



Differences between children's self-reports and teacher ratings of emotional intelligence and anxiety: A cross-informant study

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ABSTRACT

Teachers play a crucial role in supporting children's socio-emotional development, yet their evaluations of emotional functioning may be influenced by academic achievement and classroom behavior. This study examined cross-informant differences between children's self-reported trait Emotional Intelligence (trait EI) and scholastic anxiety, and teacher ratings of the same constructs, while also considering the role of academic grades. Participants were 197 primary school children (aged 8–11) and their teachers, who completed parallel forms of the Trait Emotional Intelligence Questionnaire and the Anxiety Scale Questionnaire for Children. Overall, agreement between informants was low. Teachers consistently rated children's trait EI higher than children rated themselves; moreover, teacher-rated trait EI tended to be higher among students with stronger academic results and those judged as well-behaved by their teachers, whereas children's self-reported trait EI was only related to academic grades. Thus, the association between trait EI and behavior was evident only for teacher ratings. In contrast, children reported more scholastic anxiety than teachers did. The child–teacher discrepancy in anxiety was especially pronounced among students judged as well-behaved, whereas academic grades (Italian, Math) did not reliably amplify or reduce this gap. These findings suggest that teachers may conflate visible classroom behavior with socio-emotional competence and may fail to detect internalized distress, particularly in well-behaved pupils. Integrating teacher ratings with children's self-reports can provide a more accurate picture of students' emotional well-being and inform early, school-based supports.

1. Introduction

Emotional Intelligence (EI) has been widely investigated as a psychological construct central to children's emotional and social development. Broadly, EI refers to individual differences in how people perceive, understand, regulate, and express their own emotions and those of others (Hughes & Evans, 2018). Although several theoretical models exist, one of the most established approaches in developmental research is the trait model (Petrides & Furnham, 2000), which conceptualizes EI as a constellation of emotional self-perceptions and behavioral dispositions situated at the lower levels of personality hierarchies (Petrides et al., 2007). Unlike ability-based frameworks that emphasize maximal performance on emotion-related cognitive tasks (Mayer–Salovey–Caruso Emotional Intelligence Test; Mayer et al.,

2012), trait EI captures individuals' typical emotional functioning and self-concept in everyday life.

Trait EI has been shown to predict children's psychological well-being, social adjustment, and adaptive school functioning (Andrei et al., 2015; García-Sancho et al., 2014; Perera & DiGiacomo, 2015). Importantly, its development becomes increasingly salient during middle childhood, approximately between ages 8 and 10, when children begin to integrate emotional awareness into their self-concept and show growing autonomy in regulating emotions (Saarni, 2000; Keefer et al., 2013; Petrides, 2009). These features make trait EI particularly suitable for assessment through self- and informant-report methods in primary school samples.

In parallel, scholastic anxiety refers to the apprehension, worry, and physiological arousal that arise in response to academic demands and

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evaluative situations (Putwain & Symes, 2011; Segool et al., 2013). It often takes the form of performance-focused anxiety (e.g., tests, oral participation, graded tasks), with evidence indicating that such anxiety emerges already in primary school and is associated with reduced attention, working-memory efficiency, and task engagement, mechanisms through which anxiety can compromise learning and classroom participation (Segool et al., 2013; von der Embse et al., 2018). While social-evaluative concerns (e.g., fear of negative peer/teacher evaluation) are relevant in school settings, the primary-school literature consistently shows that achievement-linked worries are common and consequential from early grades (Sorvo et al., 2017; Szczygiel et al., 2024).

From a developmental perspective, the transition to formal schooling can amplify children's awareness of externally evaluated performance and classroom routines (e.g., tests, public responding, sustained seat-work), increasing performance-salient worries relative to more diffuse relational concerns (Ahtola et al., 2011; Davidson et al., 2023). Such worries are not merely transient; they are associated with lower academic self-concept, self-efficacy, and reduced school adjustment and well-being (Robson et al., 2023), as well as with broader internalizing risk over time (Letcher et al., 2012). Importantly, these anxiety manifestations are often subtle and internal, making them less observable to adult informants than externalizing behaviors, a property that helps explain cross-informant discrepancies in school contexts (Parent et al., 2019).

These characteristics also bear on measurement. Although self-report remains essential for capturing subjective emotional experiences, the self-report nature of widely used assessment tools in this field may also constitute a limitation. Despite the extensive use of self- and other-ratings to evaluate both personality and children's behavior, only a few studies have incorporated other perspectives within the trait EI field. Some have integrated parental reports (Petrides et al., 2004), showing that multisource ratings of trait EI are differentially predictive of external criteria (Gugliandolo et al., 2015). Moreover, children's self-insight and metacognitive emotion knowledge are still developing in late childhood, which can constrain the precision of self-descriptions, especially for complex internal states such as worry or tension under evaluation pressure. As self-concept differentiation and metacognitive emotion regulation mature through middle childhood and early adolescence, reports become more reliable; however, variability in developmental level and language comprehension can still affect data quality. This methodological issue further supports the need for a multi-informant approach that combines self- and teacher-reports to capture both subjective and externally observable aspects of children's socio-emotional functioning.

In this context, the joint examination of trait Emotional Intelligence (EI) and scholastic anxiety provides a conceptually meaningful dual-domain framework for understanding children's socio-emotional functioning in school. Trait EI represents perceived emotional strengths and adaptive dispositions, whereas scholastic anxiety captures internalizing difficulties that may interfere with learning and adjustment. Considering these constructs together allows for an integrated view of both positive and negative emotional dimensions that shape adaptation in academic contexts. This dual focus also offers a stringent test of teachers' ability to detect children's socio-emotional functioning, potentially overestimating strengths (trait EI) and underestimating distress (anxiety), particularly in relation to observable factors such as academic achievement and classroom behavior.

Finally, a large body of work shows that cross-informant agreement on children's socio-emotional functioning is modest and theoretically informative rather than mere "measurement error" (Achenbach et al., 1987; De Los Reyes & Kazdin, 2004, 2005). Discrepancies reflect differences in context (home vs. classroom), observability (externalizing vs. internalizing), and role expectations, and bear direct implications for screening and intervention. Within school settings, teachers are key informants who observe children over time in structured and social

learning contexts (Xiang et al., 2022). Yet research on teacher judgment shows that academic and behavioral achievements can shape impressions, sometimes producing halo effects and an under-recognition of internalizing difficulties that are less observable in class (Machts et al., 2016; Südkamp et al., 2012; Urhahne & Wijnia, 2021). For this reason, integrating self- and teacher reports offers a more balanced and ecologically valid perspective, capturing both the child's internal experiences and the teacher's observations of classroom behavior and socio-emotional adjustment.

1.1. The present study

To our knowledge, no study has concurrently examined (a) child vs. teacher ratings of both trait EI and school anxiety in primary-school children, and (b) whether academic grades systematically moderate discrepancies between these two informants. Prior work typically addresses either trait EI or internalizing symptoms separately, relies mainly on parent informants, or does not test cross-informant mean-level bias and agreement alongside potential academic "lenses." Moreover, evidence on the moderating role of achievement is mixed and mainly derived from older students or different socio-educational systems. There is also a paucity of data from Italian primary schools.

To fill this literature gap, the present study pursued three aims. First, to quantify cross-informant agreement for trait EI and scholastic anxiety. Second, to test mean-level differences by rater (children vs. teachers) for both constructs. Third, to examine whether Italian and Math grades and classroom behavior are associated with (a) overall levels and (b) rater discrepancies in these constructs. Based on the literature, we tested three hypotheses: (H1) cross-informant agreement would be low, particularly for anxiety; (H2) teachers would report higher children's trait EI and lower school anxiety relative to children's self-reports (mean-level bias); (H3a) Academic grades in Italian and Mathematics would moderate discrepancies between children's and teachers' reports, with larger rater gaps expected among higher-achieving students. And (H3b) Classroom behavior would also moderate rater discrepancies, such that children judged as better behaved would show larger differences between self- and teacher-reported school anxiety and trait EI. In addition, we explored whether academic grades and classroom behavior would amplify or attenuate these discrepancies, given their established influence on teacher judgments (Begeny et al., 2008; Kaiser et al., 2017; Machts et al., 2016; Urhahne & Wijnia, 2021) and, given well-documented gender differences in both emotional expression and internalizing symptoms during childhood (Chaplin & Aldao, 2013; Else-Quest et al., 2006), we also explored sex as a potential moderator of cross-informant discrepancies.

By jointly modeling strengths (trait EI) and internalizing difficulties (anxiety) in the same primary school sample, the study proposed to advance a dual-domain, cross-informant framework with clear implications for school-based assessment and early intervention.

2. Method

2.1. Participants and procedures

This cross-informant study involves 197 children aged 8–11 years (101 females; mean age = 9.55, SD = 0.63) and their primary teachers. All children involved in the study were native to the cultural and educational context in which they lived. Moreover, eight teachers participated in the study, one per class. In the Italian primary school system, each class is led by a "main" or "prevalent" teacher, who follows the same pupils across all five years of primary education and teaches the core academic subjects (Italian, Mathematics, History, Geography, and Science). For this reason, inclusion in the study was based on holding this main-teacher role. Other teacher characteristics (age, gender, experience) were descriptive rather than selection criteria and reflect the demographic composition of the Italian primary education

workforce, which is approximately 95% female, mostly aged between 45 and 65 years, and highly experienced. An a priori power analysis was conducted using G*Power 3.1 to determine the minimum required sample size to detect medium effects in a mixed-design ANOVA with one within-subjects factor (Rater: child vs. teacher) and one between-subjects factor (Grade: Basic, Intermediate, Advanced). Assuming a medium effect size ($f = 0.25$), $\alpha = 0.05$, and desired power ($1 - \beta$) = 0.80, the analysis indicated that a minimum of 130 participants would be sufficient. The final sample of 197 children, therefore, was adequate to detect medium effects or larger.

Two questionnaires in different forms were administered to children and teachers to evaluate children's self-perceptions and teacher ratings. The data collection was carried out by a trained researcher, separately for children and teachers. First, data collection for children was conducted in the classroom during regular class time, lasting approximately 30 min. Second, regarding teachers, a researcher provided the instructions about the questionnaires in the classroom while teachers completed their questionnaires about every child later, giving them back to the researcher the day after. Teachers reported that data collection lasted approximately 2 h, and all participants were women between 50 and 60 years old with at least 20 years of teaching experience.

Informed consent was obtained from both parents of every child and their principal teacher. The study was conducted in accordance with the Declaration of Helsinki and was approved by the Bioethics Committee of the last author's institution (Protocol No. 322763/2021).

2.2. Measures

2.2.1. Trait Emotional Intelligence

The Trait Emotional Intelligence Questionnaire Child Short Form (TEIQue-CSF; Mavroveli et al., 2008) in its validated Italian version (Russo et al., 2012) and the Italian version of Trait Emotional Intelligence Questionnaire-360 Short Form (TEIQue-360-SF; Petrides, 2009) were used to measure children's trait EI and teachers' ratings of children's trait EI. The first version comprises 36 items, responded to on a 5-point scale (e.g. "It is easy for me to talk about my emotions."; "I am good at understanding how other people feel"; "I usually think very carefully before I speak") while the second comprises 30 items (e.g. "Expressing emotions in words is not a problem for him/her."; "Normally, he/she is able to empathize with others' feelings."; "Often stops to reflect on his/her feelings."). The Likert scale of the teacher's version was reduced from 7 to 5 points to facilitate comparison between the scores. For this study, global trait EI scores were evaluated from both questionnaires. In this study, both questionnaires have shown good reliability (Cronbach's alpha = 0.85 and 0.92, respectively).

2.2.2. Scholastic anxiety

The Italian version of the Anxiety Scale Questionnaire for Children (Busnelli et al., 1974) was used in its two different versions to assess children's self-reported anxiety symptoms (e.g., "Does your heart beat fast when the teacher asks you to repeat a lesson?" "Do you think your classmates understand lessons better than you?"; and teacher ratings of children's anxiety (e.g., "When questioned, does he/she stutter or hesitate?"; "Is he/she afraid of performing worse than classmates?"). The self-reported version provides three scores: general anxiety, scholastic anxiety, and total anxiety. For the purpose of this study, only the subscale of scholastic anxiety was used, as the teacher version reported only anxiety symptoms related to the scholastic context. The reliability of both tests was good (Cronbach's alpha = 0.85 and 0.84).

2.2.3. Academic performance and behavior

Academic performance in Italian and math, as well as children's behavior ratings, was measured through the children's final school grades provided by their teachers. In the Italian primary school system, students are assessed through descriptive levels of competence rather than numeric grades. Each subject (e.g., Italian, Mathematics) is

evaluated according to nationally standardized criteria set by the Italian Ministry of Education, which specify four main achievement levels: Basic, Intermediate, Advanced, and In progress (the latter used only for emerging skills). For this study, the first three categories were used, corresponding to increasing mastery of subject-specific learning objectives. Teachers assign these levels based on students' achievement across multiple curricular indicators (e.g., comprehension, problem-solving, and written expression). In our analyses, the three levels were coded numerically (1 = Basic, 2 = Intermediate, 3 = Advanced). The same categorical structure was applied to the behavioral evaluation, which reflects teachers' judgments on compliance with rules, participation in class, socialization, academic effort, and motivation.

2.3. Statistical analysis

Statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS for Windows, release 25.0). Sex was coded as a dummy variable: F = 0 and M = 1, while school grades were coded as follows: 1 = basic, 2 = intermediate, and 3 = advanced. First, bivariate statistics (Pearson's r) were used to explore relationships among variables. Agreement between children's self-reports and teachers' ratings (H1) was assessed using intraclass correlation coefficients (ICCs; two-way mixed-effects, absolute-agreement, single-measures model, ICC [3,1]; Shrout & Fleiss, 1979) computed separately for trait EI and anxiety. In line with De Los Reyes and Kazdin's (2005) framework, we examined three components of cross-informant agreement: (a) level agreement through mean comparisons (ANOVAs), (b) rank agreement through correlations between self- and teacher-reports, and (c) differentiation through comparisons of score variability using Levene's tests for equality of variances. To test mean-level differences between informants (H2) and to examine whether academic achievement and individual characteristics moderated these differences (H3), we ran a series of 2 (Source: child, teacher) \times 3 (Grade: Basic, Intermediate, Advanced) repeated-measures ANOVAs. The within-subject factor was Source (two levels), and the between-subject factors were the grade in Italian, Mathematics, and Behavior, as well as Sex. Separate models were estimated for each subject area and each construct (trait EI, anxiety). When the main effects or interactions involving Grade or Sex were significant, Bonferroni-adjusted post hoc comparisons were performed. We report F statistics, exact p -values (except when < 0.001), and partial η^2 as the measure of effect size.

3. Results

3.1. Inter-rater agreement and correlational analysis

Overall, agreement between children's self-reports and teachers' ratings was quantified with two-way mixed-effects intraclass correlation coefficients (ICC[3,1], absolute agreement, single measures) (Table 1). Trait EI showed low but statistically significant agreement, ICC(3,1) = 0.22, 95% CI [0.08, 0.35], while, in contrast, agreement for school anxiety was negligible and not different from zero, ICC(3,1) = 0.13, 95% CI [-0.01, 0.26]. According to conventional benchmarks (< 0.40 = poor; Koo & Li, 2016), both ICCs fall within the "poor" range, indicating that less than one quarter of the variance in scores is shared across informants. Moreover, the correlational analysis reported in Table 2,

Table 1
Intraclass Correlation Coefficients (ICC) between self-report and teacher ratings.

Construct	ICC	95% CI	Model	N
Trait EI	0.220	[0.080, 0.350]	ICC(3,1)	197
Anxiety	0.128	[-0.012, 0.263]	ICC(3,1)	197

Note. ICCs are based on a two-way mixed-effects, absolute-agreement, single-measures model. Interpretation follows Koo and Li (2016): < 0.40 = poor agreement.

Table 2
Correlational analysis between variables.

	1	2	3	4	5	6	7
1. Trait EI(S.R.)	1						
2. Trait EI(T.R.)	0.22**	1					
3. Anxiety(S.R.)	-0.41***	-0.12	1				
4. Anxiety (T.R.)	-0.04	-0.54***	0.14*	1			
5. Italian	0.21**	0.34***	-0.07	-0.21***	1		
6. Math	0.21**	0.35***	-0.07*	-0.24***	0.79***	1	
7. Behavior	0.19**	0.35***	-0.08	-0.18**	0.26***	0.35***	1

Note. S.R. = self-reported; T.R. = teacher ratings.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

showed that teacher ratings in trait EI and anxiety were related to all academic results including behavioral grades (all $ps < 0.01$), while self-reported scores showed no relationship with behavioral grades ($p > 0.05$). Moreover, even if self-reported trait EI and anxiety symptoms showed significant and negative relationship each other ($p < 0.001$) as well as teacher ratings in trait EI and anxiety ($p < 0.01$), no relationship was found between self-reported anxiety symptoms and the respective teacher ratings ($p > 0.05$) as well as between self-reported trait EI and teacher ratings in anxiety. In addition to the correlational analyses, we also considered the level and differentiation components of cross-informant agreement (De Los Reyes & Kazdin, 2005). Level agreement was already examined through mean comparisons (ANOVAs), while the differentiation component was evaluated by comparing score variability between self- and teacher-reports using Levene's tests for equality of variances.

Results indicated significant differences in variability for both trait EI, $F(1, 195) = 17.09, p < 0.001$, and school anxiety, $F(1, 195) = 32.38, p < 0.001$. Standard deviations showed that teachers provided a wider range of scores for trait EI (SD = 0.68 vs. 0.51). Conversely, children reported greater variability in school anxiety (SD = 11.00 vs. 7.04).

3.2. Mean differences in cross-informant ratings of children's trait EI

The results of the 2 (Source: child vs. teacher) \times 3 (grade level) repeated-measures design are presented in Table 3 (descriptive) and Table 4. The ANOVAs were run separately for Italian, Math, and Behavior confirmed a consistent mean-level differences between children's self-reported trait EI and teachers rating indicating a significant main effect of the rater (Italian: $F(1,191) = 11.10, p = 0.001, \eta^2_p = 0.055$; Math: $F(1,191) = 14.20, p < 0.001, \eta^2_p = 0.069$; Behavior: $F(1,191) = 14.98, p < 0.001, \eta^2_p = 0.073$).

Table 3
Means (M) and standard deviations (SD) for trait emotional intelligence and scholastic anxiety by rater and academic grades.

Grade	Trait EI child report M (SD)	Trait EI teacher report M (SD)	Anxiety child report M (SD)	Anxiety teacher report M (SD)
Italian				
Basic	3.48 (0.48)	3.49 (0.50)	17.00 (5.17)	17.44 (7.54)
Intermediate	3.43 (0.54)	3.76 (0.67)	17.42 (5.82)	15.27 (6.65)
Advanced	3.68 (0.47)	4.19 (0.63)	15.60 (6.31)	12.64 (7.04)
Math				
Basic	3.42 (0.41)	3.54 (0.46)	18.09 (4.50)	16.00 (6.68)
Intermediate	3.44 (0.55)	3.74 (0.65)	16.99 (5.59)	16.06 (6.91)
Advanced	3.67 (0.47)	4.19 (0.64)	15.80 (6.52)	12.33 (6.79)
Behavior				
Basic	3.42 (0.41)	3.54 (0.46)	17.80 (7.35)	16.00 (7.30)
Intermediate	3.44 (0.55)	3.74 (0.65)	16.54 (4.90)	16.41 (8.69)
Advanced	3.67 (0.47)	4.19 (0.64)	16.20 (6.34)	13.04 (6.36)

Bonferroni-adjusted post hoc tests on the between-subject factor showed that trait EI increased with achievement: for Italian, Advanced > Intermediate ($\Delta = 0.33, SE = 0.07, p < 0.001$) and Advanced > Basic ($\Delta = 0.44, SE = 0.15, p = 0.014$), for Math, Advanced > Intermediate ($\Delta = 0.33, SE = 0.07, p < 0.001$) and Advanced > Basic ($\Delta = 0.43, SE = 0.14, p = 0.009$), for Behavior, Advanced > Intermediate ($\Delta = 0.22, SE = 0.08, p = 0.033$), Advanced > Basic ($\Delta = 0.80, SE = 0.18, p < 0.001$), and Intermediate > Basic ($\Delta = 0.59, SE = 0.19, p = 0.007$). Finally, none of the Source \times Grade interactions reached significance (all $p \geq 0.07$), indicating that the teacher-child gap (-0.30 – 0.42 scale points) remained stable across grade levels (Table 5).

3.3. Mean differences in cross-informant ratings of children's anxiety

Parallel ANOVAs for school anxiety presented in Tables 3 and 4 revealed a very large Source effect in all three models (Italian: $F(1,190) = 151.82, p < 0.001, \eta^2_p = 0.444$; Math: $F(1,190) = 184.95, p < 0.001, \eta^2_p = 0.493$; Behavior: $F(1,190) = 123.26, p < 0.001, \eta^2_p = 0.393$). Academic grades showed modest main effects (Italian: $F(2,190) = 4.42, p = 0.013$; Math: $F(2,190) = 5.03, p = 0.007$; Behavior: $F(2,190) = 4.89, p = 0.008$). Bonferroni comparisons indicated that only Intermediate < Advanced for Italian ($\Delta = 2.81, SE = 1.02, p = 0.019$), Intermediate < Advanced for Math ($\Delta = 2.96, SE = 1.02, p = 0.013$), and Intermediate < Advanced for Behavior ($\Delta = 3.35, SE = 1.29, p = 0.030$) survived correction; other pairwise contrasts were non-significant (Table 5). Moreover, no Source \times Grade interaction emerged (all $p \geq 0.43$), indicating that the underestimation was invariant across achievement levels. Contrary, a Source \times Sex effect appeared in two models (Italian: $F(1,190) = 11.56, p < 0.001, \eta^2_p = 0.057$; Math: $F(1,190) = 7.20, p = 0.008$), indicating a larger teacher-child gap for boys.

4. Discussion

This cross-informant study investigated (a) mean-level differences and agreement between children's self-reports and teachers' ratings of trait EI and school anxiety, and (b) whether academic achievement (Italian, Math, and Behavioral grades) influenced such discrepancies. Overall, agreement between informants was low for both constructs (ICC_(3,1) = 0.22 for TEI; ICC_(3,1) = 0.13 for anxiety), with the latter not significantly different from zero. These values are consistent with prior multi-informant research, which has shown modest convergence on socio-emotional constructs in childhood (Achenbach et al., 1987; De Los Reyes & Kazdin, 2005).

In line with our second hypothesis, teachers rated children's trait EI scores higher than the children themselves did. This mean-level rater effect was consistent across the Italian, Mathematics, and Behavior models: on average, teacher scores exceeded children's by ~ 0.30 – 0.40 scale points, yielding small-to-moderate effects ($\eta^2_p \approx 0.06$ – 0.07). Rater \times Grade interactions were not significant, indicating that the teacher-child gap did not vary as a function of academic grades or behavior.

Table 4
Repeated-measures ANOVAs comparing children's and teachers' ratings.

Construct	Factor	Stratum	Effect	F	P	Partial η^2
Trait EI	Italian	Between	Italian	14.470	<0.001	
Trait EI	Italian	Between	Sex	0.848	0.358	0.004
Trait EI	Italian	Between	Sex	0.125	0.326	0.722
Trait EI	Italian	Within	Italian	11.095	0.001	0.055
Trait EI	Italian	Within	Rater \times	2.430	0.091	0.025
Trait EI	Italian	Within	Italian			
Trait EI	Italian	Within	Rater \times	0.808	0.370	0.004
Trait EI	Italian	Within	Sex			
Trait EI	Italian	Within	Rater \times	1.372	0.256	0.014
Trait EI	Italian	Within	Sex \times			
Trait EI	Italian	Within	Italian			
Trait EI	Math	Between	Math	14.828	<0.001	
Trait EI	Math	Between	Sex	1.149	0.285	0.006
Trait EI	Math	Between	Sex \times	0.209	0.552	0.577
Trait EI	Math	Between	Math			
Trait EI	Math	Within	Rater	14.201	<0.001	
Trait EI	Math	Within	Rater \times	2.690	0.070	0.027
Trait EI	Math	Within	Math			
Trait EI	Math	Within	Rater \times	0.413	0.521	0.002
Trait EI	Math	Within	Sex			
Trait EI	Math	Within	Rater \times	1.332	0.266	0.014
Trait EI	Math	Within	Sex \times			
Trait EI	Math	Within	Math			
Trait EI	Behavior	Between	Behavior	12.617	<0.001	
Trait EI	Behavior	Between	Sex	0.376	0.540	0.002
Trait EI	Behavior	Between	Sex	0.156	0.407	0.666
Trait EI	Behavior	Between	Behavior			
Trait EI	Behavior	Within	Rater	14.978	<0.001	
Trait EI	Behavior	Within	Rater \times	2.138	0.121	0.022
Trait EI	Behavior	Within	Behavior			
Trait EI	Behavior	Within	Rater \times	4.809	0.030	0.025
Trait EI	Behavior	Within	Sex			
Trait EI	Behavior	Within	Rater \times	2.900	0.057	0.029
Trait EI	Behavior	Within	Sex \times			
Trait EI	Behavior	Within	Behavior			
Anxiety	Italian	Between	Italian	4.415	0.013	0.044
Anxiety	Italian	Between	Sex	4.937	0.027	0.025
Anxiety	Italian	Between	Sex	57.846	0.644	0.526
Anxiety	Italian	Between	Italian			
Anxiety	Italian	Within	Rater	151.823	<0.001	0.444
Anxiety	Italian	Within	Rater \times	0.075	0.928	7.880
Anxiety	Italian	Within	Italian			$\times 10^{-4}$
Anxiety	Italian	Within	Rater \times	11.562	<0.001	
Anxiety	Italian	Within	Sex			
Anxiety	Italian	Within	Rater \times	3.602	0.029	0.037
Anxiety	Italian	Within	Sex \times			
Anxiety	Italian	Within	Italian			
Anxiety	Math	Between	Math	5.030	0.007	0.050
Anxiety	Math	Between	Sex	4.986	0.027	0.026
Anxiety	Math	Between	Sex Math	27.618	0.309	0.735
Anxiety	Math	Between	Math			
Anxiety	Math	Within	Rater	184.953	<0.001	
Anxiety	Math	Within	Rater \times	0.826	0.439	0.009
Anxiety	Math	Within	Math			
Anxiety	Math	Within	Rater \times	7.195	0.008	0.036
Anxiety	Math	Within	Sex			
Anxiety	Math	Within	Rater \times	1.826	0.164	0.019
Anxiety	Math	Within	Sex \times			
Anxiety	Math	Within	Math			
Anxiety	Behavior	Between	Behavior	4.893	0.008	0.049
Anxiety	Behavior	Between	Sex	4.194	0.042	0.022
Anxiety	Behavior	Between	Sex	17.427	0.195	0.823
Anxiety	Behavior	Between	Behavior			
Anxiety	Behavior	Within	Rater	123.256	<0.001	
Anxiety	Behavior	Within	Rater \times	0.842	0.432	0.009
Anxiety	Behavior	Within	Behavior			
Anxiety	Behavior	Within	Rater \times	2.454	0.119	0.013
Anxiety	Behavior	Within	Sex			
Anxiety	Behavior	Within	Rater \times	0.207	0.813	0.002
Anxiety	Behavior	Within	Sex \times			
Anxiety	Behavior	Within	Behavior			

Note. Results from 2 (Source: child, teacher) \times 3 (Grade) repeated-measures ANOVAs. Effect size = partial η^2 .

Two non-mutually exclusive explanations are plausible. First, children's self-concepts, especially in terms of emotional and social abilities, are still consolidating; as a result, they may report lower levels of capacities that are less salient or harder to monitor internally. This developmental explanation is consistent with evidence that children's self-concept differentiation and metacognitive emotion knowledge continue to mature during late childhood (Keefer et al., 2013; Saarni, 2000). Second, teachers' judgments are shaped by observable classroom behaviors and may be susceptible to halo effects from academic performance or behavior, which can lead to inflated ratings of children's emotional competence (Machts et al., 2016; Südkamp et al., 2012; Urhahne & Wijnia, 2021). Importantly, because trait EI includes subjective, context-specific facets, adult observers may not fully capture elements that reside primarily in the child's private experience.

The modest correlations between self- and teacher-reports observed for both trait EI and school-related anxiety are consistent with H1, which predicted low cross-informant agreement. In line with previous multi-informant research (De Los Reyes & Kazdin, 2005; Funder, 2012), agreement tends to be lower for constructs involving internal and affective processes than for externally observable domains such as cognitive ability. According to Funder's Realistic Accuracy Model (RAM; Funder, 2012), the accuracy of interpersonal judgments depends on a sequence of conditions: the relevant behavioral information must be available, detected, and correctly interpreted by the observer. When the cues that convey internal emotional states are subtle or private, as in the case of anxiety or emotional self-perceptions, external observers have limited access to the information necessary to make accurate judgments. Whereas cognitive performance can be inferred from tangible outcomes, trait EI and anxiety rely on subjective emotional experiences that are less accessible to external observers.

All these considerations are consistent to trait EI theoretical framework (Petrides et al., 2007, 2016) because it represents self-perceived emotional dispositions rather than measurable abilities, which naturally limits external accuracy. However, the difficulty in capturing children's subjective experiences should not be viewed as a methodological weakness but as an opportunity to enhance teachers' awareness of these internal dimensions. Interventions and teacher-training programs should therefore not only focus on recognizing behavioral indicators but also foster educators' ability to attune to the emotional and experiential world of their students.

Conversely, and consistent with H2, teachers reported substantially lower levels of scholastic anxiety than children. This cross-informant gap is consistent with the lower classroom observability of internalizing symptoms, rather than a claim about which informant is more "accurate." The Source effect was substantial ($\eta^2_p \approx 0.39-0.49$), indicating that teachers reported roughly half the anxiety levels that children reported themselves, a robust effect across all models. This aligns with the literature, which shows that adults are less accurate at internalizing symptoms, as these are less observable than externalizing behaviors (Achenbach et al., 1987; Parent et al., 2019). Moreover, a significant Source \times Sex interaction (for two of the three models) indicated that the discrepancy was larger for boys, this results are aligned to research that suggesting teachers may be especially likely to miss anxious experiences in male pupils, maybe because boys show fewer overt signs or because anxiety in boys is less prototypical within teachers' schemas (Löhre et al., 2024).

However, in our sample, boys and girls did not differ significantly in their self-reported anxiety levels ($p = 0.13$), suggesting that the observed discrepancy does not simply reflect lower anxiety among male pupils. Rather, it may indicate that teachers are less likely to detect anxiety symptoms in boys, potentially because these are expressed through less prototypical or more externalizing behaviors (Else-Quest et al., 2006; Robson et al., 2023). This interpretation aligns with prior research showing that teachers often underestimate internalizing difficulties in male students, especially when symptoms are less overt or do not interfere with classroom behavior (Achenbach et al., 1987; Parent et al.,

Table 5
Bonferroni-adjusted pairwise comparisons by grade level.

Construct	Factor	Comparison	Mean diff	SE	df	T	p (adj)
Trait EI	Italian	Basic vs Intermediate	-0.109	0.155	191	-0.700	1.000
Trait EI	Italian	Basic vs Advanced	-0.438	0.152	191	-2.871	0.014
Trait EI	Italian	Intermediate vs Advanced	-0.329	0.066	191	-4.977	<0.001
Trait EI	Math	Basic vs Intermediate	-0.095	0.146	191	-0.650	1.000
Trait EI	Math	Basic vs Advanced	-0.426	0.142	191	-2.994	0.009
Trait EI	Math	Intermediate vs Advanced	-0.331	0.066	191	-5.004	<0.001
Trait EI	Behavior	Basic vs Intermediate	-0.585	0.189	191	-3.092	0.007
Trait EI	Behavior	Basic vs Advanced	-0.802	0.177	191	-4.529	<0.001
Trait EI	Behavior	Intermediate vs Advanced	-0.217	0.084	191	-2.571	0.033
Anxiety	Italian	Basic vs Intermediate	0.840	2.383	190	0.352	1.000
Anxiety	Italian	Basic vs Advanced	3.644	2.337	190	1.559	0.362
Anxiety	Italian	Intermediate vs Advanced	2.805	1.016	190	2.760	0.019
Anxiety	Behavior	Basic vs Intermediate	1.948	2.885	190	0.675	1.000
Anxiety	Behavior	Basic vs Advanced	5.301	2.701	190	1.963	0.153
Anxiety	Behavior	Intermediate vs Advanced	3.353	1.288	190	2.603	0.030

Note. Pairwise comparisons are Bonferroni-corrected. Positive mean difference = higher scores in the second group.

2019).

Beyond mean-level differences, the analyses of differentiation revealed that informants also differed in the variability of their ratings. Teachers displayed greater differentiation in their evaluations of trait EI, whereas children showed wider variability in self-reported school anxiety. This pattern suggests that the two informants rely on distinct reference frames when judging emotional functioning, teachers tend to emphasize overt behavioral expressions, while children's self-evaluations reflect more nuanced internal states. Such divergence is theoretically consistent with cross-informant models (De Los Reyes & Kazdin, 2005) and reinforces the view that each perspective contributes unique, complementary information.

Contrary to our third hypothesis, grades in Italian and Mathematics did not moderate the teacher-child discrepancy. Although achievement was associated with mean-level differences (higher grades were related to higher trait EI and, to a lesser extent, lower anxiety across informants), the rater gap remained essentially stable across different levels of academic performance. By contrast, behavior in classroom did moderate the discrepancy in the anxiety models: the difference between teacher and child reports was larger among students rated as better behaved. Together with the observed Rater \times Sex interactions (greater gaps for boys), this pattern suggests that characteristics associated with classroom presentation (e.g., behavior, gendered expression of distress) may influence teachers' perceptions more than academic marks per se. Thus, the teacher-child difference in mean levels was stable across Italian and Mathematics achievement: teachers reported higher trait EI and lower anxiety than children, regardless of grades; however, the teacher-child difference in anxiety was larger among students rated as better behaved. This pattern partially diverges from reports of achievement-driven biases in teacher judgments (Begeny et al., 2008; Kaiser et al., 2013; Urhahne & Wijnia, 2021), suggesting that in our sample, academic performance functioned more as a general correlate of socio-emotional functioning than as a lens that distorted teacher ratings relative to children's self-reports. Still, the modest sex-related modulation for anxiety hints that other child characteristics (e.g., gendered expression of distress) may shape teacher perception more than grades do.

From an applied standpoint, these findings underscore that relying solely on teacher ratings risks systematic misestimation or overestimation of socio-emotional strengths, as well as underestimating children's internal distress. While multi-informant assessment remains crucial to mitigate single-source bias, dismissing children's self-perceptions would forfeit critical information needed to tailor interventions and support well-being. Teachers may benefit from targeted training to recognize internalizing symptoms and to differentiate observed classroom behavior from underlying emotional states.

4.1. Limitations and future directions

The findings of this study should be viewed within the context of its limitations that may impact their generalizability and interpretability.

Firstly, the study may be susceptible to the issue of social desirability bias, as children or teachers might be inclined to present themselves or the class in a more socially acceptable or favorable light, potentially influencing self-reported trait EI and anxiety levels. Secondly, the study's cross-sectional nature may limit its ability to capture the dynamic nature of children's emotional experiences and academic achievements over time. Longitudinal data would provide a more comprehensive understanding of the developmental trajectories of trait EI and anxiety concerning academic performance. Thirdly, the study's focus on a specific demographic or cultural group may limit the generalizability of its findings to a broader population. Cultural and contextual factors play a crucial role in shaping emotional experiences, and a more diverse sample would enhance the study's external validity. Furthermore, the study may lack a comprehensive exploration of potential confounding variables that could influence the observed relationships. Factors such as socioeconomic status, family dynamics, or individual differences in coping strategies may contribute to the complexity of the findings. Finally, the repeated-measures ANOVAs did not statistically adjust for the nesting of children within teachers; although this is unlikely to change the pattern of large Source effects, it may inflate Type I error for smaller interactions.

Moreover, the moderation analyses involving sex should be interpreted with caution, as this factor was not specified a priori but included as an exploratory extension to provide a broader understanding of cross-informant differences.

Considering these limitations is crucial for interpreting the study's results accurately and encourages future research to address these constraints. Specifically, future work should adopt multilevel or latent variable approaches (e.g., multi-informant SEM), include observational or physiological indices of anxiety, and test targeted teacher-training interventions to reduce perceptual bias.

5. Conclusion

Overall, this study highlights systematic mean-level differences between children's self-perceptions and teachers' evaluations of socio-emotional functioning. Teachers reported higher trait EI and lower scholastic anxiety than children, and these rater differences did not vary with achievement in Italian or Mathematics. By contrast, for anxiety, the teacher-child gap was larger among pupils rated as better behaved. Thus, while grades related to overall levels of trait EI and anxiety, they did not amplify or attenuate the discrepancy between informants.

These findings reinforce the value of a multi-informant approach:

complementing teacher reports with children's self-perceptions enhances ecological validity and yields a more comprehensive view of pupils' emotional well-being. Without adjudicating which informant is "more accurate," recognizing systematic rater differences, and the potential influence of classroom presentation, can inform targeted professional development, helping educators attend to subtle signals of internal distress and to consider individual emotional and social needs alongside academic and behavioral performance.

CRedit authorship contribution statement

Marco Andrea Piombo: Writing – original draft, Visualization, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Sabina La Grutta:** Validation, Supervision, Resources, Project administration, Investigation, Conceptualization. **Maria Stella Epifanio:** Validation, Resources, Investigation. **Elena Trombini:** Supervision, Resources, Project administration, Investigation, Conceptualization. **Federica Andrei:** Writing – review & editing, Supervision, Project administration, Methodology, Conceptualization.

Declaration of competing interest

Authors declare no conflict of interests.

Data availability

Data will be made available on request.

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