

Emotional Intelligence Training: Evidence regarding its Efficacy for Developing Leaders

By **Mary Pat McEnrue**, California State University Los Angeles, **Kevin S. Groves**, Graziadio School of Business and Management at Pepperdine University, & **Winnie Shen**, University of Minnesota

Academic Citation: Mary Pat McEnrue, Kevin S. Groves & Winnie Shen, “Emotional Intelligence Training: Evidence regarding its Efficacy for Developing Leaders,” Kravis Leadership Institute, *Leadership Review*, Vol. 10, Winter 2010, pp. 3 – 26.

About the Authors: **Mary Pat McEnrue, Ph.D.**, is Professor of Management, former Chair and Associate Dean in the College of Business and Economics at California State University, Los Angeles. Her current research focuses on leadership, learning and innovation in creative industries (new media content and distribution companies, bio tech firms). She teaches courses in new venture creation, managing creativity and innovation, leadership and general management. E-mail address: mmcenru@calstatela.edu.

Kevin S. Groves, Ph.D., is an assistant professor of Organization Theory and Management at the Graziadio School of Business and Management at Pepperdine University. Dr. Groves’ primary research interests include values-centered transformational leadership, talent management and succession planning systems, leader intelligences, and leader thinking styles. His research has been published in numerous outlets, including the *Journal of Management*, *Academy of Management Learning & Education*, *Journal of Business Ethics*, and the *Journal of Management Development*, and the *Leadership and Organization Development Journal*. He consults with organizations in the areas of executive development and succession planning, organizational change, and employee engagement. Dr. Groves received his Ph.D. from Claremont Graduate University. E-mail: kevin.groves@pepperdine.edu.

Winnie Shen, is a Ph.D. candidate in industrial-organizational psychology at the University of Minnesota. She earned her undergraduate degree in psychology from California State University, Los Angeles. Her current research interests include fairness, bias, and diversity issues in organizational and educational settings, the prediction and measurement of academic and job performance, leadership and emotional intelligence, and occupational health psychology. E-mail: shenx094@umn.edu.

Keywords: Leadership development; emotional intelligence; training

Abstract

Emotional intelligence (EI) scholars have repeatedly bemoaned the fact that little or no empirical research has tested whether it is possible to enhance the EI of individuals in organizations through deliberate training. This review examines twelve extant EI training studies. We provide information on the training design, measure of EI used to assess impact, research method, and contribution that each study makes to understanding whether and how to boost leaders' capability to handle the emotional challenges inherent in the positions they hold. Our review demonstrates that extant research does not provide sufficient evidence concerning whether it is feasible to increase EI among individuals or how to carry out EI training. We offer specific recommendations to improve both the nature of EI training and the quality of research on enhancing the EI of leaders.

Introduction

How people feel at work affects their motivation, creativity, performance, interpersonal judgments, communication, flexibility, helpfulness, absenteeism, bargaining, and negotiation behavior (Forgas & George, 2001). Not only do emotions influence both what people think and how people think, but they also have a profound effect on what occurs at work and in other realms of life. Indeed, tragic mistakes and great achievements are often emotion-laden phenomena. Emotions, feelings, and moods constitute an essential component of social life in general and particularly in organizations. It is therefore not surprising that research on emotional intelligence has mushroomed during the last decade (e.g., Ashkanasy & Daus, 2005; Day & Kelloway, 2004; Zeidner, Matthews, & Roberts, 2004).

Understanding what emotional intelligence entails is a critical requirement for someone in a leadership position. Moreover, there is mounting evidence that demonstrating emotional intelligence (not simply understanding or endorsing the idea) is essential for leaders, particularly those responsible for managing organizational change (e.g., Barbuto & Burbuck, 2006; Bommer, et al., 2005; Brown & Moshavi, 2005; Rubin, et al., 2005; Smollan, 2006; Huy, 2002). Among executives and particularly human resource professionals, identifying whether it is possible to select people with this capability and/or train individuals (including oneself) to become more emotionally intelligent is a key question. The answer to this question will help guide decisions regarding how to boost the quality of leadership and to more effectively manage innovation within organizations.

This article focuses on the deliberate development of emotional intelligence among leaders and prospective leaders. The question guiding this research is: Can one increase the emotional intelligence of leaders and prospective leaders through deliberate development? The article is organized as follows. First, we briefly describe four models and 11 measures used to assess EI. These serve as the theoretical foundation and criteria for training in EI. We then examine the nature and results of extant empirical studies on the development of EI. We describe the training design, research method, and contribution each makes to understanding whether and how to engage in training and development efforts to boost leaders' capability to handle the emotional challenges inherent in leadership positions, particularly their responsibility to manage change. Lastly, we offer a set of suggestions for further research that focuses on three areas: developing EI among leaders through deliberate training and the evaluation of those efforts; factors which

likely affect the need for, process of, and outcome realized from development efforts; and further testing and revision of existing models and measures of EI so that they are more relevant for leadership development.

This paper adds value to the existing body of research on leadership development, emotional intelligence, and change management in several ways. First, it is a comprehensive review of empirical research. It does not rely on anecdotal reports. Moreover, it includes all research studies reported across multiple academic and professional fields (participants range from students in business and health services to public sector managers to leaders in a variety of profit making entities). Hence, it offers leadership development professionals the opportunity to examine every piece of research conducted to date including studies conducted outside their immediate industry.

Secondly, it places extant research into the context of the major theories regarding emotional intelligence. That is, it examines multiple models of emotional intelligence and existing EI measures so that readers can truly understand the meaning of results reported by researchers and implications thereof in terms of existing theories. This is useful both for purposes of evaluating the relevance of existing EI models but also advancing theory and research regarding the development of EI among leaders.

Lastly, the article provides a means of transferring theory about leadership development, particularly with regard to emotional intelligence, into leadership practice. It offers a coherent summary of evidence regarding EI training that leadership development professionals can use to decide whether to invest effort, time, and other resources in attempting to enhance EI among managers and potential leaders, particularly those responsible for managing significant organizational change efforts. In that sense, it adds value to the practice of leadership development as well.

Emotional Intelligence Models and Measures

Research on emotional intelligence (EI) emanates from four conceptualizations of the phenomenon. The four models have been advanced by Salovey and Mayer (1990, 1997), Goleman and colleagues (1995, 1998), Bar-On (1997) and Dulewicz and Higgs (1999, 2000). Accordingly, research on the EI of individuals has typically employed these models and their associated measures or variations thereof, including precursors and offshoots. The measures respectively include the MSCEIT, ECI-2, EQ-I, and EIQ. The models and measures differ in terms of whether they narrowly define EI or broadly conceive of it as closely related either to personality attributes such as optimism or to behavioral outcomes such as achievement. Although an in-depth description of these models and measures is beyond the scope of this paper, McEnrue and Groves (2006) present a thorough review of the similarities and differences between EI models and evidence regarding the validity of the corresponding EI instruments.

Below we describe each of the eleven measures used to assess EI among training participants. Our aim is to insure that the reader can fully appreciate and evaluate extant research that utilized these measures. Table 1 identifies the EI theoretical model, dimensions/scales, and research

using the measure. It also offers selected comments concerning the use of the various methods for measuring EI.

[See Table 1 Below]

MSCEIT

The model proposed by Mayer and Salovey (1997) conceives of EI as an ability rather than a dimension of personality by narrowly defining the construct to distinguish it from other phenomena such as initiative or customer service orientation. Mayer and Salovey provide an abbreviated definition of the phenomenon. It is “the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge and to reflectively regulate emotions so as to promote emotional and intellectual growth” (p. 5). Because this model is widely endorsed by theorists and researchers in the field (e.g., Ashkanasy & Daus, 2005; Daus & Ashkanasy, 2005), we chose to employ it as the template against which to compare other models and corresponding measures.

The model includes four dimensions of EI: perception and appraisal of emotions; facilitating thinking with emotions; understanding complex emotions; and the regulation and management of emotions. Each dimension incorporates four skills. For example, regulation of emotion includes: staying open to feelings; reflectively engaging emotions depending upon utility and informativeness; reflectively monitoring and judging emotions in oneself and others; and managing emotions in oneself and others by reducing the negative and increasing the positive. Hence, the construct is comprised of many constituent elements. Note that any of these skills may be manifest in several ways. For example, one may manage emotions in oneself by at least six methods: situation selection, situation modification, attention deployment, cognitive reappraisal, response modulation, or complete suppression (John & Gross, 2004). There are at least that many methods available to manage the emotions of others. Thus, although the construct is narrowly defined, the demonstration of EI as conceived within this framework is a sophisticated and complex skill significantly different from other phenomena.

The MSCEIT measure developed by Mayer, Salovey & Caruso (2003) seeks to mirror the model. Respondents complete 141 questions that are subdivided into four sets of tasks. The tasks ask an individual to: identify how a person feels based upon his/her facial expression and the extent to which certain images or landscapes express various emotions; compare different emotions to different sensations and indicate which mood is likely to assist certain kinds of problem-solving; identify how emotions transition from one to another; and connect certain situations with certain emotions. Lastly, the test asks respondents to evaluate how effective different actions would be in achieving an outcome involving other people and to rate the effectiveness of alternative actions in situations that call for emotion regulation. Among all the available EI instruments, the MSCEIT is the only measure that tests emotional intelligence by comparing self-reported scores against expert and consensus opinion. This distinguishes the MSCEIT from its counterparts.

WEIP

Various researchers have referenced the Mayer and Salovey (1997) model in creating other measures of emotional intelligence. Jordan et al. (2002), for example, created a measure of work

group emotional intelligence based upon an earlier model of EI proposed by Salovey and Mayer (1990). The WEIP is different than other instruments because (1) it is not a general EI measure, (2) all the items refer to members of the respondent's team, and (3) it assesses EI within a single context – operating in a workgroup. Note that as yet, no research has investigated whether competencies generalize across situations or not. That is, whether an individual who, for example, is “EI challenged” when working within a group has no difficulty in demonstrating a high level of EI in other realms of activity or vice versa.

The WEIP has apparently undergone successive modification since its initial creation by Jordan et al. (2002). The number of items has totaled 27, 30, 48 and 36 subdivided into various subscales all ultimately collapsed into two scales titled: 1) ability to deal with own emotions and 2) ability to deal with others' emotions (Jordan, 2006; Murray, 2006). Inspection of the WEIP-6, the most recent version of the instrument, indicates that it measures just two dimensions in the Mayer and Salovey (1990) EI model: a) perception and appraisal of emotions; and b) the regulation of one's own and others' emotions. Four of the six subscales in the WEIP-6 appear to correspond to the four facets of EI in the first dimension of the Mayer & Salovey 1990 model that deals with perception and appraisal of emotions. One of the remaining scales appears to measure ability to manage others' emotions. The last subscale is titled “use of emotion to facilitate thinking” but actually appears to tap regulation of one's own emotions rather than the use of emotions to enhance problem-solving, decision-making, and direct attention (e.g., “I am not very good at controlling my emotions when working with my team”).

SREI

Schutte et al. (1998) also developed an EI measure. The self-report of emotional intelligence (SREI) contains 33 items subdivided into four factors: optimism/mood regulation, appraisal of emotions, utilization of emotions and social skills. It is based upon the original model of EI proposed by Salovey and Mayer (1990). Hence, it does not measure the dimensions of EI in the revised model. Their original model included a dimension titled “use of emotion to facilitate performance” which referred to the ability of individuals to make use of their emotions by directing them toward constructive activities and personal performance. The revised EI model reconceived this dimension by specifically linking the use of emotion to cognitive processing and re-titled it “use of emotion to facilitate thinking”. This dimension includes the use of emotion to direct attention and to enhance decision-making. The revised model also includes a dimension called understanding emotions, which was not part of the original Salovey and Mayer (1990) model. The latter deals with understanding how emotions change, complex/mixed emotions, the meaning of emotions in context, etc. Note that the SREI is similar to the EIQ and EQ-i, described below, in the sense that it includes items which appear to tap constructs other than EI such as optimism and self-efficacy (e.g., “I expect I will do well on most things I try”, “When I am faced with a challenge, I give up because I believe I will fail”).

WLEIS

No study, as yet, has used Wong and Law's (2002) WLEIS measure to assess EI among training participants. Nevertheless, we describe the measure here and distinguish it from others. Law et al. (2004, p. 496) indicate that they developed the measure “according to the four dimensional

definition of EI as proposed by Davies et al. (1998)". In an earlier presentation of the method used to develop the measure presented in Wong and Law (2002), however, the researchers refer to the dimensions of EI in the 1990 Salovey and Mayer model. This is the same unrevised model upon which Schutte et al. (1998) relied in order to create the SREI. Consequently, the WLEIS is missing the same two dimensions of EI: understanding emotions and using emotions to facilitate thinking.

The WLEIS is comprised of 16 items subdivided into four scales, including appraisal of emotion in oneself; appraisal of others' emotions; regulation of emotion in oneself; and use of emotion to facilitate performance. Wong and colleagues (e.g., Wong & Law, 2002; Law et al., 2004) took great pains to differentiate and compare scores on the WLEIS from personality, IQ, powerlessness, and life satisfaction as well as assorted measures of EI-related phenomena (e.g. TMMS, ECQ, ACT, etc.). It appears, however, that the WLEIS and associated results they report deal with very few of the leadership skills one probably needs to demonstrate in interacting with others in an emotionally intelligent way.

Upon close inspection, there are several potential shortcomings in using the WLEIS to develop EI among leaders. Firstly, nearly all of the items deal with the individual him/herself without any reference to others. There are, for example, no items that refer to managing others' emotions. There are no items that involve the use of emotions to direct attention, facilitate decision-making, or enhance problem-solving. Rather, the items that deal with use of emotion include "I am a self-motivating person" and "I always tell myself I am a competent person". These items appear to measure general self-efficacy or self-esteem rather than emotional intelligence. Hence, the WLEIS is unlikely to be an ideal tool for assessing or training leaders with the following responsibilities: to manage others' emotions (e.g., calming a frightened group of employees); for detecting deception in others (e.g., getting a straight story about how the Hong Kong office is really doing); for promoting innovation (e.g., boosting enthusiasm about the development and use of new technology); or demonstrating other essential EI abilities.

ECI-2

Goleman, Boyatzis, and McKee (2002) developed a model based upon Goleman's (1995, 1998) original EI model along with results of research on management competencies using the SAQ (Boyatzis, Stubbs, & Taylor, 2002) and other instruments. The measure for this EI model is the Emotional Competence Inventory, Version 2 (ECI-2). It includes eighteen competencies arrayed in four clusters: self-awareness, self-management, social awareness, and social skills. The competencies include items such as: having a strong sense of one's self worth, optimism, readiness to act on opportunities, sensing others' development needs and bolstering their abilities, and nurturing instrumental relationships. Version 2 of the ECI has substantially fewer items than the ECI-1 (72 versus 110). It omits two scales (conscientiousness and communication), collapses two scales (building bonds and teamwork) into one and includes a scale (optimism) not in ECI-1. This EI model and the ECI-2 are somewhat similar to Bar-On's (1997) model of EI and the EQ-i in that many of the scales in the ECI-2 appear to measure products of EI such as establishing satisfying relationships and working cooperatively with others, but not EI per se.

EQ

Dulewicz and Higgs' (1999, 2000) model of EI and corresponding measure, the EQ, incorporates seven dimensions: conscientiousness, intuitiveness, influence, interpersonal sensitivity, motivation, resilience and self-awareness. This model is similar to Bar-On's (1997) EI model and measure in the sense that it includes what appear to be trait-based phenomena such as conscientiousness and defines EI very broadly by including constructs such as motivation. As such, it appears to be less than ideal for measuring EI.

EQ-i

Bar-On (1997) defines emotional intelligence as a multi-factorial array of interrelated emotional, personal, and social abilities that help people cope with daily demands. The EQ-i is comprised of 133 items subdivided into five scales and 15 subscales (Bar-On, 2004). The scales include: Intrapersonal, Interpersonal, Adaptation, Stress Management, and General Mood. The content of the items in the EQ-i appears to match the concepts included in Bar-On's model. For example, the interpersonal scale includes the following three subscales: to be aware of and understand how others feel; to establish mutually satisfying relationships and relate well with others; and to identify with one's social group and cooperate with others. The measure is similar to the ECI-2 in that many of the scales in the EQ-i do not appear to measure EI but rather products of emotional intelligence such as establishing satisfying relationships and working cooperatively with others.

The measurement of EI is still a somewhat controversial issue. In part, the controversy remains owing to the fact that there are actually four streams of research that exist in the field and there is little commonality between the various conceptualizations of the phenomenon. Moreover, there are distinct differences among various measures of EI described above. Note that the model and measure that one uses in training leaders and potential leaders to enhance their emotional intelligence makes a practical difference. Ideally, the model will define the objectives, content and method as well as the nature of results sought and achieved as a result of the training process. Note that if the model and measure used to assess EI among adults include trait-based phenomena such as conscientiousness, we would expect very little change to occur as a result of training. By definition, traits are relatively immutable. Inspection of Table 1 provides an indication of which indices used in training research do include these phenomena, seemingly unrelated constructs, or what appear to be products of EI.

Research on Emotional Intelligence Training

There are very few published reports of well-designed "clinical trials" of EI assessment and development tools. Overall, the twelve studies we unearthed do not provide solid evidence regarding EI training. They either omit key information concerning the training effort, or, there are significant limitations with one or more elements of the research design and conclusions reached. Below we provide a brief description of the conceptual model of EI employed, the measure that served as the criterion, participants, duration of training, nature of activities, experimental design, and outcome reported by researchers. We also selectively comment on

these studies where appropriate. Table 2 summarizes the data we unearthed concerning each of the twelve studies.

[See Table 2 below]

Meyer, Fletcher and Parker

Meyer, Fletcher, and Parker (2004) referenced the Mayer and Salovey (1997) EI model and used the MSCEIT among a set of 15 administrators and dentists employed at a multi-site dental practice. The training participants engaged in a one-day ropes and challenge course designed to enhance their intra- and interpersonal development. They completed the MSCEIT before and after the training. Although improvements in scores were recorded, the changes were not statistically significant. That is, Meyer et al. reported no significant pre-post test differences in overall EI or any of the dimensions. The researchers suggested that the results occurred for the following reasons: small sample size, high pretest scores which produced a ceiling effect, and/or that the training intervention was a one day program focused on enhancing intra and interpersonal development rather than a multi-day program focused on EI-specific abilities. Hence, we cannot make a judgment about the efficacy of EI training on the basis of this research. The results may reflect type II error owing to the nature and duration of training, the type and number of participants, or some other confounding variable.

Boyatzis, Stubbs and Taylor

The most frequently reported research concerned with EI training is that carried out at the Weatherhead School at Case Western Reserve. Here researchers relied upon Goleman's model of EI but used a surrogate measure of emotional intelligence, the Learning Skills Profile (LSP). This tool requires respondents to sort 72 cards measuring 12 competencies twice, first to estimate their competency and second to estimate the need for each of the competencies in their job. Boyatzis, Stubbs, and Taylor (2002) do not provide detailed information concerning the design and conduct of the training to which students were exposed during the program. They do, however, provide pre-/post-data to show that individuals in the MBA program reported increases in the following three clusters of competencies: cognitive, self-management, and relationship management. The latter included the following six elements: goal setting, action, initiative, leadership, helping and relationship. The authors indicate that these "make up what we call emotional intelligence competencies" (p. 150).

Others conducting research in the field who endorse a different model of emotional intelligence would likely disagree that goal setting, action, initiative, leadership, helping and relationship are actually elements of emotional intelligence. Thus, they would likely agree that the research demonstrated a pre-post increase in several emotional competencies but not an increase in emotional intelligence per se. Such researchers make a distinction between emotional intelligence, products of emotional intelligence, predictors of emotional intelligence and factors related to emotional intelligence. Sometimes these distinctions are not apparent in reports of research concerning emotional intelligence including research on the development of EI. Three other studies carried out within the framework of Goleman's (1998) model have been reported by Latif (2004), Clark, Callister, and Wallace (2003) and Sala (2002).

Latif

Latif (2004) designed and conducted a management skills course with the aim of improving personal, interpersonal, and group skills among doctor of pharmacy students. He measured the students' EI at the start and end of the course. The course required them to carry out a series of 20 self-assessment exercises, write a paper based on a journal which they kept throughout the semester, develop a plan to enhance their strengths and address their weaknesses, engage in student debates and develop, as a member of a team, a training module to enhance class members' expertise in a particular management skill such as time management, managing conflict, and motivating others. Latif references Goleman's model but did not use the ECI or ECI-2 to measure EI. Rather, he created an instrument to assess EI by adapting items included in a book written by Weisinger (1998). Latif indicates that the tool assessed five components of EI: self-awareness, self-regulation, motivation, empathy, and interpersonal skills. He reported that mean scores improved significantly upon post-test compared to the pre-test. Latif does not indicate how many students were involved and provides no evidence regarding the psychometric properties of the measure. It is clear from the comments of the students included in the paper that they thought the experience was worthwhile. However, the nature of the research, including the fact that there was no control group with which to evaluate the impact of the intervention and no information regarding the psychometric quality of the EI measure, makes it difficult to derive any firm conclusions about the impact of the management skills training on the development of EI from this study.

Clark, Callister, and Wallace

Clark et al. (2003) attempted to demonstrate that methods used to teach management skills to undergraduate students significantly improved their EI. They framed their research within Goleman's model but used several subscales from the EQ-map to measure emotional intelligence. The EQ-map is described in Cooper and Sawaf (1996). It appears to be a popular tool about which there is little or no published information concerning its reliability or validity (Zeidner, Matthews, & Roberts, 2004).

The vendor of the EQ-map indicates that the tool includes 23 scales (Essi Systems, Inc., 2006). Clark et al. (2003) extracted and in some cases modified nine scales from the set included in the map. They measured personal power, outlook, resilience, compassion, emotional self awareness and awareness of others, emotional expression, and interpersonal connections. Note that many of these appear to be either products of EI or bear striking resemblance to other constructs such as self-efficacy or optimism. The researchers reported increases in the following four subscales of the EQ-map for a set of 121 students taking a semester-long undergraduate management skills course versus a control group of 113 students taking other business courses: emotional self-awareness, emotional expression, resilience, and interpersonal connection. These results are noteworthy in light of the fact that the course was not specifically designed to enhance the emotional intelligence of students.

Sala

Sala (2002) reported on the results of a training program titled 'Mastering Emotional Intelligence'. Trainees participated in three workshops totaling five days. The first provided an introduction to EI. The second concentrated on EI competencies where the participants' self-assessments varied dramatically from those of others. The third provided further opportunity to work on EI behaviors. Pre- post-workshop assessments were obtained with the ECI, a precursor to the ECI-2. The participants included a sample of 20 Brazilian managers and consultants and a sample of 19 U.S. accountants. The post-workshop ratings showed significant improvement on eight out of 20 competencies (measured after an 8 month interval) and 19 out of 20 competencies (measured after a 14 month interval), respectively. Sala noted that increases in post-workshop ECI scores with both samples suggests that the interventions were effective at improving EI. However, he noted that good demographic data (e.g., age, years of service) to control for other confounding variables would have permitted him to make a stronger assertion about both the measure used and the training program. Moreover, he cautioned, "without an adequate control group it is difficult to isolate the impact of the intervention versus that of other variables that may have contributed to higher scores" (p. 24).

Moriarity and Buckley

Other research reported by Moriarity and Buckley (2003) describes a training effort involving students who worked in teams over the course of a semester to complete a set of tasks assigned by the instructor. The module consisted of 24 contact hours. They compared the pre-/post-scores of trainees (n = 80) versus a control (n = 80) group. Students received "lectorettes" concerning various topics such as conflict resolution and communication and then participated in groups for the remainder of the course either in a facilitated, experiential setting, or independently once a week. The researchers used the WEIP-5 (48 items subdivided into two scales--own and others' emotions) to measure emotional intelligence among the students operating in teams compared to control group individuals taking a lecture format organizational behavior class.

Moriarity and Buckley (2003) found that students in the experimental group reported a significant increase in their ability to deal with others' emotions and that there were significant pre-/post-course differences on both scales (own and others' emotions) for the scores of individuals in treatment group as assessed by peers. However, there was no significant difference between the experimental and control group in the level of EI achieved with the exception of one dimension. In contrast to their prediction, the control group scored significantly higher than the experimental group on the subscale titled 'application of emotions to facilitate thinking'. Since they report an alpha coefficient of just .45 for this subscale, it is possible that this result is a product of the subscale's low reliability.

Murray, Jordan, and Hall-Thompson

Murray, Jordan, and Hall-Thompson (2005) reported on an effort to determine whether training interventions focusing specifically on imparting relational and behavioral skills can lead to increased emotional intelligence. Employees (n = 206) in a large public sector organization engaged in four days of training in a program titled 'Journey into Leadership'. According to the researchers, the design of the training involved an experiential behavior modeling process and

was based upon eight theories that deal with self-awareness, leadership, personality, balancing work and non-work, perceptual positioning, rapport-building, trust-building, individual empowerment, and organizational culture. They cited the work of 11 individuals as sources of support for the training content and process including Covey (1990), Senge (1990), and Wheatley (1992) among others.

Murray et al. used the Workgroup Emotional Intelligence Profile (WEIP-6) to measure EI. They found a significant difference in the pre-post scores of training participants on the total score, the scales, and each of the subscales. Although the WEIP-6 appears to measure only six to nine of 16 elements in the Mayer and Salovey (1997) model, this research suggests that EI can be increased through training which focuses on relational and behavioral skills.

Murray and Lawrence

Murray and Lawrence (2006) argue that an individual's emotional intelligence skills can only be altered through specifically targeted emotions training (EIT). They examined scores on the WEIP-6 for three groups comprised of employees from a large government organization. Two experimental groups (n = 62 and n = 163) completed the instrument before and after training. They received either an interpersonal skills (IST) or emotional intelligence (EIT) training intervention in between completing the emotional intelligence measure. The control group consisted of a subset of employees who did not undergo training, completed the instrument three times, and for whom the researchers had matched Time 1 through Time 3 scores (n = 99).

The researchers reported no significant change in the total WEIP-6 score or two scales (own vs. others' emotions) for the control group or for the group that received IST but a significant increase in the self-reported scores of individuals who participated in EIT. Unfortunately, they do not provide any information concerning the nature of training in which either of the experimental groups participated (duration, process, content, methods, etc.). They do, however, reference Murray, Jordan, and Hall-Thompson (2005) in which two studies are reported: the one described above in which participants underwent a four day training program titled 'Journey into Leadership' and another study in which participants (n = 48) underwent a day long interpersonal skills training program consisting of three sessions. It appears as though the latter program is the training in interpersonal skills to which Murray and Lawrence (2006) refer.

According to Murray et al. (2005), the interpersonal skills training (IST) consisted of a one day course with a half day follow-up two weeks later and covered three areas: supportive communication, conflict resolution, and goal setting. More specifically, it focused on the following: eight principles of supportive communication, the difference between functional and dysfunctional conflict, various conflict resolution styles, expectancy and goal setting theories, and the characteristics of effective goals. Participants were encouraged to set goals within the three areas to be achieved before the follow-up session two weeks later.

Murray et al. (2005) reported no significant difference between Time 1 and Time 2 scores from pre- to post-training two weeks later for the interpersonal skills training participants, or for the control group individuals (n = 161) who did not participate in training but completed the WEIP-6, twice, five months apart. This suggests that training in interpersonal skills will not yield

improvement in emotional intelligence. There are, of course, other possible explanations for these results and companion studies which compared IST and EIT including differences in training method and duration as well as the nature of participants and jobs they performed. It appears, for example, that the individuals who participated in the IST worked in lower employment seniority levels within the organization. They were on average older and included few females (mean = 41.6, 42.6% female vs. mean = 35.5, 55% female). However, it is difficult to tell if these differences account for the results since the researchers did not test for any significant differences across the various subsets of subjects.

Murray and Jordan

Murray and Jordan (2006) report on a training program conducted in a large public sector organization in which an experimental group (n = 163) received a two-day training intervention with half-day follow-up while a control group received no training. They measured emotional intelligence using the WEIP-6 (36 items collapsed into 2 scales) among participants in the training before and after the two and one-half day program and among individuals in the control group before and after nine months had elapsed. Although Murray and Jordan offered a range of ideas aimed at enhancing the emotional intelligence of individuals, they primarily described the focus of the training that occurred rather than methods, tools, or the sequence of activities carried out during the training intervention. Hence, exactly what transpired during the training program in terms of tools and methods used to enhance EI is unclear. In particular, it is somewhat ambiguous whether the training focused on building awareness, understanding, behavioral skills, or on the connection between EI and work group performance or other outcomes.

The researchers found no statistically significant difference on either of the WEIP-6 scales (own and others' emotions) between Time 1 and Time 2 (nine months later) for the control group. On the other hand, there was a significant difference for the individuals who participated in the 2.5 day training intervention. There are, of course, competing explanations for the results reported. For example, the researchers noted that the control group consisted of individuals from various levels, departments, and geographic locations in the organization so as to minimize any differences between the experimental and control groups but they do not provide any information on the job level, departments, or geographic locations of those who underwent training. They also indicated that the control group (mean = 40.4) was slightly younger than the treatment group (mean = 43) with many fewer females (32.9% vs. 42.9%, respectively). They do not, however, test for comparability of the samples (experimental vs. control). Nor do they discuss the possibility that the duration of the training and timing of pre-post EI measurement for the various subsets of employees played a role (2.5 days and nine months) in the results they obtained.

Murray and Jordan point out that the effect they found was small ($d = .17$) but nevertheless meaningful in light of the fact that the duration of training was just two and one-half days. Thus, this study together with other research reported by Murray, Jordan, and Hall-Thompson (2005), and Murray and Lawrence (2006) provide an indication that emotional intelligence (at least the two dimensions of EI in the Mayor and Salovey (1997) model which the WEIP-6 appears to measure) can be increased through emotions-focused training.

Jaeger

Jaeger (2003) used Bar-On's (1997) definition of EI and the EQ-i for research on the EI of graduate students in public administration who were enrolled in a special section of a management course (n = 31), as well as the EI of students in four other sections of the course taught without an emphasis on EI (n = 119). The EI section included the following elements: readings on EI, attention to the human component of management during the first three weeks, case discussions regarding EI, a group project experience in addition to pre-post assessment of EI, and subsequent opportunity to develop strategies to increase their EI throughout the semester. He reported a significant treatment/control group differences in gains on the total EQ-i score and all five scales (general mood, stress management, adaptability, interpersonal, and intrapersonal). It appears from the results reported that the training had a powerful effect.

Dulewicz, Higgs, and Slaski

Dulewicz, Higgs, and Slaski (2003) found improvements in eight of 15 sub-scores on the EQ-i based on comparison of Time 1 and Time 2 scores of a training group and a control group. The nature of the training and individuals who participated are described in Bardzil and Slaski (2003) and in Dulewicz and Higgs (2004). The participants were 59 middle managers from a retail organization. The training occurred one day per week for four weeks. It focused on the development of self-awareness, detachment, regulation of emotions, recognition of emotion in others, and the impact of one's behavior on others. Training methods included lectures, discussion, videos, exercises, role-playing, diaries, and one-to-one feedback. Apparently, they used another index of emotional intelligence, the EIQ, to assess the efficacy of the training intervention as well. Using this instrument they found significant improvement following training on both the total EIQ score and five of seven elements in the Dulewicz and Higgs framework.

Both the EIQ and EQ-i are broad measures of emotional intelligence that incorporate personal characteristics such as flexibility, conscientiousness, and intuitiveness. These attributes, particularly conscientiousness, are typically considered traits, which by definition are stable features of an adult. Thus, it is odd that the training carried out by Jaeger (2003) and by Dulewicz et al. (2003) produced significant change in participants' emotional intelligence as indexed by these measures.

Mausolff, Bringman, Martinez, and Paggi

Mausolff et al. (2006) endeavored to determine whether a humanistic-experiential approach to training in emotional intelligence would yield an increase in EI. Participants in the treatment condition (n = 25) included frontline staff and their supervisors in a medium sized California city and a set of graduate students in a school counseling program. The control group (n = 20), which did not receive training, was comprised of professional staff in another department in that city and graduate students in a public administration program. The researchers describe the methods and activities in which subjects in the treatment group participated, including listing feeling words (name and identify); role play situations; active listening exercises; discussion of norms of emotional self-expression; listing of common irrational assumptions; developing and discussing written records of thoughts; and tactics for cooling down emotions and obtaining distance. In total, the training lasted 13.5 hours.

The researchers used a subset of questions from Schutte et al.'s (1998) measure of EI, the SREI, for purposes of assessing emotional intelligence. They identified groups of questions in the scale that appeared to measure self-awareness, managing emotions, empathy, and expressing emotions, and then monitored improvement of participants in each of the dimensions as well as the total SREI scale score. Apparently, participants responded to the questions with reference to their coworkers. The researchers reported a significant pre-post difference in EI among individuals in the treatment group but no such difference among individual in the control group. In examining pre-post differences among individuals in the treatment group, they found a significant difference in three of four dimensions: self-awareness, empathy, and managing emotions. However, the subscales that Mausolf et al. (2006) constructed were ad hoc in nature. Moreover, the researchers did not provide any evidence regarding their reliability or validity. As such, the results should be viewed with some caution.

Other EI Training and Research

Some researchers who have reported on training efforts have only measured emotional intelligence beforehand (e.g., Luskin et al., 2005) while others have only measured emotional intelligence after the training intervention (e.g., Jordan et al., 2002; Manring, 2004). This is obviously not adequate for purposes of making any judgments about the feasibility and effectiveness of EI training. Some have focused on a single aspect of EI such as emotion recognition accuracy (e.g., Elfenbein, 2006). Most published reports regarding the effectiveness of training as a means of enhancing emotional intelligence among employees do not provide any quantitative data at all to support the results described. They are wholly prescriptive in orientation, entirely anecdotal in nature, and/or completely atheoretical in terms of research foundation (e.g., Ashkanasy & Dasborough, 2003; Boyatzis & Van Oosten, 2003; Brown, 2003; Caruso & Wolfe, 2001; Cherniss & Goleman, 2001; Morris, Urbanski, & Fuller, 2005). In the following sections, we offer leadership development scholars a series of recommendations for overcoming the limitations described above and for improving the process of developing EI among leaders.

Recommendations

Theorists and researchers have repeatedly bemoaned the fact that there have been little or no published empirical studies examining whether EI can be trained (e.g., Day & Kelloway, 2004). This review demonstrates that at least twelve empirical studies have indeed been conducted despite reports to the contrary. Unfortunately, extant research does not provide sufficient information about whether it is feasible and/or how to enhance EI among leaders. Rather than reiterate our findings concerning training efforts and research conducted to date, we focus our discussion on both how to improve the process of developing EI among leaders and prospective leaders and research regarding those efforts. Additionally, we discuss factors which likely affect the need for, process of, and outcome realized from development efforts; and, further testing and revision of existing models and EI measures to increase relevancy for leadership development. We believe that any effort to enhance the EI of leaders through deliberate training should incorporate essential design elements from the field of leadership development.

Correspondingly, any evaluation of training that is conducted should incorporate elements of effective research design (Cook & Campbell, 1979; Stone-Romero, 2002).

Future Efforts to Develop the EI of Leaders

At a minimum, any effort to develop the emotional intelligence of leaders through deliberate training should concentrate on emotional intelligence rather than other related knowledge, skills, or abilities. Although this seems like an obvious and superfluous recommendation, those engaged in EI training have repeatedly sought to realize a significant EI increase among trainees in programs not specifically designed to enhance EI. That is, the training content and method did not match the training objective or vice versa. Correspondingly, investigators have carried out research to demonstrate that training, which does not (or does) specifically focus on EI development, will (or will not) produce significant EI gains among participants. We think trainers as well as researchers should abandon this line of investigation in favor of more compelling research questions and in favor of more pressing concerns about the design and conduct of training.

More compelling issues include: which individuals benefit from EI training and how to select such trainees; the magnitude of goals and expectations established for change; the duration of training necessary to produce any EI gain at all and that which yields a high level of expertise. It seems, for example, highly unlikely that training of extremely short duration (1-3 days) will yield any appreciable gain in EI given the nature of the construct and what we know about the development of expertise in any realm of activity whether it be golf, mathematics, parenting, art, or project management. For a discussion of the impact of establishing unrealistic goals concerning the likely speed, amount, ease and consequence of behavioral change, see Polivey and Herman (2002).

Other important concerns regarding the design and conduct of training include: the nature and sequence of activities that will enhance overall and specific dimensions of EI; assistance provided to trainees in the form of feedback and coaching; the criterion of interest (e.g., awareness, understanding, attitude toward, behavioral demonstration, etc.); and whether some elements of EI are easier to train than others (e.g., detecting deception, remaining open to feelings, using one's emotions to enhance one's own and others' creativity, etc.). Furthermore, we believe that future efforts to examine the development of EI among leaders should address the conditions that maximize retention and use of new attitudes, skills or behaviors; contextual conditions that obviate or exacerbate the need for training; the extent to which training and results are situation specific requiring a measurement tool that's situation specific, the experience of trainees as they undergo the process, the role of intrinsic and extrinsic rewards, potential obstacles as well as many other considerations. The field of leadership development is a relatively mature one. We know a great deal about application of training and development principles to help ensure that leadership development is designed and delivered effectively (e.g., Collins & Holton, 2004; Day, 2001). It would be worthwhile to both pay attention to and use findings from the science of training and development in examining the need for, process of, and results achieved from EI development efforts (Salas & Kosarzycki, 2003).

Future Research on EI Training Efforts

Effective research design requires investigators to consider a range of methodological issues, including the match between the theoretical model, training objectives and method of measuring training outcomes; the quality of the tool used to measure training effects; the number and nature of participants; use of a control group; measurement of and control for possible confounding variables as well as a host of other research elements. Clearly, none of these design elements are exotic. Specific to leadership training and development, several reviews and meta-analyses (e.g., Collins & Holton, 2004; Day, 2001; Kur & Bunning, 2002) have concluded that most organizations fail to empirically evaluate program implementation and outcomes, which robs them of the opportunity to diagnose problem areas or needed programmatic changes. The application of theory-driven evaluative methods, which model the conceptual links among program components and outcomes as well as key mediating and moderating variables, would allow training executives and program developers to diagnose needed changes (e.g., Kirkpatrick & L'Aillier, 2004; Chen, 1990). Given the paucity of evaluative research on leadership training and development practices, future research should focus on designing evaluation studies that assess changes in knowledge (learning), behavior (expertise), and results (performance) (e.g., Collins & Holton, 2004; Kirkpatrick & Kirkpatrick, 2005).

It would be useful as well to supplement well-designed empirical research with high quality research of a qualitative nature as opposed to anecdotal reports regarding EI training efforts (e.g., Reilly, 2005). It would be particularly beneficial if those engaged in training and research provided a detailed description of what occurred during the process of training rather than treating the training process as a mysterious black box between Time 1 and Time 2 measurement of EI. Lack of information concerning the process of training simply fuels skepticism about whether and how EI training actually produces the gains reported in studies.

There are a number of factors that likely affect the need for, process of, and outcome realized from EI development efforts. We especially encourage research which examines characteristics that might accelerate EI development including: those of trainees (e.g., EI development self-efficacy, openness to experience); the nature of jobs they perform (e.g., highly interdependent, involving significant emotional labor); organizations in which they work (e.g., undergoing radical or incremental change, family-operated versus professionally managed); industry (e.g., newly emerging, subject to considerable regulatory oversight); and features of the business environment (e.g., cultural values particularly regarding emotional expressiveness, nature of the market served, etc.).

Ciarrochi, Chan, and Caputi (2000, p. 540) indicate that “in general, various measures (of EI) cover ... four distinct areas: emotion perception, regulation, understanding and utilization”. It is apparent, however, from the present review of all the measures used to assess EI among training participants that most measures do not actually assess each of these areas. We recommend abandoning or significantly revising any existing measure of EI that does not assess the major dimensions of EI (Mayer & Salovey, 1997), particularly those which omit the use of emotions to facilitate thinking (e.g., direct attention, problem-solve, etc.). There are obvious problems with such measures in terms of construct validity (McEnrue & Groves, 2006), apart from any problems that may exist in terms of reliability or their utility for purposes of training and development applications (e.g., self-report, social desirability, face validity, value in establishing training objectives and measuring results). As noted in the introduction, emotions influence both

what people think and how people think. They have both an immediate impact on individuals and a long-term impact by creating the ongoing mood in which people operate. Hence, any tool used to measure EI among leaders and prospective leaders for purposes of training needs to assess the use of emotions to facilitate thinking (problem-solving, decision-making, etc.).

The field of EI training has a less than stellar reputation owing to the number of training purveyors that exist but absence of *high quality* empirical evidence regarding the efficacy of the training they provide. This review outlines existing empirical research regarding EI training. It is apparent that there is a lot of opportunity to improve upon what has been done and to advance our understanding of EI development among employees as a whole and particularly among leaders.

References

- Ashkanasy, N., & Dasborough, M. (2003). Emotional awareness and emotional intelligence in leadership teaching. *Journal of Education for Business, 1*, 18-22.
- Ashkanasy, N., & Daus, C. (2005). Rumors of the death of emotional intelligence in organizational behavior are vastly exaggerated. *Journal of Organizational Behavior, 26*, 441-452.
- Barbuto, J.E., & Burbach, M.E. (2006). The emotional intelligence of transformational leaders: A field study of elected officials. *Journal of Social Psychology, 146*(1), 51-64.
- Bardzil, P., & Slaski, M. (2003). Emotional intelligence: Fundamental competencies for enhanced service provision. *Managing Service Quality, 13*(2), 97-104.
- Bar-On, R. (1997). *Bar-On emotional quotient inventory: Technical manual*. Toronto: Multi-Health Systems, Inc.
- Bar-On, R. (2004). The Bar-On emotional quotient inventory (EQ-i): Rationale, description and psychometric properties. In G. Geher (Ed.) *Measuring emotional intelligence: Common ground and controversy* (pp.115-145). Hauppauge, N.Y.: Nova Science Publishers, Inc.
- Bommer, W., Rich, G., & Rubin, R. (2005). Changing attitudes about change: Longitudinal effects of transformational leader behavior on employee cynicism about organizational change. *Journal of Organizational Behavior, 26*(7), 733-753.
- Boyatzis, R., Stubbs, E., & Taylor, S. (2002). Learning cognitive and emotional intelligence competencies through graduate management education. *Academy of Management Learning and Education, 1*(2), 150-162.
- Boyatzis, R., & Van Oosten, E. (2003). A leadership imperative. *Ivey Business Journal, 67*, 1-6.
- Brown, R.B. (2003). Emotions and behavior: Exercises in emotional intelligence. *Journal of Management Education, 27*, 122-134.
- Brown, F.W., & Moshavi, D. (2005). Transformational leadership and emotional intelligence: A potential pathway for an increased understanding of interpersonal influence. *Journal of Organizational Behavior, 26*, 867-871.
- Caruso, D., & Wolfe, C. (2001). Emotional intelligence in the workplace. In J. Ciarrochi & J. Fargas (Eds.) *Emotional intelligence in everyday life: A scientific inquiry* (pp.150-167). New York: Psychology Press.
- Chen, H. (1990). *Theory-driven evaluations*. Newbury Park, CA: Sage.
- Cherniss, C., & Goleman, D. (2001). Training for emotional intelligence. In C. Cherniss & D.

- Goleman (Eds.). *The emotionally intelligent workplace* (pp. 209-233). San Francisco: Jossey-Bass.
- Ciarrochi, J.V., Chan, A.Y.C., & Caputi, P. (2000). A critical evaluation of the emotional intelligence construct. *Personality and Individual Differences*, 28, 539-561.
- Clark, S.C., Callister, R., & Wallace, R. (2003). Undergraduate management skills courses and students' emotional intelligence. *Journal of Management Education*, 27(1), 3-23.
- Collins, D. & Holton, E. (2004). The effectiveness of managerial leadership development programs.: A meta-analysis of studies from 1982-2001. *Human Resource Development Quarterly*, 15(2), 217-248.
- Cook, T., & Campbell, D. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Boston: Houghton Mifflin.
- Cooper, R. and Sawaf, A. (1996). *Executive EQ*. New York: Berkley Publishing.
- Covey, S. (1990). *The seven habits of highly effective people*. New York: Simon and Schuster.
- Daus, C., & Ashkanasy, N. (2005). The case for an ability-based model of emotional intelligence in organizational behavior. *Journal of Organizational Behavior*, 26, 453-466.
- Davies, M., Stankov, L., & Roberts, R.D. (1998). Emotional intelligence: In search of an elusive construct. *Journal of Personality and Social Psychology*, 75(4), 989-1015.
- Day, D. (2001). Leadership development: A review in context. *Leadership Quarterly*, 11(4), 581-613.
- Day, A., & Kelloway, E. (2004). Emotional intelligence in the workplace: Rhetoric and reality. In G. Geher (Ed.) *Measuring emotional intelligence: Common ground and controversy* (pp.219-241). Hauppauge, N.Y.: Nova Science Publishers, Inc.
- Dulewicz, V., & Higgs, M. (1999). Can emotional intelligence be measured and developed? *Leadership & Organization Development Journal*, 20, 242-252.
- Dulewicz, V., & Higgs, M. (2000). Emotional intelligence: A review and evaluation study. *Journal of Managerial Psychology*, 15(4), 341-372.
- Dulewicz, V., & Higgs, M. (2004). Can emotional intelligence be developed? *International Journal of Human Resource Management*, 15, 95-111.
- Dulewicz, V., Higgs, M., & Slaski, M. (2003). Measuring emotional intelligence: Content, construct and criterion-related validity. *Journal of Managerial Psychology*, 18(5), 405-420.
- Elfenbein, H. (2006). Learning in emotion judgments: Training and the cross-cultural understanding of facial expressions. *Journal of Nonverbal Behavior*, 30(1), 21-36.
- Essi Systems, Inc. (2006, April 26). Emotional intelligence solutions from Essi Systems. Retrieved June 27, 2006, from <http://www.essisystems.com/solutions/eq.php3>.
- Forgas, J., & George, J. (2001). Affective influences on judgments and behavior in organizations: An information processing perspective. *Organizational Behavior and Human Decision Processes*, 86(1), 3-34.
- Goleman, D. (1995). *Emotional intelligence*. New York: Bantam Books.
- Goleman, D. (1998). *Working with emotional intelligence*. New York: Bantam.
- Goleman, D., Boyatzis, R., & McKee, A. (2002). *Primal leadership: Realizing the power of emotional intelligence*. Boston: Harvard Business School Press.
- Huy, Q. (2002). Emotional balancing of organizational continuity and radical change: The contribution of middle managers. *Administrative Science Quarterly*, 47, 31-69.

- Jaeger, A. (2003). Job competencies and the curriculum: An inquiry into emotion in graduate professional education. *Research in Higher Education*, 44(6), 615-639.
- John, O., & Gross, J. (2004). Healthy and unhealthy emotion regulation: Personality processes, individual differences, and life span development. *Journal of Personality*, 72(6), 1301-1333.
- Jordan, P. Personal communication, May 16, 2006.
- Jordan, P.J., Ashkanasy, N.M., Hartel, C.E., & Hooper, G. (2002). Workgroup emotional intelligence: Scale development and relationship to team process effectiveness and goal focus. *Human Resources Management Review*, 12(2), 195-214.
- Kirkpatrick, D., & Kirkpatrick, J. (2005). *Evaluating training programs: The four levels*. 3rd ed. San Francisco: Berrett-Koehler.
- Kirkpatrick, D., & L'Allier, J. (2004, June). Evaluation as a strategic tool. *Chief Learning Officer*, 30-33.
- Kur, E., & Bunning, R. (2002). Assuring corporate leadership for the future. *Journal of Management Development*, 21(9), 761-779.
- Latif, D. (2004). Using emotional intelligence in the planning and implementation of a management skills course. *Pharmacy Education*, 4(2), 81-89.
- Luskin, F., Aberman, R., & DeLorenzo, A. (2005). The training of emotional competence in financial advisors. *Issues and Recent Developments in Emotional Intelligence*. Retrieved May 14, 2006, from <http://eiconsortium.org>.
- Manring, S. (2004, April). *Using academic service-learning in a business school curriculum to foster development of emotional intelligence*. Paper presented at the AAC&U conference, Chicago, IL.
- Mausolff, C., Bringman, N., Martinez, E., & Paggi, R. (2006, August). *Humanistic-experiential approach to training in emotional intelligence*. Paper presented at the Academy of Management meeting, Atlanta, GA.
- Mayer, J., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds.) *Emotional Development and Emotional Intelligence: Educational Implications* (pp. 3-24). New York: Basic Books.
- Mayer, J.D., Salovey, P., & Caruso, D.R. (2003). Measuring emotional intelligence with the MSCEIT V2.0. *Emotion*, 3(1), 97-105.
- McEnrue, M.P., & Groves, K. (2006). Choosing among tests of emotional intelligence: What is the evidence? *Human Resource Development Quarterly*, 17(1), 9-42.
- Meyer, B., Fletcher, T., & Parker, S. (2004). Enhancing emotional intelligence in the health care environment: An exploratory study. *Health Care Manager*, 23(3), 225-234.
- Moriarity, P., & Buckley, F. (2003). Increasing team emotional intelligence through process. *Journal of European Industrial Training*, 27, 98-110.
- Morris, J.A., Urbanski, J., & Fuller, J. (2005). Using poetry and the visual arts to develop emotional intelligence. *Journal of Management Education*, 29(6), 888-904.
- Murray, J. Personal communication, May 16, 2006.
- Murray, J., & Jordan, P. (2006). *Improving emotional intelligence and performance through emotions focused training interventions*. Paper to be presented at the Academy of Management meeting, Atlanta, GA.

- Murray, J., Jordan, P., & Hall-Thompson, S. (2005). *Can emotional intelligence be increased through training? An experimental study*. Paper presented at the Academy of Management Meeting, Honolulu, HI.
- Murray, J., & Lawrence, S. (2006). *Using a self-report measure to determine whether emotional intelligence can be trained*. Paper to be presented at the Academy of Management Meeting, Atlanta, GA.
- Polivy, J., & Herman, C. (2002). If at first you don't succeed: False hopes of self-change. *American Psychologist*, 57(9), 677-689.
- Reilly, P. (2005). Teaching law students how to feel: Using negotiations training to increase emotional intelligence. *Negotiation Journal*, 21(2), 301-314.
- Rubin, R., Munz, D., & Bommer, W. (2005). Leading from within: The effects of emotion recognition and personality on transformational leadership behavior. *Academy of Management Journal*, 48(5), 845-858.
- Sala, F. (2002). *Emotional competence inventory technical manual*. Philadelphia: HayGroup.
- Salas, E. & Kosarzycki, M. (2003). Why don't organizations pay attention to (and use) findings from the science of training. *Human Resource Development Quarterly*, 14(4), 487-491.
- Salovey, P., & Mayer, J.D. (1990). Emotional intelligence. *Imagination, Cognition, and Personality*, 9(3), 185-211.
- Schutte, N.S., Malouff, J.M., & Hall, L.E. (1998). Development and validation of a measure of emotional intelligence. *Personality and Individual Differences*, 25(2), 167-177.
- Senge, P. (1990). *The fifth discipline*. Sydney: Random House.
- Smollan, R. (2006, August). *Emotional intelligence and organizational change*.

Paper presented at the Academy of Management Meeting, Atlanta, GA.

- Stone-Romero, E. (2002). The relative validity and usefulness of various empirical research designs. In S. Rogelberg (Ed.) *Handbook of research methods in industrial and organizational psychology*. (pp. 77-98). Malden, MA: Blackwell Publishing.
- Weisinger, H. (1998). *Emotional intelligence at work: The untapped edge for success*. San Francisco: Jossey-Bass.
- Wheatley, M. (1992). *Leadership and the new science*. San Francisco: Berrett-Koehler.
- Wong, C., & Law, K.S. (2002). The effects of leader and follower emotional intelligence on performance and attitude: An exploratory study. *Leadership Quarterly*, 13(3), 243-274.
- Zeidner, M., Matthews, G., & Roberts, R.D. (2004). Emotional intelligence in the workplace: A critical review. *Applied Psychology: An International Review*, 53(3), 371-399.

Table 1: Summary of EI Measures Utilized in Training Studies

EI Measure	Theoretical Model	EI Dimensions/ Scales	Empirical EI Training Research	Comments
MSCEIT	Salovey & Mayer (1990; 1997)	<ul style="list-style-type: none"> ▪ Perceiving, appraising, & expressing emotions ▪ Emotional facilitation of thinking ▪ Understanding emotions ▪ Regulating emotions 	Meyer, Fletcher, & Parker (2004)	Each dimension has four elements
LSP	Goleman (1995; 1998) & Boyatzis, Goleman, & Rhee (1999)	<ul style="list-style-type: none"> ▪ Leadership ▪ Relationship ▪ Helping ▪ Sense-making ▪ Information-gathering ▪ Information analysis ▪ Theory-Building ▪ Quantitative ▪ Technology ▪ Goal-setting ▪ Action ▪ Initiative 	Boyatzis, Stubbs, & Taylor (2002)	Six dimensions (goals setting, action, initiative, leadership, helping and relationship) considered emotional intelligence competencies
Ad Hoc EI Measure	Weisinger (1998)	<ul style="list-style-type: none"> ▪ Self-awareness ▪ Self-regulation ▪ Motivation ▪ Empathy ▪ Interpersonal skills 	Latif (2004)	No evidence of the measure's psychometric properties
EQ-Map	Cooper & Sawaf (1997)	<ul style="list-style-type: none"> ▪ Personal power ▪ Outlook ▪ Resilience ▪ Compassion ▪ Emotional self-awareness ▪ Emotional awareness of others ▪ Emotional expression ▪ Interpersonal connections 	Clark, Callister, & Wallace (2003)	Clark et al. included 9 of 23 EQ-map scales in their study Popular tool with little or no published information on psychometric properties
ECI-2	Goleman (1995; 1998) & Boyatzis, Goleman, & Rhee (1999)	<ul style="list-style-type: none"> ▪ Self-awareness ▪ Self-management ▪ Social awareness ▪ Social skills 	Sala (2002)	Several EI clusters & competencies tap products of EI or traits related to but distinct from EI
WEIP-5	Salovey & Mayer (1990)	<ul style="list-style-type: none"> ▪ Ability to deal with own emotions ▪ Ability to deal with others' emotions 	Moriarty & Buckley (2003)	Group-based EI measure Items appear to measure only two Salovey & Mayer (1997) EI dimensions: perception & appraisal of emotions and regulation of emotions

Table 1: Summary EI Measures Utilized in Training Studies (Cont.)

EI Measure	Theoretical Model	EI Dimensions/ Scales	Empirical EI Training Research	Comments
WEIP-6	Salovey & Mayer (1990)	<ul style="list-style-type: none"> ▪ Ability to deal with own emotions ▪ Ability to deal with others' emotions 	Murray & Jordan (2006) Murray, Jordan, & Hall-Thompson (2005) Murray & Lawrence (2006)	<p>Group-based EI measure</p> <p>Items appear to measure only two Salovey & Mayer (1997) EI dimensions: perception & appraisal of emotions and regulation of emotions</p>
EQ-i	Bar-On (1997)	<ul style="list-style-type: none"> ▪ Intrapersonal ▪ Interpersonal ▪ Adaptation ▪ Stress Management ▪ General Mood 	Jaeger (2003) Dulewicz, Higgs, & Slaski (2003)	Several EI scales tap products of EI or traits related to but distinct from EI
EIQ	Dulewicz & Higgs (1999; 2000)	<ul style="list-style-type: none"> ▪ Self-awareness ▪ Emotional resilience ▪ Motivation ▪ Interpersonal sensitivity ▪ Influence ▪ Intuitiveness ▪ Conscientiousness 	Dulewicz, Higgs, & Slaski (2003)	Several EI scales tap traits related to but distinct from EI or products of EI as well as non-EI constructs
SREI	Salovey & Mayer (1990)	<ul style="list-style-type: none"> ▪ Optimism/ mood regulation ▪ Appraisal of emotions ▪ Utilization of emotions ▪ Social skills 	Mausolff et al. (2006)	<p>Mausolff et al. selected subset of questions from SREI (Schutte et al., 1998) to create ad hoc measure of self-awareness, managing emotions, empathy and expressing emotions.</p> <p>No evidence provided regarding reliability or validity</p>
WLEIS	Salovey & Mayer (1990)	<ul style="list-style-type: none"> ▪ Self-emotion appraisal ▪ Others' emotion appraisal ▪ Use of emotion ▪ Regulation of emotion 	N/A	<p>No study, as yet, has used the WLEIS (Wong & Law, 2002) to assess EI training and development.</p> <p>Items do not appear to tap two EI dimensions: understanding emotions and using emotions to facilitate thinking.</p> <p>Most items deal only with self without reference to others.</p>

Table 2: Summary of EI Training Study Results

Study	Sample	Training Treatment	Training Duration	Results	Limitations
Meyer, Fletcher, & Parker (2004)	Administrators & Dentists	Ropes and challenge course	1 day	No significant pre-/posttest differences	Small sample; limited training length, intensity
Boyatzis, Stubbs, & Taylor (2002)	MBA Students	Not reported	Length of MBA program	Significant posttest increases in cognitive, self-management, & relationship management	Competencies include products of EI, others devoid of emotional content
Latif (2004)	Doctoral Pharmacy Students	Self-assessment exercises, journal writing, self-development plan, and debates	Graduate course	Significant post-test increases in EI scores	No evidence of EI measure's psychometrics; no control group
Clark, Callister, & Wallace (2003)	Undergraduate Students	Management skills course	Semester	Posttest increases in emotional self-awareness, expression, resilience, & interpersonal connection	No evidence of EI measure's psychometrics
Sala (2002)	Brazilian Managers & US Accountants	Three workshops on: awareness, individual competencies and change	5 days	Posttest EI competency increases: 8 of 20 for Brazilian Managers & 19 of 20 for US Accountants	No control group comparisons
Moriarity & Buckley (2003)	Undergraduate Students	Lectures and instructor-facilitated experiential exercises	24 contact hours	No treatment/control group EI differences	Low (.45) alpha coefficient for one EI scale
Murray, Jordan, & Hall-Thompson (2005)	Public Sector Employees	Experiential behavior modeling focused on relational and behavioral skills	4 days	Significant pre-/posttest differences for overall and two scales	Measure's applicability to Salovey & Mayer (1997) model
Murray & Lawrence (2006)	Government Employees	Interpersonal skills training consisting of supportive communication, conflict resolution, & goal-setting*	1 day*	Significant change in treatment group pre-/posttest overall EI and two scales	Limited description of nature of training

Note: *Murray & Lawrence (2006) did not report training content or duration, but reference a Murray, Jordan, and Hall-Thompson (2005) study in which 48 participants underwent three interpersonal skills training sessions during a one-day program.

Table 2: Summary of EI Training Study Results (Cont.)

Study	Sample	Training Treatment	Training Duration	Results	Limitations
Murray & Jordan (2006)	Public Sector Employees	Not reported	2.5 days	Significant change in treatment group pre-/posttest overall EI and two scales	Limited description of nature of training; nonequivalent groups
Jaeger (2003)	Public Admin. Graduate Students	EI readings, material on human component of mgmt, case discussions, group project experience	Graduate course	Significant change in treatment group overall EI and five scales	EI scales composed largely of traits
Dulewicz, Higgs, & Slaski (2003)	Retail Middle Managers	Lectures, class discussion, videos, exercises, role-playing, diaries, and one-to-one feedback.	One day per week for four weeks	Significant change in 8 of 15 treatment group EQi scales and 5 of 7 EIQ scales	EI scales composed largely of traits
Mausolff et al. (2006)	Gov. Employees & Graduate Students	Listing feeling words, role plays, active listening exercises, class discussion, listing irrational assumptions, and discussing tactics for cooling down emotions.	13.5 hours	Significant treatment group posttest changes in self-awareness, empathy, and managing emotions	No evidence of EI measure's psychometrics