



Meta-emotion philosophy in teachers from kindergarten to middle school

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Abstract

The present study further investigated the role of teachers as emotional socializers by exploring both the theoretical and the empirical applicability of the construct of meta-emotion philosophy in teachers coming from kindergarten to middle-school. Specifically, we first aimed to test the psychometric properties of a specific tool to assess meta-emotion philosophy (i.e., the Crèche Educator Emotional Style Questionnaire - CEESQ, originally developed for early childhood educators). The second aim was to explore whether the associations between the dimensions provided by the CEESQ were in line with the meta-emotion philosophy framework. 815 female teachers (mean teaching experience = 20.08 years, SD = 10.84 years) from kindergarten to middle school took part to the study. The original 5-factor structure of the CEESQ was confirmed (i.e., three factors related to how teachers approach students' emotions and perceive their self-efficacy as emotional socializers, and two factors related to how they recognize and approach their own emotions in daily life). Moreover, the CEESQ factors showed several significant interrelations, especially considering the correlations between teachers' self-efficacy as socializers toward students' emotions and teachers' perceptions of their own personal emotional competence. Emerged results indicated the usefulness to expand the construct of meta-emotion philosophy from parenting to student-teacher relationship in order to reach a more comprehensive understanding of the role of teachers as emotional socializers; moreover, they suggest the need for including in teachers' pre-service and ongoing education a specific attention to promote awareness about the strict connection between personal emotional world and emotion-related educational practices adopted toward students.

Keywords Meta-emotion philosophy · Emotional style · Emotion socialization · Self-efficacy as emotional socializer · Emotional competence

Introduction

Alongside the well-established field of research focused on the role of parents in children's emotion socialization processes (e.g., Denham et al., 2012; Eisenberg et al.,

1998), the understanding of youths' emotion socialization is increasingly interested in the role of caregiver pertaining to extra-familial contexts, such as teachers at school. The present study aimed to expand the investigation of the role of teachers as emotional socializers by exploring both the theoretical and the empirical applicability of the construct of meta-emotion philosophy (MEP; Gottman et al., 1996, 1997; Katz et al., 2012) in teachers coming from kindergarten to middle-school. Emotion socialization can be defined as a dynamic process through which caregivers implicitly and/or explicitly drive children's trajectories about emotional development by implementing social practices that orientate children's way of interpreting and expressing emotions (Eisenberg et al., 1998; Thompson, 2015). The MEP construct, originally proposed by Gottman and colleagues (1996, 1997), can help to in-depth understand how parents' thoughts and feelings about emotions play a central role in

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the emotional socialization of their children. Specifically, the MEP encompasses (a) an organized set of feelings and thoughts (i.e., a philosophy of emotional expression and regulation) that parents have about both their own and their children's emotions, and (b) an approach to both their own and their children's emotions (Gottman et al., 1996, 1997). There are three core principles underlying this construct: (1) parents' beliefs, thoughts, and attitudes about emotions model their emotion socialization behaviors toward children; (2) parents' thoughts and feelings about their own emotions are associated to their thoughts and feelings about their children's emotions; (3) awareness, acceptance, and regulation of emotions are central processes to the MEP (Katz et al., 2012). To summarize, parental socialization of children's emotions is related to a set of beliefs, thoughts, and attitudes about emotions, and the MEP constitutes "an underlying basis for parents' expression and regulation of their own emotions, and for their reactions to and coaching of their children's emotions" (Katz et al., 2012, p. 417). The two principal meta-emotion philosophies in parents are coaching (i.e., awareness and acceptance of both their own and their children's emotions, and willingness to help children in managing their emotional experience) and dismissing (lack of emotion awareness and lack of interest, low acceptance toward both their own and their children's emotions, devaluating, minimizing, or ignoring children's emotional experience; Gottman et al., 1996, 1997; Katz et al., 2012; Lagacé-Séguin & Coplan, 2005; Lunkenheimer et al., 2007).

The construct of MEP has been largely studied within the context of parent-child relationships (Gottman et al., 1996, 1997; Lagacé-Séguin & Coplan, 2005; Hakim-Larson et al., 2006; Lunkenheimer et al., 2007; Ornaghi et al., 2019). Since extant literature has highlighted that caregivers pertaining to educational and school contexts (i.e., early childhood educators and teachers) play an important role in children's socio-emotional developmental trajectories across different school levels (e.g., Denham et al., 2012; Jennings & Greenberg, 2009; McGrath & Van Bergen, 2015; Pianta et al., 2003), it appears important to investigate their role as emotional socializers of children's emotions by applying the construct of MEP. On this regard, many studies have highlighted the adaptive impact of teachers' emotion reflection and emotion awareness on supporting students' emotional development, e.g., by equipping teachers to face students' different temperamental characteristics (Harkoma et al., 2021), to promote students' emotion regulation (Mänty et al., 2022), or to apply a consistent emotional support that impact on students' adjustment (Bailey, 2022). The novelty of the application of the MEP construct lies in considering that teachers' emotional socialization practices towards students are affected by an emotional dimension that pertains

to teacher's personal emotional competence, i.e., a general emotional domain that goes beyond specific work-related aspects. This would also be in line with the growing field of investigation that stresses the strict continuity between teachers' personal functioning and their professional role (Baroncelli et al., 2022; Jennings & Greenberg, 2009; Thateus & Selvakumar, 2022).

Meta-emotion philosophy in educational contexts

To date, only few recent studies explored the construct of MEP in educational contexts, providing initial evidence about its validity in the relationship between children attending crèche and their early childhood educators (Ciucci et al., 2015, 2018; Ornaghi et al., 2020, 2021). For instance, Ciucci et al. (2015) first focused on how to assess the dimensions of the MEP within a sample of early childhood educators by developing and validating a self-report questionnaire (i.e., the Crèche Educator Emotional Style Questionnaire - CEESQ) composed by two sections: the first one (i.e., CEESQ-Children's Emotions) pertains early childhood educators' beliefs and behaviors concerning children's emotions and educators' approach toward children's emotions (i.e., coaching and dismissing emotional styles, and self-efficacy as emotional socializer), while the second one (i.e., CEESQ-Individual Emotions) focuses on early childhood educators' self-evaluations about their own personal emotional competence (i.e., emotional self-efficacy, and denial of emotions). In detail, coaching and dismissing styles capture different early childhood educators' beliefs, thoughts, and attitudes about children's emotions resulting in specific emotion socialization practices that are conceptually in line with the above-described coaching and dismissing parental meta-emotion philosophies; moreover, the dimension of self-efficacy as emotional socializer describes early childhood educators' self-perception related to capabilities as professionals in the socialization of children's understanding, expression, and regulation of emotions. As for the second section of the CEESQ, the dimension of emotional self-efficacy gets close to the construct of trait emotional intelligence (e.g., Petrides & Furnham, 2000) and relates to self-perceptions about one's own awareness and ability to regulate one's own emotions, while the dimension of denial of emotions refers to rejecting or not accepting one's own emotions. The same authors empirically confirmed the theoretical conceptualization of the MEP, since early childhood educators who were more aware of their own emotions and more likely to regulate their own emotions were also more likely to recognize, accept, and regulate children's emotions in the day care centers. This association was mediated by their levels of self-efficacy as emotional socializers, suggesting that early childhood

educators who perceive themselves as competent with their own emotions are facilitated in developing a representation of their professional role as central in the processes of children's emotional development, and therefore are more motivated to implement adaptive emotional socialization practices involving attention and caring toward children's emotions (i.e., a coaching style); on the other hand, early childhood educators who reported high rate in denying one's own emotions were more likely to adopt a dismissing style towards children's emotions (Ciucci et al., 2015). Subsequent studies using the CEESQ confirmed similar pattern of association between early childhood teachers' beliefs about emotions and emotion socialization practices. Specifically, Ornaghi et al. (2020) found that early childhood educators who perceived themselves as actively involved in children's emotional development were more prone to adopt a coaching style, while educators with beliefs concerning their marginal role in children's emotional development were more prone to use a dismissing style towards children's emotions. Further, Ornaghi et al. (2021) showed that educators' coaching style was positively related to teaching about emotions, open expressiveness of one's own emotional states, and beliefs related to the value of talking with children about emotions; on the contrary, dismissing style was associated with beliefs concerning low merit of talking with children about emotional states and low teaching about emotion expression, as well as high protection of children from dismissing emotions.

Meta-emotion philosophy in subsequent school levels

All the above-reported findings pertain to early childhood educators; as far as we know, to date the theoretical framework of the MEP has rarely been applied in research involving teachers coming from subsequent school levels. Two studies by Ojala (2015, 2021) constitute a partial exception: they explored, in high school contexts, the role of teachers' beliefs about students' emotions and how they deal with them in the specific learning process related to climate change education. On a broader level, it must be considered that several constructs are very similar to the MEP (i.e., sub-components of the MEP) and they have been investigated in relation to teachers, such as teachers' emotional intelligence and teachers' beliefs on emotions. On this regard, there is growing evidence that teachers' emotional intelligence, beliefs and personal values motivate and drive their professional self-efficacy and behaviors toward students (Biesta et al., 2015; Jennings & Greenberg, 2009; Thatheus & Selvakumar, 2022; Wu et al., 2019).

As for the specific emotion-related mechanisms within teachers that drive their emotional socialization toward

students, the milestone study by Denham et al. (2012) highlighted that kindergarten teachers approach children's emotions similarly to parents (i.e., using emotional socialization practices such as modeling, contingency, and explicit teaching), claiming for an in-depth exploration of the connection between how they deal with their own emotional experience and how they deal with children's emotions. Specifically, teachers' emotional competence (i.e., individual differences in awareness, understanding, and management of own emotions; Saarni, 1999) and teachers' feelings of well-being at work are related to the quality of teachers' emotional socialization practices, such that high levels of teachers' negative emotionality and low emotion awareness are associated to punishing practices, minimization, and ignoring of children's emotions, as well as higher feelings of job resources and job control are positively associated to teachers' emotional expressiveness, contingent reactions, and attitudes toward directly teaching children about emotions (Denham et al., 2012, 2017; Jennings & Greenberg, 2009). Considering literature on primary and middle school, much of research has focused on the impact of the quality of student-teacher relationship (e.g., in terms of warmth, affiliation, or satisfaction) on students' emotional development (Jennings & Greenberg, 2009; McGrath & Van Bergen, 2015; Pianta et al., 2003), while the emotion-related mechanisms through which teachers act as emotional socializers has been less considered. Nevertheless, several studies provide us with important elements, highlighting that teachers' individual differences in many psychological characteristics (including beliefs, identity, and goals) affect - either directly or in interaction with external factors pertaining to work environment, such as students' characteristics - the process of activation in front of emotions and implementation of consequent behaviors (Cross & Hong, 2009, 2012; den Brok et al., 2013; Garner, 2010; Hosotani & Imai-Matsumura, 2011; Jennings & Greenberg, 2009; Newberry, 2010). This process informs over time teachers' personal and professional identity and goals, further contributing to individual differences in teachers' emotional experiences and related practices in classrooms (Cross & Hong, 2009, 2012).

To conclude, although current research provides important information about the way teachers deal with students' emotional experience, studies specifically devoted to investigate teachers' emotion socialization practices toward students and the role of teachers' emotion-related characteristics in emotion socialization practices are still needed. We believe that the MEP framework applied to kindergarten, primary, and middle school teachers could represent both a theoretical and an empirical framework for considering the bond between teachers' emotional experiences and their professional practices toward students, since the focus on meta-emotion philosophies allow to jointly consider feelings and

thoughts about emotions (i.e., both one's own and students' emotions) as well as the way to approach them.

The present study

In the present study, we aimed to add to the field of research focused on the role of teachers as emotional socializers, advancing extant literature by pursuing two main aims. First, we proposed to approach teachers' emotional socialization toward students by exploring, for the first time, the construct of the MEP in Italian teachers coming from kindergarten to middle-school using the CEESQ, that was originally developed by Ciucci et al. (2015) for early childhood educators. In so doing, we expected to confirm its original factor structure. We highlight that we decided to jointly focus on teachers coming from three different school contexts: kindergarten, primary school, and middle school. Notwithstanding the different ages of the students and the different context-related tasks of the teachers, the present research was conducted in Italy, where these three school levels are usually part of the same administrative comprehensive institution, and teachers coming from these different school levels discuss about emotional and relational practices related to the various tasks of their work (e.g., with reference to the management of emotional problems in students or the application of conduct rules concerning students' behavior, or during the attendance to common professional refresher courses). Specifically, we expected to find that the factor structure of the CEESQ was invariant across the three school levels here considering, indicating that the dimensions constituting the core of the MEP in teachers capture emotional processes that are independent from students' age or other contextual factors. Further, in line with the original study by Ciucci et al. (2015), we explored whether the factor structure of the CEESQ was invariant considering teachers' amount of professional experience and teachers' level of education. These two personal characteristics have been indicated by Denham et al. (2017) as affecting the quality of teachers' emotion socialization practices, and it was important to explore whether they could affect the operationalization of the construct of MEP among teachers. In line with results by Ciucci et al. (2015) on early childhood educators, we expected that the factor structure of the CEESQ emerged as invariant regarding these variables.

Second, the investigation of the construct of MEP through the CEESQ allow us to in-depth explore the strict connection between teachers' personal emotional experience (i.e., emotional self-efficacy and denial of emotions), teachers' emotion socialization practices toward children (i.e., coaching and dismissing styles), and teachers' level of self-efficacy as emotional socializers. In other words, we aimed to explore whether the associations between the dimensions

provided by the CEESQ are in line with the MEP framework. According to the theoretical framework and previous results from Ciucci et al. (2015), we expected positive associations between emotional self-efficacy concerning own emotions, coaching style toward students, and self-efficacy as emotional socializer; moreover, we hypothesized that higher levels of denial of own emotions were associated to higher levels of dismissing style toward students. Further, we tried to replicate and expand the mediation model tested by Ciucci and colleagues (2015), expecting that levels of self-efficacy as emotional socializer played a mediation role in the associations between teachers' way to approach their own emotions and teachers' emotional styles toward students.

Materials and methods

Participants and procedure

The present study opted for a convenience sample, that was recruited on a voluntary basis within the context of professional refresher courses. 27 public comprehensive administrative institutions located in Central Italy were contacted (in Italy, kindergartens, primary schools, and middle schools are usually part of the same comprehensive administrative institution). The presentation of the proposed activities was realized during teaching staff meetings or through official school communication channels, and it was specified that participating teachers should have completed a series of questionnaires relating to their emotional and relational experience. No economic incentives were given. Since the number of male participants was very low ($n=30$) and widely insufficient to conduct subsequent analyses in a robust way (e.g., a multi-group analysis by gender), they were not included. As a consequence, the final sample was made up by 815 female teachers (mean teaching experience = 20.08 years, $SD=10.84$ years). All the teachers were of Italian cultural background; 212 worked in kindergartens, 450 in primary schools, and 153 in middle schools. 430 (52.76%) reported a high school degree, and 385 (47.24%) a university degree. Data collection was realized with the aid of trained assistants. Teachers completed the CEESQ before to start any activity related to the professional refresher courses, in order to obtain answers not influenced by the nature of the courses themselves. Teachers were requested to fill out the questionnaire on individual sheets without any time limitation. Local scholastic institutions approved all procedures, and written informed consent was obtained from participants. No conflicts of interest have to be reported for this study.

Measure

Crèche Educator Emotional Style Questionnaire (CEESQ; Ciucci et al., 2015). The CEESQ was developed to assess the MEP in early childhood educators; the original CEESQ's items were reviewed to be applied with teachers from kindergarten to middle school. As a result, the only modification pertained rewording “child” as “student”, and “children” as “students”. CEESQ consists of 32 items and five expected factors: coaching (7 items, e.g. “*When a student is angry, it’s an opportunity for getting close*”), dismissing (5 items, e.g. “*I help students to get over their sadness quickly, so they can turn to something else*”), self-efficacy as emotional socializer (6 items, e.g. “*I feel able to help students cope with their fears and their anger*”), emotional self-efficacy (10 items, e.g. “*I quickly understand the emotions I’m feeling when my mood changes*”), and denial of emotions (4 items, e.g. “*I perceive my negative emotions as something to defend myself against*”). Coaching, dismissing and self-efficacy as emotional socializer involve teachers’ beliefs and behaviors concerning students’ emotions and teachers’ approach toward students’ emotions; these factors are comprised in the section CEESQ-Students’ Emotions. Emotional self-efficacy and denial of emotions are teachers’ self-evaluations about their own personal emotional competence; these factors are comprised in the section CEESQ-Individual Emotions. According to the theoretical background of the MEP, the associations among the factors of the two sections can express the connection between adults’ and children’ emotional domains. Participants were asked to rate each statement on a 5-point Likert scale (1 = “not true”, 2 = “almost never true”, 3 = “sometimes true”, 4 = “almost always true”, and 5 = “completely true”). Since many items had no participants’ responses in the extreme values of the Likert scale, the original scores were rescored on a 3-point Likert scale (0 = “not true” + “almost never true”, 1 = “sometimes true”, 2 = “almost always true” + “completely true”).

Data analyses

The data analyses strategy followed four main steps. Specifically, Step 1 was preliminary to all analyses; Step 2 and Step 3 were functional to pursuit the first main aim of the present study (i.e., concerning the factor structure of the CEESQ); Step 4 allowed to face the second main aim (i.e., investigating whether the associations between the dimensions provided by the CEESQ are in line with the MEP framework).

Step 1: Imputation of missing data

First, missing data were inspected. The proportion of missing values across the entire questionnaire was modest ($n=92$, 0.35%), and for each item it was no higher than 1.23% (i.e., item 11 of the CEESQ-Students’ Emotions section, that pertains to the coaching style). The imputation method for missing data here adopted was the Chained Equation Modeling (White et al., 2011), that estimates missing values on the basis of regression models taking into account the existing item values. According to Little (1988), the categorical nature of scores was respected using the Predictive Mean Matching method that replaces estimated values with the closer integer number. To realize this step, the R package mice was used (van Buuren & Groothuis-Oudshoorn, 2011).

Step 2: Confirmatory factor analyses

A confirmatory factor analyses (CFA) approach was adopted using the R package lavaan (Rosseel, 2012) to test the CEESQ’ factor structure. Both to avoid distortions due to data distribution, and to respect the Likert-type nature of items, a polychoric correlation matrix using the mean- and variance- adjusted weighted least squares estimator (WLSMV) was used (Dumenci & Achenbach, 2008; Flora & Curran, 2004). Three increasingly complex models were tested: a single general factor model (Model 1), a two-factor model reflecting the two different CEESQ sections (Model 2), and a five-factor model (Model 3) reflecting the original CEESQ factor structure. Goodness of fit was evaluated using different indices. Considering that the χ^2 index is highly sensitive to sample size, interpretation of model was based on the robust versions of the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA). CFI and TLI measure relative fit compared to the null model, and they should exceed .95; RMSEA is a measure of absolute model fit, and it should be $<.05$ ($<.08$ is considered acceptable; Hooper et al., 2008; Hu & Bentler, 1999). Factor reliabilities were calculated using the ordinal version of coefficient alpha, that is calculated on the basis of the polychoric correlation matrix (instead of the classic Pearson correlation matrix) in order to respect the Likert-type nature of observed items (Zumbo et al., 2007; Gadermann et al., 2012). Moreover, inter-factor correlations (i.e., ϕ) were computed.

Step 3: Invariance of factor structure

By a multi-group confirmatory factor analysis procedure, CEESQ measurement invariance was tested for the three different school levels. According to the original study (Ciucci

et al., 2015), groups of teachers with different amounts of teaching experience (divided at the median, equal to 19 years), and teachers with high school versus university level of education were compared. Four different levels of measurement invariance were considered. Configural invariance is the baseline model and tests whether the same items measure the same factors across groups, without constraints on parameters. Weak (or metric) invariance requires that factor loadings be equivalent across groups. Strong (or scalar) invariance in addition necessitates to test for the equivalence of the intercepts (or thresholds for categorical variables). Finally, strict invariance requires to test whether the indicators' residual variances are equal across groups. The increasing complexity of invariance levels was evaluated according to Chen (2007): once again, the χ^2 differences tests (that is commonly used in psychometric research) was avoided due to sensitivity to sample size and normality of data distribution, and differences in CFI values $\leq -.010$ along with differences in RMSEA values $\geq .015$ were considered as indicators of lack of measurement invariance.

Step 4: Descriptive statistics, correlations, and mediation analyses

We calculated the mean for each emerged factor, exploring descriptive statistics (i.e., standard deviation, skewness and kurtosis) along with zero-order correlations (i.e., Pearson's r). We in-depth explored the associations between teachers' personal emotional competence and teachers' emotional styles toward students by the mean of a hierarchical linear regression approach. In Step 1, Dismissing was regressed onto Coaching to account for their shared variance. In Step 2, dimensions of CEESQ-Individual Emotions (i.e., Emotional Self-efficacy and Denial of Emotions) were added to investigate their additive contribution to Coaching. Lastly, according to the original study by Ciucci et al. (2015), the Self-efficacy as Emotional Socializer dimension was added in Step 3 to explore its potential mediation role in the associations between teachers' personal emotional competence and teachers' emotional styles toward students. The mediation analysis was realized using the R package lavaan (Rosseel, 2012) with a bootstrap approach (5000 samples). The regression analyses were repeated replacing Coaching with

Dismissing as dependent variable. Given our study's sizable total sample size, only associations of at least modest effect size (i.e., r or $\beta \geq .20$, with $p < .001$) were emphasized in the text to focus on the findings most likely to be meaningful and replicable.

Results

Results of CFAs were reported in Table 1. Item 3 from CEESQ-Students' Emotions had a low factorial loading; thus, it was deleted.¹ The goodness-of-fit indices for Model 1 were not sufficient ($\chi^2 = 5049.71$, $df = 434$, $p < .001$, CFI = .870, TLI = .860, RMSEA = .096 (95% CI .094-.099)). Model 2 also showed not completely satisfactory indices ($\chi^2 = 2973.45$, $df = 433$, $p < .001$, CFI = .927, TLI = .922, RMSEA = .072 (95% CI .070-.075)). Model 3 fitted the data best ($\chi^2 = 1364.52$, $df = 424$, $p < .001$, CFI = .974, TLI = .971, RMSEA = .044 (95% CI .041-.046)), and it was considered the best representative of CEESQ factor structure.

Factor loadings (i.e., λ) were reported in Table 2: they were all $\geq .47$, with $p < .001$. Inter-factor correlations were $\phi = .44$ (Coaching ~ Dismissing; $p < .001$), $\phi = .76$ (Coaching ~ Self-efficacy as Emotional Socializer; $p < .001$), $\phi = .46$ (Coaching ~ Emotional Self-efficacy; $p < .001$), $\phi = -.02$ (Coaching ~ Denial of Emotions; $p > .05$), $\phi = .33$ (Dismissing ~ Self-efficacy as Emotional Socializer; $p < .001$), $\phi = .16$ (Dismissing ~ Emotional Self-efficacy; $p < .001$), $\phi = .20$ (Dismissing ~ Denial of Emotions; $p < .001$), $\phi = .62$ (Self-efficacy as Emotional Socializer ~ Emotional Self-efficacy; $p < .001$), $\phi = -.28$ (Self-efficacy as Emotional Socializer ~ Denial of Emotions; $p < .001$), and $\phi = -.58$ (Emotional Self-efficacy ~ Denial of Emotions; $p < .001$). Cronbach's alphas were all sufficient (i.e., Coaching: .80, Dismissing: .79, Self-efficacy as Emotional Socializer: .90, Emotional Self-efficacy: .91, Denial of Emotions: .62).

Table 3 reported the model fits concerning the measurement invariance analyses. Considering that the cut-off criteria indicated by Chen (2007) were not exceeded in any step, strict measurement invariance was assumed for the three different school levels within the same administrative comprehensive institution, for amount of teaching experience (i.e., using the median of the years of teaching experience), and

Table 1 Comparison of different factor models for CFA

Model	χ^2	Df	p	CFI	TLI	RMSEA [95%-CI]
Model 1 (one-factor model)	5049.71	434	< .001	.870	.860	.096 [.094;.099]
Model 2 (two-factor model)	2973.45	433	< .001	.927	.922	.072 [.070;.075]
Model 3 (five-factor model)	1364.52	424	< .001	.974	.971	.044 [.041;.046]

Note CFI = Comparative Fit Index, RMSEA = Root Mean Square Error of Approximation, TLI = Tucker Lewis Index

¹ We reported here results without this item; full results are available from corresponding author.

Table 2 Standardized loadings (λ) from the CFA

Item		λ
<i>CEESQ-Students' Emotions:</i>		
<i>Coaching</i>		
5	The contribution of teachers to the emotional development of students is fundamental at school	.55
6	Students' sadness is an emotion worth exploring	.68
8	When a student is happy, I take some time to share this feeling with him/her	.54
10	I accept students' fear even if it seems unmotivated	.71
11	When a student is angry, I help him/her to express what made him/her so angry	.75
13	When a student is angry, it's an opportunity for getting close	.55
16	When a student is feeling a negative emotion, it's an opportunity to use my educational skills	.47
<i>Dismissing</i>		
1	When a student is angry, my goal is to make him/her stop	.62
2	I help students get over sadness quickly so they can move on	.68
7	I try to change the negative mood of a student into a cheerful one	.78
14	When a student is afraid, I try to distract him/her	.73
<i>Self-efficacy as Emotional Socializer</i>		
4	I feel I am very good at making the students reflect on what made them angry, frightened or sad	.67
9	I easily recognize the emotions that a student is experiencing	.83
12	I feel able to help students cope with their fears and their anger	.82
15	I am able to stay close to an angry student	.79
17	I can easily distinguish the different emotions a student is feeling	.83
18	I can get the students to express all of their emotions	.81
<i>CEESQ-Individual Emotions:</i>		
<i>Emotional Self-efficacy</i>		
1	When my mood changes, I easily recognize my emotions	.57
2	When I am angry, I have some control over my emotions	.72
4	I am able to manage emotions that are too intense	.81
6	I can easily identify the reasons for my emotions	.63
8	When I am sad, I feel I can deal with the sadness I feel	.67
9	I can describe the strategies I use in order to cope with negative emotions	.73
10	I am able to prevent my fears taking over	.80
12	I feel in control of my emotions	.80
13	I am able to express what I feel	.74
14	I willingly accept the emotions I feel	.71
<i>Denial of Emotions</i>		
3	I don't like the emotions I experience	.59
5	When I feel euphoric, I have the feeling of losing control	.48
7	I feel uncomfortable when I do not have control over my emotions	.61
11	I perceive my negative emotions as something to defend myself against	.53

Notes Item 3 from the section CEESQ-Students' Emotions (i.e., "The students will learn to manage their emotions by themselves") was removed from final analyses due to low factorial loading. All standardized loadings were $p < .001$

for teachers' level of education (i.e., high school degree vs. university degree).

Descriptive statistics for the emerged factors were reported in Table 4. Skewness and Kurtosis values suggested a normal distribution for CEESQ' dimensions, except for the Kurtosis values for Coaching that was a bit higher than desirable (values ranging from -2.00 to $+2.00$ can be considered acceptable; George & Mallery, 2010)². As for zero-order correlations, Coaching presented

positive correlations with Self-efficacy as Emotional Socializer ($r = .51, p < .001$), Emotional Self-Efficacy ($r = .32, p < .001$), and Dismissing ($r = .26, p < .001$). Moreover, Dismissing showed a positive association with Self-efficacy as Emotional Socializer ($r = .24, p < .001$). Further, Self-efficacy as Emotional Socializer had a positive association to Emotional Self-efficacy ($r = .51, p < .001$). Lastly, Emotional Self-efficacy and Denial of Emotions were negatively correlated ($r = -.36, p < .001$).

Results of regression analyses were reported in Table 5. Over and above the shared variance between Coaching and Dismissing ($\beta = .26, p < .001$) in Step 1, the variables related

² Subsequent analyses were repeated using a log-transformed measure of Coaching. Since results were substantially identical, we used the original scale.

Table 3 Comparison of different factor models testing measurement invariance

Model	χ^2	df	<i>p</i>	CFI	RMSEA	Δ CFI	Δ RMSEA
<i>School Level</i>							
Configural	2416.82	1272	< .001	.970	.049	-	-
Weak	2529.02	1324	< .001	.964	.052	-.006	.003
Strong	2590.79	1376	< .001	.966	.049	.002	-.003
Strict	2714.87	1438	< .001	.962	.051	-.004	.002
<i>Amount of teaching experience</i>							
Configural	1948.25	848	< .001	.970	.047	-	-
Weak	1959.51	874	< .001	.968	.049	-.002	.002
Strong	2002.30	900	< .001	.969	.047	.001	-.002
Strict	2058.87	931	< .001	.967	.048	-.002	.001
<i>Teachers' level of education</i>							
Configural	1885.09	848	< .001	.972	.046	-	-
Weak	1892.16	874	< .001	.969	.047	-.003	.001
Strong	1946.84	900	< .001	.970	.046	.001	-.001
Strict	1970.29	931	< .001	.969	.046	-.001	.000

Notes CFI=Comparative Fit Index, RMSEA=Root Mean Square Error of Approximation

Table 4 Descriptive statistics and Person's correlations

	M (SD)	Skewness	Kurtosis	1	2	3	4	5
1 - Coaching	1.78 (0.25)	-1.76	4.28	-				
2 - Dismissing	1.34 (0.53)	-0.54	-0.61	0.26***	-			
3 - Self-efficacy as Emotional Socializer	1.51 (0.41)	-0.68	0.12	0.51***	0.24***	-		
4 - Emotional Self-efficacy	1.63 (0.37)	-1.04	0.45	0.32***	0.11**	0.51***	-	
5 - Denial of Emotions	0.71 (0.42)	0.09	-0.49	0.01	0.13***	-0.18***	-0.36***	-

Notes **p* < .05; ***p* < .01, ****p* < .001

to teachers' personal emotional competence added a significant 9% of variance in the explanation of Coaching in Step 2: specifically, higher levels of Emotional Self-efficacy were related to higher levels of coaching style toward students' emotions ($\beta = .33, p < .001$). The addition of Self-efficacy as Emotional Socializer in Step 3 revealed a positive association with Coaching ($\beta = .43, p < .001$), explaining a further 13% of variance; at the same time, the association between Emotional Self-efficacy and Coaching markedly reduced below the threshold of $\beta = .20$, suggesting a mediation effect of Self-efficacy as Emotional Socializer. This effect was confirmed by the specific mediation analysis: Emotional Self-efficacy was positively related to Coaching style through a positive association to Self-efficacy as Emotional Socializer (standardized mediated effect = .22, unstandardized mediated effect = .15, $p < .001, z = 8.42$, bootstrapped 95% IC = [.12; .19]; see Fig. 1).

Considering Dismissing as dependent variable, over and above its shared variance with Coaching ($\beta = .26, p < .001$), the variables related both to teachers' personal emotional competence and to Self-efficacy as Emotional Socializer added a weak 2% each, showing significant and positive associations with both Denial of Emotions and Self-efficacy as Emotional Socializer, that however were both below the threshold of $\beta = .20$.

Discussion

The present study added to the field of research that investigates the role of teachers as emotional socializers toward students' emotions by testing, for the first time, the construct of the MEP (Gottman et al., 1996, 1997) within school contexts. In so doing, we were able to consider the bond existing between teachers' emotional socialization beliefs and practices toward children's emotions (i.e., in terms of emotional styles and self-efficacy as emotional socializer) and their individual emotional processes (i.e., in terms of emotional self-efficacy, a sub-domain of personal emotional competence). Two main aims were addressed. First, we expanded recent research that developed and validated a specific tool (i.e., the CEESQ; Ciucci et al., 2015) to assess the MEP in early childhood educators. The original CEESQ's items were reviewed to be used with teachers from kindergarten to middle school (the terms "child" or "children" were replaced with the terms "student" and "students"), and a confirmatory factor analysis approach was applied. Results confirmed that CEESQ showed the original five-factor structure (i.e., Coaching, Dismissing, Self-efficacy as Emotional Socializer, Emotional Self-efficacy, and Denial of Emotions), except for the item "The students will learn to manage their emotions by themselves" that failed

Table 5 Results of regression analyses

	Coaching			Dismissing		
	Step 1 (β)	Step 2 (β)	Step 3 (β)	Step 1 (β)	Step 2 (β)	Step 3 (β)
Coaching	-.26***	.21***	.13***	.26***	.23***	.16***
Dismissing		.33***	.12**		.09*	.04
Emotional Self-efficacy		.10**	.11**		.16***	.17***
Denial of Emotions			.43***			.17***
Self-efficacy as Emotional Socializer						
Model Fit	$F(1,814) = 59.133***$	$F(1,814) = 50.960***$	$F(1,814) = 83.194***$	$F(1,814) = 59.133***$	$F(1,814) = 27.248***$	$F(1,814) = 24.744***$
R^2	.07	.16	.29	.07	.09	.11
ΔR^2	-	.09***	.13***	-	.02***	.02***

Notes * $p < .05$; ** $p < .01$, *** $p < .001$. β = Standardized regression coefficient. R^2 = Coefficient of determination

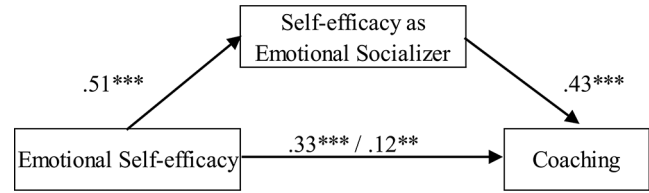


Fig. 1 Mediation model (reported coefficients are β values. Notes * $p < .05$; ** $p < .01$, *** $p < .001$. The model was controlled for both dismissing and denial of emotions

to load onto the original Dismissing factor. In this regard, we can hypothesize that such a belief refers to an approach according to which children and preadolescents acquire greater autonomy and personal agency in their developmental processes. In other words, while 0-to-3 years old children attending crèche need a very structured emotional scaffolding and the lack of it on the part of early childhood educators indicates a dismissing approach to their emotions, in older students a greater emotional independence would be desirable and indeed to be promoted, therefore it would not constitute an index of dismissing approach on the part of teachers. Obviously, this evidence must be read in the light of the Italian context in which the research was conducted, and further cross-cultural research would be needed to expand this result in non-Western cultures. Further, the invariance of the factor structure of the CEESQ both across school levels (i.e., kindergarten, primary school, and middle school) and considering two teachers' personal variables (i.e., years of working experience and academic education level; Ciucci et al., 2015) was tested. Our results confirmed the invariance of the CEESQ. This was important to demonstrate that the operationalization of the MEP construct in teachers within the school context provided by the CEESQ allows to focus on processes that are independent from students' age or other teachers' factors. Moreover, this was particularly significant also in the light of the specific Italian school organization, in which these three school levels are usually part of the same administrative comprehensive institution: the construct of the MEP can constitute a common ground for teachers' pre-service education and in-service formation to share and consolidate socialization practices which, although different in their manifestation, are equivalent in terms of emotional processes. In other words, according to our proposal there is no difference - in terms of underlying processes - between a kindergarten teacher who assists a 4-year-old pupil to deal with fear or sadness by taking the pupil in her/his harms and conversing with her/him, and a middle school professor who support a 14-year-old preadolescent in managing unpleasant emotions by establishing a dialogue and a confrontation based on an empathic connection both emotionally and cognitively activated.

The second main aim of the present study was to explore whether the associations between the dimensions provided by the CEESQ are in line with the MEP framework, that postulates an interrelation between caregivers' emotional socialization beliefs and attitudes toward students (i.e., in terms of emotional styles and self-efficacy as emotional socializer) and their own emotional processes (i.e., in terms of personal emotional competence). Results were substantially in line with those found by Ciucci et al. (2015) in early childhood educators, and highlighted a strict bond between teachers' emotional experiences and professional practices implemented toward students' emotions. Specifically, teachers who were more aware and abler to regulate their own emotions were also more likely to implement a coaching style toward the emotions of their students, as well as to have higher levels of self-efficacy as emotional socializer. In addition, the tested mediation model led us to make an in-depth validation of the construct of the MEP. As expected in line with Ciucci et al. (2015), levels of self-efficacy as emotional socializer mediated the positive association between individual emotional self-efficacy and coaching style toward students. In other words, a component of personal emotional competence influences teacher's reactions toward children's emotions via the effect of professional emotional self-efficacy. These results were also in line with the construct of the MEP theorized by Gottman et al. (1996, 1997) in parent-children's relationship, confirming a strict bond between how teachers recognize, accept and regulate their own and their students' emotions. As for denial of own emotions and dismissing style, emerged results were not completely in line with our expectations. First of all, considering the threshold of at least modest effect size here adopted, denial of emotions presented only a negative association with individual emotional self-efficacy, whereas it was not related to the components of the MEP concerning professional aspects. Moreover, dismissing style was positively associated to both coaching style and self-efficacy as emotional socializer. It could indicate that, among teachers, coaching and dismissing are two compatible emotional styles: in other words, teachers could adopt and considered each of them a valid style toward students' emotions, and a mean to confirm themselves as efficient emotional socializers. In this sense, a strength of the CEESQ is to allow to assess the MEP styles in a dimensional way rather than in a categorical way, avoiding creating absolute categorizations (e.g., "coaching teachers" vs. "dismissing teachers") that would reduce the impact of applying the MEP in school contexts. An in-depth research could clarify in which situations teachers prefer one instead of the other style; considering that the ratio educator-children attending crèche is very higher in day care centers than in other school levels (1:10 vs. 1:25), we wonder if at higher educational level teachers

adopt a coaching style as dominant reactions to children's negative emotions, but then they have to turn to a dismissing style in order to effectively manage class group. On this regard, future studies could use scenarios that refer to different situations in which the teachers face students' emotions (e.g., the teacher during a dyadic interaction in front of a single student's emotional arousal vs. the teacher in front of the emotional activation of the whole class group). Moreover, subsequent research could in-depth clarify the correlates of these two styles, and their unique role. For instance, our regression analyses indicated that the positive association between dismissing and self-efficacy as emotional socializer was no longer above the threshold of .20 when the shared variance between coaching and dismissing was accounted for.

Limitations

We are aware that these results need to be interpreted considering some limitations. As previously stated, a main limitation refers to the unique cultural context in which the research was carried out: we agree with Hyson and Lee (1996) that beliefs and practices are "culturally loaded" and context-dependent, so we need to collect data by CEESQ in other Countries to confirm our findings through cross-cultural comparisons. Moreover, the convenience sampling technique here adopted may represent a source of bias, since several factors (e.g., teachers' individual differences in the sensitiveness toward to the topic of the present study, or school deans' different levels of effort in promoting the research within their school institution) could have resulted in over- or under- representation of specific teacher categories; on this regard, future studies should consider to adopt different sampling techniques that allow to balance participants on the basis of those individual and/or contextual characteristics that are assumed to be relevant for the purposes of the study. Further, the present research was conducted within an exclusively female sample: it may be that these beliefs and practices are also gender-loaded, hence it could be useful to include male teachers in future investigations. Moreover, in addition to teachers' gender and level of school in which they work, we considered only two additional demographic variables in performing invariance analyses about the factor structure of the CEESQ (i.e., teachers' amount of professional experience and teachers' level of education). These variables are important because they were considered also in the original work by Ciucci et al. (2015). Nevertheless, we are aware that there are several other variables that future research could consider in further investigating the psychometric properties of the CEESQ; for instance, it could be interesting to test whether the nature of the subjects (e.g., teachers who mainly teach

humanistic subjects that more likely allow to explore emotions and moods vs. teachers who mainly teach scientific subjects that less likely allow to focus on inner states) or the amount of time spent in each class (e.g., teachers who spend all their hours with the same group of students vs. teachers who operate with many different groups of students, spending few hours with each group) have an impact in the operational definition of the construct of the MEP. Another potential limitation could be represented by the transformation of the original 5-point Likert scale into a 3-point Likert scale. Future studies could in-depth investigate the practical usefulness of the extreme values of the Likert scale for those items that received no participants' responses as for the "not true" and the "completely true" options, as well as the presence of possible biases due to social desirability (e.g., to express the "not true" option in front of items concerning coaching style, or the "completely true" option in front of items concerning dismissing style toward students' emotions). Nevertheless, we have to note that correlation coefficients between each of the CEESQ subscales calculated using the 3-point Likert scale and the same CEESQ subscales calculated using the original 5-point Likert scale were all strong (i.e., r s between .90 and .96, p s < .001). Importantly, concurrent validity and discriminant validity (as well as temporal stability) were not tested, and future studies should consider to in-depth explore the correlates of the CEESQ.

Implications and conclusions

Despite the above-reported limitations, this study represents an important contribution to research on the MEP of teachers, and it encourages to explore the associations of the CEESQ with external variables (e.g., emotional competence in students) in order to empirically confirm the emotional processes postulated by the MEP. Moreover, our results highlight that processes underlying students' emotion socialization practices are similar despite different school levels (i.e., kindergarten, primary school, and middle school), suggesting the opportunity for teachers to engage in professional refresher courses with colleagues of other school levels with a view to educational continuity across childhood and early adolescence. Further, we believe that the CEESQ can constitute a valid instrument that can help teachers in gaining self-awareness about the interrelations between their individual psychological characteristics and the emotion-related socialization practices they implement with students: as highlighted by growing research, there is a strict continuity between teachers' personal functioning and their professional role (Baroncelli et al., 2022; Jennings & Greenberg, 2009), and the attention on this aspect should

became more and more central in order to promote the well-being of the whole school context.

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Data availability Dataset is available on request.

Declarations

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

Conflict of interest The authors declare that they have no conflict of interest.

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