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Author(s): Kyriazopoulou, Myrto; Pappa, Sotiria

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Emotional intelligence in Greek teacher education: Findings from a short intervention

Myrto Kyriazopoulou¹ · Sotiria Pappa²

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Abstract

Emotional intelligence (EI) is widely known to be crucial for professional development in education, and it is a curricular component of Greek teacher education. Still, there is little information available on student teachers' EI. The aim of this study was to explore whether student teachers' trait EI can be developed through a two-week, EI-focused intervention. The study followed a quasi-experimental design with a mixed method approach, using the Trait Emotional Intelligence Questionnaire-Short Form (Greek version) ($N = 42$) and reflective emotion diaries ($N = 19$). The participants were third-year undergraduate students studying primary education and teaching at the University of Crete. While the results from the statistical analysis showed no development of student teachers' trait EI, the findings from the thematic analysis of the reflective emotion diaries suggested that this intervention was beneficial, facilitating emotion identification and potentially enabling emotion regulation through increased self-awareness. The study concludes with a discussion of its limitations and practical implications for future intervention studies on EI.

Keywords Trait emotional intelligence · Intervention · Teacher education · TEIQue-SF · Reflective diaries · Greece

Emotional intelligence (EI) in education is crucial regarding not only teaching outcomes (Corcoran & Tormey, 2013; Pozo-Rico & Sandoval, 2020) but also teachers' well-being (Colomeischi, 2015). Concerning teachers' well-being, EI has been found to affect teaching satisfaction (Yin et al., 2013), sense of self-efficacy (Vesely et al., 2013; Wu et al., 2019), and resilience to stress and burnout (Alrajhi et al., 2017; Mérida-López & Extremera, 2017). Studies that focus on EI in teacher education have highlighted the great impact of its development on effective teaching, increased self-awareness, and enhancement of classroom relationships (Dolev, 2016; Gilar-Corbi et al., 2018). These studies substantiate the importance of EI in the early stages of a teaching career and highlight EI as an important aspect of teachers' personal and

professional lives that can be developed through initial teacher education (Dacre-Pool & Qualter, 2012; Dolev & Leshem, 2017; Hen & Sharabi-Nov, 2014; Kotsou et al., 2019; Nelis et al., 2009; Nelis et al., 2011; Palomera et al., 2008; Pozo-Rico & Sandoval, 2020; Vesely-Maillefer & Saklofske, 2018). There is strong evidence from previous intervention studies, that EI can be developed in universities (Petrides et al., 2018), yet there is little research on student teachers' EI (e.g., Corcoran & Tormey, 2012; Gilar-Corbi et al., 2018; Hen & Sharabi-Nov, 2014). Findings from EI-focused trainings or interventions in teacher education are still scarce.

This study explores the development of Greek student teachers' EI through a brief intervention during their teaching training. In Greece, both in-service and pre-service teachers have reported experiencing stress and burnout in teaching (Kokkinos & Stavropoulos, 2016), rendering EI interventions an empowering tool for teachers' work, particularly in their early years. Platsidou's (2010) study found a negative correlation between trait EI and burnout among special education teachers, proposing that this burnout could be prevented by increasing teachers' trait EI. Hatzichristou and Lianos (2016) review EI interventions across Greece, focusing on pupils' and teachers' social and emotional learning, yet they do not report any actions taken in teacher education. Universities responsible for teacher education in Greece follow the same

✉ Myrto Kyriazopoulou
myrto.m.kyriazopoulou@jyu.fi

Sotiria Pappa
sotiria.s.pappa@helsinki.fi

¹ Department of Teacher Education, University of Jyväskylä, Alvar Aallon katu 9, 40600, Jyväskylä, Finland

² Faculty of Educational Sciences, University of Helsinki, Siltavuorenpenger 1, 00170 Helsinki, Finland

national curriculum, which focuses on the development of pupils' intellectuality, emotionality, and morality (Zervas, 2016). In practice, however, each university offers different courses depending on its teacher educators' expertise and available funding. Moreover, although EI is mentioned in the curricula of all Greek primary teacher education programs, it is rarely present in their syllabi; even in the courses including EI in their description, there is no evidence that the concept is taught (Alexopoulou, 2018). The economic crisis of the past decade has deeply affected education, causing teacher training programs to offer fewer courses and shorter teaching practices across the country. Consequently, despite its acknowledgement in the international literature (e.g., Dacre-Pool & Qualter, 2012; Dolev & Leshem, 2017; Hen & Sharabi-Nov, 2014; Kotsou et al., 2019; Nelis et al., 2009), the need to develop student teachers' EI has been poorly addressed in the Greek context. This study attempts to rectify a lack of explicit EI-focused training in Greek teacher education and, in doing so, examine whether a short, EI-focused intervention helps to develop student teachers' EI. The three prevalent conceptualizations of EI and their implications for education are presented in the following section.

Theoretical Framework

Emotional Intelligence

The concept of EI emerges from Gardner's (1983) multiple intelligences model, which refers to interpersonal and intrapersonal intelligences. Various conceptualizations of EI have been developed (e.g., Mayer & Salovey, 1997; Nelis et al., 2009; Petrides & Furnham, 2006), but the most prevalent EI theories include the ability, trait, and mixed models. Ability theorists conceptualize EI as "the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth" (Mayer & Salovey, 1997, p. 5). A cross-cultural study between Greece and the United States drawing on ability EI theory revealed that, for Greek preschool teachers, EI was significant in predicting students' emotional and behavioral difficulties and proposed the inclusion of specific training regarding these aspects in teacher education (Poulou et al., 2018).

Trait theorists study EI as a personality trait "(or trait emotional self-efficacy) that concerns emotion related dispositions and self-perceptions measured via self-report" (Petrides et al., 2007, p. 273). Studies on trait EI have shown a negative correlation with depression and burnout; individuals with higher levels of EI are less likely to develop certain mental illnesses (Mikolajczak et al., 2009). Trait EI has further been found to affect academic achievement and decrease the possibility of

university drop-out (Petrides et al., 2018). One of the mixed models is the tripartite model of EI that consists of three levels: ability, trait, and emotion-related knowledge (Nelis et al., 2009). The level of ability refers to utilizing emotion knowledge in practice and what people can do with this knowledge, while the level of trait refers to dispositions regarding emotional behavior and people's actions (Mikolajczak et al., 2009; Nelis et al., 2009; Nelis et al., 2011). The level of emotion-related knowledge refers to what people know about emotions and ways of managing them (Mikolajczak et al., 2009; Nelis et al., 2009; Nelis et al., 2011). The design of the intervention reported in the present study was premised on the tripartite model of EI, although the study examined changes in student teachers' trait EI.

Emotional Intelligence in Education

A recent study by Kotsou et al. (2019) reviewed EI interventions in educational settings across all possible frameworks. The authors concluded that most of the studies (37/46) used trait self-report measurements and showed a significant increase in the participants' trait EI, yet either the intervention content or the theoretical foundation, for the majority of the studies, was somewhat unclear. Educational research drawing on the ability model further supports the development of EI through interventions. For instance, Gilar-Corbi et al. (2018) performed a quasi-experimental study that included an eight-session intervention with student teachers. The intervention was based on the ability model and included theories of stress management, emotional understanding, emotion management, and other key ability features. Student teachers' EI increased significantly after the intervention, and the authors concluded that teacher education is an ideal environment for EI interventions.

Most studies have used an ability lens to create intervention content but have used trait self-report measures to examine its effectiveness (e.g., Hen & Sharabi-Nov, 2014; Dolev & Leshem, 2017). Hen and Sharabi-Nov's (2014) experimental study with primary teachers examined the prediction of empathy through EI and explored their experiences through their reflective writing. This study had a mixed method, quasi-experimental design including reflective journals to evaluate a 56-h ability-based training. After the training, the teachers showed an increase in trait EI and other important emotional factors, such as self-introspection, emotional awareness, emotional regulation, and understanding others. The findings from the reflective journals indicated that reflective writing could enhance teachers' EI and increase their self-awareness. Moreover, Dolev and Leshem (2017) conducted a study on a two-year EI training for teachers as part of their professional development that was based on a trait EI model. Their qualitative study drew on 18 thematically analyzed interviews with schoolteachers, and the main findings indicated an increase in

EI, self-awareness, and awareness of EI as a concept. Their study highlighted the overall positive impact of EI trainings for teachers.

Findings from studies using the tripartite model have provided significant results on increasing participants' EI while having a strong theoretical stance (e.g., Dacre-Pool & Qualter, 2012; Nelis et al., 2009; Nelis et al., 2011). Nelis et al. (2009) conducted experimental research to examine the possibility of increasing university students' EI. Their intervention lasted four weeks and included a variety of activities (e.g., role-playing activities) and a reflective emotion diary. After the intervention, students' trait EI and their ability to identify and manage emotions increased significantly, and the increase was still present six months later. Nelis et al. (2011) conducted two studies to explore whether the changes in university students' trait EI last and whether they affect other factors, such as well-being and health. In both studies ($N = 58$, $N = 92$), the authors implemented interventions of three six-hour sessions based on the tripartite model of EI, which showed significant results in developing participants' trait EI, among other factors. Dacre-Pool and Qualter's (2012) intervention included eleven two-hour sessions, and the results were significant for developing the aspects of understanding and managing emotions, as well as self-efficacy. The authors argued that the ability model had limitations for measuring EI and that trait EI could be susceptible to change even though personality traits have generally shown relative stability across time.

This study attempts to study EI holistically and thus adopts the tripartite model of EI (Nelis et al., 2009). The overarching aim of this study is to explore whether student teachers' EI can be improved through a supportive intervention explicitly focused on EI. The content, implementation, and evaluation of the intervention were guided by the methodological design of the studies presented in this subsection. Using a mixed method, quasi-experimental design, the study examined whether a two-week intervention increased student teachers' trait EI. The research questions guiding this study are as follows:

1. Does an EI-focused intervention enhance Greek student teachers' development of trait EI?
2. How is EI present in Greek student teachers' emotion diaries?

Methods

Participants and Intervention

This study followed a quasi-experimental design; namely, there was a non-random selection of participants and a mixed

method approach. The 42 participants, whose average age was 21, were undergraduate student teachers of a primary teacher education program at the University of Crete during the fall semester of 2019. Of these participants, 21 took part in the intervention (all females), and 21 comprised the control group (16 females, 5 males). While the control group continued attending their usual classes, the intervention group attended a teacher education seminar at which students focused on a specific scientific field in smaller groups. All participants were informed about the aims and scope of the intervention, as well as the procedures of the subsequent study, and the ethical guidelines outlined by BERA (, 2018) were followed (see also Creswell & Plano Clark, 2018).

The EI-focused intervention consisted of two two-hour sessions that were integrated into the seminar syllabus. The seminar syllabus was predetermined, hence the duration of the intervention depended on how much lecture time could be granted for the intervention sessions. The structure of the intervention (see Appendix A Table 4) was based on previous EI-focused intervention-based studies (Dolev & Leshem, 2017; Nelis et al., 2009; Nelis et al., 2011) and was divided into four thematic areas following ability theory (i.e., understanding, identifying, expressing and using, and managing emotions) (Mayer & Salovey, 1997). Before the first session and after the second session, all participants answered the Trait Emotional Intelligence Questionnaire-Short Form (Petrides & Furnham, 2006) so that their self-reported development of trait EI in response to the EI-focused intervention could be examined. The intervention group was further asked to keep a reflective emotion diary, in which they would describe their daily emotions and possibly engage with the intervention content.

Trait Emotional Intelligence Questionnaire-Short Form

Participants' trait EI was measured with the validated Greek version of the Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF) to examine the effectiveness of the intervention on the student teachers' trait EI development (Petrides & Furnham, 2006). The TEIQue-SF consists of 30 items addressing the four factors of well-being, self-control, emotionality, and sociability. Responses are measured on a seven-point Likert scale ranging from 1 (completely disagree) to 7 (completely agree); the higher the score, the greater the extent of a respondent's self-perception of trait EI. The Greek version of TEIQue-SF has been validated by Stamatopoulou et al. (2016), and it has shown excellent psychometric properties for the global trait EI score (Stamatopoulou et al., 2016). In this study, the internal consistency was satisfactory for pre-test ($\alpha = .77$) and post-test ($\alpha = .85$) measurements.

Reflective Diaries

Diaries are important methodological tools that manifest participants' emotional worlds and are considered valid when assessing people's experiences in such development programs (Hen & Sharabi-Nov, 2014; Shek, 2010). Hence, participant diaries were used as a learning tool during the intervention to afford the intervention group the space to elaborate on their emotional experiences and as a reflective tool to promote self-awareness about their emotions (see Dolev & Leshem, 2017; Hen & Sharabi-Nov, 2014). In total, 19 out of 21 participants in the intervention group kept emotion diaries. The students were asked to write a minimum of four entries in which they would briefly analyze their emotions, but they were encouraged to write daily.

Data Analysis

The mixed method design aimed to holistically examine student teachers' potential EI development. This allowed for an integration of two worldviews, namely those of realist ontology and constructivist epistemology, thus utilizing critical realism theory (Creswell & Plano Clark, 2018; Ercikan & Roth, 2008). To answer to the first research question, pre- and post-intervention questionnaire data were analyzed using SPSS 24. First, five independent sample t-tests between the intervention and control groups were conducted. Then, five two-factor mixed ANOVAs were conducted to examine any significant effect between the pre- and post-test scores of the intervention and control groups on the global TEI and its factors of well-being, self-control, emotionality, and sociability (Kyriazopoulou, 2020).

The reflective emotion diaries were analyzed using thematic analysis (Braun & Clarke, 2006). The coding and organization of codes into themes were informed by both ability and trait EI theories. However, as the diaries were intended to provide insight into how participants processed their emotions, the flexibility of thematic analysis as an approach to qualitative data allowed for coding participants' descriptions of subjective emotional experiences that were not directly

related to themes in ability and trait theories (Creswell & Plano Clark, 2018). As the diary data were in Greek, the native language of all the participants and of both authors, they were initially coded in Greek. The lead author first coded the data in their entirety. The second author checked the initial coding and any changes were jointly discussed wherever there was disagreement on the fit of the codes. The final codes were subsequently translated into their nearest equivalent in English and grouped to create subthemes (see Tables 1 and 2). From the subthemes, two main themes were developed and subjected to further researcher triangulation (Graneheim & Lundman, 2004) to evaluate the naming and internal coherence of the themes and subthemes, taking into account the theoretical framework. The prevalence of the themes and subthemes was estimated according to the number of transcripts corresponding to the total of the codes.

Results

Intervention and Emotional Intelligence Development

Results from the TEIQue-SF (Petrides & Furnham, 2006) indicate relatively high levels of pre-test trait EI for both the intervention ($M = 4.89$, $SD = .55$) and control groups ($M = 4.99$, $SD = .54$). However, the five independent sample t-tests for comparisons between the intervention ($N = 21$) and control ($N = 21$) groups showed no statistically significant differences regarding pre-test and post-test mean scores on global TEI and the four factors of well-being, self-control, emotionality, and sociability (see Table 3). According to Cohen's (1988) criteria ($d \leq .2$), the effect size was small (.18).

The two-factor mixed ANOVA tests showed no statistically significant differences for either the intervention or control groups in relation to pre-test and post-test scores on global TEI and the four factors (see Appendix B Table 5). The statistical results indicate that the two-week intervention caused no quantitatively observed change to the intervention group's trait EI development. These results are contrasted by the

Table 1 Codes and subthemes of theme 1

Theme	Subthemes	Codes
Emotion identification (100%)	Positive emotional states (84.21%)	Happy, excited, proud, creative, love, gratitude, relief, joy, compassionate towards the self, satisfied, mentally joyful, courageous, great, fulfilled, calm, good, success, good day, self-confident
	Negative emotional states (94.73%)	Anxious or stressed, tired, pressured, disappointed, insecure, sad, sorrow, angry, upset, fearful, in agony, panicked, lonely, in despair, helpless, jealous, depressed, nervous, fed up, bored, annoyed, irritated, in tension

Table 2 Codes and subthemes of theme 2

Theme	Subtheme	Codes
Emotion regulation (73.68%)	More effective strategies (52.63%)	Discussion for problem resolution Distancing Cognitive reappraisal Hobbies (Cooking, Exercising, Painting, Dancing, Music, Travelling) Social interactions (family, friends)
	Less effective strategies (26.31%)	Alcohol 'Passive sleep' Rumination Spending time alone Self-blame

moderate qualitative change observed in the diary data, which is elaborated on in the next subsection. This contrast suggests the potential of short EI interventions in teacher education, despite the absence of statistically validated benefits.

Emotion Diaries and Emotional Intelligence

The diaries indicated participants' capabilities to perceive and understand their emotions and to become more self-aware concerning the nature, source, and influence of their emotions. Some students implicitly showed increased introspection in their later entries, while a few explicitly mentioned that their self-awareness increased due to participation in the intervention sessions. The two main themes of emotion identification and emotion regulation presented in this section suggest the potential of short interventions for supporting student teachers in developing their own insights regarding their perceived emotions.

Emotion Identification The theme of emotion identification concerns the participants' abilities to recognize their emotional states through explicitly naming and discussing their perceived emotions (see Table 1), although not all participants were equally expressive. While most participants were able to describe their emotions, a couple of them (ST1001, ST1007) struggled to identify their emotions, expressing confusion and uncertainty regarding their emotional states and themselves. To an extent, this theme is connected to the TEIQue-SF factors of well-being and emotionality because ST1001 and ST1014, who scored low on these factors, often reported negative emotions and seemed to have negative self-images.

Three of the most frequently occurring positive emotional states were happiness, love, and excitement. Happiness and love were closely associated with family and friends, underscoring the importance of spending time with significant others for the student teachers' emotional well-being. ST1003 characteristically stated, "My emotions for today are love, joy, gratitude and happiness, because I am here with my family, with people that I love and love me." Happiness was further associated with being present in the moment and satisfaction with university-related activities. Excitement was also related to the latter, as evinced by ST1010, who wrote, "today my day was, in one word, exciting. This is because in the teaching practice, a lady talked to us about emotions, human communication and the 'Language of Love.'" Less prominent, yet important, were the emotional states of fulfilment (2/19 = 10.52%), gratitude (4/19 = 21.05%), and satisfaction (4/19 = 21.05%). Fulfilment and satisfaction, in particular, were further connected to the participants' practicum. For instance, ST1004 reported feeling successful upon receiving rewarding feedback on their practicum from their mentor, explaining, "I was feeling joy and fulfilment and also the feeling of success that I have made it and that I will have to continue trying so as to achieve my goals." The connections the participants made between these emotions and their experiences during teacher education are an encouraging sign of psychologically meaningful engagement with their studies. Pride was mentioned by ST1020 in connection to their practicum and by ST1004 and

Table 3 Means, standard deviations, and significance of differences across intervention and control groups

Factor	Time	Intervention M (SD)	Control M (SD)	
Global TEI score	pre-test	4.89 (.55)	4.99 (.54)	$t(40)=-.56$
	post-test	4.80 (.66)	4.94 (.51)	$t(40)=-.75$
Well-being	pre-test	5.21 (.94)	5.54 (.81)	$t(40)=-1.22$
	post-test	5.15 (.99)	5.56 (.79)	$t(40)=-1.48$
Self-control	pre-test	4.19 (.79)	4.25 (.78)	$t(40)=-.26$
	post-test	4.08 (.64)	4.11 (.95)	$t(40)=-.12$
Emotionality	pre-test	5.13 (.77)	4.97 (.73)	$t(40)=.71$
	post-test	5.08 (.96)	4.98 (.62)	$t(40)=.42$
Sociability	pre-test	4.65 (.65)	4.72 (1.00)	$t(34.52)=-.27$
	post-test	4.49 (.71)	4.76 (.68)	$t(40)=-1.24$

Note. All t-test results were not significant at the $p = .05$ level

ST1021 in connection to the upcoming national holiday, suggesting that emotions are a situationally based phenomenon.

Across the diary data, anxiety or stress were the most commonly reported emotional states and were mainly associated with the practicum, time management issues, course workload, and extracurricular work. For instance, ST1010 reported that “today was my first day of teaching and I was very anxious, because I hadn’t taught a whole day by myself before.” What is alarming, however, is that five participants (26.32%) reported psychosomatic symptoms of anxiety (ST1001, ST1010, ST1011, ST1014, ST1019). For example, ST1014 noted, “Last night, I constantly had tachycardia and I couldn’t relax. I don’t sleep well, I constantly have nausea and insomnia.” These participants reported more negative emotional states across their diaries, suggesting that “negativity breeding negativity” might become a persistent or pervasive mindset if left unaddressed.

Further connected to course workload, teaching practice preparation, and time management were the emotional states of sadness, pressure, nervousness, and anger. While most negative emotional states appeared to be part of the day and later subside, some participants (3/19 = 15.79%) frequently reported pressure, especially related to their practicum (ST1010, ST1009, ST1014). For example, ST1014’s diary suggested that coordinated or timely collaboration with one’s mentor is important for experiencing less pressure, and ST1002 noted that student teachers need to be given adequate time to prepare prior to the practicum, as the shortage of time causes them to prioritize at the expense of their well-being. Talking about staying behind to prepare for their practicum, ST1002 complained, “Meanwhile, all [university] students leave these days to go to their homes or their parents come here and this angers me and at the same time saddens me right now.” Not being with their family during the upcoming holiday was reported by other participants who also reported more negative emotional states or negatively affected moods.

Emotion Regulation This theme describes participants’ strategies for better managing their emotional states, to which most of the student teachers made both direct and indirect references (see Table 2). Emotion regulation concerns the individual and is different from the TEIQue-SF’s emotion management, which concerns others’ emotions. Emotional management and other facets of sociability (i.e., assertiveness and social awareness), as described by Petrides and Mavroveli (2018), were not present in the diary data, and the participants’ scores on sociability were rather low. This theme, however, is connected to an extent to the TEIQue-SF factor of self-control; most participants’ scores on self-control were moderate to relatively high; seven participants (36.84%) reported more effective emotion regulation strategies in their diaries (ST1002, ST1009, ST1012, ST1013, ST1017, ST1018, ST1019). It was found that ten participants (52.63%) in total

used effective emotion regulation strategies, and five participants (26.31%) used less effective ones.

Most of the effective emotion regulation strategies were behavioral. Hobbies in participants’ weekly routines (4/19 = 21.05%), such as physical exercise and dancing, were helpful in handling mood swings and associated with positive emotional states. More important, however, were participants’ social interactions; some participants who socialized during and after difficult situations found it easier to respond to negative emotional states. Participants describing spending time with family and friends as effective scored higher in emotionality (ST1003, ST1009, ST1011, ST1013, ST1017, ST1019; 31.58%), while those who did not scored lower (ST1002, ST1006). Less effective behavioral strategies aimed at escapism and included sleep (“I will ‘pass out’ in sleep, I will get lost for a while. I need it.” ST1007) and self-isolation:

The major emotion of my day is sadness. I feel alone and tired with everyone and everything. [...] I turn down my friends and I push them away, I have nerves and insomnia because of my tiredness and I just want to stay to relax for an hour. (ST1014)

Most of the less effective strategies were cognitive because they were used for avoidance rather than reconciliation. Participants largely considered mental distancing and cognitive reappraisal to be effective strategies. Mentally distancing oneself seemed to create space for positivity as participants consciously separated themselves from emotionally overwhelming instances during the day. Regarding participants distancing themselves from their problems, ST1013 explained, “The reason I had so many emotions of joy and happiness was because I left behind me every emotion of tiredness, stress and anger that dominate me almost daily because of the workload.” Cognitive reappraisal was seen in participants’ re-evaluation of their emotions, and its use could be attributed to intervention discussions. For example, ST1019 declared, “Anxiety does not help me in anything, on the contrary it disorients me and distorts the word around me. I do not know how, but even now at 21, I will remove it permanently from my life...” This participant used cognitive reappraisal often in their diary and showed a small increase in well-being from pre-test (3.67) to post-test (4.63) and emotionality from pre-test (4.63) to post-test (5.88). Moreover, in a spirit of hopelessness, ST1004 resolved, “As much as I can, I avoid such thoughts, so that I won’t worry over reasons that are pointless. To discuss about them when no one will respond and answer your questions,” while ST1021 repeatedly ruminated on the same concerns in vain, especially in relation to their practicum, which “has become a nightmare.”

This theme suggests that most participants knowingly pursued avenues of emotional expression that would help them

regulate their emotions and that some of them were aware of the ineffectiveness of their avoidance strategies. Hence, it can be argued that the latter would particularly benefit from support in developing their EI, as it could alleviate feelings of helplessness and urge them towards healthier methods of emotional regulation in the short term. Participants' knowledge of which regulatory responses to emotions worked for them suggests a sense of self-awareness. Found across the diaries, self-awareness could be attributed to participants purposefully engaging with introspection and being more articulate about themselves, their emotions, and their experiences. For instance, worrying about their practicum, ST1019 wrote, "It's my insecurities that make me feel this way and I will not let them come true. [...] Why, then, should I be so hard on myself when I wouldn't be on anyone else?!" The express usefulness of an EI-focused intervention in enhancing self-awareness and potentially emotional regulation was evinced in two diary entries (ST1008, ST1017). ST1017 wrote:

During the seminar that I attend, *we* focused on emotional intelligence and I realized how I got carried away these days by a negative emotion [...] After the seminar and the speech, I felt very well and the most important thing was the fact that [name removed] had also been feeling kind of weird lately and, as we discussed, I realized that I wasn't alone.

ST1017 had an increase in their pre-test (2.50) and post-test (3.83) scores on self-control and reported using more effective regulation strategies (e.g., exercise). On the other hand, ST1014 had a decrease in their pre-test (4.13) and post-test (3.90) scores on self-control, with negative emotional states consistently present throughout their diary. Hence, training on emotion regulation could be particularly helpful for student teachers struggling with anxiety and practicum-related responsibilities.

Discussion

This study addresses the lack of explicit instruction on EI in teacher education in Greece. Focusing on 42 student teachers, half of which attended a short EI-oriented intervention, the study examined whether an intervention would support student teachers' trait EI development and how EI manifests in student teachers' diary entries regarding their emotional experiences. The changes observed in respondents' pre- and post-test self-reports were non-statistically significant. However, the intervention seemed to be helpful to some of the participants, who implicitly and explicitly reported in their diaries an increase in their self-awareness, thus supporting the usefulness of an EI-focused intervention

for international educational contexts (Dacre-Pool & Qualter, 2012; Hen & Sharabi-Nov, 2014; Nelis et al., 2009; Nelis et al., 2011).

Contrary to the questionnaire results, the participants' diaries showed that an EI-focused intervention can be beneficial to some student teachers. The theme of emotion identification, referring to the participants' capabilities to identify the intensity and quality of an experienced emotion, supports the potential of journaling for identifying emotions and becoming aware of one's development through an EI-focused intervention (see also Hen & Sharabi-Nov, 2014). It further supports the connection found between teachers' EI and teaching satisfaction (Yin et al., 2013); the participants who scored higher in the questionnaire reported feeling satisfied with their teaching practicum efforts in their diaries. Other emotions associated with the practicum, particularly preparing and planning for it, were anxiety or stress, pressure, and disappointment. To some extent, anxiety and other negative emotions can be a natural part of the learning process and of difficult problem-solving situations that may lead to good outcomes (Anttila et al., 2017). However, negative emotions associated with the teaching practicum, such as emotional exhaustion, have been reported elsewhere (Kokkinos & Stavropoulos, 2016), and the diary data suggest that there were student teachers who appeared to need more support than others in coping with challenging situations. Hence, it would be worth examining whether these emotions are generally present in student teachers' lives and education.

The theme of emotion regulation strategies referred to participants' methods of emotional response to stimuli in their environments in relation to the self. Emotion regulation strategies were reported across participants' diaries; they seemed to be employed both consciously and habitually and were evaluated according to their usefulness for the self. Moreover, participants who reported using more effective regulation strategies also reported more positive emotions in their diaries, and vice versa (see also Kyriazopoulou, 2020). The student teachers who repeatedly described ineffective regulation strategies, as well as the few student teachers who expressed an awareness of ineffective emotion regulation strategies and an intention to change them, would be suitable candidates for EI-focused interventions, since EI is a potential protective factor from the path starting from rumination and leading to pathological anxiety (Liu & Ren, 2018). EI-focused interventions have been found to enhance self-awareness regarding thoughts, emotions, and the self; evoke personal introspection; and consolidate a personal and professional consciousness (Dolev & Leshem, 2017; Hen & Sharabi-Nov,

2014). The self-awareness present in the diary data is theoretically connected to EI but mostly addressed by ability models of EI (Mayer & Salovey, 1997). Hence, it might be more fruitful to examine emotion as a multifaceted concept drawing on aspects of both ability and trait theories (Nelis et al., 2009; Nelis et al., 2011), which can help develop personality characteristics (Mayer & Salovey, 1997; Petrides & Furnham, 2006).

This study was meant as a small-scale intervention to help student teachers develop their EI, and the participants' diaries suggest that EI interventions in Greek teacher education have potential. If EI interventions are to be implemented as part of teacher education curricula, they should be open to more students rather than bound to course registration. Moreover, they would be more helpful if they were of longer duration and better timed, such as before and after the teaching practicum, so that EI skills development pertaining to classroom interactions can be specifically targeted (e.g., Hawkey, 2006; Gilar-Corbi et al., 2018). In doing so, curricular variation across teacher training programs in the country could be addressed by collaboration of online seminars led by experienced lecturers and practicum mentors. On one hand, this would be a concerted effort to include EI in student teachers' initial preparation nation-wide while following contemporary developments in instructional methods and responding to a decrease of university resources for teacher education (see Zervas, 2016). On the other hand, this would offer the opportunity to enhance university-school partnerships while sensitizing in-service teachers to the importance of EI for teaching and mentoring student teachers. Third, using diaries could assist student teachers, teacher educators, and mentors in better processing pre-teachers' emotional reactions to teaching experiences and teaching as a profession. Diaries may further be used for needs assessment prior to planning an EI-focused intervention or used in conjunction with other activities, such as drama or drawing. The latter could enable those student teachers who are uncomfortable expressing their emotional experiences in writing to channel and process their emotional experiences through other mediums. Fourth, measuring emotions would benefit from a mixed method approach, as self-reports assess subjective perceptions of reality (Pekrun, 2016), thus potentially measuring only conscious emotions or including personal biases. Despite its small scale and sample size, it is hoped that this study will incentivize further EI-focused training in Greek teacher education, especially in light of its recognized position as an important aspect of teachers' professionalism internationally (Corcoran & Torney, 2013; Dacre-Pool & Qualter, 2012; Palomera et al., 2008; Hawkey, 2006; Gilar-Corbi et al., 2018).

Limitations

The findings of this study may not be generalizable, but the intervention design can easily be replicated with more participants in similar contexts, potentially helping pre-service teachers' resilience, well-being, and chances of burnout (e.g., Alrajhi et al., 2017; Mérida-López & Extremera, 2017; Vesely et al., 2013). However, certain limitations need to be addressed in relation to the sample, the duration of the intervention, and the intervening period between pre- and post-testing. The sample size might not have been sufficient for a statistically observed positive change in participants' trait EI, and the sample of 42 student teachers is not representative of the student teacher population in Greece. Additionally, the participants in the intervention group were all women and there were only five men in the control group. The lack of gender balance in this study is explained by the fact that teacher training programs across Greece have significantly more female than male students in them. For a better representation of the general population, future studies could reinforce male participation in research on education settings. Three of the twenty-one participants in the intervention group did not complete their emotion diaries; this is a limitation to the study, because we do not know what their qualitative data might have shown. Moreover, the participants in the control group did not keep emotion diaries, which could have enabled a comparison of themes across groups. The absence of statistically significant differences between the intervention and control groups in both pre-test and post-test time points could be attributed to the short duration of the intervention or the small sample. The reported intervention was based on the four-week intervention of eighteen hours by Nelis et al. (2009) and Nelis et al. (2011) and could, therefore, have been more conducive to statistically significant results had it been implemented longer; a two-week EI-focused intervention might not significantly increase student teachers' trait EI. This study quantitatively examined trait EI, which is a distinct, compound construct located at the lower levels of personality hierarchies and whose variance is summarized by higher-order personality traits (Petrides et al., 2007). Therefore, it is possible that student teachers' emotion-related self-perceptions, namely trait EI, may require longer interventions before they change, since that would afford student teachers more time to engage with, and possibly internalize, aspects of EI theory. While some EI intervention studies have found non-statistically significant results, those conducted in educational contexts have shown promising results (see Kotsou et al., 2019). Since short interventions have been successful in developing student teachers' trait EI (Nelis et al., 2009; Nelis et al., 2011), and both increases and decreases in trait EI were observed in this study's intervention group, the lack of statistically significant results could be mitigated by a larger number of respondents and longer interventions.

Appendix A

Table 4 Intervention structure

Sessions	Sections	Material and activities
1st part (2-h session)	Introduction	<ul style="list-style-type: none"> • Introduction • The content of intervention • Consent form, privacy notice and pre-test • Information for emotion diaries
	Section 1: Understanding emotions	<ul style="list-style-type: none"> • Emotional intelligence and the role of emotions • https://www.youtube.com/watch?v=SJOjprbfeE • Using Mahti cards and discussing in dyads
	Section 2: Identifying emotions	<ul style="list-style-type: none"> • Emotion theory, basic emotions, nonverbal communication, exercise through role play in groups of three and full group discussion • Movie suggestion: <i>Inside Out</i>
2nd part (2-h session)	Section 3: Expressing and using emotions	<ul style="list-style-type: none"> • Ways of expressing emotions, empathy, definitions, examples through videos https://www.youtube.com/watch?v=1Evwgu369Jw • Discussion in dyads about empathy (personal reflections) • Empathetic and active listening, video, and exercise in teams of three • https://www.youtube.com/watch?v=t685WM5R6aM
	Section 4: Managing emotions	<ul style="list-style-type: none"> • Managing strategies, promoting positive emotions, discussion in teams of four • Video for mindfulness: https://www.youtube.com/watch?v=vzKryaN44ss
	Conclusion	<ul style="list-style-type: none"> • Exercises of mindfulness for managing emotions (breathing exercise: body scan) • Post-test • Discussion about the topics and questions

(Kyriazopoulou, 2020)

Appendix B

Table 5 Two-factor mixed ANOVA results

Factor		df1, df2	F	p
Global TEI	Time	1, 40	1.79	.18
	Group	1, 40	.47	.49
	Time*group	1, 40	.17	.68
Well-being	Time	1, 40	.72	.79
	Group	1, 40	2.04	.16
	Time*group	1, 40	.20	.66
Self-control	Time	1, 40	1.19	.28
	Group	1, 40	.46	.83
	Time*group	1, 40	.02	.88
Emotionality	Time	1, 40	.03	.86
	Group	1, 40	.39	.53
	Time*group	1, 40	.08	.77
Sociability	Time	1, 40	.44	.50
	Group	1, 40	.58	.44
	Time*group	1, 40	1.23	.27

Note. at p = .05 level.; time is pre and post-tests, group is the intervention and control, and time*group is their interaction

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Code Availability Not applicable.

Authors' Contributions The primary author conducted the intervention and data collection. Both authors were involved in the research design, data analysis and writing of the manuscript.

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Data Availability See Appendix 1.

Declarations

Consent to Participate and Consent to Publish Informed consent was obtained from all individual participants included in the study.

The study is consistent with the 1964 Declaration of Helsinki and its later addenda.

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

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