Ability emotional intelligence, trait emotional intelligence, and academic success in British secondary schools: A 5 year longitudinal study

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ABSTRACT

This study examines the long-term effects of ability- and trait EI on academic performance for British adolescents. The sample comprised 413 students from three secondary schools in the North-West of England. Students completed tests of ability EI, trait EI, personality, and cognitive ability in Year 7 (mean age = 11 years 2 months). Performance data at the end of Year 11 (mean age = 15 years 10 months) were collected. Structural Equation Modelling examined the longitudinal relationships between latent variables of these constructs. Results show that the importance of ability EI resides in the fact that it moderates the effect of cognitive ability on performance in Year 11. Trait EI has a direct effect on Year 11 performance for boys only. This suggests that initiatives that help to develop ability EI and increase trait EI offer educators opportunities to improve educational achievement.

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1. Introduction

Emotional skills support both social and cognitive development in young children (see Denham, 2007, for review). Emotional knowledge also predicts academic competence and task orientation in middle childhood, even when controlling for verbal ability (Izard, 2002; Izard et al., 2001). Furthermore, poor emotional competence amongst adolescents results in school difficulties associated with subsequent academic underachievement, such as school drop-out and persistent antisocial behaviour (Gagnon, Craig, Tremblay, Zhou, & Vitaro, 1995; Haapasalo & Tremblay, 1994; Kochenderfer & Ladd, 1996). In keeping with this notion that emotional functioning is linked to academic performance and success, we investigated associations between ability- and trait-emotional intelligence (EI) and academic achievement amongst British adolescents in mainstream education. A prospective design determined whether ability and trait EI at transfer into British secondary school (aged 11–12: Year 7) predict academic performance at age 16 (Year 11). Such work provides comprehensive information about how reasoning and problem-solving in the emotion domain (ability EI) and individual self-perceptions in emotional capabilities (trait EI) predict academic success in adolescence.

1.1. The ability and trait EI distinction

EI has been conceptualised as an emotion-related cognitive ability involving the ability to perceive, use, understand and regulate emotion (Mayer & Salovey, 1997; Mayer, Salovey, & Caruso, 2004). Others have defined EI as a constellation of emotion-related self-perceptions at the lower levels of personality hierarchies (Petrides, Furnham, & Mavroveli, 2007; Petrides, Pita, & Kokkinaki, 2007). These two perspectives have been termed ability EI and trait EI, respectively. This distinction between ability- and trait EI is well-supported in the adult literature, with meta analyses (Joseph & Newman, 2010; Van Rooy, Viswesvaran, & Pluta, 2005) showing non-significant associations between measures of trait EI and intelligence and a positive, although still relatively weak, association between ability EI and measures of crystallised intelligence and verbal IQ. Furthermore, meta-analysis data also support a fairly moderate association between trait EI, but not ability EI, and personality facets (Van Rooy et al., 2005). In addition, Joseph and Newman (2010) found the correlation between self-report (trait) EI measures and performance-based (ability) EI measures to be low enough to suggest two distinct constructs, which supports evidence from earlier meta-analyses (O'Boyle, Humphrey, Pollack, Hawver, & Story, 2010; Van Rooy et al., 2005). Recent work also shows that trait- and ability EI can be validly measured in middle and late childhood (e.g., Barlow, Qualter, & Stylianou, 2010; Mavroveli, Petrides, Sangareau, & Furnham, 2009; Rivers, Brackett, & Salovey, 2008), and are distinct from one another (Qualter, Barlow, & Stylianou, 2011).

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1.2. The significance of ability and trait EI in predicting academic success

Ability EI theory provides a framework within which to study the role of emotions in predicting academic performance (Mayer, Salovey, & Caruso, 2008). Successful academic performance includes being able to identify emotional stressors (Lyons & Schneider, 2005), a process which ability EI can facilitate by providing emotion-related knowledge and capabilities such as emotion perception and emotional understanding. Further, skills such as effective management of one's emotions foster emotional resilience (e.g., see Fabes & Eisenberg, 1997), allowing individuals to adapt to stressful situations or crises, which, if unresolved, may hinder their academic performance.

Trait EI may also be important for academic performance and success, primarily because emotional self-efficacy is an important aspect of this construct (Kirk, Schutte, & Hine, 2008; Petrides, Frederickson, & Furnham, 2004; Petrides & Furnham, 2003; Petrides, Furnham, & Mavroveli, 2007; Petrides, Pita, & Kokkinaki, 2007; Petrides, Sangareau, Furnham, & Frederickson, 2006; Qualter et al., 2011). Our argument builds on previous work suggesting an association between beliefs about ability to perform a behaviour and actually performing the behaviour (e.g. Bandura, 1986; Crick & Dodge, 1994; Wigfield & Eccles, 1992). We argue that perceived emotional self-efficacy (an aspect of trait EI) plays an important role in emotion self-management in education situations: it affects actions not only directly, but also through its influence on other decisions that might impact on academic performance (Bandura, 1999, 2001). Thus, within the context of education, Bandura argues that beliefs of one's emotional self efficacy are likely to influence what self-regulative standards people adopt during learning activities, including revision; whether they think in an enabling or debilitating manner when considering their academic performance; how much effort they invest in any one particular learning or revision strategy; how they persevere in the face of academic difficulties; how resilient they are to academic stressors; how vulnerable they are to non-academic stressors; and choices they make in non-academic aspects of their lives. In addition, self-efficacy theory suggests that beliefs about earlier successes and failures in affect regulation in response to academic stressors will influence future emotional responses and emotion management in similar academic situations (e.g. Parsons & Ruble, 1977).

With regard to empirical evidence, concurrent and one-year studies show that ability EI is important within the context of academic success, even after personality and academic intelligence are statistically controlled (Gil-Olarte Marquez, Martin, & Brackett, 2006; Lyons & Schneider, 2005; Mestre, Guil, Lopes, Salovey, & Gil-Olarte, 2006). Trait EI is also an important factor in the academic achievement of university and high school students (e.g., Austin, Evans, Goldwater, & Potter, 2005; Downey, Mountstephen, Lloyd, Hansen, & Stough, 2008; Parker, Summerfeldt, Hogan, & Majeski, 2004; Parker et al., 2004; Vidal Rodeiro, Bell, & Emery, 2009). In addition, it is an important predictor when academic success is conceptualised as dropout versus completion of Year 1 at university (Parker, Hogan, Easterbrook, Oke, & Wood, 2006; Qualter, Whiteley, Morley, & Dudiak, 2009), and exclusions versus non-exclusions in secondary school (Petrides et al., 2004; Qualter, 2008; Qualter, Whiteley, Hutchinson, & Pope, 2007).

Whilst there is evidence that trait EI relates to academic performance, several studies report no significant association (Barchard, 2003; Bastian, Burns, & Nettelbeck, 2005; Newsome, Day, & Catano, 2000; Van Der Zee, Thijs, & Schakel, 2002). Petrides et al. (2004) argue that whilst trait EI may not be associated directly with academic achievement, it moderates the relationship between cognitive ability and academic performance; because they experience more stress during their studies, adolescents with low IQ benefit academically if they have appropriate self-perceived emotional skills. If we relate this back to notions of emotional self-efficacy, an example will help: lower IQ for a student who says they cannot manage stress well could lead to poor academic performance because it creates a negative self-concept that begins to undermine the student's academic motivation. In contrast, students who say they manage stress well, but have low IQ are able to draw upon perceived emotion management resources in order to successfully recover from falling grades, or reconcile continuous poor performance, and use appropriate emotion management strategies in the lead-up to examinations. Currently, research has investigated how trait EI moderates the relationship between IQ and academic performance (Petrides et al., 2004), but ability EI is also likely to work in the same way; both trait- and ability EI will inform the behavioural response chosen to the stressor. Thus, both types of EI may be important in predicting academic performance because they act as moderators of cognitive ability. An important step in extending existing research is a prospective examination of both ability- and trait EI and their interaction with cognitive ability in predicting academic performance.

1.3. Other predictors of academic success: the importance of cognitive ability, gender and personality

The overall aim of this study is to determine whether ability EI and trait EI can predict academic performance when other important non-cognitive factors (personality) and cognitive ability (IQ) are controlled. Given previous literature, within our model of academic performance, we expect cognitive ability to predict academic performance very well. Given findings from previous studies showing correlations between intelligence test scores and overall exam results, $r = .49$ to $.69$ (Deary, Strand, Smith, & Fernandes, 2007; Furnham, Monsen, & Ahmetoglu, 2009), we expect cognitive ability to have the most impact on academic achievement within our model.

In addition to cognitive ability, personality has also been shown to be important in predicting academic performance, and Eysenck's model of personality has proven useful. Empirical investigation shows that neuroticism (characterised by low self esteem, depression, shyness, moodiness, and anxiety) is a negative predictor of academic performance, particularly when students are assessed by final examinations (Chamorro-Premuzic & Furnham, 2003; Laidra, Pullman, & Allik, 2007). Psychoticism (aggressive, tough-minded, apathetic, antisocial, creative, impulsive, and reckless: Pervin, 1993) has also been shown to be a negative predictor of academic success (Goh & Moore, 1987; Maqsud, 1993; McLaughlin, Moutray, & Muldoon, 2007; Petrides, Chamorro-Premuzic, Frederickson, & Furnham, 2005; Sanchez-Marin, Rejano-Infante, & Rodriguez-Troyano, 2001). In addition, extraversion (sensation-seeking, assertive, and sociable) is associated with academic success, although there is evidence that this relationship changes from childhood to adolescence (Wolf & Ackerman, 2005). Specifically, there is a change from a positive relationship between extraversion and performance between ages 7 and 13 to a negative relationship when the child reaches 14.

Another important variable to consider is gender. Boys typically perform less well on school assessments than girls, despite similar scores on cognitive tasks (e.g. Deary et al., 2007; Ferguson & Horwood, 1997; Mestre et al., 2006). This may arise due to the impact of EI on the academic performance. Females typically score comparatively higher on EI tests compared to boys (e.g., Goldenberg, Matheson, & Mantler, 2006; Schneider, Lyons, & Williams, 2005), and girls may be able to utilise these EI skills in a way that facilitates performance (e.g., via stress management). To explore the possibility that EI impacts on performance for girls and not boys, we examined the same model separately across boys and girls.

1.4. Rationale and aims of the study

The overall aim of this prospective study is to establish the direct and moderating effects of both ability- and trait EI in predicting academic performance. Currently, there exist only concurrent or short-