current analyses).

Results demonstrating significant associations between quality of student-teacher interactions and one particular TEIM variable, management of disputant's emotions, demonstrated a potentially informative area of EI that is not adequately examined in this study. Managing an emotionally reactive student requires a teacher to engage in perspective taking and emotion regulation to consider the experience of a disputant. Teachers who are able to articulate sophisticated ways to handle these situations may also be versatile in how they commonly address student needs in their teaching (as observed on the CLASS). Greater measurement development around the ways teachers' report addressing disputants' emotions may yield EI data that is representative of relevant teacher EI functioning.

Finally, the TEIM's use of a three point Likert scale might have further limited its ability to detect possible associations with the CLASS dimensions. Low sensitivity and specificity as well as a narrow range of a scale are problematic in distinguishing variations in a sample (Kazdin, 2003). To increase the TEIM's ability to detect variations in EI level, the revised TEIM could have multiple levels of scoring depending on the quality of the response. A seven-point scale, for example, may offer increased ability to quantify levels of EI in fine intervals.

Limitations of study method. This study was a preliminary investigation of the TEIM and was exploratory in nature. Weaknesses of the study method include a focus on a select few psychometric properties, and a relatively short-term examination of predictive validity. Development of a new measurement further necessitates an

examination of various types of reliability and validity (e.g., test-retest reliability).

Validity studies could examine how sensitive the TEIM is to interventions focused on

developing teacher EI, investigating its validity through multiple sources of information

such as direct observations of understanding and management of emotions during conflict

in a classroom. Rating scales completed by students and staff and an investigation of the

predictive validity of the TEIM scale to teacher performance, teacher well-being, and

classroom outcomes could further enhance the data. Accordingly, this study is only an

initial investigation in the early development of this measure. Additional measurement

studies are needed to replicate the findings related to reliability and predictive validity of

the TEIM

      This study also used a short time span between the collection of the TEIM

responses and the classroom observations using the CLASS. The TEIM responses were

measured at the start of the school year and the CLASS scores were collected one to two

months later. It would be informative to examine whether the TEIM scores, collected in

the fall, predicted observed CLASS scores in the spring. Further, multiple collections of

TEIM across the school year would also enable an examination of the stability of the EI

constructs throughout the school year. It is unknown whether EI shift across the school

year in response to a range of stressors including the demands of high stakes testing.

Implications for Practitioner

      The findings of this study have direct implications for a rapid evaluation of EI and

data-driven professional development to improve teacher personal and professional lives.

Review of EI literature reveals a lack of EI tests that provide efficient, relevant

assessments of essential EI skills for teaching. The measurement of teacher EI has

particular importance given the current focus on identifying characteristics of effective

teachers when other teacher characteristics have demonstrated no relation or only a

modest relation to student outcomes (e.g., Loeb & Béteille, 2008; Whitehurst, 2002).

Scholars have called for enhancing student and teachers' experience through helping

teachers better manage their emotions (Brackett & Caruso, 2007). The TEIM could serve

as a unique method of measuring teachers' EI and providing relevant feedback on

individual EI abilities. The assessment could provide information about ongoing EI

functioning and could possibly pinpoint teachers' strengths and weaknesses, and suggest

ways to leverage strengths when possible and strategies for improving areas of weakness.

Offering reliable feedback and guidance to individual teachers in a safe and supportive

environment can help provide teachers with insight into their strengths and areas for

development.

Administrators of teacher preparation programs might also use the TEIM as a new

tool to assess teachers' EI skills to inform professional development curricula. Outcomes

might provide information for creating training programs to develop and improve

emotional skills of individual teachers and possibly even administrators and the school as

a whole. Previous research of the RULER Approach to Social and Emotional Learning

(Brackett, 2005) demonstrate that teachers' EI can be improved and can produce positive

classroom outcomes (Rivers, Brackett, Reyes, Elbertson, & Salovey, 2012; Hagelskamp,

Brackett, Rivers & Salovey, 2013). The TEIM could be used to examine the conditions

under which teachers with higher EI exhibit improvements in specific classroom

outcomes and to focus teacher EI training programs on the emerging determinants (see

Appendix E for a more detailed review of the literature on EI interventions).

Conclusion

In summary, the TEIM scale measuring teacher EI is still in its infancy. The current study shows its promise. The analyses offered initial support for its reliability and predictive validity. Further examination is warranted to extract a theoretically sound construct of teacher EI and refine the coding scheme to accurately represent it. The present study provides a better understanding of what contributes to high quality teacher-student classroom interactions by examining teacher EI as a possible underlying mechanism. It demonstrates the complex interaction between teachers' ability to perceive, use, understand and manage emotions in themselves and others and quality classroom interactions. Although we cannot infer causality, specific elements of EI may enable teachers to be more responsive to students' academic and social-emotional needs and better able to facilitate higher order thinking skills, problem solving and metacognition. Global EI may further promote teachers' ability to provide leadership, autonomy, and content relevance to students. In contrast, high levels of global EI seems to inhibit teachers' ability to encourage desirable behavior and redirect misbehavior, possibly as a result of excessive empathy which prevents consistent enforcement of classroom expectations. Further research can examine ideal EI conditions in the classroom to promote an effective context for learning. Moreover, teacher trainings should encourage teachers to develop their abilities to perceive, use, understand and manage their emotions and thus develop higher levels of EI and produce positive classroom outcomes.

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Appendix A
Emotional Intelligence and Leadership

The study of leadership in the EI literature has received more research attention than any other applied study of EI. Goleman's (1998) assertion that EI is "sine qua non" of leadership led to widespread interest in the association between EI and leadership performance outcomes (e.g., Higgs & Aitken, 2003; Scott-Ladd & Chan, 2004). Bass and Stogdill (1990) defined leadership as activities engaged by individuals or group members that significantly contribute to the "development and maintenance of role structure and goal direction necessary for effective group performance" (p. 7). Goleman's research revealed that the characteristics traditionally associated with leadership (e.g., well-trained, analytic mind, creative and determined) are "threshold capabilities" that are required, but not sufficient to ensure success. Successful leaders are differentiated by high levels of EI including self-awareness, self-regulation, motivation, empathy, and social skill (Goleman, 1998b). A growing body of research concurs that EI is a strong requisite for those in leadership positions (e.g., Antonakis, Ashkanasy, & Dasborough, 2009; Higgs & Aitken, 2003). The research diverges, though, in how it examines the relationship between EI and leadership. The primary EI and leadership associations identified in the literature include links to transformational and transactional leadership styles, to specific qualities of successful leaders, and to organizational outcomes.

Leadership Styles

The most commonly examined leadership styles include those of the transformational and transactional leaders. Transformational leadership is characterized by idealized influence, inspirational motivation, intellectual stimulation, and individual consideration (Bass & Avolio, 1994). Contemporary leadership theorists and researchers

continue to cite these elements as the foundations of transformational leadership (Kim,

2006; Northouse, 2007). Transformational leaders promote change through the sharing of

values such as altruism, supportiveness, service, honesty and fairness that encourage

subordinates to reach beyond their own needs (Engelbrecht & Murray, 1995).

Transactional leadership, on the other hand, seeks to maintain stability by promoting

consistent performance to meet agreed upon goals (Bryant, 2003; Lussier & Achua,

2004). Transactional leaders use contingent rewards and punishments that serve as

economic exchange transactions (Barnett, 2003; Gellis, 2001) to encourage employee

performance (Bass & Avolio, 1994). The most widely used instrument for measuring

transformational and transactional leadership styles is the Multifactor Leadership

Questionnaire (MLQ; Bass & Avolio, 1990).

A variety of literary sources provide empirical evidence to support the notion that

EI is a predictor of transformational leadership (e.g., Barbuto & Burbach, 2006; Duckett

& Macfarlane, 2003; Leban & Zulauf, 2004; Mandell & Pherwani, 2003). Significant

associations between distinct areas of EI and features of transformational leadership have

been found across cultures and research settings (e.g. Corona, 2010; Polychroniou, 2009;

Sunindijo et al., 2007; Tang, Yin, & Nelson, 2010). Some studies support the connection

between EI and all components of the transformational leadership style (e.g., Srivsastava

& Bharamanaikar, 2004) while others only demonstrate a relationship with specific

characteristics of transformational leaders, such as empathy (e.g., Barbuto & Burbach,

2006; Barling, Slater & Kelloway, 2000; Downey, Papageorgiou & Stough, 2005;

Palmer, Walls, Burgess, & Stough, 2001). Additionally, while much of the research relies

on the leaders' self-report, several studies have found that leaders with higher EI are

perceived by their subordinates as more effective and transformational (e.g., Sivanathan & Fekken, 2002).

Brown and Moshavi's (2005) review of EI and transformational leadership literature sought to clarify the relationship between the two factors. They concluded that EI is both an antecedent of transformational leadership (i.e., those with higher EI are more likely to choose behaviors consistent with transformational leadership) and indirectly supports or enhances transformational leadership. Wang and Huang (2009) corroborated this conclusion when they examined the antecedent factor of EI as a predictor of transformational leadership and found that EI explained more than a quarter of the variance of transformational leadership ratings. Lindebaum and Cartwright (2010) similarly found a significant correlation between outside-rater assessment of EI and transformational leadership. However, Harms and Crede's (2010) meta-analysis on EI and transformational leadership suggests that although EI may contribute to transformational leadership, claims that EI serves as the primary determinant of transformational leadership were exaggerated.

Effective Leadership Qualities

Mills' (2009) meta-analysis examining empirical evidence establishing the link between EI and effective leadership provides evidence that EI may be a significant contributor to leadership effectiveness. In fact, Landy (2005), a noted critic of EI research, shared his belief that EI shows promise in predicting leadership effectiveness. Leadership effectiveness is defined in terms of a leader's capacity to encourage his or her subordinates to achieve organizational goals (Judge, Bono, Ilies & Gerhardt, 2002). Leadership research emphasizes specific EI competencies that are hypothesized to

influence leadership behaviors, effectiveness or emergence (Daus & Harris, 2003; Hawkins & Dulewicz, 2007; Leban & Zulauf, 2004). Dearborn (2002) states that effective leaders are those who develop an array of EI competencies. Thus an examination of leadership variables that are hypothesized to be linked with EI is warranted. In particular, emotional competencies in self-awareness, perception of others' emotions, empathy, regulation of one's own emotions and regulation of others' emotions seem to contribute to leadership effectiveness.

Self awareness. Emotional self-awareness is linked to effective leadership performance (Church, 1997; Sosik & Megerian, 1999). Rosete and Ciarocchi (2005) found that leaders' perception of their own emotions was linked to both leadership effectiveness and to leaders' actual performance. Previous studies (Atwater & Yammarino, 1992; Yammarino & Atwater, 1997) indicate that leaders who are self-aware are able to adjust their behavior to meet the needs of the organization. Sosik and Megerian's (1999) research revealed that associations between components of EI, leadership behavior, and performance varied as a function of self-awareness of managers. In their study, managers who maintained accurate self-awareness had higher EI and were viewed as more effective leaders to their superiors and subordinates.

Perception of others' emotions. Rosete and Ciarocchi (2005) also found that the leaders' perception of others' emotions is a predictor of performance. Kerr, Garvin, Heaton, and Boyle's (2006) study supported these findings with their conclusion that managers scoring higher on areas of the MSCEIT measuring perception of others' emotions were viewed by their employees as more effective leaders. Wong and Law (2002) similarly found that managers' self-reported accuracy in perceiving others'

emotions was associated with effective leadership outcomes. The ability to understand

others' emotions is thus seen as a skill that is necessary for effective leaders (Bass &

Avolio, 1994).

Empathy. Researchers examining the relationship between EI and leadership

maintain that empathy, the ability to understand and experience another person's feelings

or emotions, is an important element of EI (Wong & Law, 2002), and promotes a leader's

social support and positive interpersonal relationships (George, 2000). Kellet, Humphrey

and Sleeth (2002) compared emotional and cognitive competencies that are associated

with subordinate-perceived effective leadership, and concluded that empathy bore the

strongest relationship with perceived effective leadership. A later study of theirs led them

to conclude that empathy is an important predictor of leadership emergence (Kellett,

Humphrey, & Sleeth, 2006). Empathy plays a particularly important role in adopting

leadership positions in self-managing teams and employing effective leadership (Wolff,

Pescosolido, & Druskat, 2002). Empathy provides leaders with an understanding of how

to present initiatives in a way that is received by subordinates, transcends personal

interests and takes into account individual and organizational needs of subordinates

(Gardner & Avolio, 1998).

Emotion regulation. A leader's ability to regulate his emotions has also been

shown to be a critical leadership component. This EI ability provides leaders with a

greater repertoire of behavioral responses so they can adopt different roles depending on

the situational demands (Boal & Hooijberg, 2000). Glasø and Einarsen (2008) found that

leaders are more inclined to regulate their emotions than subordinates. Research

demonstrates that leaders' self-regulation affects subordinates' work emotion and

attitudes (Newcombe & Ashkanasy, 2002). Zampetakis and Kafetsios (2009) relatedly found that subordinates' perception of the emotion regulation skills of their leaders was positively correlated with their entrepreneurial behavior.

Regulation of others' emotions. Bono and Ilies (2006) studies demonstrated the direct influence a leader can have in modifying subordinates mood and perception. Leaders' ability to regulate subordinates' emotions and manage complex social and personal dynamics, central features of EI, is related to leadership effectiveness (e.g., Cann, 2004). According to Cherniss (in Cherniss & Goleman, 2001), the most effective leaders are those who recognize and effectively intervene when their subordinates feel discouraged or dissatisfied. Understanding and regulating one's emotions as well as those of others enables leaders to facilitate a cooperative working environment (Levasseur, 1991) and share positive feelings with work colleagues (Sosik, 2001), thus fostering healthy relationships that provide the foundation necessary to work through inevitable conflict and promote increased motivation toward goal fulfillment (Beecham & Grant, 2003; Dearborn, 2002). Furthermore, this leadership ability to change the affective pattern in the organization can promote bonds between individuals at work and help build coherent, effective, and highly motivated teams (Prati, Douglas, Ferris, Ammeter & Buckley, 2003).

Organizational Outcomes

Leaders' EI influences not only the performance of individual leaders, but also the overall organizational outcomes (George, 2000). Many studies have established that leaders' EI explains a high proportion of variance in both leadership effectiveness and a range of organizational results (e.g., Carmeli, 2003; Ozcelik, Langton & Aldrich, 2008).

It is theorized that the interpersonal dimension of EI allows leaders to accomplish their

goals more effectively (George, 2000; Hooijberg, Hunt, & Dodge, 1997; Zaccaro, 2001).

Emotionally intelligent leaders are better able to articulate precise and persuasive visions

(Bass, 2002), influence others (Murphy 2002), demonstrate sensitivity to subordinates'

needs (Cherniss 2010), intervene when individual and group demands are in conflict

(Zaccaro, 2002) and embrace cultural diversity (Offerman & Phan, 2002) to increase

organizational cohesiveness. Accordingly, leaders' EI facilitates the creation of a trusting,

collaborative environment, which positively affects subordinates satisfaction, retention

and commitment (Beecham & Grant, 2003; Goleman, Boyatzis, & McKee, 2001; Holt &

Jones, 2005) and ultimately their performance and productivity (Bachman, Stein,

Campbell & Sitarenios, 2000; Joseph & Newman, 2010; Law, Wong & Song, 2004;

Wong, Law & Wong, 2004, Van Rooy and Viswesvaran, 2004).

Leaders' EI appears to yield benefits for leaders as well, including a positive

impact on their self-esteem and emotional health (Schutte, Malouff, Simunek, McKenley,

& Hollander, 2002). Wong and Law (2002) found that leaders' level of EI was

significantly associated with both leaders' and subordinates' well being as well as the

motivation of subordinates to take on additional roles within the organization. Research

has also revealed relationships between leaders' EI and other variables associated with

leadership effectiveness, such as exhibiting higher-quality vision (Côté, Lopes, &

Salovey, 2003) and commitment (Carmeli, 2003), displaying greater creativity (Cote et

al., 2005) and being more productive (Kerr, Garvin, Heaton & Boyle, 2006).

Criticism of EI-Leadership Connection

Although much evidence has accumulated in support of the connection between EI and effective leadership, a comprehensive examination reveals inconsistencies across results. Whereas some studies demonstrate a close relationship (Barbuto & Barbuch, 2006), other results are weak at best (Kobe, Reiter-Palmon, & Rickers, 2001). These mixed results may be a result of imprecise theoretical rationales (Landy, 2005; Locke, 2005), over-reliance on leaders' self-report (Antonakis, 2004), or sampling error (Hunter & Schmidt, 2004). Further, Antonakis (2003) argues that EI contributes little or nothing to leadership effectiveness literature when personality traits and general intelligence are controlled for. In contrast, an examination of more recent research demonstrates that although some findings remain weak or mixed, some are quite impressive. For instance, one study found that EI was correlated with effective performance in a group of executives, over and above already established workplace measures such as reasoning ability and personality (Rosete & Ciarrochi, 2005). Another study found that EI predicted leadership performance whereas measures of generalized intelligence and personality did not (Boyatzis, Good & Massa, 2012). In sum, conceptual integration of the varied concepts of EI and effective leaders along with more research using rigorous methodologies is warranted to ascertain the validity of the association between EI and leadership (Antonakis et al., 2009; Locke, 2005).

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Appendix B

Theoretical Model of the Classroom Assessment Scoring System-Secondary (CLASS-S; Pianta, Hamre, Haynes, Mintz & La Paro, 2006)

Domain	Dimensions	Description
Emotional Support	Positive Climate	The overall emotional tone of the classroom and connections among teachers and students
	Negative Climate	The overall level of expressed negativity (e.g., irritability, frustration, anger, etc.)
	Teacher Sensitivity	The teacher's responsiveness to academic and social/emotional needs of students
	Regard for Adolescent Perspectives	The extent to which the teacher offers leadership, autonomy, and content relevance to students.
Classroom Organization	Behavior Management	The teacher's ability to use effective methods to encourage desirable behavior and redirect misbehavior
	Productivity	The teacher's management of time to maximizes instruction.
	Instructional Learning Formats	The teacher's provision of interesting, varied activities and materials to maximize engagement
Instructional Support	Content Understanding	The depth of lesson content and integration of facts, skills, concepts, and principles.
	Analysis and Problem Solving	The teacher's facilitation of higher order thinking skills, problem solving and metacognition
	Quality of Feedback	The provision of feedback that is focused on expanding or extending learning and understanding
Outcome measure	Student Engagement	Reflects the degree to which students are focused and participating in the classroom learning activity

Appendix C
Teacher Emotional Intelligence Measure

Please read the vignettes below and describe how you might respond in this situation. Imagine that it is the middle of the school year and you are 20 minutes into your teaching…

1. You have asked a student two times to stop talking to another student in the back of the room. The student continues to talk to the other student. You ask a third time and the student says he/she is telling his/her friend important stuff and that the teacher should mind his/her own business.

	Not at all		Somewhat		Very much
How much would you feel **angry** if this happened to you?	1	2	3	4	5
How much would you feel **worried** if this happened to you?	1	2	3	4	5

What other feelings might you have? _____

How would you deal with your feelings about it? _____

_____

What would you be thinking? What would you do?
_____

_____

How might the other students in the room feel? Why would they feel that way?

_____

_____

How would you deal with what they were feeling? _____

_____

How might the student who told you to mind your own business feel? Why would he/she feel that way?

_____

_____

How would you deal with his or her feelings? _____

_____

Appendix D
TEIM Coding Manual

I. What other feelings might you have?
Variable name: Perception of Own Emotions
Reflects a teacher's ability to recognize multiple, complex, internal emotions

Coding Scheme
1 = Teacher has not written an emotion other than anger or worry or has written a thought rather than an emotion

2 = Teacher lists one emotion

3 = Teacher lists two or more distinct emotions

Examples of 1's
"My feelings about the situation don't really matter here." *There is no stated emotion.*

"Angry but take a second to respond." *No emotion different than anger or worry is described*

Examples of 2's
"Disappointment" *One distinct emotion is provided.*

"Irritated, Aggravated." *Two similar emotions are provided.*

Example of 3's
"Embarrassed, disappointed, angry" *Three distinct emotions are provided.*

II. How would you deal with your feelings about it?
Variable name: Management of Own Emotions
Reflects a teacher's ability to self-regulate

Coding Scheme
1 = Teacher doesn't address the feelings at all or provides a maladaptive strategy

2 = Teacher suggests something vague. Feelings may be discussed but the answer lacks a clearly formulated strategy.

3 = Teacher provides a specific strategy that will likely succeed in modulating the teacher's emotions.

Examples of 1's

"Yell" "I would joke with the student" This is not likely to be an effective way of managing one's feelings in this situation.

"Give them a detention" *Teacher provides a consequence without addressing the feeling*

Examples of 2's
"I would suppress my true feelings and thoughts." *The temporary suppression of feelings can be adaptive in the moment but no strategy is provided for dealing with it later*

"Act like it doesn't bother me as much as it really does and give necessary consequence." *This addresses feelings in the short term but no strategy offered for handling the suppressed feelings later*

"Stay calm and deal with student." *Although the suggestion is good, no actual strategy for "staying calm" is discussed*

Examples of 3's
"Vent to another teacher" *This describes a specific strategy that is likely to be helpful.*

"Remind myself that he's just a kid." "Don't take it personally."

"Count to ten." "Deep breaths."

III. What would you be thinking?
Variable name: Use of Thoughts to Generate Emotions
Reflects a teacher's ability to use thoughts to generate more constructive emotions

Coding Scheme

1 = Teacher provides no thought or teacher provides a maladaptive thought. This thought seems to be counterproductive to modulating a negative emotional response.

2- Teacher's response likely has a neutral impact on emotion regulation

3-Teacher provides thought that likely helps modulate a negative emotional response

Examples of 1's
"He's showing disrespect." *Although an accurate statement, it probably exacerbates the teacher's anger.*

Examples of 2's
"I would be thinking of the best way to handle the situation." *An adaptive response, but it doesn't help modulate the initial negative emotional reaction.*

"Try to determine how I could correct the issue to motivate the student." *Also a potentially positive response but wont have any impact on the teacher's immediate emotional experience*

Examples of 3's
"I wonder what's wrong with him. Maybe he's having a bad day" *This empathic thought helps the teacher to decrease his or her negative feelings*

IV. What would you do?

Coding Scheme:
This question will not be coded. Please record in short hand what the teacher would do (e.g., talk in hallway)

V. How might other students in the room feel?
Variable name: Perception of Group's Emotions
Reflects the ability to identify accurately a range of emotions the other students might feel

Coding Scheme
1 = Teacher writes no feeling, a feeling the student would not reasonably be expected to have, or describes behaviors or cognitions associated with a feeling without naming the specific feeling.

2 = Teacher writes one or more appropriate feelings that are all of the same valence (either all negative, positive, or neutral)

3 = The teacher recognizes the possibility of a mix of emotions including at least two differently valenced emotions (positive and negative, positive and neutral, or negative and neutral)

Examples of 1's
"Sad" *This does not seem to be a likely emotional response to this situation*

"They can't believe what the student said" *Although the teacher describes a cognition related to the emotion of disbelief, the feeling itself is not explicitly stated.*

Examples of 2's
"Anger, confusion, embarrassment" *Several emotions are listed but they are all negative*

"Disbelief" *Only one neutral emotion is listed*

Examples of 3's
"…the students would be both entertained and embarrassed." *Recognition of multiple contrasting emotions*

"They're distracted, they're angry that they cannot learn, they may be interested." *A neutral, negative and positive emotion is listed*

VI. Why would they feel that way?
Reflects an awareness of group social-emotional dynamics.

Coding Scheme:
This question will not be coded.

VII. How would you deal with how they were feeling?
Variable name: Management of Group's Emotions
Reflects a teacher's ability to influence and regulate group social-emotional dynamics

Coding Scheme
1 = Teacher doesn't directly address the stated emotional experience or responds maladaptively

2 = Teacher deals with the students' feelings in a limited way. (For instance, the teacher may redirect the group activity to change the classroom emotion.)

3 = Teacher directly deals with the feelings in a positive way

Examples of 1's
"I'd make a joke about it" "I'd ignore it." *Maladaptive response*

"Re-examine teaching strategies" *This is a distal strategy that does nothing to address the immediate emotional experience*

"Reinforce the rules" *A lecture about rules is unlikely to influence the social-emotional dynamic*

Examples of 2's
"I tell them to ignore what happened and concentrate on their own business" "Remove the student so could focus" "In the short term, isolate student, explain why behavior was wrong to diminish the impact on the flow of class and make some change in activity or topic." *Indirect and limited methods of helping the students' cope with their emotional experience primarily through redirection*

"I'd keep things positive and calm" "I would discuss respect and the importance of following rules." *Doesn't directly address stated emotional experience although can indirectly influence.*

Examples of 3's
"I would have a class discussion about what happened" "I would express in a calm manner how respect will help them achieve their future goals." *Methods have potential to allow students to positively explore their feelings*

VIII. How might the student who told you to mind his own business feel?
Variable name: Perception of Disputant's Emotions
Reflects the ability to engage in perspective taking and recognize emotional experience of other

Coding Scheme

1 = Teacher describes a thought rather than a feeling or describes an unlikely feeling

2 = Teacher describes only "hard," or "externalizing emotions that are associated with asserting power (e.g., anger) or a superficial feeling (e.g., distracted).

3 = Teacher describes at least one "soft" or "internalizing" emotion that is associated with more vulnerability (e.g., sadness, anxiety, sympathy).

Examples of 1's
"Hopefully he she will take away the fact that his/her response was inappropriate and will not be tolerated" *Does not address student's feelings.*

"They are not interested in the class." *Although this describes a possible feeling of boredom, there is no direct mention of the feeling and it does not correspond well to the student's behavior*

Examples of 2's
"Cocky, defiant," "Angry, upset" *These are all similar, negative feelings*

Examples of 3's
"Might not understand what he/she did wrong; might be angry and embarrassed at being called out." A*ble to engage in complex perspective taking in which recognizes both a hard emotion (anger) and a soft emotion (embarrassment)*

IX. Why would he feel that way?
Variable name: Understand Disputant's Emotions
Reflects an ability to empathically understand emotional information

Coding Scheme

1 = Teacher provides no real reason or an implausible one

2 = Teacher provides a plausible reason

3 = Teacher provides an insightful or sensitive reason that demonstrates empathy

Examples of 1's
"(The student will feel bad) probably but he/she has already said it." *States feeling with no explanation*

Examples of 2's
"(Angry) because he was disciplined" *Plausible explanation with little insight*

Examples of 3's
"He was focused on his own needs and felt attacked" "He felt he had something very important and needed to share" *Provides thoughtful, empathic response*

X. How would you deal with his feelings?
Variable name: Management of Disputant's Emotions
Reflects a teachers' ability to help the student self-regulate or positively engage in social-emotional interactions

Coding Scheme
1 = Teacher doesn't deal with feelings and/or responds in a way unlikely to be constructive

2 = Teacher deals with feelings in a limited or vague way or offers a limited regulation strategy that doesn't promote insight.

3 = Teacher deals with feelings in a way likely to be helpful. The teacher may even help the student self-regulate or proactively work on social-emotional interactions

Examples of 1's
"I would not deal with their feelings. I would treat them as they've treated me."

Examples of 2's
"Meet with the student after class" *While this has the making of a good strategy, it's not thought out enough*

"Referral to counselor" *Teacher doesn't directly deal with feelings and instead chooses to outsource*

"Try to correct the behavior, get the student focused and redirect" *Regulation strategy which does not promote insight*

"Let them have their say if need be but tell them they are infringing on others' rights to learn by acting in a selfish manner" *Although the provision of an opportunity to talk is*

constructive, the use of harsh, negative language makes the likelihood of a productive outcome slim.

<u>Examples of 3's</u>
"Have a hall conference to explore why he acted as he did and the consequences it had on the class" *This response is similar to the first example of a 2 code, but it is more thought out, suggesting that it would be more effective in managing the student's feelings and building a better relationship with the student.*

XI. Global EC Code

Overall how would you rate the teacher response in terms of reflecting his or her emotional competency? For this code, take a step back from the individual responses and think about the teacher's total emotional competence as defined by teacher's ability to perceive emotion, integrate emotion to facilitate thought, understand emotions and to regulate emotions?

<u>Coding Scheme</u>
1 = Low emotional competence

2 = Average emotional competence

3 = High emotional competence

Appendix E
Emotional Intelligence Intervention Implication

Development of Emotional Intelligence

The concept of EI is relatively new, thus there are few applied empirical studies

examining EI training and intervention outcomes (Mayer, Roberts & Barsade, 2008).

That said, the nearly 3,000 scientific articles that have been published on EI since the

concept was first popularized in 1990 provide us with some level of confidence that more

than IQ, EI can be enhanced over our lifespan (Becker, 2003). Schutte, et al.'s, (2001)

seven EI studies, examining the relationship between EI and interpersonal skills, led them

to the conclusion that training may be an effective method of increasing EI. Several other

studies demonstrate the successful development of EI in organizational settings through

thoughtful training and practice (Boyatzis, 2001; Boyatzis, Stubbs, & Taylor, 2002;

Cherniss & Caplan, 2001; Dulewicz & Higgs, 2004; Goleman, 1998; Mayer & Salovey,

1997; Murray, Jordan, & Ashkanasy, 2006).

There are currently several programs that have recently been developed with the

express goal of improving overall EI (e.g., Mastering Emotional Intelligence Program;

Goleman & Boyatzis). A recent review of the literature by Schutte, Malouff and

Thorsteinsson (2013) identified four true experimental intervention studies with a

retention of the majority of the participants (Crombie Lombard & Noakes, 2011; Kirk,

Schutte & Hine, 2011, Reuben, Sapienza & Zingales, 2009; Wing, Schutte & Byrne,

2006), utilizing performance measures of EI (Crombie et al., 2011; Reuben et al., 2009),

or self-report measures of typical or trait emotional functioning (Kirk et al., 2011, Wing

et al., 2006) as outcome measures. The authors concluded that there is preliminary

evidence to support the claims that EI training programs can effectively increase an

individual's EI. Their research also indicates that EI training can improve related

outcomes, including wellbeing, mental health, physical health, relationships, work

performance, and even adjustments in personality traits.

Although not directly measuring EI, other programs conceptualizing EI as a series

of interrelated social and emotional skills and competencies are promising. This view of

EI expands the available training possibilities, as there are already many programs that

focus on developing skills to help individuals become more emotionally competent.

Meta-analyses examining the effectiveness of training programs suggest that

interpersonal skill is the most malleable element of EI, with average short-term

improvements of almost 50% (Arthur Jr, Bennett Jr, Edens, & Bell, 2003). Results from

programs seeking to improve other EI skills show potential as well. Stress management

programs have reported an average reduction of stress of 35% (Richardson & Rothstein,

2008) and results of an empathy training programs revealed a 37% improvement in

global empathy (Bonvicini, Perlin, Bylund, Carroll, Rouse, & Goldstein, 2009).

While outcome research and program evaluations provide some evidence that EI

can be taught, perhaps the most compelling demonstration comes from affective

neuropsychological studies emphasizing the "plasticity" of the social brain (Davidson,

Jackson, & Kalin, 2000; LeDoux, 1996) including the adult human brain (Eriksson et al.,

1998 as cited in Davidson, et al., 2000). These studies indicate that, with suitable training,

people can improve their EI and become more prosocial, altruistic, and compassionate.

Recent research on mindfulness training also indicates that EI competencies can

be developed. Mindfulness practices may minimize stress (Lama & Ekman, 2008)

promote emotional self-awareness (Brown & Ryan, 2003) and contribute to greater self-

regulation (Ramel, Goldin, Carmona, & McQuaid, 2004; Shapiro, Schwartz, & Bonner, 1998), empathy (Eisenberg, et al., 1989), creativity and motivation (Davidson, et al., 2003). Greater use of mindfulness provides increased accessibility to a range interpretations and behavioral responses to stressful situations (Zelazo & Cunningham, 2007) and is characteristically associated with higher EI (Brown & Ryan, 2003; Schutte & Malouff, 2011). Schutte and Malouff (2011) further suggest that mindfulness may be a catalyst for the development of EI. A model proposed by Jennings and Greenberg (2009) utilizes mindfulness programs to enhance social emotional competencies.

Components of an Effective EI intervention Program

Research demonstrates that our ability to identify and manage our own and others' emotions is fairly stable over time (Watson & Walker, 1996) and is shaped by our early childhood experiences (Grossmann, Grossmann & Waters, 2006; Meany, 2001), genetics (Vernon, Petrides, Bratko, & Schermer, 2008) and even age (Bar-On, 2000; Fariselli, Ghini & Freedman, 2006). Accordingly, although it can be changed, long-term improvements will require commitment and persistent effort, over an extended period of time (Cherniss & Adler, 2000; Cherniss & Goleman, 2001; Cherniss, Goleman, Emmerling, Cowan, and Adler, 1998; Goleman, 1998; Goleman, Boyatzis, & McKee, 2002 as cited in Emmerling, & Goleman, 2003).

Traditional training programs commonly adopt a uniform approach to change that ignores individual complexities and primarily utilizes a cognitive learning experience (Dearborn, 2002). According to Cherniss et al. (1998), this method is generally not effective in developing EI competencies. Cherniss et al. (1998) provide guidelines for effective EI training that includes four basic phases: preparation for change, training,

transfer and maintenance, and evaluation of change. The training phase utilizes emotional

learning techniques and allows for more self-directed discovery and individualized

support. Schutte, Malouff and Thorsteinsson (2013), cite various successful interventions

that have used a combination of didactic and skills-based training (e.g., Kotsou, Nelis,

Grégoire & Mikolajczak., 2011; Nelis, et al., 2011; Schutte & Malouff, 2002; Slaski &

Carwright, 2003; Ruiz-Aranda et al., 2012), while others have used techniques such as

self- reflection (e.g., Wing et al., 2006). Murray, Jordan, and Thompson (2005) provide

several recommendations for increasing the learning of EI for trainees including

attending to one's own and others' emotions, journal keeping, reflective learning, and

good communication.

Shortcomings of Available EI Intervention Research

Despite the popularity of EI training initiatives and the aforementioned evaluation

studies, the research base is relatively thin in terms of the degree to which many of these

training programs truly heighten participants' EI. In other words, despite the years of

research verifying the concept of EI, substantive evidence that establishes the effects of

the training programs on improving participants' EI is scarce (Eichmann, 2009; Weis &

Arnesen, 2007). An online search for EI training programs reveals a plethora of available

programs claiming to improve EI. A closer examination reveals that the majority of

available options tout their advantages using terms like "research-derived model" or

"field-tested curriculum," while they fail to demonstrate effective learning designs that

have been empirically tested. In addition, Caruso, Bienn and Kornacki (2006) note that

there is a dearth of research that utilizes validated EI assessments tools to measure the

effects of participation in a comprehensively designed training intervention. Matthews,

Zeidner & Roberts (2007) further point out paucity in EI intervention research comparing

results to related fields such as personality and intelligence. In sum, the lack of robust

evidence regarding the actual impact of training either on EI or on any of the

performance related outcomes EI is purported to influence suggests a need for more

rigorous research (Law, Wong & Song 2004) and cautionary use of the training programs

currently in existence.

Review of Select EI Training Programs

Following is a brief review of a select few EI organizational training programs

that have been evaluated including: Emotional Competence Training Program (American

Express Financial Advisors); Mastering Emotional Intelligence Program (MEI; Goleman

& Boyatzis, 2001); Developing Breakthrough Leadership (Goleman, Boyatzis & McKee,

2002).

Emotional Competence Training Program. The Emotional Competence

Training Program was developed based on a program from the American Express

Financial Advisors. This program seeks to provide managers with an increased awareness

of the vital role emotions play in organizational interaction and to promote their ability to

manage their emotions and communicate effectively with others. Consequently, the

program targets a variety of EI skills including self-awareness, self-regulation, empathy,

communication and conflict management. There are several versions of the program

available with differing lengths and content, geared toward individual trainees' roles in

the organization. Results from one program evaluation examining the effects of the of

the Emotional Competence Training on a group of 33 advisors as compared to a control

revealed a significant increase in the trained groups scores on the Seligman Attributional

Styles Questionnaire, a measure of optimism and coping skill that has predicted success

in life insurance sales in previous research and in sales revenues. Another evaluation

study compared the performance of advisors working under trained managers with those

working for managers who had not yet received training. The findings from comparisons

of both groups one year prior to and following training indicated that advisors working in

regions with trained leadership grew their businesses significantly more (AMEX

Program, 2003).

Mastering Emotional Intelligence Program (MEI). The Mastering Emotional

Intelligence Program (designed by Goleman and Boyatzis) is a one-year course that

supports the development of EI competencies while providing trainees with the skills to

better understand and address workplace EI issues. Trainees participate in various

workshops throughout the year and are encouraged to utilize fellow trainees for support

and feedback (Sala, 2001). Program effectiveness studies utilizing the Emotional

Intelligence Inventory to measure EI levels before and after implementation of the MEI

with a total of 39 participants showed significant increases in EI levels of participants

(Boyatzis, Goleman, & Rhee, 1999; Sala 2005).

Developing Breakthrough Leadership. This customized leadership

development program was designed based on a program used successfully at the

Weatherhead School of Management. It is an EI program that promotes self-awareness

through defining goals, identifying areas of weakness and creating and enacting

individual plans for relevant behavioral changes (Goleman, Boyatzis, & McKee, 2002).

Longitudinal studies of program effectiveness utilizing a sample of MBA students

demonstrated significant improvements on videotaped and audiotaped behavioral samples

and questionnaire measures of EI skills including self-awareness, self-management,

social awareness and relationship management. These improvements were sustained even

five to seven years after training completion (Goleman, Boyatzis, & McKee, 2002).

Importance of EI Training for Teachers

The potential benefits of practically applying EI theories to educational settings

are by now widely recognized yet insufficiently tested empirically (Humphrey Curran,

Morris, Farrell & Woods, 2007). Much of the data that currently exists on EI intervention

is not empirical and the little that does exist primarily emphasizes intervention strategies

focused on students (e.g., Demasio, 1994; Elias, Zins, Weissberg, Frey, Greenberg,

Haynes, et.al., 1997; Jensen, 1996; Sousa, 1998; Sylwester,1995). Teacher preparation

programs typically focus on educating teachers in the cognitive domains (Goleman, 1995;

Gotz, 1997). The emphasis on content and pedagogy precludes pursuit of affective

training and goals (Noddings, 1998) and allows teachers to enter real classroom settings

without a comprehensive training experience (Korthagen & Kessels, 1999; Zeichner,

2010). In fact, researchers maintain that an understanding of social-emotional

developmental issues should have a more central role in standardized teacher training

curriculum (Poulou, 2005). The importance of including EI training in teacher

preparation programs was highlighted in a recent study by Justice, Espinoza, Veitch, and

Lin (2012). Providing teachers with EI training will likely affect their students'

achievement both during the program and in the following years as well (Elias, Ubriaco,

Reese, Gara, Roshanbaum & Haviland, 1992). Moreover, research suggests that many

teachers feel unqualified to identify and respond to challenging behavior and strong

negative emotionality from students (Garner, 2010), thus underscoring the need for EI programs for teachers.

Review of an EI Teacher Training Program

There are only a few training programs with empirical research, that profess to facilitate the development of EI among teachers. Following is a brief review of the RULER Approach (Brackett, 2005), the one program that has been more widely disseminated and evaluated.

The RULER Approach to Social and Emotional Learning. The **"**RULER" (Brackett, 2005), an outgrowth of decades of EI research conducted by the Yale Center for Emotional Intelligence, is a multi-year EI program that is designed to improve the quality of classroom interaction by integrating comprehensive professional development for teachers with skill-building programming for students. It theorizes that teaching children and the adults involved in their education the RULER skills (Recognizing, Understanding, Labeling, Expressing, and Regulating) fosters greater emotional literacy and an ability to identify, problem solve about, and regulate their own and others' emotions in various settings. Results of a 2-year clustered randomized-controlled experiment suggest that the RULER Approach creates a more positive learning climate (Brackett, Rivers, Reyes, & Salovey, 2010). In the first year, classrooms in RULER schools demonstrated a higher degree of warmth and connectedness between teachers and students, more autonomy and leadership among students, and teachers who focused more on students' interests and motivations (Rivers, Brackett, Reyes, Elbertson, & Salovey, 2012). In the second year, RULER schools exhibited increased teacher abilities to interact with student in emotion-focused ways, greater emotional support, better classroom

organization, and more instructional support (Hagelskamp, Brackett, Rivers & Salovey, 2013)

Summary

In sum practical EI development opportunities have been most frequently documented in the professional business settings (e.g., Murray, Jordan, & Ashkanasy, 2006). A few rigorous studies in this field demonstrate the success of interventions designed to increase EI and characteristics associated with higher EI (Schutte, Malouff & Thorsteinsson, 2013). Programs focused on enhancing specific EI skills show potential as well (e.g., Arthur Jr, Bennett Jr, Edens, & Bell, 2003). Given research demonstrating the link between EI and effective teaching (e.g., Iordanoglou's, 2007), teacher pre-service and in-service programs are beginning to be acknowledged as a valuable intervention opportunity for promoting EI in teacher (Justice, Espinoza, Veitch, & Lin, 2012). A promising study of the RULER Approach to Social and Emotional Learning (Brackett, 2005) shows that teacher training can produce positive classroom outcomes (Rivers, Brackett, Reyes, Elbertson, & Salovey, 2012; Hagelskamp, Brackett, Rivers & Salovey, 2013). While preliminary research suggests positive changes, more research is needed to develop and assess sound theoretical models for improving teacher EI and student outcomes.

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