Relationships of personality, affect, emotional intelligence and coping with student stress and academic success: Different patterns of association for stress and success

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ABSTRACT

The associations of personality, affect, trait emotional intelligence (EI) and coping style measured at the start of the academic year with later academic performance were examined in a group of undergraduate students at the University of Edinburgh. The associations of the dispositional and affect measures with concurrent stress and life satisfaction were also examined. The survey was completed by 238 students, of whom 163 gave permission for their end-of-year marks to be accessed. Complete data for modelling stress and academic success were available for 216 and 156 students respectively. The associations of academic success and stress differed, and high stress was not a risk factor for poor academic performance. Further analyses were based on the extraction of three composite factors (Emotional Regulation, Avoidance and Task Focus) from the EI and coping subscales. Structural equation modelling showed that academic performance was predicted by Conscientiousness, Agreeableness, positive affect and the Task Focus factor. Modelling for stress and life satisfaction showed relationships with personality, affect, and the Task Focus and Emotion Regulation factors. The Task Focus factor played a mediating role in both models, and the Emotion Regulation factor acted as a mediator in the model for stress and life satisfaction. The theoretical interpretation of these results, and their potential applications in interventions targeting at-risk students, are discussed.

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1. Introduction

The emotions which students experience within the learning environment are known to be related to important outcomes such as academic success and academic adjustment, and also to student health and well-being. The specific topic of test anxiety and its effect on academic performance has been widely studied (e.g. Zeidner, 1995, 1996). Studies of other correlates of negative emotions have established associations with stress in students (Austin, Saklofske, & Mastoras, 2010) and with poorer academic adjustment (Halamandaris & Power, 1997). The role of positive emotions in educational contexts has been less widely researched but associations have been found with academic performance and academic engagement (Lewis, Huebner, Reschly, & Valois, 2009; Pekrun, Elliot, & Maier, 2009; Reschly, Huebner, Appleton, & Antaramian, 2008). In the context of studying student emotions, it is also appropriate to examine the potential utility of emotional intelligence (EI) as an explanatory variable. Models of EI highlight a range of emotion-related capabilities; a component of EI which appears to be particularly likely to support students in the learning environment is Emotion Regulation, since individuals who can regulate their emotions well are better able to manage stress. Other emotional capabilities such as being able to perceive

and understand emotions would be expected to support the process of building and maintaining students' social support. In addition to being of theoretical interest, if EI is found to be related to academic success and/or academic adjustment, such findings would enable the development of intervention programmes designed to enhance EI capabilities in vulnerable students.

When considering in more detail how students' emotions are related to their academic success and well-being, it is important to take account of research showing that the propensity to experience both positive and negative emotions has been consistently linked to stable dispositional tendencies. Thus the study of student emotions and their outcomes requires the examination of a network of associations amongst state and trait variables. In the remainder of this section the associations amongst key variables, and results on how they are related to academic performance, student stress and other indices of student well-being and adjustment to the academic environment are examined.

1.1. Results on personality, emotions and coping in students

A central result in research on emotions is the emergence of two distinct dimensions, positive affect (PA) and negative affect (NA), from numerous factor-analytic studies. In addition to factorial independence, there is evidence that PA and NA are respectively linked to distinct biobehavioural approach and withdrawal systems (Harmon-Jones, Gable, & Peterson, 2010; Watson, Wiese, Vaidya, &

Tellegen, 1999). PA and NA also differ in their correlation patterns with behavioural variables such as health complaints, stress, and social activities (Watson, 1988). In line with these established findings, the education-related findings on positive and negative emotions will be reviewed separately.

There is an extensive literature of negative emotions, and the underlying dispositions which promote them, in educational contexts. From the perspective of individual differences research it has proved theoretically informative to link negative emotions to pre-disposing dispositional traits, in particular to personality and coping style. Because the personality trait of Neuroticism (N) is strongly associated with a propensity to experience negative emotions (e.g. Matthews, Deary, & Whiteman, 2009), it is of central importance in research on negative emotions. In addition, there are well-established strong associations amongst a broader set of variables: N, negative emotions, maladaptive[1] (especially emotion-focussed) coping, anxiety, and psychological distress (Matthews et al., 2009). These have been combined by some researchers into a temperamental factor of negative affectivity (Clark, 2005). The importance of personality and coping style in relation to stress in students has been examined in a number of studies (e.g. Austin et al., 2010; Watson, Deary, Thompson, & Li, 2008), with stress being found to be the most strongly related to N and coping style, whilst the results of Conard and Matthews (2008) indicate that N is a stronger determinant of student stress than perceived workload.

Maintaining the focus on negative emotions, research on the emotional and dispositional determinants of student academic success has mainly focussed on anxiety or, more specifically, on test anxiety, with consistent negative associations with academic performance being found (Hembree, 1988; Seipp, 1991). Other studies of negative emotional/dispositional factors in students have found a wide range of associations relating to health, academic adjustment and well-being. Examples of these findings are associations of maladaptive coping with problem eating (Wichianson, Bughi, Unger, Spruijt-Metz, & Nguyen-Rodriguez, 2009), N and negative affect (NA) with loneliness and poorer adjustment to university life (Halaman-daris & Power, 1997), N with maladaptive perfectionism and self-reported daily hassles (Enns, Cox, Sareen, & Freeman, 2001; Vollrath, 2000), NA with lower levels of student engagement (Reschly et al., 2008), and N and maladaptive coping with homesickness (Van Tilburg, Vingerhoets, & Van Heck, 1999).

By contrast, evidence has been found in a number of studies of students for positive and protective effects of personality traits (in particular Extraversion, E, and Conscientiousness, C), positive emotions and task-focussed coping. Extraversion is associated with experiencing positive emotions (Matthews et al., 2009) and, as with N and NA discussed above, the existence of a broad temperament dimension of positive affectivity underlying these associations has been proposed (Clark, 2005). Both E and C have been found to be positively correlated with task-focussed coping (e.g. Deary et al., 1996) and, amongst personality traits, C is the strongest and most consistent predictor of academic success (Poropat, 2009). There are also associations between achievement motivation and C, with achievement motivation being found to mediate the relationship between C and academic performance (Richardson & Abraham, 2009). Austin et al. (2010) reported that C and task-focussed coping were associated with lower student stress levels, and Lewis et al. (2009) showed that positive emotions had incremental validity over negative emotions in predicting a range of positive outcomes such as adaptive coping and engagement in middle and high school students.

A specific mechanism (the broaden-and-build model) of the role of positive emotions in promoting adaptive outcomes has been proposed in which positive emotions promote increased behavioural flexibility, broadened attention and engagement with approach goals (Fredrickson, 2001; Lyubomirsky, King, & Diener, 2005). This mechanism includes a synergistic relationship between positive emotions and adaptive coping (Fredrickson & Joiner, 2002). Pekrun et al. (2009) argue that the positive associations they report between the emotions of hope and pride and student academic performance could arise from such a process. Similarly, Reschly et al. (2008) suggest that their finding of partial mediation of the relationship between positive emotions and academic engagement supports the broaden-and-build theory.

1.2. Studies of emotional intelligence (EI) in educational contexts, and links between EI and coping

This section will focus on trait EI, which has been defined as "a constellation of emotional self-perceptions located at the lower levels of personality hierarchies" (Petrides, Pita, & Kokkinaki, 2007). EI has been found to be positively associated with psychological health (e.g. Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2007), with indices of well-being such as life satisfaction, and with lower stress levels (e.g. Austin et al., 2010). Emotion Regulation is viewed as a key component of the processes underlying these associations (Austin et al., 2010; Mikolajczak, Nelis, Hansenne, & Quoidbach, 2008), with the capability to down-regulate negative emotions and up-regulate positive emotions providing an adaptive mechanism for students to handle the inevitable stressors of academic life. Other work on EI in educational contexts focussing on academic adjustment and student drop-out has shown that EI promotes the successful transition from high school to university, with higher EI scores being found in academically successful compared to unsuccessful first-year students, and in students who remain at university compared to those who drop out (Parker, Hogan, Eastabrook, Oke, & Wood, 2006; Parker, Summerfeldt, Hogan, & Majeski, 2004). Positive associations between EI and academic success in school pupils have also been found (Downey, Mountstephen, Lloyd, Hansen, & Stough, 2007; Hogan et al., 2010; Parker, Creque, et al., 2004; Petrides, Frederickson, & Furnham, 2004).

EI has also been found to be positively correlated with adaptive and negatively correlated with maladaptive coping (e.g. Austin et al., 2010; Petrides et al., 2007; Saklofske, Austin, Galloway, & Davidson, 2007). Some recent work (Austin et al., 2010; Saklofske et al., 2007) has built on these empirical associations, and on the theoretical linkages which have been argued to underlie them (Matthews & Zeidner, 2000; Salovey, Bedell, Detweiler, & Mayer, 2000). It has been suggested that EI facilitates "successful and efficient self-regulation toward desired ends" (Salovey et al., 2000, p511), with high EI individuals having a superior ability to manage their emotions in stressful situations, avoid ruminating on negative events and set future goals effectively. Within this perspective, the EI component of Emotion Regulation is aligned with (non-use of) emotion-focussed coping, whilst emotional understanding and Emotion Regulation support the adoption of a task-focussed approach, for example by anticipating the emotions which will be experienced whilst working to achieve a desired goal.

Using this framework of EI as a component of coping, factor-analytically derived composites of EI and coping scales have been found to have explanatory power in the study of health-related behaviours (Saklofske et al., 2007) and stress (Austin et al., 2010). The models used in these studies built on the well-established transactional approach to coping processes, in which coping is conceptualised as "personality in action under stress" (Bolger, 1990), and thus would be expected to mediate the influence of personality on stress and related outcomes. Evidence for the mediating role of coping has been found in a large number of studies (e.g. Bolger, 1990; Bolger & Zuckerman, 1995; Carver et al., 1993; Deary et al., 1996). In studies of coping and EI, an example of this approach is the finding that a broad Emotion Regulation factor, with

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[1] The terms adaptive and maladaptive coping are used in this review in the interests of clarity; this usage relates to a large literature showing that in many contexts coping strategies which can be broadly classified as task-focussed are adaptive, whereas those classified as emotion-focussed are maladaptive. Nonetheless, it should be noted that there is evidence that the optimum choice of coping style is situationally dependent, and the broad adaptive/maladaptive labels are not universally applicable (Zeidner & Saklofske, 1996).