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ORIGINAL CONTRIBUTION

Stella Mavroveli
K.V. Petrides
Chloe Shove
Amanda Whitehead

Investigation of the construct of trait emotional intelligence in children

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S. Mavroveli · C. Shove · A. Whitehead
Institute of Education
University of London
London, UK

K.V. Petrides (✉)
Department of Psychology
University College London
26 Bedford Way
WC1H 0AP London, UK
E-Mail: k.petrides@ucl.ac.uk

Abstract This paper discusses the construct of trait emotional intelligence (trait EI or trait emotional self-efficacy) with emphasis on measurement in children. The Trait Emotional Intelligence Questionnaire-Child Form (TEIQue-CF) is introduced and its development and theoretical background are briefly explained. It is shown in two independent studies that the TEIQue-CF has satisfactory levels of internal consistency ($\alpha = 0.76$ and $\alpha = 0.73$, respectively) and temporal stability [$r = 0.79$ and $r_{(corrected)} = 1.00$]. Trait EI scores were generally unrelated to proxies of cognitive ability, as hypothesized in trait EI theory (Petrides et al. in Matthews et al. (eds) Emotional intelligence: knowns and unknowns—series in affective science. Oxford University Press, Oxford, pp 151–166). They also differentiated between pupils with unauthorized absences or exclusions from school and controls. Trait EI correlated positively with teacher-rated positive behavior and negatively with negative behavior (emotional symptoms, conduct problems, peer problems, and hyperactivity).

Key words trait emotional self-efficacy – academic achievement – exclusions – truancy – TEIQue

Introduction

This study is based on the distinction between trait emotional intelligence (trait EI or "trait emotional self-efficacy") and ability EI (or "cognitive-emotional ability"), proposed by Petrides and colleagues and reflecting the fundamental distinction in differential psychology between typical and maximal performance [1, 9, 14]. This distinction is mainly based on the measurement method used to operationalize the construct viz., self-report versus maximal performance. Trait EI is defined as a constellation of emotion-related self-perceptions located at the lower levels of personality hierarchies and should be investigated primarily with reference to established personality taxonomies. Ability EI is hypothesized to comprise emotion-related cognitive abilities that ought to be measured via maximum-performance tests.

It should be noted that, in theory, the validation of trait EI does not preclude the validation of ability EI and vice versa [67]. However, like others (e.g., [6, 45, 18, 46]) we believe that the operationalization of EI as a cognitive ability is undermined by the lack of truly objective criteria that can be used to score EI items.

Measurement of ability EI

The main argument against the use of ability-based measures is that emotional experience is inherently subjective [70] and, therefore, not amenable to the type of scoring used in IQ testing. Matthews et al. [34] drew

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on problems inherent in assessing social "intelligence" to bring forward analogous problems in ability EI, mainly concerning the question of what constitutes the "emotionally intelligent" response in different situations and contexts. Brody [6] pinpointed several key weaknesses in the conceptualization and assessment of EI via ability-based measures. He noted that there is a contradiction between what these measures claim to be measuring and what they actually measure; that is, ability EI tests, at best, assess one's emotion-related knowledge as opposed to intelligence of any kind (see also [19, 20]). These a priori limitations render empirical research with ability EI problematic, since conceptual problems at the level of theory cannot be overcome through empiricism [15, 38].

Measurement issues with trait EI

We briefly address criticisms of self-report measures of EI from the perspective of trait EI theory, although it should be remembered that trait EI does not merely refer to EI measured through self-report (see [53]). Criticisms that might be directed towards trait EI mainly concern the perceived redundancy of the construct in the presence of personality variables [35]. Issues inherent in personality assessment via self-reports, such as acquiescence, deviance, and extreme responding [34] also apply to EI assessment via self-report. However, relevant empirical evidence has demonstrated that the construct is not "… simply old wine in a new bottle" [35, p. 515), but rather has clear incremental validity over and above established personality traits and mood (see [54, 55]). Furthermore, it is widely accepted that emotional experience is inherently subjective and, consequently, efforts to provide reliable and accurate measurement of emotion-related information cannot be severed from the individual and their self-perceptions.

Empirical validation of trait EI

Trait EI has applications in clinical, educational, and organizational psychology. Many studies have contributed to the nomological network of the construct by establishing statistically significant relationships with a host of criteria, including coping styles [36, 55], life satisfaction and depression [54, 60], emotion identification and sensitivity to mood induction [52], happiness [8], goal orientation [63], managerial level [68], and occupational stress [41].

In line with the definition of trait EI as a personality construct, studies have also revealed zero correlations with measures of ability EI [69] and low to zero correlations with indices of cognitive ability, particularly when the latter is measured through non-verbal IQ tests (see [16, 39, 43, 44]). Despite criticisms regarding redundancy in the presence of personality measures, there is mounting evidence that trait EI predicts variance over and above the Big Five and the Giant Three (see [8, 29, 52], and, especially, [54]). Similarly, trait EI scores have been found to predict psychosomatic symptoms over and above both optimism and alexithymia [40].

In educational settings, trait EI can differentiate between pupils with learning disabilities and controls [59]. Other research has shown that high trait EI pupils tend to have fewer unauthorized absences and are less likely to have been expelled from school due to rule violations, compared to their low trait EI peers [51]. Aspects of trait EI made a unique contribution to the understanding of the relationship between stress and mental health in a sample of university students [13]. Trait EI may also influence children's peer relations at school [56] and decrease the likelihood of exhibiting aggression and delinquency [61]. Petrides et al. [56] found on a sample of primary-aged children that high trait EI scores facilitated prosocial behavior and prevented antisocial behavior. They also reported that pupils with high scores received more nominations by their classmates for being co-operative and for having leadership qualities and fewer nominations for being disruptive, aggressive, and dependent.

Trait Emotional Intelligence Questionnaire–Child Form (TEIQue–CF)

To date, trait EI research has been primarily based on convenience samples of college students, young adults, and, less frequently, adolescents. In contrast, there is little data from children samples, largely as a consequence of the lack of appropriate measures. Furthermore, the construct has been researched as developmentally invariant, i.e., under the assumption that there are no structural or qualitative changes in its sampling domain over the lifespan. Thus, in the few studies that have involved children and adolescents, data were collected with measures that were simplified adaptations of existing instruments developed for adults (e.g., [56, 57, 61]).

Existing measures for research in children and adolescents include the Emotional Quotient-inventory: Youth Version (EQ-i: YV; [4]), which is based on the adult EQ-i form and assumes that the construct remains unaltered across major developmental stages. This is an unwarranted assumption because there is evidence, mainly stemming from the child development literature, that the emotional life of the child differs fundamentally from that of the adult [64]. More important, like the adult version of the EQ-i, the child version claims to assess intelligence, competencies,

Table 1 The sampling domain of trait EI in children

Facets	Brief description of facets	Example items
Adaptability	Concerns children's self-perceptions of how well they adapt to new situations and people	"I find it hard to get used to a new school year"
Affective disposition	Concerns children's self-perceptions of the frequency and intensity with which they experience emotions	"I am a very happy kid"
Emotion expression	Concerns children's self-perceptions of how effectively they can express their emotions	"I always find the words to show how I feel"
Emotion perception	Concerns children's self-perceptions of how accurately they identify their own and others' emotions	"It is easy for me to understand how I feel"
Emotion regulation	Concerns children's self-perceptions of how well they can control their emotions	"I can control my anger"
Low impulsivity	Concerns children's self-perceptions of how effectively they can control themselves	"I do not like waiting to get what I want"
Peer relations	Concerns children's self-perceptions of the quality of their relationships with their classmates	"I listen to other children's problems"
Self-esteem	Concerns children's self-perceptions of their self-worth	"I feel great about myself"
Self-motivation	Concerns children's self-perceptions of their drive and motivation	"I always try to become better at school"

and skills through self-report items of the type "I can control my emotions".

There is a need for an inventory predicated on a sampling domain specifically developed for children. To this end, we embarked on the construction of the child form of the Trait Emotional Intelligence Questionnaire (TEIQue-CF), based on a content analysis of the literature on socioemotional development between 8 and 12 years. This was undertaken to ensure comprehensive sampling of the emotional aspects of children's personality. Our conceptualization does not, in the first instance, seek to address processes underlying socioemotional development. Rather, it concentrates on ascertaining the constituent components of trait EI in childhood, in the form of self-perceptions (see Table 1). Some of these components may be considered processes and others outcomes of processes underlying emotional development, but this distinction is not relevant for our purposes, since we are only interested in identifying salient emotional constructs to include in the children's sampling domain of trait EI.

The present studies

The main aim of the two studies in this paper was to explore the psychometric properties of the TEIQue-CF, which was specifically constructed as an open-access, multidimensional inventory to assess trait EI in children aged between 8 and 12 years. Particular emphasis was placed on aspects of construct validity, internal consistency, and temporal stability. With respect to the last of the three, it was expected that trait EI will show stability levels similar to those of other broad personality traits (i.e., in the order of about 0.6; [24].

Trait EI and cognitive ability

As a personality construct, trait EI should not correlate strongly with cognitive ability or proxies thereof [53]; for empirical confirmation, see [3, 43]. We, therefore, hypothesized that indices and proxies of cognitive ability, including verbal intelligence and academic achievement, would be unrelated, or only weakly related, to trait EI (see Petrides, Furnham et al. [53] for details of the theory). Nevertheless, individual differences in trait EI do have an impact on academic performance, with effects that may be especially relevant for vulnerable students. For example, Petrides et al. [51] demonstrated a moderating effect of IQ on the relationship between trait EI and GCSE[1] performance, according to which high trait EI was associated with better performance in low IQ pupils only. It was suggested that such effects as trait EI might have on academic performance are likely to assume prominence when the demands of a situation outweigh a pupil's intellectual resources. In contrast to their high IQ counterparts, low IQ pupils are more likely to be forced to draw on resources other than their cognitive ability in order to cope with the demands of their courses, which is why high trait EI may be an important asset for them.

Parker et al. [48, 49] reported modest correlations (e.g., $r = 0.20$, $P < 0.05$) between trait EI and academic performance in high-school and university samples, which raises the possibility that the effects of trait EI may vary across educational levels as well as

[1]General Certificate of Secondary Education tests (GCSEs) are normally sat by 15- to 18-year-old in UK schools and colleges. They are the principal means of assessing pupil attainment at the end of compulsory secondary education and entail a combination of external examination and coursework, with the balance towards the former. GCSEs are graded from A* to G (i.e., on an 8-point scale).

across subjects, like the effects of other personality traits (e.g., Heaven et al. [27], Petrides et al. [50]. For example, Laidra et al. [31] found that Agreeableness was an important predictor of academic performance (GPA) in primary, but not secondary, schoolchildren. In contrast, Neuroticism predicted academic performance in secondary, but not primary, schoolchildren. The overall picture emerging so far is consistent with the postulates of trait EI theory and suggests that the construct's impact on academic achievement is modest and likely to be more relevant to specific groups of vulnerable children.

Trait EI and school maladjustment

Juvenile delinquency and episodes of school transgression pose a serious challenge for schools and policy makers. In the UK, the measure of pupil exclusion is employed to reduce undesirable behavior, including disobedience, physical aggression, and disruptiveness. However, exclusions, permanent or temporary, are still a major cause of concern, both for their increasing use by headteachers as well as for their undesirable consequences [47]. Current research suggests that certain groups of pupils are more susceptible to exclusions. These include boys, children from certain ethnic minorities, children described as having special educational needs or are looked-after by the local authorities, and children coming from disadvantaged socio-economic backgrounds and unstable families [11, 26, 47]. Such children are more likely to benefit from intervention programs targeting socioemotional skills (see [7], within which trait EI assessment may have an important role to play. Unauthorized absences are also an index of school maladjustment, usually involving incidents of truancy and related undesirable activities (e.g., juvenile delinquency and substance abuse).

Given that self-perceptions tend to be accurate [28] and to have real-life importance [66], we expected that trait EI will differentiate between pupils with and without exclusions and unauthorized absences. We also expected that teachers would rate high trait EI pupils higher than their low trait EI peers on prosocial behavior (e.g., being considerate of others' feelings and being kind to them) and lower on conduct problems, emotional symptoms, and peer rejection.

Study 1

The purpose of this study was to test the validity of trait EI in children. In particular, we examined the relationship between trait EI and academic achievement (operationalized as performance on the national Key Stage 2 assessment; see "Method") and verbal intelligence (operationalized through Raven's Mill Hill Vocabulary Scale). Following trait EI theory, we hypothesized that:

1. Trait EI would be orthogonal (uncorrelated) to verbal intelligence-H1.
2. Trait EI would show low-to-zero correlations with indices of academic achievement-H2. More specifically, we expected that trait EI scores would be orthogonal to SAT scores on maths (H2a), science (H2b), English (H2c), reading (H2d), and spelling (H2e).

Method

Participants

The sample comprised 139 Year 7 children (70 boys and 69 girls). All were between 11 and 12 years old with a mean age of 11.23 years (SD = 0.42 years). They were recruited from a state school in Southeast England via personal communication with the headteacher. The sample varied considerably in ethnic and social backgrounds, reflecting the wider community whence it was drawn (39.6% were Pakistani, 21.6% White-UK heritage, 18.7% Indian, 7.2% White European, and 12.9% from other ethnic backgrounds). Pupils with special educational needs and those who had English as an additional language were excluded from the study. Those who missed more than 15 items (17.2% of the TEIQue-CF) were excluded from subsequent analyses.

Measures

Trait Emotional Intelligence Questionnaire-Child Form (TEIQue-CF). The TEIQue-CF provides comprehensive coverage of child personality facets relating to emotion. It was specifically developed for children aged between 8 and 12 and includes 88 short statements responded to on a 5-point Likert scale (e.g., "If I am sad, I try to put on a happy face"). All items were cross-checked against the Children's Printed Word Database ([65]—1996), which covers printed word vocabulary for the first four years of primary school. Prior to conducting this study, the scale was administered to a group of 30 children between the ages of 8 and 12 in order to ensure that the wording and the syntax of the items were appropriate for the target age range and also to obtain an estimate of completion time. Children were asked to put their hand up whenever they came across a difficult item. Three such items were identified and subsequently revised for use in future research.

Academic achievement

Key Stage 2 scores. Standard assessment task (SAT) scores were obtained for each participant. The National Curriculum in the UK is a flexible framework used by schools to ensure that teaching standards are consistent throughout the country. Key Stage 2 results were provided by the participating school for English, maths, and science.

Reading age—NfER Group Reading and Single Word Spelling test scores. Reading and spelling age were assessed at the beginning of the school year. Pupils were tested on the NfER Group Reading Test (Form A), which consists of 48 sentence completion items and provides a standardized score and reading age. They were also tested on the NfER Single Word Spelling Test Form F, which covers everyday vocabulary and provides a standardized score and spelling age.

Mill Hill Vocabulary Scale Form 1 Junior (MHV; [58]). The MHV was used to measure children's verbal ability. This test comprises 33 multiple-choice and 33 open-ended items. It assesses familiarity with culture-laden common knowledge as well as ability to learn and recall information.

Procedure

Oral and written instructions describing the procedure were given to the children. The questionnaires were completed under supervision during regular class periods. The researcher, teacher, and classroom assistants were present to ensure confidentiality and independent responding. All children were informed that they could withdraw from the study at any point. Additional data were collected from the school archives. Children completed the TEIQue-CF in two occasions separated by a 3-month interval (Times 1 and 2).

Results and discussion

The internal consistency of the TEIQue-CF in Times 1 and 2 was satisfactory ($\alpha = 0.76$ and $\alpha = 0.72$, respectively). Test–retest reliability over the 3-month period (attenuated and disattenuated) were both satisfactory ($r = 0.79$ and $r = 1.00$, respectively).

Gender differences

There were no gender differences in trait EI scores [$t_{(137)} = 0.417, P > 0.05$]. However, given the adequate sample size and the fact that the absence of gender differences in means does not imply that a construct's relationships to external criteria are gender-invariant, we proceeded with gender-specific analyses.

Trait EI and verbal intelligence

As expected, the relationship between trait EI and verbal intelligence did not reach significance levels (total sample: $r = 0.146$, $P > 0.05$; boys: $r = 0.243$, $P > 0.05$; girls: $r = 0.076$, $P > 0.05$). This supported H1, viz., that verbal intelligence would be unrelated to trait EI.

Trait EI and academic achievement

Non-parametric correlations were calculated between the variables because achievement scores were measured on an ordinal 4-point scale. On the total sample, there was no relationship between trait EI and maths (H2a; $r = 0.131$, $P > 0.05$), science (H2b; $r = 0.022$, $P > 0.05$), English (H2c; $r = 0.120$, $P > 0.05$), or reading (H2d; $r = -0.009$, $P > 0.05$). However, trait EI scores correlated positively with spelling scores (H2e; $r = 0.289$, $P < 0.01$). Gender-specific analyses (see Table 2) revealed that trait EI was unrelated to English, science, and reading scores, but was moderately related to maths ($r = 0.295$, $P < 0.05$) and spelling scores ($r = 0.384$, $P < 0.01$), in boys only. With the exception of spelling (total sample: $r = 0.253$, $P < 0.05$; boys: $r = 0.295$, $P < 0.05$), these correlations lost their significance when we controlled for verbal intelligence.

In accordance with our hypotheses, trait EI was generally unrelated to academic performance. However, the results also suggest that confounding with verbal intelligence may lead to low or moderate correlations with proxies of academic achievement, especially in heterogeneous samples or samples of young children. These findings support trait EI theory, which predicts that the construct should not be highly correlated with academic performance. Indeed, there is little reason to theorize that self-reports on emotional aspects of personality should be strongly related to academic achievement. This expected lack

Table 2 Intercorrelations between key variables in study 1 broken down across gender

Variables	1	2	3	4	5	6
Trait EI	–	−0.020	0.011	0.987	−0.124	0.277
Maths	0.295*	–	0.671**	0.513**	0.563**	0.549**
Science	0.018	0.488**	–	0.549**	0.577**	0.474**
English	0.181	0.630**	0.528**	–	0.618**	0.652**
Group reading	0.129	0.492**	0.456**	0.622**	–	0.569**
Single-word spelling	0.384**	0.415**	0.277*	0.549**	0.575**	–

Correlations below the diagonal are for boys ($N = 70$). Correlations above the diagonal are for girls ($N = 69$). $^{*}P < 0.05$, $^{**}P < 0.01$

of relationship is part of the more general hypothesis that, in certain contexts, high trait EI scores may well have negative consequences (e.g., Petrides & Furnham, 2003 found that high trait EI was related to mood deterioration following exposure to distressing stimuli; see also [62]).

Study 2

Children's self-perceptions influence their behavior at school and correlate with teacher ratings and achievement scores [17, 25]. Trait EI theory provides a framework for organizing the numerous relationships involved and for deriving specific hypotheses. Following this theory, we hypothesized that:

1. Trait EI scores would correlate positively with teacher-rated favorable characteristics (e.g., prosocial behavior) and negatively with teacher-rated unfavorable characteristics (e.g., conduct problems and antisocial behavior)—H1.
2. Pupils with unauthorized absences would have lower trait EI scores than their peers without unauthorized absences—H2.
3. Pupils who have been excluded from school would have lower trait EI scores than pupils who have not been excluded—H3.

Method

Participants

The sample comprised 188 boys, between 8 and 12 years old, with a mean age of 10.18 years (SD = 1.31 years). Because of the disproportionately low number of girls with exclusions or unauthorized absences, a boys-only sample was recruited. Pupils with special educational needs, those who were looked-after by the local authorities, and those who had English as an additional language were excluded from the study. Furthermore, participants who skipped more than 15 items (17.2% of the TEIQue-CF) were excluded from subsequent analyses. The pupils came from 19 different state schools, randomly selected from a list provided by a support services organization. Participants were predominantly of White-UK heritage (78.5%; 7% White European; 3% White other; 1% Black Caribbean heritage; 1.5% Black other; 0.5% Chinese; and 2.5% stated other).

Measures

Trait emotional intelligence questionnaire–child form.

The same version was used as in Study 1
Strengths and Difficulties Questionnaire (SDQ; [22, 23] see Table 3 for a description). The SDQ was designed to assess behavioral and emotional problems in children. The version used in this study was completed by teachers and assessed a total of 25 positive and negative behavioral characteristics divided into five categories: emotional symptoms, conduct problems, inattention-hyperactivity, peer problems, and prosocial behavior. Item scores on the SDQ vary from 0 to 2 (0 = "not true", 1 = "somewhat true", and 2 = "certainly true"), resulting in maximum subscale scores of 10. With the exception of the prosocial scale, higher scores indicate more problems. A total difficulties score, with a maximum of 40, is calculated by summing up scores on emotional symptoms, conduct problems, hyperactivity, and peer problems. The long version of the scale that was used in this study also includes a subscale labeled "Impact Supplement", in which the three items about overall distress (*difficulties upset or distress the child*) and social impairment (*difficulties interfere with the child's peer relationships* and *difficulties interfere with classroom learning*) are summed up to create a single index, ranging from 0 to 6. Higher scores on this index suggest that teachers believe a child's behavioral problems are upsetting the child, and may interfere with peer relations and classroom learning. The internal consistency of the SDQ was 0.84 on this sample.

Fixed-period exclusions (*FPE*): Fixed period exclusions allow schools to expel a pupil for a limited period, up to a maximum of 45 school days, in each

Table 3 Brief description and internal consistencies of the strengths and difficulties questionnaire (SDQ)

Scale	Characteristic items	Cronbach's alpha
Emotional symptoms	Often complains of headaches, stomach-aches or sickness	0.84
Conduct problems	Often has temper tantrums or hot tempers	0.89
Hyperactivity	Restless, overactive, cannot stay still for long	0.74
Peer problems	Solitary, tends to play alone	0.82
Prosocial behavior	Often volunteers to help others	0.82
Impact score	Teacher judgments of whether difficulties upset or distress the child, interfere with peer relationships, or interfere with classroom learning	0.87

The SDQ was completed by the teachers

academic year. Such exclusions are made with the intention that the pupil will return to the school from which he or she was expelled. There were 30 pupils with fixed-period exclusions in our sample.

Internal exclusions (*INTE*): internal exclusions involve removing a pupil from the classroom, but not from the school premises. Usually, the pupil is temporarily secluded in a designated area within the school, with appropriate support and supervision, or to another class. There were 25 pupils with internal exclusions in our sample.

Unauthorized absences (*UNA*): unauthorized absences include truancy, but also cases where the parents or carers are aware that the child is unjustifiably absent from school (e.g., due to family holidays). There were 35 pupils with unauthorized absences in our sample.

Procedure

A total of 19 schools were randomly chosen from the 40 schools that offered to participate. A consent form was sent to the parents explaining the purpose and procedure of the study. Additional data were collected from the school archives. Pupils were divided into four groups based on the information provided by each school. The first group comprised pupils with fixed-period exclusions (FPE; $n = 30$), the second group those with internal exclusions (INTE; $n = 25$), and the third group comprised those with unauthorized absences (UNA; $n = 35$). Finally, 98 boys with no absences or exclusions were matched on age with the pupils in the three experimental groups and formed the control group.

Oral and written instructions describing the procedure were given as appropriate. The questionnaires were completed under supervision to ensure confidentiality and independent responding. All pupils were informed that they could withdraw from the study at any point. As in Study 1, one aim was to examine the comprehensibility of the TEIQue-CF in the target ages. Therefore, children were asked to raise their hand, if they came across a statement they could not understand. Two items that troubled the children were identified and subsequently revised for use in future research.

Results and discussion

The TEIQue-CF showed satisfactory levels of internal consistency on this sample ($\alpha = 0.73$), suggesting that emotional self-perceptions can be assessed reliably within this age group.

Trait EI and the SDQ

Table 4 presents the correlations between teacher SDQ ratings and children trait EI scores, which provide clear support for hypothesis H1. As can be seen in that table, trait EI correlated negatively with the total difficulties rating ($r = -0.342$, $P < 0.001$), as well as with emotional symptoms ($r = -0.192$, $p < .05$), conduct problems ($r = -0.289$, $P < 0.001$), hyperactivity ($r = -0.311$, $P < 0.001$), and peer problems ($r = -0.223$, $P < 0.01$). In contrast, it correlated positively with prosocial behavior scores ($r = 0.274$, $P < 0.001$). Similarly, there was a negative correlation between trait EI and teacher judgments of whether the difficulties were personally upsetting to the child ($r = -0.188$, $P < 0.05$), interfering with peer relationships ($r = -0.266$, $P < 0.001$), interfering with classroom learning ($r = -0.248$, $P < 0.01$), and being a burden to the teacher and the class as a whole ($r = -0.267$, $P < 0.001$). A total impact score was derived by summing up teacher ratings of children's problems and this too was negatively correlated with trait EI ($r = -0.282$, $P < 0.001$).

The negative relationship between teacher impact ratings and trait EI scores points to a possible pro-

Table 4 Intercorrelations between trait EI and the strengths and difficulties questionnaire (SDQ; $N = 188$)

Variables	1	2	2.1	2.2	2.3	2.4	2.5	3	3.1	3.2	3.3
Trait EI	–										
SDQ total difficulties	−0.342**	–									
Emotional symptoms	−0.192*	0.641**	–								
Conduct problems	−0.289**	0.846**	0.340**	–							
Hyperactivity	−0.311**	0.844**	0.272**	0.752**	–						
Peer problems	−0.223**	0.718**	0.514**	0.470**	0.410**	–					
Prosocial behavior	0.274**	−0.661**	−0.292**	−0.644**	−0.641**	−.455**	–				
SDQ Impact score	−0.282**	0.841**	0.510**	0.799**	0.676**	612**	−0.571**	–			
Difficulties upset or distress the child	−0.188*	0.644**	0.644**	0.494**	0.390**	0.541**	−0.319**	0.758**	–		
Difficulties Interfere with peer relationships	−0.266**	0.749**	0.470**	0.697**	0.548**	0.639**	−0.560**	0.888**	0.664**	–	
Difficulties interfere with classroom learning	−0.248**	0.792**	0.382**	0.762**	0.729**	0.516**	−0.565**	0.901**	0.717**	0.718**	–
Difficulties are a burden on teacher and class	−0.267**	0.703**	0.296**	0.762**	0.623**	−0.427**	−0.488**	0.867**	0.657**	0.800**	0.427**

The SDQ was completed by the teachers. $^{*}P < 0.05$, $^{**}P < 0.01$

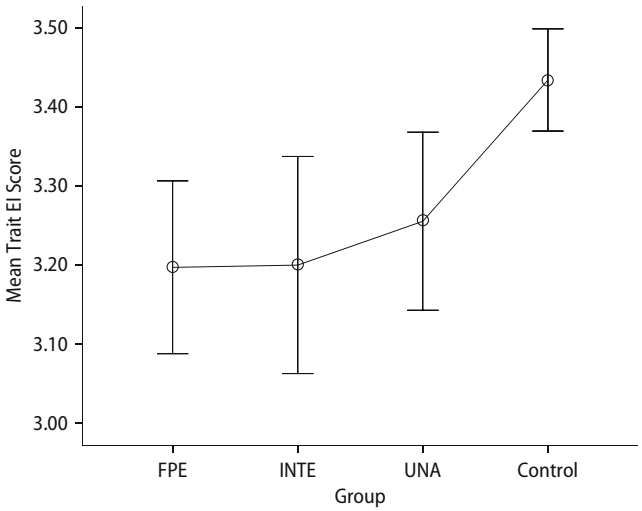

Fig. 1 Mean trait EI scores for children with fixed–period exclusions (FPE), internal exclusions (INTE), unauthorized absences (UNA), and the control group

tective role of trait emotional self-efficacy against socioemotional problems. Although the mechanisms through which trait EI relates to prosocial behavior cannot be explored with the present dataset, the results clearly suggest that the construct is linked to behaviors that are readily perceivable by others (in this case, the teachers).

Trait EI, absenteeism, and exclusions from school

To test hypotheses H2 and H3, a one-way ANOVA was performed with the four groups as the between-subjects factor and trait EI as the dependent variable. There was a significant main effect of group [F (3, 183) = 7.27, $P < 0.001$, partial eta squared = 0.11 representing a medium effect). Post hoc analyses (Tukey-HSD; see Fig. 1) indicated that the control group (M = 3.43, SD = 0.32) scored significantly higher than the FPE (M = 3.19, SD = 0.29), the INTE (M = 3.20, SD = 0.33), and the UNA (M = 3.25, SD = 0.32) groups. These results support hypotheses H2 and H3, viz., that children with unauthorized absences or exclusions from school will have significantly lower scores compared to controls.

As hypothesized, trait EI differentiated between adjusted and maladjusted pupils. It also correlated consistently with teacher ratings of behavior. Overall, the findings point to an association between trait EI and problematic behavior, particularly in pupils who have not adapted well at school.

General discussion

The main aim of the studies presented herein was to test the psychometric properties of the TEIQue-CF. Based on trait EI theory and previous findings with adolescents and adults, hypotheses were formulated in order to test the scale's internal consistency, temporal stability, and construct validity. In Study 1, the data corroborated H1 and, partially, H2. In Study 2, the data corroborated hypotheses H1, H2, and H3.

The internal consistency of the TEIQue-CF was satisfactory. However, higher levels may be desirable, if decisions about individual children are to be made in educational or clinical settings. It will be important to monitor the internal consistencies of the global and facet scores on larger and more heterogeneous samples before changes are introduced, particularly in light of the encouraging data on temporal stability. In any case, the temptation to lengthen the instrument in order to boost alphas must be balanced against fatigue considerations, which can be particularly problematic for child measures.

Findings on the relationship between trait EI and academic achievement have not been highly consistent, not least because of sampling differences and the use of inconsistent criteria (cf. [2, 48, 51]). For instance, significant trait EI effects were observed when academic achievement (operationalized as GPA) was assessed in an undergraduate sample (e.g., [49]), but not in a sample of high-school pupils (e.g., [51]. On the whole, the results of this paper agree with studies reporting weak correlations of trait EI with cognitive ability and academic performance (see also [5, 51, 69]).

Future research should look beyond direct links between trait EI and academic achievement into mediating and moderating effects within specific groups of children (especially, low IQ). As suggested by [50], the relationship between personality and academic achievement should be examined in individuals of similar cognitive ability, since IQ differences may mask or even distort it. Furthermore, achievement is affected by many other variables, such as school practices, family influences, peer interactions, and psychopathology, which should also be taken into account in the specification of process models.

Individual differences in trait EI may be relevant to coping with school pressures, in particular, and to successful adaptation, more generally [36]. Study 2 shows that trait EI is linked to how pupils are perceived by their teachers, such that those pupils who are deemed to be experiencing emotional and behavioral problems at school score lower on the TEIQue-CF. In contrast, high trait EI pupils seem more adept at controlling their school behavior in order to achieve desirable outcomes (e.g., good relations with teachers and peers). Thus, children who perceive themselves as emotionally competent are less likely to get involved in activities that will put them at risk of exclusion.

Pupils who had been excluded from school or had unauthorized absences scored significantly lower on the TEIQue-CF compared to their well-adjusted counterparts. While there was no fault-line distinguishing those who were truants from those who had been excluded due to antisocial behavior, trait EI was a powerful differentiator between adjusted and maladjusted children. Intervention programs [7] and national statistics [47] point to certain groups of children who are more prone to disorderly conduct, and, consequently, more likely to be excluded from school. Reducing exclusions and truancy could help tackle underachievement, juvenile delinquency, and social isolation. Study 2 suggests that trait EI has a role to play in this effort, although that role is neither as prominent nor as straightforward as routinely suggested in the "EQ is good for you" literature, which views emotional intelligence as a mental ability or a competency or a skill (e.g., [21, 37]). What seems clear, however, is that trait EI profiling will be useful in the timely identification of pupils at risk of school maladjustment.

Our data suggest that boys with nonconforming behavior have less confidence in their emotional abilities. Low trait EI may predispose boys to deviant behavior either directly or indirectly by interacting with other risk factors (personal or environmental). It could be hypothesized that gender differences in exclusion rates may be partly due to gender differences in trait EI. This hypothesis merits investigation on a larger sample that will include adequate numbers of excluded boys as well as girls. The fact that both gender and trait EI correlate with antisocial behavior does not necessarily mean that the former two will be correlated between them. Indeed, the evidence from adult samples indicates that there are no gender differences in global trait EI scores, although there are pronounced differences in some of the facets (e.g., [10, 36], but see also [12, 39]). While there were no gender differences in Study 1, more research is required to corroborate this finding. It will also be necessary to determine whether there are significant gender differences in the trait EI facets that are most strongly related to exclusions, specifically, and to antisocial behavior, more generally.

The accuracy and real-life importance of self-reports has been questioned on the grounds that some individuals may hold unrealistic or biased self-perceptions (see [28, 30]). Our findings can also be considered with reference to this debate. Trait EI was related to behavioral outcomes measured via teacher-ratings as well as to objective indices of school maladjustment (e.g., exclusions and unauthorized absences), which lends support to the view that children's emotion-related self-perceptions are, at least to some extent, accurate and relevant to behaviors that are readily observable by others.

The TEIQue-CF is a reliable and valid index of global trait EI for children between 8 and 12 years. Among the goals of future research would be to investigate the factor structure of the inventory in this age group. In fact, this is one of the relatively rare occasions where a factor analytic study of a questionnaire is likely to yield significant theoretical insights, particularly as regards the degree of differentiation in trait EI self-perceptions between childhood and adulthood [55], see also [32, 33]. Trait EI theory predicts that children's responses will show significantly *less* differentiation (i.e., fewer factors) than adult responses, which yield a four-factor structure.

Research with adult samples has verified the predictive and explanatory value of trait EI over and above established personality measures (see [29, 40, 54, 55]). Although we did not address issues of incremental validity in these two studies, future research should examine this issue. The child operationalisation of trait EI provides comprehensive coverage of emotion-related personality facets and we expect that, in many cases, it will show greater predictive validity than the higher-order personality dimensions, especially with reference to affect-laden criteria (see [54]).

As might be expected, in light of the disparateness of the emotional lives of children and adults, there exist extensive qualitative differences (i.e., construct discontinuity) in the respective operationalizations of trait EI. Further research will help elucidate the nature of this discontinuity and facilitate the development of longitudinal models that can accurately describe the developmental trajectories of emotional self-perceptions across the lifespan.

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