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Teachers' emotional experience and its relationships with emotional intelligence and efficacy beliefs

Experiência emocional de professores e suas relações com inteligência emocional e crenças de eficácia

Experiencia emocional de los profesores y sus relaciones con la inteligencia emocional y las creencias de eficacia

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Abstract

Teachers face emotional challenges throughout the school year, and their ability to manage these demands can impact both their well-being and professional effectiveness. This study investigated the relationship between emotional intelligence, self-efficacy beliefs, and the emotional experience of public school teachers. A total of 51 teachers participated, responding to the Emotional Competence Inventory, the Teacher Sense of Efficacy Scale, and an emotional experience measure based on the circumplex model of affect. Correlational analyses indicated positive associations between emotional intelligence and self-efficacy, as well as between self-efficacy and emotional experience throughout the school year. Mediation models suggest that personal efficacy beliefs play an intermediary role in the relationship between emotional intelligence and teachers' emotional experience. The findings are discussed in terms of their implications for teacher training, highlighting the importance of interventions that foster socioemotional skills to enhance teachers' well-being and emotional resilience.

Keywords: Emotional competence. Socioemotional skills. Self-efficacy.

Resumo

Professores enfrentam desafios emocionais ao longo do ano letivo, e sua capacidade de lidar com essas demandas pode impactar tanto seu bem-estar quanto sua eficácia profissional. Este estudo investigou a relação entre inteligência emocional, crenças de eficácia e experiência emocional de professores da rede pública. Participaram 51 docentes, que responderam ao Inventário de Competências Emocionais, à Escala de Crenças de Eficácia de Professores e a um medidor de experiência emocional baseado no modelo circumplexo do afeto. As análises correlacionais indicaram associações positivas entre inteligência emocional e autoeficácia, bem como entre autoeficácia e experiência emocional ao longo do ano letivo. Modelos de mediação sugerem que as crenças de eficácia pessoal desempenham papel intermediário na relação entre a inteligência emocional e a experiência emocional dos professores. Os achados são discutidos em termos das implicações para a formação docente, destacando a importância de intervenções que promovam habilidades socioemocionais para fortalecer o bem-estar e a resiliência emocional dos professores.

Palavras-chave: *Competências emocionais. Habilidades socioemocionais. Autoeficácia.*

Resumen

Los profesores enfrentan desafíos emocionales a lo largo del año escolar, y su capacidad para gestionar estas demandas puede afectar tanto su bienestar como su eficacia profesional. Este estudio investigó la relación entre inteligencia emocional, creencias de eficacia y experiencia emocional de profesores de la red pública. Participaron 51 docentes, quienes respondieron al Inventario de Competencias Emocionales, a la Escala de Creencias de Eficacia de Profesores y a un medidor de experiencia emocional basado en el modelo circumplejo del afecto. Los análisis correlacionales indicaron asociaciones positivas entre inteligencia emocional y autoeficacia, así como entre autoeficacia y experiencia emocional a lo largo del año escolar. Los modelos de mediación sugieren que las creencias de eficacia personal desempeñan un papel intermedio en la relación entre la inteligencia emocional y la experiencia emocional de los profesores. Los hallazgos se discuten en términos de sus implicaciones para la formación docente, destacando la importancia de intervenciones que fomenten habilidades socioemocionales para fortalecer el bienestar y la resiliencia emocional de los profesores.

Palabras clave: *Competencias emocionales. Habilidades socioemocionales. Autoeficacia.*

1 Introduction

With the turn of the millennium, socioemotional skills (SES) have gained prominence in education as essential competencies that impact academic performance and prepare students for the personal and professional challenges of the 21st century; however, less attention has been given to the socioemotional skills of the teachers themselves, despite their central role in the development of these skills in students (Gimbert *et al.*, 2023; Lozano-Peña *et al.*, 2021; Scheirlinckx *et al.*, 2023).

Several authors converge on the importance of teachers' socioemotional skills for the success of education across multiple dimensions. These skills are highlighted as fundamental for teaching efficacy, contributing not only to students' school/academic performance but also to the development of important competencies for self-understanding, understanding others, and making sound life decisions. Teachers' ability to manage their own emotions and deal with the emotional demands of the school environment significantly impacts the classroom climate, strengthening interpersonal relationships and promoting student motivation and engagement. Furthermore, these skills prove crucial for dealing with the growing challenges of the profession, such as students' disruptive behavior and pressure for results, which often lead to occupational stress and burnout (Gimbert *et al.*, 2023; Lozano-Peña *et al.*, 2021; Oliveira *et al.*, 2021; Rajendran; Athira; Elavarasi, 2020; Scheirlinckx *et al.*, 2023).

Many constructs are associated with socioemotional skills, such as emotional intelligence, personality traits, and executive functions, among others (Bueno; Ricarte, 2022). This study adopts emotional intelligence, the circumplex model of affect, and self-efficacy beliefs as indicators of teachers' socioemotional skills. These variables were chosen because they influence important educational outcomes, such as student performance and school climate. Thus, this work seeks to investigate the interaction between these variables in a sample of Brazilian public school teachers. In the following sections, we will present these variables and their relevance to the educational field.

1.1 Emotional intelligence

The emotional intelligence (EI) was originally defined as the capacity to process affectively charged information, composed of four abilities: perceiving, facilitating thought (emotional reasoning), understanding, and regulating emotions. The perception of emotions involves recognizing emotions in oneself and others and the ability to differentiate between true and false expressions. Facilitating thought refers to the use of emotions to prioritize and organize tasks and make decisions. The understanding of emotions is related to recognizing complex transitions and mixtures of emotions and identifying the causes and consequences of observed emotional states. Finally, the regulation of emotions encompasses managing emotions to achieve goals, including openness to feelings (pleasant or unpleasant) and adaptation to contextual demands (Mayer; Caruso; Salovey, 2016; Rivers *et al.*, 2019).

This model is known as the ability model of EI, as it relies on cognitive skills related to the processing of emotional information (Mayer; Caruso; Salovey, 2016). In this research, we opted for the theoretical model of EI as an ability, assessed via the self-report of respondents regarding their own emotional competencies, which has been conventionally termed perceived emotional intelligence (Bru-Luna *et al.*, 2021).

These abilities play a fundamental role in the educational environment, influencing how students and teachers handle the relational and cognitive challenges inherent to school settings. For example, meta-analytic studies have suggested that EI is the third most important predictor of academic performance, following intelligence and the conscientiousness trait (Maccann *et al.*, 2020; Sánchez-Álvarez; Berrios Martos; Extremera, 2020). A study with Brazilian children reached similar results, identifying EI, fluid intelligence, and the agreeableness trait as the main

predictors of academic performance (Castro; Bueno; Peixoto, 2021). Findings such as these reinforce the importance of including socioemotional skills, like EI, in schools, and, by similarity and proximity, lead us to raise questions about the effects of EI in teachers—both concerning their knowledge and ability to promote these skills in students, and concerning the effects of these skills on the promotion and protection of their well-being at work.

In fact, studies show the effect of emotional intelligence, alongside other constructs, on a series of aspects related to the educational environment. For example, a study involving 559 Portuguese basic and secondary school teachers showed that teachers with a greater capacity for emotional regulation tend to perform better at classroom discipline (Valente; Monteiro; Lourenço, 2019). Zhi *et al.* (2024), in turn, showed that Chinese teachers with higher EI and self-efficacy are more prone to adopting technological resources in English as a foreign language classes. In another study, conducted with American teachers and students, training in EI for teachers resulted in significant improvements in their emotional skills, in the quality of teacher-student relationships (classroom climate and teachers' and students' socioemotional skills), and in students' academic performance in mathematics, science, and English language (Pattiasina; Zamakhsari; Halim, 2024).

These examples show that emotional intelligence and its abilities positively impact diverse aspects of the educational context, such as teaching quality, the adoption of innovative pedagogical practices, and teachers' well-being. For this reason, we opted to include this variable in this study, and, additionally, to include a measure capable of capturing the emotional state a person is experiencing at a given moment. A tool frequently used in intervention programs for the development of emotional intelligence is the Mood-meter, which assists in the identification and control of emotional states, promoting greater emotional awareness and support for emotional regulation. This tool is based on the circumplex model of affect (Russell, 1980), which will be presented in the next section.

1.2 Mood-meter and the Circumplex Model of Affect

The circumplex model of affect (Russell, 1980) is part of the dimensional approaches to the psychology of emotions, which, instead of classifying emotions into different categories (sadness, joy, fear, etc.), assume that emotional states can be represented in a continuous space, defined by underlying dimensions (valence and activation) that capture the differences and

similarities between these states. This dimensional perspective aligns with psychological theories that emphasize the interaction between cognitive and emotional processes and seek to structure human affective experiences systematically (Posner; Russell; Peterson, 2005; Russell; Barrett, 1999).

In this model, affective states are represented in a bipolar two-dimensional space, where the dimensions of pleasure-displeasure (valence) and activation-deactivation (energy, or arousal) define a Cartesian plane. Emotions are distributed circularly between the axes, so that each emotion is described by a unique position in the space, synthesizing relationships between emotional states in terms of proximity and opposition (Posner; Russell; Peterson, 2005; Russell, 1980; Russell; Barrett, 1999).

Russell *et al.* (1999) found evidence supporting the reproducibility of the circumplex model of affect across different languages and cultures, such as Polish, Greek, Estonian, and Chinese. According to the authors, these results indicate that the model presents a solid general structure, suggesting that the underlying dimensions of valence and activation are broadly understood similarly across cultures, reinforcing the universality of the model's main components.

A Brazilian study based on this model, which aimed to seek validity and reliability evidence for an instrument to assess affect in athletes, found a structure with three factors. The authors concluded that these factors are influenced by the valence and activation (arousal) dimensions of the circumplex model of affect (Crispim *et al.*, 2017), suggesting that the universality of the model also applies to the Brazilian context.

The use of this model in the educational area was driven by an intervention program for the development of socioemotional skills based on the emotional intelligence ability model, RULER (an acronym for EI-related skills: Recognising, Understanding, Labelling, Expressing, and Regulating). This program employs a tool called the Mood-meter, which is essentially the operationalization of the circumplex model of affect in an application. The user reports their feeling (valence) and energy (activation) at a given moment and receives a graphical representation of the intersection between these measures on a Cartesian coordinate system, enabling the identification of the current emotional state (Brackett *et al.*, 2011).

In the upper-left quadrant, there are unpleasant affective states of high physiological activation, such as anger, fear, and anxiety. In the lower-left quadrant, there are unpleasant affects of low physiological activation, typical of the sadness-depression continuum. Similarly,

in the upper-right section, there are pleasant affects of high physiological activation, ranging from contentment to ecstasy, while the lower-right section contains pleasant affects of low physiological activation, such as calm, tranquility, and serenity (Brackett *et al.*, 2011).

Although the authors recommend the use of the Mood-meter to help assign a name to the emotional state being experienced, improve empathy, and enhance social connections (Brackett *et al.*, 2011), there are few reports on its use in the scientific literature, especially with teachers. One of the few found and available for reading was conducted with Pakistani university professors (n=270), which found that pleasant emotional states were important for boosting satisfaction, accomplishment, and resilience in the workplace. In contrast, unpleasant emotions, regardless of the level of activation, tend to reduce satisfaction and increase vulnerability to exhaustion (Siraj; Anwar; Anwar, 2024).

Other studies that captured teachers' emotional states in other ways (not via the Mood-meter) achieved similar results. For example, Keller and Becker (2021) discovered that teachers' positive emotions, such as pleasure, are correlated with similar emotions in students, while the emotional authenticity perceived by students significantly influences their own emotional experiences. In turn, Frenzel *et al.* (2021) highlight that teachers' emotions directly affect students' emotions, influencing their engagement and academic performance. These studies suggest that the genuine expression of positive emotions by teachers can promote a more effective and emotionally healthy learning environment for students.

In addition, emotions, like emotional intelligence, show relationships with teacher self-efficacy. For instance, a study investigated the reciprocal relationships between Croatian teachers' emotions and their self-efficacy (TSE) over time. The results indicated that higher levels of self-efficacy predict a subsequent increase in positive emotions, such as joy and pride. Conversely, negative emotions, such as anger, exhaustion, and hopelessness, were predictors of a subsequent decrease in teacher self-efficacy (Burić; Slišković; Sorić, 2020).

These findings demonstrate that emotions and affective states play a central role in teachers' well-being and performance, as well as in their interaction with students. Thus, we opted to include a measure of affective states in this research inspired by the Mood-meter. Additionally, the interaction between emotions and self-efficacy highlights the potential bidirectional nature between these constructs, suggesting that the ability to regulate and understand emotions can not only promote more positive emotional states but also reinforce teachers' efficacy beliefs regarding their professional competencies. Based on this overview,

the next section will explore teacher self-efficacy beliefs, its dimensions, and its impact on the educational environment.

1.3 Self-Efficacy

Bandura (1977) defined self-efficacy as an individual's belief in their own capacity to organize and execute the actions necessary to perform a task within a given domain. This expectation of personal efficacy directly influences the choice of activities, the level of effort invested, and persistence in the face of challenges and adverse experiences.

The author identifies four main sources that shape self-efficacy beliefs: *mastery experience*, which offers direct evidence of capability, where previous successes strengthen efficacy beliefs while failures weaken them; *vicarious experience*, which refers to observing similar people succeeding, thus reinforcing the belief that the individual can also achieve similar results; *verbal persuasion*, where realistic encouragement from others can motivate and sustain efforts in the face of challenges; and *physiological and affective states*, where positive emotional states and low levels of physiological activation generally strengthen efficacy beliefs, while negative states, such as high anxiety, tend to weaken them, creating a cycle of self-evaluation that influences future performance (Bandura, 1977).

The application of this definition to teachers delimits a context (school) in which teachers develop beliefs about their capacity for action. Woolfolk and Hoy (1990), for example, found two factors related to teachers' efficacy beliefs: personal efficacy, referring to the teacher's beliefs about their ability to handle the demands of the teaching situation, and teaching efficacy, which refers to the beliefs about the extent to which the teacher's work is (or is not) capable of overcoming factors they cannot control, such as the student's home environment, student motivation, and discipline, among others (Bzuneck; Guimarães, 2003; Woolfolk; Hoy, 1990).

A recent literature review found that teachers with high levels of self-efficacy tend to view challenges as learning opportunities, demonstrate greater commitment to teaching, and create a more motivating environment for students, resulting in greater academic success. Conversely, teachers with low self-efficacy often avoid challenging tasks, which negatively impact their pedagogical practices and student motivation. Furthermore, self-efficacy is

strongly associated with classroom management, collaboration with colleagues, and the adoption of innovative pedagogical methods (Hussain; Khan; Bidar, 2022).

Self-efficacy impacts teachers' own mental health. A study conducted with 742 teachers in Germany, for example, highlights that self-efficacy plays a crucial role in protecting against occupational stress and promoting mental health. Teachers with high self-efficacy exhibit greater psychological resilience, which translates into an increased ability to handle teaching-related challenges, better emotional balance, and higher overall life satisfaction. Moreover, teachers with greater self-efficacy tend to experience more social support and a sense of accomplishment at work, which are fundamental factors for maintaining good mental health. Conversely, low levels of self-efficacy are associated with a higher tendency to face emotional difficulties and less ability to cope with stress, which can increase vulnerability to burnout and other mental health conditions (Muenchhausen *et al.*, 2021).

Based on the results of previous studies, it is plausible to assume that emotional intelligence, affective states, and self-efficacy beliefs are interconnected in the teaching experience, given that all influence relevant variables in the school context. The abilities associated with emotional intelligence appear to help teachers deal more effectively with the emotional challenges of teaching practice, fostering more positive affective states and, consequently, a more productive classroom climate. Furthermore, as discussed, physiological and affective states—among other factors—contribute to the strengthening of self-efficacy beliefs, making the hypothesis of positive correlations among emotional intelligence, positive affective states, and efficacy beliefs plausible. The relationships between these variables, however, still lack empirical investigation, especially with the measures adopted in this study.

The objective of this study, then, was to investigate teachers' emotional experience throughout the school year and its relationships with emotional intelligence and efficacy beliefs. Specifically, we verified: 1) the quality of teachers' emotional experience (feelings and energy level) at the beginning and end of a typical year and in an atypical year (during the COVID-19 pandemic); 2) the relationships of these emotional experiences with emotional intelligence and efficacy beliefs; 3) the relationships between emotional intelligence and efficacy beliefs; and 4) whether efficacy beliefs mediate the relationships between emotional intelligence and teachers' emotional experience.

2 Method

This is a cross-sectional field research study with a quantitative approach.

2.1 Participants

The sample for this study consisted of 51 participants with a mean age of 48.4 years (Standard Deviation [SD] = 11.1) and was predominantly female (68.6%). Regarding race/color, 43.1% of the participants declared themselves White, followed by Brown (37.2%), Black (15.7%), and Asian/Yellow (3.92%). The majority reported being married (58.8%) and had a complete or incomplete postgraduate level of higher education (92.2%). Regarding professional work, most reported working in High School (52.9%), followed by Elementary School I (up to 5th grade) (27.5%) and Elementary School II (6th grade onwards) (19.6%), with 56.9% working full-time. In terms of health, 68.6% stated they had no chronic problems, although about half the sample reported using medication (51%).

The study included public school teachers with at least two full years of classroom experience, who agreed to participate in the research by signing the Free and Informed Consent Form (FICF). Participants who were not teaching at the time of data collection, had not taught in the public network for at least two full years, or who were performing non-teaching duties during the collection were excluded.

The participants were contacted through social media, emails, and dissemination within schools, with the support of school administrators. The dissemination included the offer of a lecture on emotional intelligence in the classroom and the anticipated research findings.

2.2 Instruments

In addition to a sociodemographic questionnaire for characterizing the sociodemographic profile of the investigated sample, the following instruments were employed: the Emotional Competencies Inventory – Revised Version (ECI-R), the Teachers' Efficacy Beliefs Scale, and the Mood-meter. These instruments are described below.

Emotional Competencies Inventory – Revised Version (ECI-R) – This instrument evaluates perceived emotional intelligence. Composed of 34 items, the ECI-R presents statements about emotional abilities to be read and answered using a 5-point Likert scale, where

1 corresponds to “Does not apply to my case” and 5 corresponds to “Applies perfectly to my case”, with the possibility of assigning 2, 3, or 4 if the respondent considers their degree of agreement to be between the extremes. The instrument has shown evidence of factorial validity and good reliability indices for assessing the following factors: perception of emotions (e.g., *I identify activities that put me in a bad mood*), emotional expressiveness (e.g., *I find it easy to express what I feel*), regulation of emotions in other people (e.g., *I can help other people feel better*), regulation of low-potency emotions in oneself (e.g., *I can overcome my discouragement*), and regulation of high-potency emotions in oneself (e.g., *I can control my irritation*) (Bueno; Correia; Peixoto, 2021).

Perception of emotions (perc) measures sensitivity to detect one's own and others' emotional states, including the influence of social interactions on these states. Emotional expressiveness (expr) assesses the ability to express feelings clearly and without fear of rejection. Regulation of emotions in other people (reot) refers to the ability to deal with emotionally distressed individuals, helping them feel better and more prepared to face challenges. Regulation of low-potency emotions (rlpe) involves the capacity to overcome emotions like sadness and discouragement, maintaining self-motivation and generating appropriate feelings to deal with daily demands. Finally, regulation of high-potency emotions (rhpe) encompasses the capacity to control impulses, such as anger or euphoria, to act appropriately to the circumstances. In addition to these factors, a general emotional competence factor (ecer) can be calculated by averaging the five primary factors, representing an integrated view of the emotional abilities assessed by the instrument (Bueno; Correia; Peixoto, 2021).

Woolfolk and Hoy’s Teachers’ Efficacy Beliefs Scale – The instrument, originally developed by Woolfolk and Hoy (1990) and translated and validated for Brazilian Portuguese by Bzuneck and Guimarães (2003), is composed of 20 statements answered on a 6-point Likert scale, ranging from total disagreement to complete agreement. Participants could also assign the intermediate values 2, 3, 4, or 5 if their degree of agreement fell between the extremes. Of the 20 items, 12 correspond to personal efficacy beliefs (e.g., *when I really try, I know I can cope with the most difficult students*), while the other eight assess teaching efficacy beliefs (e.g., *if parents would do more for their children, teachers could do more too*). These factors present reliability coefficients (Cronbach’s alpha) equal to or greater than 0.7 (Bzuneck; Guimarães, 2003). Personal efficacy refers to the degree of confidence the individual has in their ability to respond to the demands of the teaching situation, while teaching efficacy relates to the belief

that teachers, in general, are prepared to competently handle the specific challenges of the educational routine (Bzuneck; Guimarães, 2003; Woolfolk; Hoy, 1990).

The Mood-meter (Brackett *et al.*, 2011) is composed of two variables: feeling and energy level, which correspond to the valence and arousal dimensions of the circumplex model of affect, respectively (Russell, 1980). These variables were assessed in specific contexts, which in this research corresponded to the emotional state (feeling and energy level) related to teaching work at different moments: at the beginning (m1s and m1e) and at the end of the school year before the pandemic (m2s and m2e), and during the pandemic (m3s and m3e). The questions were adapted for each context. For example: "BEFORE THE PANDEMIC, how did you usually FEEL at the beginning of the school year?" and "BEFORE THE PANDEMIC, what was your ENERGY level usually like at the end of the school year?" Additionally, shifts in feelings and energy level from the beginning to the end of the year were calculated by subtracting the end-of-year value from the beginning-of-year value.

Responses were collected on a 0-to-10 point scale, where, for feelings, 0 indicated "feeling extremely bad" and 10, "feeling extremely good". For the energy level, 0 corresponded to "low energy level" and 10, to "high energy level". Thus, each participant obtained scores for feeling (m1s) and energy level (m1e) at the beginning of the school year before the pandemic, scores for feeling (m2s) and energy level (m2e) at the end of the school year before the pandemic, and scores for feeling and energy during the pandemic (m3s and m3e). These pairs of variables can be graphically represented on Cartesian axes that form four quadrants: the upper-left (high energy, unpleasant feeling), related to emotions such as anger, fear, disgust, and anxiety; the lower-left (low energy, unpleasant feeling), linked to sadness, melancholy, loneliness, and depression; the upper-right (high energy, pleasant feeling), associated with joy, optimism, euphoria, and ecstasy; and the lower-right (low energy, pleasant feeling), tied to relaxation, calm, tranquility, and serenity. Since it is based on participants' direct responses, the Mood-meter does not have associated psychometric studies.

2.3 Procedures

The study was conducted in compliance with Resolution No. 510/2016 of the National Health Council and received approval from the Research Ethics Committee (REC) under Certificate of Presentation for Ethical Appraisal (CPEA) No. 49989421.4.0000.5208.

Following approval, schools were contacted to enable data collection, which was also disseminated through social media. Data collection occurred between October and December 2021.

The research instruments and the Free and Informed Consent Form (FICF) were made available in an electronic form hosted on Google Forms, the link for which was shared via social media. Upon accessing the form, participants received detailed information about the study's objectives and procedures, the guarantee of anonymity, the possibility to withdraw at any time, and the researchers' contact information for any queries. Participation was formalized by explicit agreement in the FICF, after which participants gained access to the remainder of the form. No time limit was established for completing the data. The collected data are stored and will be kept on file for a period of five years, as per the CEP's recommendations.

2.4 Data Analysis

After the collection period, the data were organized in an electronic spreadsheet for the execution of statistical analyses. To achieve the proposed objectives, scatter plots of the variables related to emotional experience were generated, with feelings on the abscissa axis and the energy level on the ordinate axis. Additionally, Pearson correlation coefficients were calculated between the factors assessed by the instruments. Correlations were considered statistically significant when p was less than 0.05. Regarding magnitude, correlations less than or equal to 0.3 were considered low, from 0.31 to 0.50 were considered moderate, and greater than 0.50 were considered high (COHEN, 1992).

The mediation models were estimated using structural equation modeling based on the multiple regression approach, utilizing the lavaan package in the R software. The goal was to test whether the mediator variable (personal efficacy) partially or fully explained the relationship between emotional intelligence and emotional states (feeling and energy level). For this purpose, the following coefficients were examined: (a) the effect of emotional intelligence on personal efficacy, (b) the effect of personal efficacy on emotional states, and (c') the direct effect of emotional intelligence on emotional states, controlling for personal efficacy. The indirect effect (ab), corresponding to the influence mediated by personal efficacy, was also

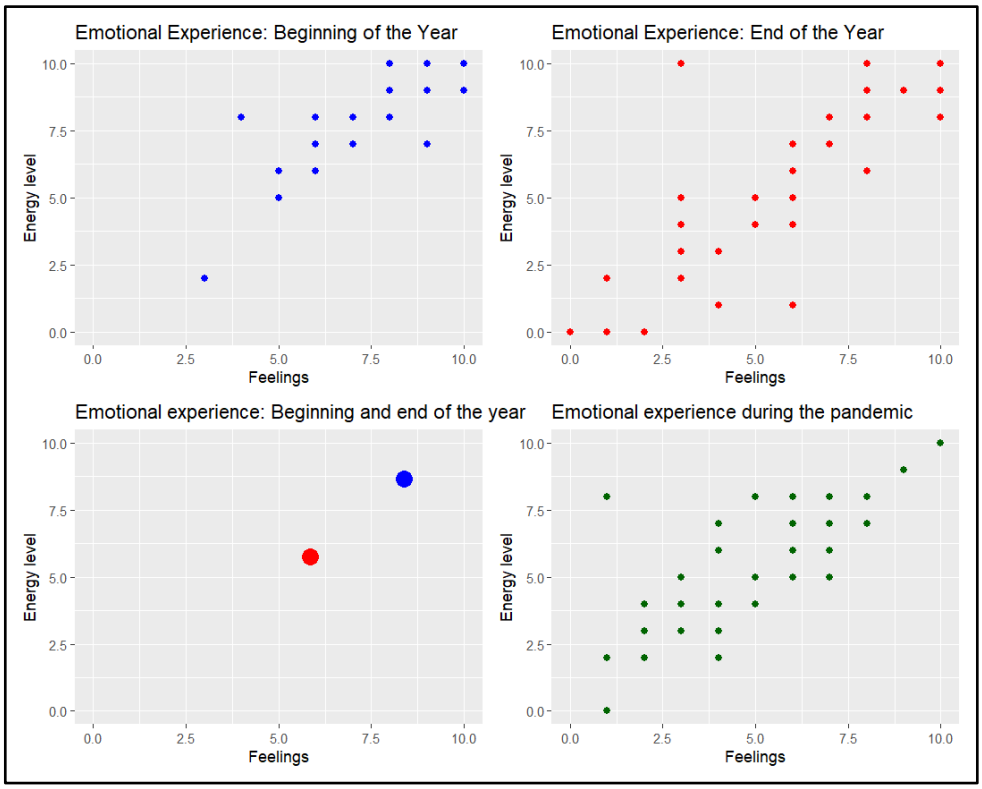
estimated, as well as the total effect (c ′ +ab), which represents the sum of the direct and indirect effects.

The statistical significance of the coefficients was assessed, considering a significance level of p≤0.05. The model adequacy was verified using fit indices such as the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). Models with CFI and TLI above 0.90, RMSEA below 0.08, and SRMR less than 0.08 were considered adequate (Baron; Kenny, 1986; Hayes, 2022).

3 Results

The first specific objective of this work was to verify the quality of teachers' emotional experience, for which four scatter plots were generated with Cartesian axes representing feelings and energy level, which are presented in Figure 1.

Figure 1 – Mood-meter of Teachers' Emotional Experiences Throughout the Year.



Source: Own authorship.

The two upper plots show the teachers' emotional experience at the beginning and end of the school year, respectively. It is noted that, at the beginning of the year, the data points are concentrated in the upper-right quadrant and, at the end of the year, they extend along the upper-right and lower-left quadrants. The plots in the bottom row show the average shift from the beginning to the end of the year and the dispersion in an atypical pandemic year, respectively. It is noted that, on average, the emotional experience tends to move from the upper-right quadrant toward the center, while the emotional experience during the pandemic resembles the emotional experience at the end of the school year.

The second objective of the study was to verify the relationships between teachers' emotional experiences, emotional intelligence, and efficacy beliefs. For this purpose, Pearson correlation coefficients were calculated for the measures of emotional experiences (feeling and energy level) with the factors of the ECI-R and the Teachers' Efficacy Beliefs Scale, the results of which are presented in Table 1.

Table 1 – Correlation Coefficients of Emotional Experiences with Emotional Intelligence and Efficacy Beliefs.

Factors	m1s	m1e	m2s	m2e	m3s	m3e
Perception of Emotions	0,33*	0,27	0,24	0,28*	0,13	0,08
Emotional Expressiveness	0,19	0,04	0	0,04	0,1	0,14
Regulation of Emotions in Others	0,24	0,12	0,26	0,35*	0,38**	0,29*
Regulation of Low-Potency Emotions	0,33*	0,24	0,3*	0,36**	0,4**	0,33*
Regulation of High-Potency Emotions	0,2	0,14	0,24	0,19	0,39**	0,24
Emotional Competencies – General	0,33*	0,2	0,26	0,31*	0,38**	0,29*
Personal Efficacy (pers_eff)	0,.43**	0,39**	0,36**	0,45***	0,44**	0,4**
Teaching Efficacy (teach_eff)	0,05	0,06	0,07	0,1	0,14	0,18

Source: Own authorship.

*p<0.05 significant correlations; **p<0.01 significant correlations; ***p<0.001 significant correlations; m1s – Mood-meter feeling at the beginning of the year, before the pandemic; m1e – Mood-meter energy level at the beginning of the year, before the pandemic; m2s – Mood-meter feeling at the end of the year, before the pandemic; m2e – Mood-meter energy level at the end of the year, before the pandemic; m3s – Mood-meter feeling during the pandemic; m3e – Mood-meter energy level during the pandemic.

With slight variations, the results show that the factors perception of emotions, regulation of emotions in others, regulation of low-potency emotions, and the general emotional competencies factor demonstrated positive, significant, and moderate correlations with feelings

at the beginning of the year, with the energy level at the end of the year, and with both (feelings and energy level) during the pandemic. Furthermore, there was also a pattern of moderate, positive, and significant correlations between the measures of feeling and energy level across all conditions. However, no correlations were found between teaching efficacy and the measures of teachers' emotional experience. The Pearson correlation coefficients between the emotional intelligence factors (ECI-R) and teachers' efficacy beliefs are shown next.

Table 2 – Correlation Coefficients Between Emotional Intelligence and Efficacy Beliefs.

Factors	Personal efficacy	Teaching efficacy
Perception of emotions	0,44**	-0,07
Emotional expressiveness	0,14	-0,2
Regulation of emotions in others	0,49***	-0,06
Regulation of low-potency emotions	0,36**	-0,03
Regulation of high-potency emotions	0,38**	0,04
Emotional competencies – general	0,47***	-0,09

Source: Own authorship.

*p<0.05 significant correlations; **p<0.01 significant correlations; ***p<0.001 significant correlations.

It is observed that there was a pattern of moderate, positive, and significant correlations between the emotional competency factors and the personal efficacy factor, except for emotional expressiveness; however, there were no significant correlations with the teaching efficacy factor of the Teachers' Efficacy Scale.

The fourth specific objective of this work was to investigate whether efficacy beliefs mediate the relationships between emotional intelligence and teachers' emotional experience. For this, the total emotional intelligence score from the ECI-R (icer) and the personal efficacy beliefs score (pers_eff) were used in six models, predicting each of the teachers' emotional experience measures: feeling and energy level at the beginning of a typical year (m1s and m1e), at the end of a typical year (m2s and m2e), and in an atypical (pandemic) year (m3s and m3e).

Table 6 shows the regression coefficients of the models.

Table 3 – Regression Coefficients of the Mediation Models.

Model	a	b	c'	ab	total
m1s	0,830***	0,754*	0,628	0,626*	1,254**
m1e	0,830***	0,743*	0,051	0,617*	0,668
m2s	0,830***	1,057**	0,720	0,877*	1,598**
m2e	0,830***	1,480***	0,903	1,228**	2,131***
m3s	0,830***	0,966***	1,085*	0,801*	1,887***
m3e	0,830***	0,926***	0,674	0,769*	1,443**

Source: Own authorship.

The results of the mediation models revealed consistent patterns in the relationship between emotional intelligence (icer), teachers' personal efficacy (pers_eff), and emotional states represented by the feeling and energy level scores at the different time points assessed. Coefficient "a", which captures the relationship between icer and pers_eff, was significant in all models ($a=0.830$; $p\leq0.01$), indicating that perceived emotional intelligence is positively associated with teachers' personal efficacy beliefs. Coefficient "b", which assesses the impact of pers_eff on the dependent variables (in each model), was significant in the majority of models, suggesting that personal efficacy exerts a direct influence on the emotional states (in each model), particularly during moments of greater emotional activation or throughout critical periods, such as the end of the year and during the pandemic. Coefficient c', which captures the direct relationship between icer and the emotional variables after controlling for pers_eff, was not significant in most models, indicating that the relationship between perceived emotional intelligence and emotional states is mediated by personal efficacy beliefs. This mediation is corroborated by the indirect effect coefficients (ab), which were marginally significant in most models. Finally, the total effect (total) was significant in most models, reinforcing the relevance of perceived emotional intelligence and personal efficacy in determining teachers' emotional states.

4 Discussion

The central objective of this study was to investigate the emotional experience of teachers throughout the school year and its relationships with emotional intelligence and efficacy beliefs among public school teachers in the state of Pernambuco. The initial results showed that the emotional experiences of teachers varied considerably over the school year and

within the pandemic context. In emotional terms, the results indicate that, at the beginning of the year, teachers tend to be influenced by pleasant emotions with a high energy level (upper-right quadrant), such as joy and euphoria (Brackett *et al.*, 2011); however, this pattern shifts throughout the year, such that, by the end of the year, only some teachers remain in this same emotional condition, while others move toward unpleasant feelings with a low energy level (lower-left quadrant), such as discouragement, sadness, and depression (Brackett *et al.*, 2011).

This data has important implications for teaching practice, as pleasant emotional states are associated with satisfaction, accomplishment, and resilience in the workplace, while unpleasant emotional states tend to reduce satisfaction and increase vulnerability to exhaustion (Siraj; Anwar; Anwar, 2024). Furthermore, teachers' emotional states directly affect students' emotions, influencing their engagement and academic performance (Frenzel; Daniels; Burić, 2021; Keller; Becker, 2021). From this, it can be inferred that teachers who begin to experience unpleasant emotions throughout the year also tend to find less satisfaction in their work and lessen or not influence student engagement and performance in their subjects as much.

The decrease in the quality of emotional experience over the year may be associated with the accumulation of demands and the increase in occupational stressors, as highlighted by Rajendran *et al.* (2020), among others. The similarity between emotional states at the end of the year and during the pandemic reinforces teachers' emotional vulnerability in situations of prolonged stress.

The data showed, however, that not all teachers have their affective state altered over the year. Future research could explore this aspect. For instance, researchers linked to Positive Psychology might be interested in understanding which personal aspects, practices, or characteristics enable some teachers to sustain their positive and energized emotional states throughout the year, despite the accumulation of demands and the increase in occupational stressors. Other researchers might be more interested in the susceptibility of a group of teachers to alterations in emotional experience and in investigating their possible relationships with other psychological variables, such as personality and mental disorders, etc.

In this study, we found two variables related to teachers' emotional state over the year: emotional intelligence (and its abilities) and teachers' efficacy beliefs; however, this study advances by showing the specificities of these relationships.

Among the abilities related to emotional intelligence, the perception of emotions (perc) and the regulation of emotions (reot and rlpe) were the ones that presented significant

correlations with emotional experience, but the pattern changes considerably from the beginning to the end of the year. While at the beginning of the year the correlations were with feelings, indicating that greater emotional ability (reot and rlpe) is associated with more pleasant emotions at the start of the year, at the end of the year the associations were with the energy level. In the pandemic context, there were associations with both feelings and energy level. In general, these results indicate that: 1) the more developed the emotional abilities (EI), especially in the perception and regulation of emotions in others and of low-potency emotions in oneself, the better the quality of teachers' emotional experiences, regardless of whether it is a typical or atypical year; 2) the relationships between emotional intelligence and emotional experiences become more numerous and of greater magnitude when environmental situations are more complex, such as in the pandemic situation.

In turn, only teachers' personal efficacy beliefs correlated positively with both aspects of emotional experience: feelings and energy level. That is, personal efficacy, which refers to the individual's degree of confidence in their ability to respond to the demands of the teaching situation (Bzuneck; Guimarães, 2003; Woolfolk; Hoy, 1990), is associated with more pleasant emotional experiences and a higher energy level in all conditions assessed (beginning and end of a typical year, pandemic year).

These results are compatible with the idea that emotional states influence efficacy beliefs, with pleasant states and low levels of physiological activation strengthening them, and unpleasant states and high levels of physiological activation weakening them (Bandura, 1977). Burić *et al.* (2020), however, warn that the relationship between emotions and self-efficacy is not bidirectional but rather asymmetric. Specifically, higher levels of self-efficacy predicted subsequent increases in the positive emotions of joy and pride. Conversely, negative emotions such as anger, exhaustion, and hopelessness were predictors of subsequent reductions in teacher self-efficacy. In any case, the relationships between efficacy beliefs and emotional experience in the classroom appear to be solid and capable of overcoming idiomatic and cultural conditions.

The present study also shows that EI abilities (except emotional expressiveness) are moderately associated with personal efficacy beliefs and, furthermore, that efficacy beliefs mediate the relationships between emotional intelligence and teachers' emotional experience. Considering that both emotional intelligence and efficacy beliefs are malleable, that is, amenable to training (Brackett *et al.*, 2011; Burić; Slišković; Sorić, 2020), these variables are

of interest for the development of socioemotional skills training programs for teachers. Furthermore, the pattern of correlations and the mediation models suggest that teachers' emotional intelligence and efficacy beliefs are more important for maintaining emotional experience at good levels of pleasantness and energy in more adverse contexts, such as the end of the year and a pandemic situation.

This study contributes to the advancement of knowledge about the relationship between emotional intelligence, efficacy beliefs, and teachers' emotional experience, broadening the understanding of the psychological factors that influence teacher well-being. Although the literature has already demonstrated that emotional intelligence and self-efficacy are important variables for teachers' performance and emotional balance, the present research deepens this discussion by testing a mediation model that explicitly included the mediating variable (personal efficacy beliefs) and estimated the indirect effect of emotional intelligence on emotional experience over the school year. The results indicated that personal efficacy beliefs play a mediating role in this relationship. This finding suggests that teachers who perceive themselves as emotionally competent not only experience more positive emotions and a higher energy level but also feel more effective in their professional practice, which, in turn, reinforces positive emotional states. Furthermore, the study highlights the dynamic of teachers' emotional changes throughout the school year and in crisis contexts, such as the pandemic, demonstrating how individual factors can modulate these experiences. Thus, by integrating theoretical models of emotional intelligence, affect, and self-efficacy, this research expands the basis for future investigations into intervention strategies aimed at teacher well-being.

Despite the contributions of the present study to the understanding of the relationships between emotional intelligence, efficacy beliefs, and teachers' emotional experience, some limitations must be considered. The sample size (n=51) may have limited the generalization of the results to other educational contexts. Although the analysis revealed significant patterns of association between the variables, studies with larger samples could confirm the robustness of these relationships and allow for more refined analyses, such as longitudinal models that capture changes over time.

Another limitation relates to the cross-sectional nature of the study, which makes it impossible to identify causal relationships between the variables. Although the findings indicate that emotional intelligence and efficacy beliefs are associated with teachers' emotional experience, it is not possible to determine the exact direction of these relationships.

Longitudinal studies could better clarify the long-term effects of emotional intelligence and efficacy beliefs on the emotional experience in the teaching environment.

In addition, the research used self-report instruments, which may have introduced social desirability bias. Teachers may have responded to the scales in a way that aligns with normative expectations regarding emotional control, influencing the scores for emotional intelligence and efficacy beliefs. Future studies could complement the data with observational assessments or third-party reports, such as evaluations by supervisors or colleagues, to obtain a more objective measure of teachers' emotional abilities.

Finally, the study focused exclusively on public school teachers from one state in the Brazilian Northeast, which restricts the applicability of the results to other educational contexts. Structural differences between public and private schools, such as institutional support, workload, and available resources, influence teachers' emotional experience. Future research could compare these variables across different educational systems to identify specific factors that favor teacher well-being.

Despite these limitations, the findings reinforce the importance of emotional intelligence and efficacy beliefs for teachers' emotional experience, highlighting the need for socioemotional skills training programs that assist in emotional regulation and the construction of teacher self-efficacy. The findings of this study point to the relevance of emotional intelligence and efficacy beliefs in teachers' emotional experience over the school year, suggesting that continuous training programs and public educational policies should include the development of socioemotional skills as an essential component. Training focused on emotional perception and regulation can help teachers deal more effectively with daily challenges, reducing the impact of stressors and promoting greater well-being in the school environment. Furthermore, strategies that strengthen teacher self-efficacy beliefs, such as mentorships, pedagogical supervision, and constructive feedback, contribute to increased emotional resilience and professional engagement. Educational programs that integrate socioemotional approaches, such as RULER (Brackett *et al.*, 2011), demonstrate the potential to enhance both teacher well-being and the school climate, directly benefiting students' performance and socioemotional development. Therefore, investing in the emotional training of teachers not only improves their quality of life at work but also strengthens education as a whole, promoting a more positive, motivating, and productive teaching environment.

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