Personality and Individual Differences xxx (2014) xxx–xxx

Contents lists available at ScienceDirect

Personality and Individual Differences

journal homepage: www.elsevier.com/locate/paid

# Emotional Intelligence and scholastic achievement in pre-adolescent children

Clare E.W. Billings [a], Luke A. Downey [a,b], Justine E. Lomas [a], Jenny Lloyd [a], Con Stough [a,*]

[a] Centre for Human Psychopharmacology, Swinburne University of Technology, Hawthorn, Australia
[b] Department of Psychology, Swansea University, Wales, UK

ARTICLE INFO

*Article history:*
Available online xxxx

*Keywords:*
Emotional Intelligence
Achievement
Children
Preadolescence

ABSTRACT

Previous research has reported an association between Emotional Intelligence (EI) and scholastic achievement in adolescent samples; however, this relationship has not yet been studied in pre-adolescent samples. The current study was the first to explore the relationship between ability EI and scholastic achievement in pre-adolescent children, using a newly created measure of EI for younger children – the Swinburne University Emotional Intelligence Test – Early Years (SUEIT-EY). Four hundred and seven girls and boys between the ages of 9 and 13 years were assessed on the SUEIT-EY, and scholastic results were collected for literacy and numeracy ability. Results indicated that a significant relationship existed between the 'Understanding and Analysing Emotions' (UAE) branch of the SUEIT-EY and measures of achievement in literacy and achievement in numeracy, for boys and girls, over and above the effect of age. Sequential Multiple Linear Regression Analyses found earlier developing UAE abilities to better predict scholastic achievement variables than the more complex UAE abilities, and accounted for 11% of the variation of both literacy and numeracy scores.



## 1. Introduction

Preadolescence is a time of life when scholastic and emotional development becomes increasingly important for students, their parents and educators. Many factors are acknowledged to affect the scholastic and emotional development of children throughout preadolescence, adolescence, and through to adulthood. In the past 20 years, a significant amount of research has focused on the role of 'Emotional Intelligence' in predicting a variety of aspects of mental functioning (Downey et al., 2008; Martins, Ramalho, & Morin, 2010), scholastic performance (Agnoli et al., 2012; Downey, Mountstephen, Lloyd, Hansen, & Stough, 2008; Jiménez Morales & López-Zafra, 2009; MacCann, Fogarty, Zeidner, & Roberts, 2011; Mavroveli & Sánchez-Ruiz, 2011; Pope, Roper, & Qualter, 2012) and important life outcomes across adolescence and young-adulthood. This research has identified direct relationships between levels of EI and important life outcomes, mediation of relationships between EI and problematic behaviours, and suggested that development of EI abilities can act as both prophylactic strategy for reducing mental health problems (Cha & Nock, 2009; Gardner & Qualter, 2009; González, Piqueras, & Linares, 2010; James, Bore, & Zito, 2012; Nolidin, Downey, Hansen, Schweitzer, & Stough, 2013) and improving social and workplace (Erkutlu & Chafra, 2012; Farh, Seo, & Tesluk, 2012; Görgens-Ekermans & Brand, 2012; Iliescu, Ilie, Ispas, & Ion, 2012) interactions. As such, the ability to reliably and validly assess EI in younger samples and identifying whether similar relationships exist between outcomes such as academic performance should contribute to the understanding of the development and importance of the abilities encompassed by EI across the lifespan.

### 1.1. Pre-adolescence and EI

Currently only a limited amount of research exists concerning younger children or pre-adolescents EI. This is probably due to a variety of reasons including the difficulty of the development of reliable and valid measures of what constitutes pre-adolescent EI. Two recently submitted papers (Lloyd et al., 2014a, 2014b) describe the item development around the theoretical model based upon the Mayer and Salovey conceptualisation of 'ability' based EI (Lloyd, 2012), and the assessment of the reliability and validity of the generated items to assess the theoretical four branch model in two large pre-adolescent samples (Lloyd et al., 2014a). Prior to these studies, research concerning adolescent EI has been

* Corresponding author. Address: Centre for Human Psychopharmacology, Swinburne University, PO Box 218 (H24), Hawthorn, Victoria 3122, Australia. Tel.: +61 3 9214 8167.
*E-mail address:* cstough@swin.edu.au (C. Stough).

http://dx.doi.org/10.1016/j.paid.2014.01.017
0191-8869/

predominantly conducted using youth or adolescent versions of previously developed adult measures of EI, for both ability and trait conceptualisations. For example, youth versions of the widely used ability measure the Mayer–Salovey and Caruso Emotional Intelligence test (MSCEIT) (Mayer, Salovey, & Caruso, 2005), the commonly used Emotional Quotient inventory (Bar-On & Parker, 2000), and the Swinburne University Emotional Intelligence test (SUEIT; Luebbers, Downey, & Stough, 2007) have been developed.

With regard to these aforementioned adolescent/youth versions of established measures of EI they have each been effective in predicting scholastic outcomes in adolescents. Recently the MSCEIT-Youth Version was administered to students in grades 4–12 (ages 10–18), with Perceiving emotions being observed to be associated with general intellectual ability and reading, Facilitating Emotions was associated with reading and Understanding Emotions was associated with general intellectual ability, reading and math marks (Peters, Kranzler, & Rossen, 2009). The EQ-i youth version has also provided consistent results within a variety of student populations, with more academically successful students scoring significantly higher than less successful student's on the EQ-I in a larger ($N = 667$) sample of American students aged 14–18 years for example (Parker et al., 2004). Similarly when using the adolescent SUEIT, higher GPA's have been reported to be related to higher levels of Emotional Management and Control (Downey, Lomas, Billings, Hansen, & Stough, 2013). The total EI score has been observed to correlate positively with GPA, geography and science marks, and again, more successful students reported significantly higher EI scores (Downey et al., 2008) in students aged 12–17. The results in these samples point to the utility of these measures, and suggest that even at the lower end of the ages assessed in these studies that EI scores are measurable and related to scholastic criterion. Although both trait and ability models have evidenced predictive efficacy and validity within young samples, it is likely that ability models for younger children would be more appropriate than self-report measures as younger children may have limited ability to understand their own EI and to report it accurately using self-report techniques.

### 1.2. EI, age and scholastic performance in students

EI abilities have been observed to develop with age (Mayer, Roberts, & Barsade, 2008) and females tend to return higher scores on EI measures than males (Austin, 2010). In primary school children, Lloyd (2012) found a significant difference in EI due to gender in both the calibration sample [*Welch* (1, 462.57) = 10.89, $p < .001$], with girls scoring higher than boys (eta squared = .01, $p < .05$), and in the validation sample [*Welch* (1, 551.06) = 7.677, $p = .006$], with girls again scoring higher than boys (eta squared = .01, $p < .05$) (Lloyd et al., 2014a). EI has been defined as the capacity to carry out sophisticated information processing about emotions and emotion-related stimuli and to use this information as a guide to thinking and behaving (Mayer, Salovey, & Caruso, 2008). As such, EI may be defined as a set of abilities that develop with increasing age and a wider range of life experiences (Mayer, Caruso, & Salovey, 2000).

Currently only limited research exists concerning the EI of pre-adolescent children and this is surprising given the important developmental changes that are known to occur during this phase of life, particularly in terms of a changing social context and the growing importance of peer relationships and children's increasing ability to understand themselves and others. This emotional development is partly reliant on the concurrent development of cognitive structures. Carroll and Steward (1984) found age differences in a number of emotional abilities, with older children's (8- to 9-year-olds) use of emotion words reflecting a more complex structure and meaning than that of 4 to 5-year-olds (Carroll & Steward, 1984). Developmental changes also occur in the way children try to control or manage the emotions of another person in a social situation (McCoy & Masters, 1985). As such, tailoring the development of EI measures to assess established models of EI within young children may increase the ability to monitor the development of emotional abilities during childhood.

Mayer and Salovey's Four Branch Model is an integrative approach to studying EI because it conceptualises EI as a complete, integrated set of abilities: perceiving emotions, using emotions, understanding emotions and managing emotions (Mayer, Salovey, & Caruso, 2004, 2012). The branches are organised such that lower branches are more isolated within the psychological systems of emotions whereas higher branches are more integrated with other psychological systems beyond that of emotions (Mayer et al., 2012). The model conceptualises EI as a developmental ability that begins developing in early childhood, with different abilities developing at different rates (Mayer et al., 2008). Within each branch, the abilities develop and progress from basic, to more complex, and research suggests that examining EI in terms of the four branches may be a more beneficial strategy when conducting EI research than considering the construct as a whole (Downey et al., 2008; Fiori & Antonakis, 2011). For example, Fiori and Antonakis (2011) recommended using the scores of the single branches rather than the total EI scores because they were found to be measuring distinct constructs and Di Fabio and Palazzeschi (2009) found that by entering the individual branches of the MSCEIT, more variance in scholastic success could be explained (Di Fabio & Palazzeschi, 2009). As such the aim of the current study was to explore the relationship between ability EI of a newly designed measure (Lloyd et al., 2014a, 2014b) at the branch level and the scholastic achievement of pre-adolescent children.

## 2. Method

### 2.1. Participants

The sample consisted of 407 mainstream primary school students (200 males, 207 females) attending four primary schools in Melbourne, Australia. Students ranged from 9 to 13 years of age with a mean age of 10.72 years ($SD = .93$) for females and 10.75 years for males ($SD = .88$). All children and parents provided written informed consent to participate in the study which was approved by the institutional ethics committee.

### 2.2. Measures

#### 2.2.1. Emotional Intelligence

The Swinburne University Emotional Intelligence Test – Early Years (SUEIT-EY) is a 68 item questionnaire designed to assess a four-factor model of EI in pre-adolescents. The development of which is described in two submitted papers, Lloyd et al. (2014a, 2014b) and a manual within a thesis Lloyd (2012). The test provides scores for four EI branches; the 38 self-report items (items 1 to 38) were designed to measure three of the four Mayer and Salovey (1997) branches of Emotional Intelligence; "Perception and Appraisal of Emotion" (PAEE: Branch I), "Emotional Facilitation of Thinking" (EFT: Branch II) and "Reflective Regulation of Emotion" (RRE: Branch IV). Six items measuring ability subsumed under Branch I; "Identify emotions in others" (IEO: Branch I Maximum EI) was measured using performance based assessment. The remaining 22 items were designed to measure Mayer and Salovey's (1997) "Understanding and Analysing Emotion" (UAE: Branch III) using performance-based assessment. Self-report items were scored on a five point Likert-type scale where 1 = "not like me at all" and 5 = "exactly like me". Four items were reverse scored.

Please cite this article in press as: Billings, C. E. W., et al. Emotional Intelligence and scholastic achievement in pre-adolescent children. *Personality and Individual Differences* (2014), http://dx.doi.org/10.1016/j.paid.2014.01.017