



## Coping mediates the relationship between emotional intelligence (EI) and academic achievement

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### ABSTRACT

Research examining the relationships between performance measures of emotional intelligence (EI), coping styles, and academic achievement is sparse. Two studies were designed to redress this imbalance. In each of these studies, both EI and coping styles were significantly related to academic achievement. In Study 1, 159 community college students completed the Mayer–Salovey–Caruso Emotional Intelligence Test (MSCEIT) and problem-focused, emotion-focused, and avoidant coping scales. Collectively, the coping variables significantly mediated the relationship between EI and grade point average (GPA) for Emotion Perception, Emotion Facilitation of Thought and Emotion Management (but not for Emotional Understanding). Problem-focused coping was the only single significant mediator, mediating the relationship between emotion management and GPA (but not other branches and GPA). In Study 2, 293 middle school students completed the Situational Test of Emotion Management for Youths (STEM-Y) and scales measuring the same three coping strategies. In this study, the coping variables again significantly mediated the relationship between emotion management and GPA. Once again, problem-focused coping was a significant mediator. Collectively, these results suggest that better educational outcomes might be achieved by targeting skills relating to emotion management and problem-focused coping.

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### 1. Introduction

The idea that academic achievement is related to social and emotional adjustment to the school environment has recently received considerable attention from the fields of economics, social and emotional learning, and positive psychology (see e.g., Goetz, Frenzel, Pekrun, & Hall, 2005; Kyllonen, Lipnevich, Burrus, & Roberts, in press; Zeidner, Matthews, & Roberts, 2009). Educational success requires self-regulated learning practices, sustained effort, managing time demands and academic stress, as well as successfully navigating the social landscape. Two constructs hypothesized to affect academic achievement through these social and motivational pathways are emotional intelligence (EI) and coping styles. The initial focus of research in this area was on the relationship between EI and academic achievement (e.g., Barchard, 2003) and between EI and coping (e.g., Bastian, Burns, & Nettlebeck, 2005). More recent studies of EI in educational settings have begun to explore the ways in which cognitive ability, EI, coping, and related

variables interact to influence performance outcomes (e.g., Hogan et al., 2010).

The current study contributes to this relatively unexplored area by testing a model that depicts coping as a mediator of the EI-academic achievement relationship. The somewhat sparse research linking coping and EI with academic achievement has employed self-report Likert-type rating scales of EI, most often administered to first-year psychology participants (see Zeidner, Matthews, & Roberts, 2006). The focus on one method of measurement (Likert-type rating scales) may restrict the generality of findings because relations involving EI vary markedly depending on how EI is measured (Mayer, Roberts, & Barsade, 2008). For this reason, the current research uses two alternatives to Likert-type self-ratings: (a) a well-known set of EI ability scales – the Mayer–Salovey–Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, Caruso, & Sitarenios, 2003) and (b) a situational judgment test assessing emotion management – the Situational Test of Emotion Management for Youths (STEM-Y; MacCann, Wang, Matthews, & Roberts, 2010). If the mediation model replicates across the two different measures of emotion management, this constitutes evidence that findings are not instrument-specific. Further, in the current paper we attempt to replicate findings in two very different and under-studied populations, namely, students in vocational

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education training (Study 1) and eighth-graders completing middle school (Study 2). The aim is to generalize findings across different populations as well as different instruments.

There is potentially both theoretical and applied knowledge to be gained by considering the role of EI and coping as essential mechanisms through which students at all levels adapt to challenging learning environments. The literature review that follows deals firstly with the definition of EI and some important considerations related to its measurement. The nature of coping is then described, along with conjectures from the available literature about the likely association between EI and different coping styles. The final section of this introduction proposes a mediation model that captures the relations among EI, coping, and academic achievement.

## 2. Emotional intelligence and its measurement

The most commonly accepted theoretical model of EI is the four-branch hierarchical model (e.g., Mayer et al., 2008). In this model, EI consists of four subcomponent branches: (a) *emotion perception* (the perception and expression of emotions); (b) *emotional facilitation of thought* (the knowledge and skills needed to use emotional states to facilitate problem-solving); (c) *emotional understanding* (an awareness of how emotions may combine, and how emotions relate to situations and time courses); and (d) *emotion management* (the strategic management of one's own and others' emotions, involving the ability to ameliorate negative emotions and maintain positive emotions). There is a proposed hierarchy among these four branches, such that abilities involved in the higher branches (understanding and management) are dependent on abilities in the lower branches (perception and facilitation). In fact, the lower two branches (perception and facilitation) are collectively known as the "Experiential EI" area, which is concerned with a person's direct experience of the world, and involves basic information processing of surrounding emotional stimuli. In contrast, the higher two branches (emotional understanding and emotion management) are collectively known as the "Strategic EI" area, which involves more complex, considered, and strategic use of the emotional information, as opposed to basic perceptual processing (Mayer et al., 2008).

The concepts within the EI framework bear some similarity to constructs from other fields. For example, Gross' (1998) research on emotion regulation has a strong conceptual link to the EI component of emotion management (Mayer et al., 2008; Zeidner et al., 2009). Further, much of the work on emotion recognition ability (e.g., Matsumoto et al., 2000; Scherer, Banse, & Wallbott, 2001) has strong conceptual links to the EI component of emotion perception. Despite these clear conceptual links, empirical and theoretical research linking these different domains is in its infancy (Roberts et al., 2006). With additional research, an empirical mapping between domains should become possible, such that findings and models can be integrated across different research domains.

Mayer, Salovey, and Caruso (2000) delineate different measurement models of EI into two broad varieties: (a) *ability EI*, which is assessed as maximum performance, shows empirical relationships to intelligence, and measured by objective tests such as the Mayer–Salovey–Caruso Emotional Intelligence Test (MSCEIT; Mayer et al., 2003); and (b) *trait EI*, which is assessed as typical performance, relates to the personality domain and relies heavily upon Likert-type rating scales. Because these different approaches are only weakly related, the relationship between EI and constructs such as coping and academic achievement depends critically upon whether EI is measured using "ability EI" or "trait EI" tests (e.g., Barchard, 2003; Matthews, Zeidner, & Roberts, 2003). Indeed, self-report rating scale measures of EI tend to correlate with other self-report

rating scales, such as personality, whilst objective measures of EI tend to correlate with cognitive performance (Bastian et al., 2005).

The fact that the two EI measurement paradigms can give rise to differing validity coefficients has implications for any study that seeks to ascertain the role of EI within a nomological network because the strength of the relations depends on the particular method used to measure EI. The vast majority of research linking EI and coping has used rating scale measures rather than performance measures of EI. Using rating scales to measure both EI and coping may over-estimate the relationship of EI with coping, but under-estimate the relationship between EI and achievement, since self-ratings measure self-perceptions of one's emotional skills rather than the skills themselves (e.g., Zeidner et al., 2006). The current study is the first to consider whether coping mediates the relationship between EI and achievement using performance measures of EI.

## 3. Coping processes

Current transactional models of stress view coping as a process that intervenes between the appraisals of stressors (both personal and environmental) and the immediate and long-term effects of the stressor, including emotional states, chronic physiological and psychological conditions, and situational outcomes (Lazarus, 1999). Coping has been defined as a person's efforts to remove, reduce, or manage threatening events or situations that are appraised as challenging or stressful (Lazarus & Folkman, 1984). Cognitive appraisals of potentially stressful stimuli are critical in this coping process, as are the resulting emotions. Ideally, *adaptive* coping should lead to a permanent problem resolution with no additional residual outcomes, while maintaining a positive emotional state.

In the early formulations of stress and coping theory (Lazarus & Folkman, 1984), a distinction was made between problem-focused coping processes (directed at altering the environmental demands placed on the person) and emotion-focused coping processes (involving attempts to regulate emotions surrounding the stressful encounter). The latter term is potentially confusing because, as already acknowledged, emotions are central to coping processes. The key word is "focus" and both terms (problem-focused coping and emotion-focused coping) capture individual differences in characteristic ways of dealing with stress. They are also known as ways of coping or styles of coping and they have implications for performance outcomes (Skinner & Zimmer-Gembeck, 2007).

Theorists have frequently emphasized the positive effects of problem-focused coping on psychological outcomes, especially when the threatening situation can be ameliorated by the person's responses (Zeidner & Saklofske, 1996). In fact, this form of coping is preferred by most people and is highly effective in stress reduction, providing a sense of mastery over the problem (Zeidner & Saklofske, 1996). Emotion-focused coping, which may help in maintaining emotional balance by effectively channeling and venting negative emotions or building up positive emotions, is not generally so effective. An adaptive response to remediable situations still requires problem-focused activities in order to effectively remove or ameliorate the threat. However, coping effectiveness is both context-specific and related to the specific encounter (Folkman & Moskowitz, 2004), meaning that what works in one situation may not work in another. Emotion-focused coping may in fact be the strategy of choice when the source of stress is unclear, little can be done to eliminate the stressor, or there is a lack of knowledge about how to modify the stressor (Lazarus, 1999). A third category introduced in the literature (Parker & Endler, 1996) – avoidant coping – reflects negative responses to stressors such as denial, drug taking, and mental disengagement. This form of coping is unlikely to lead to beneficial outcomes in any situation.

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