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Original Research

Comparative investigation of empathy levels (TEQ) between primary education teachers and parents in the Prefecture of Drama: Theoretical implications for school-family communication

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Abstract: This study conducts a comparative investigation of empathy levels between teachers and parents of primary education students in the Prefecture of Drama, considering empathy as a critical psychosocial factor for effective school-family collaboration. Data were collected using the Toronto Empathy Questionnaire (TEQ), which measures the emotional dimension of empathy. The results indicated high levels of empathy in both groups (teachers and female parents), with no statistically significant differences between them, despite the initial hypothesis that teachers would demonstrate higher empathy due to their professional training. A statistically significant correlation between gender and empathy was found only among teachers. In conclusion, the findings suggest that both parental and professional roles contribute equally to the development of emotional empathy. The study provides an empirical basis for designing joint educational interventions to enhance empathy and quality communication within the context of school-family collaboration.

Keywords: Empathy, Primary education teachers, Parents, School-family collaboration, Toronto Empathy Questionnaire (TEQ)

Introduction

Modern educational processes recognize that students' successful development and academic performance are not solely the responsibility of the school, but result from dynamic collaboration between school and family (Epstein, 2018). This relationship is one of the most critical factors for students' academic, emotional, and social development, particularly in primary education, and is based on Epstein's (2018) model of overlapping spheres of influence. Such collaboration requires the establishment of relationships founded on mutual trust and understanding (Richardson, 2022).

To achieve this, the quality of communication between school and family plays a dominant role. According to Kraft & Dougherty (2013), positive, specific, and frequent communication between teachers and parents can significantly increase student engagement in the educational process, thereby influencing their progress and performance. However, in Greece, communication is often characterized by a one-way flow of information and a lack of time and trust, which undermines collaboration

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(Papadopoulos & Gkaintatzi, 2023; Karampelas & Poulou, 2024). The need for high-quality, bidirectional interaction that overcomes these structural barriers makes it necessary to investigate the psychological factors that facilitate mutual understanding.

In this context, empathy emerges as the central variable that can transform simple interaction into substantial and constructive collaboration (Cline, 2023). It is not limited to understanding the emotions of others but also includes the ability to respond in ways that enhance emotional security and mutual understanding (Spreng et al., 2009). The present study focuses specifically on the affective dimension of empathy. This choice is based on the premise that affective empathy forms the foundation of social bonding and mutual trust, as it reflects an individual's capacity to "share" another's emotional state, which often precedes cognitive processing in interpersonal relationships (Cuff et al., 2016). Unlike cognitive approaches, affective empathy serves as the 'emotional heart' of school–family collaboration, facilitating authentic connection within the sensitive context of primary education. In the educational environment, a teacher's empathy towards parents fosters a climate of respect and cooperation, as the teacher understands family challenges (Hannon & O'Donnell, 2022). Simultaneously, parental empathy towards the teacher can strengthen trust and reduce questioning of their professional role (Borelli et al., 2021).

Given the vital importance of empathy in the school-family relationship, a systematic examination of the theoretical approaches and empirical findings related to this specific skill is essential. The following section presents the literature review, which outlines the fundamental dimensions of empathy, its role within the school and family context, and the relevant research data, leading to the identification of the research gap and the formulation of the purpose and research questions of the present study.

Literature review

Empathy is one of the most fundamental and complex concepts in social psychology and cognitive neuroscience (Decety & Cowell, 2014). Despite its clear recognition as a central component of human sociality, there is no single, universally accepted definition (Maibom, 2012). Generally, empathy is defined as an individual's capacity to experience and understand the mental state (thoughts, emotions, intentions) of another person (Read, 2019).

The multidimensional nature of this phenomenon was recognized as early as the first social theorists. Smith (1759) made the initial distinction between instinctive sympathy (or empathy), which he described as a rapid, involuntary, emotional reaction, and "intellectualized sympathy," which concerns the ability to recognize the emotional experiences of others without personally experiencing that state. Spencer (1870) echoed this distinction between the instinctive and intellectual dimensions, laying the groundwork for the modern separation of these concepts.

Cognitive and emotional empathy

Modern research has moved away from the "monolithic" concept of empathy, advocating for its replacement with more precise and distinct terms (Decety & Cowell, 2014). The prevailing view is that empathy is a multidimensional construct, compromising at least two core components that operate in parallel but can be neurocognitively and behaviorally dissociated (Blair, 2005): cognitive and emotional empathy.

Cognitive empathy refers to the mental capacity to understand another person's mental state without necessarily involving emotional engagement. It is the ability to "put oneself in another's shoes" (Maibom, 2012). Its central function is Perspective-Taking (PT), a conscious effort to adopt another's viewpoint to understand how they perceive the world (Davis, 1983). This ability is closely related to Theory of Mind (ToM), which concerns an individual's ability to attribute mental states (beliefs, desires, intentions) to themselves and others (Blair, 2005). Perspective-taking is critical, as it allows teachers to understand the challenges of daily parenting and parents to recognize the demands of the teaching role.

Neurocognitive dissociation of empathy dimensions

Historically, cognitive and emotional elements were often viewed as an interdependent system. However, modern neuroscience and psychology argue that they are dissociable phenomena (Blair, 2005). This dissociation is supported by the independence of measurements in psychometric tools, such as the Davis (1980) scale, where the Cognitive (Perspective-Taking) and Emotional (Empathic Concern/Personal Distress) subscales are relatively independent.

Perspective-taking (PT) correlates positively with empathic concern (EC) and negatively with Personal Distress (PD). Furthermore, neurocognitive dissociation observed in clinical populations provides strong evidence: individuals with psychopathy show clear dysfunction in emotional empathy but not in cognitive empathy (Theory of Mind), whereas individuals with autism have difficulties in Cognitive Empathy (ToM) but do not show such distinct impairments in emotional empathy (Blair, 2005).

Empathy in the educational context

International literature recognizes empathy as a critical pedagogical skill and a fundamental socio-emotional competency (Aldrup et al., 2022). Its importance is distinguished by its dimensions, as the function of Cognitive Empathy differs from that of Emotional Empathy, with both decisively influencing classroom climate, student behavior, and teaching effectiveness.

Cognitive Empathy (Perspective-Taking) enables teachers to adopt the viewpoint of the student or parent,

understanding the intentions and beliefs that guide their behavior (Gimbert et al., 2023). This ability is pivotal for differentiated instruction and conflict resolution, as it leads to an accurate interpretation of the underlying causes of challenging behavior (Graziano et al., 2024). Particularly within the framework of inclusive education, cognitive empathy is linked to positive attitudes toward diversity and an enhanced capacity for teachers to manage complex emotional situations, interpreting problematic behavior as a sign of deeper need or distress rather than ill intent (Graziano et al., 2024).

On the other hand, Emotional Empathy (Empathic Concern) fosters an environment of safety and emotional connection. Teachers with high emotional empathy demonstrate greater sensitivity to students' emotional needs, creating a setting of trust and academic engagement (Hossain, 2025). Empathic teachers serve as "regulators" of the emotional climate, reducing conflicts and improving students' mental health (Ampofo et al., 2025). This dimension strengthens trust within the relationship (Cline, 2023) and, equally importantly, protects teachers from professional burnout caused by Personal Distress (Aldrup et al., 2022).

The significance of empathy culminates in the school-family relationship, as it is a fundamental prerequisite for developing trust and effective communication between teachers and parents. As noted by Martin de Hijas-Larrea et al. (2025), the capacity for Perspective-Taking enhances the teacher's role as a mediator between the child's needs and parental expectations. Empathy allows the teacher to adopt the parent's perspective, understand family pressures, and build relationships of mutual trust (Cline, 2023). This psychological function is crucial for overcoming typical barriers and transforming simple communication into substantial collaboration (Cline, 2023). Consequently, empathy is now recognized as a core component of Social-Emotional Learning (SEL), constituting an essential professional competency for the modern educator (Gimbert et al., 2023).

Parental empathy and the family context

Parental empathy constitutes an integral aspect of parenting and is directly linked to the capacity to provide warmth, support, and positive communication (Borelli et al., 2021). A parent's ability to respond empathically to their child's needs has a fundamental impact on the child's development, as it is associated with optimal socio-emotional growth (Reid et al., 2013). Borelli et al. (2021) also highlight that parental empathy enhances children's cooperation and self-regulation, while simultaneously strengthening their psychological resilience. When children perceive their parents' empathy, they develop stronger emotional security and a more positive self-image (Wang & Fredricks, 2013).

Parental empathy also extends its positive influence into the school context. Parents who possess the ability to understand the teacher's perspective tend to adopt more collaborative attitudes and participate actively in school processes, thereby avoiding role conflicts (Omar et al., 2024). However, factors such as stress, parental burnout, and socioeconomic pressures can limit the expression of empathy or hinder collaboration with the school (Borelli et al., 2021).

The fundamental importance of the school-family relationship

Modern educational research highlights the school-family relationship as a decisive factor in students' academic success, situated within the broader ecological framework of development (Bronfenbrenner, 1979). According to Bronfenbrenner's model, the interaction between the child's two primary microsystems - the family and the school - constitutes the Mesosystem. The effective functioning of this Mesosystem, which directly depends on the quality of communication and role alignment (Christenson & Sheridan, 2001), is vital for the student's holistic development and adaptation. The works of Epstein (2018) and Christenson & Sheridan (2001) establish this collaboration as an indispensable prerequisite. Furthermore, extensive meta-analyses support the direct link between family involvement and an improved learning outcomes and higher success rates, particularly in Primary Education (Henderson & Mapp, 2002; Fan & Chen, 2001).

The interaction between the two parties occurs primarily through communication. Effective communication is the means by which both parties exchange knowledge about the child, agree on common goals, and resolve conflicts (Richardson, 2022). Moreover, empirical studies have shown that frequent, high-quality communication between teachers and families enhances students' school engagement, reduces behavioral difficulties, and fosters a climate of cohesiveness (Kraft & Dougherty, 2013).

However, the development of this collaboration is often not seamless and is marked by significant challenges. In the Greek educational context, difficulties are frequently identified in the lack of bidirectional information flow, limited interaction time, and differing perceptions of what constitutes "parental involvement" (Miller & Stine, 2023; Papadopoulos & Gkaintatzi, 2023). Overcoming these barriers requires the cultivation of psychosocial skills, most notably empathy.

Empathy as a catalyst for quality communication

Empathy is identified in the literature as a central pillar of effective communication, serving as a connecting link between trust and emotional intelligence (Georgiou, 2016; Hannon & O'Donnell, 2022).

Firstly, trust forms the foundation of any successful collaboration. When mutual trust exists, parents feel comfortable sharing information, and teachers feel

respected in their professional role, thereby reducing defensive behaviors (Georgiou, 2016). Empathy enhances trust because it expresses one party's intention to understand the emotions and challenges of the other.

Additionally, empathy is considered essential for managing the emotional load of the relationship, which is often a source of misunderstandings or conflicts (Hannon & O'Donnell, 2022). The ability of the teacher or the parent to employ empathic listening (Martín de Hijas-Larrea et al., 2025) allows for more effective recognition of the other side's needs and motives (Hoover-Dempsey et al., 2005). Moreover, empathic communication between the two parties does not only benefit their relationship; it is also noted to enhance the moral, social, and emotional skills of the students themselves (Omar et al., 2024).

At a theoretical level, the literature indicates that empathy transforms communication from transactional to collaborative. The ability to adopt another's perspective and respond with compassion (the emotional dimension assessed by the TEQ) is essential for creating a climate of psychological safety (Cline, 2023). Mutual empathic understanding enables parties to recognize and respect distinct role boundaries (teacher/professional vs. parent/caregiver), reducing overlaps and conflicts that often result in disengagement (Miller & Stine, 2023). Consequently, although the present research does not directly measure communication, investigating empathy - as a necessary prerequisite for effective communication - remains fundamental to understanding the dynamics of the school-family relationship.

Comparative studies on empathy levels

The need for a comparative investigation of empathy levels between teachers and parents arises from the recognition of the diverse roles, expectations, and levels of involvement inherent in each group within the school-family relationship (Miller & Stine, 2023; Hoover-Dempsey et al., 2005). Specifically, as the teacher's role is professional and the parent's is personal—implying different socio-cultural expectations, emotional involvement, and potentially varying levels of burnout—it is reasonable to expect that the empathy levels of these two groups may differ.

International literature has already highlighted systematic differences in psychological characteristics between these two populations. Notably, research by Costa-López et al. (2023), although focused on a different variable (environmental sensitivity), identified significant differences depending on role and gender. These findings strengthen the theoretical foundation of the present study, suggesting that professional and parental roles exert different influences on interpersonal skills.

In the Greek context, comparative research on empathy is extremely limited, particularly in Primary Education. At the same time, validation studies of the TEQ in the Greek population have consistently shown the influence of gender, with women scoring higher in emotional empathy (Kourmousi et al., 2017). However, the thesis by Mazokopaki (2021), which utilized the same tool (TEQ) to compare empathy between teachers and parents in Secondary Education, serves as a significant point of reference. The findings of that study indicated that teachers exhibited higher levels of empathy than parents, which may be attributed to professional training and the ongoing need for emotional regulation required by the teaching role (Angelopoulou & Babalis, 2018).

Comparing empathy levels in the Prefecture of Drama constitutes the first step toward establishing an empirical basis that will allow conclusions to be drawn about the implications of these differences for school-family communication. If differences are identified, this may indicate the need for targeted empathy-enhancing interventions, as proposed by Lee and Lee (2024), with the ultimate aim of fostering a more effective collaborative climate.

The present study

Research gap

The preceding literature review has shown that empathy constitutes a multidimensional skill (Maibom, 2012), critical for the professional role of the teacher (Aldrup et al., 2022) and fundamental for effective communication based on trust (Hannon & O'Donnell, 2022). Nevertheless, although the importance of empathy is theoretically recognized, there is a clear empirical gap regarding the comparative quantitative measurement of its levels between parents and teachers, specifically within the context of Greek Primary Education.

Although both international (Aldrup et al., 2022; Borelli et al., 2021) and Greek literature (Kourmousi et al., 2017) highlight the importance of empathy for the quality of educational and parental functioning, a significant research gap remains. Most studies focus on a single aspect of the relationship (such as communication) from either the teachers' or the parents' perspective alone; very few examine the social process holistically or report consistent improvement in this variable for both groups simultaneously (Lee & Lee, 2024). As a result, the literature lacks a systematic, comparative investigation of empathy levels between these two key stakeholders in Greek primary education.

The rationale for the present research is the need to recognize that empathy is a critical factor in the quality of communication (Spreng et al., 2009; Hannon & O'Donnell, 2022). Without knowing whether differences in empathy levels exist between teachers and parents, it is difficult to design educational interventions that enhance mutual understanding. This is particularly relevant in regions such as the Prefecture of Drama, where socioeconomic and cultural diversity may influence interpersonal communication, making an understanding of this dynamic especially important.

The present study aims to address this specific gap by measuring and comparing the empathy of both groups in the Prefecture of Drama. The resulting data are expected to provide an empirical basis for understanding the psychological prerequisites of collaboration, offering evidence that may be utilized in the future to improve school-family communication and to design targeted interventions (Lee & Lee, 2024).

Purpose of the study

Recognizing the fundamental importance of empathy, the current research seeks to conduct a comparative investigation of empathy levels, as measured by the Toronto Empathy Questionnaire (TEQ), between teachers and parents of primary education students in the Prefecture of Drama. The study intends to establish an empirical basis for the empathy levels of both groups, laying the foundation for future exploration of how their potentially differing levels of empathy may influence the quality of school-family communication.

Research questions

The present study poses the following questions, which derive directly from its purpose and aim to establish an empirical understanding of the empathy dynamics between the two groups:

1. What are the empathy levels, as measured by the TEQ, of Primary Education teachers in the Prefecture of Drama?
2. What are the empathy levels, as measured by the TEQ, of parents of Primary Education students in the Prefecture of Drama?
3. Are there statistically significant differences in empathy levels between the two groups?
4. Do the empathy levels of teachers and parents correlate with key demographic characteristics (such as gender, age, and years of professional experience)?
5. What theoretical implications for school-family communication arise from the findings of this comparison?

Research hypotheses

Based on the literature review and the anticipated differences in roles and professional training, the following research hypotheses are formulated:

1. Primary Education teachers in the Prefecture of Drama are expected to score high levels of empathy, as their role requires emotional responsiveness and the management of interpersonal relationships (Aldrup et al., 2022).
2. Parents of Primary Education students in the Prefecture of Drama are also expected to demonstrate high levels of empathy, as parenthood inherently involves emotional care and responsiveness to children's needs (Borelli et al., 2021).
3. Teachers are hypothesized to exhibit statistically higher levels of empathy (TEQ) than parents, due to their professional training, engagement with the psychological dimensions of learning, and the continuous need for interpersonal interaction within the classroom (Aldrup et al., 2022; Graziano et al., 2024).
4. Empathy levels are expected to correlate significantly with the participants' core demographic characteristics. Specifically, it is hypothesized that women will exhibit higher empathy levels, and that there will be a positive correlation between empathy and participants' age and experience.

Research methodology

The present study employed a quantitative, comparative, and correlational research design. A cross-sectional research method was selected, with variables measured once at a specific point in time; this is considered the most appropriate method for comparing characteristics between two or more independent groups (Creswell, 2014). Data were collected through the electronic distribution of a questionnaire, and the resulting data underwent statistical analysis, providing the study with its quantitative character. This design enabled the investigation of the primary research objective, specifically the comparison of mean scores for empathy—the dependent variable—between teachers and parents, who constitute the independent variables of our study.

At a methodological level, the investigation of empathy is confined to its affective dimension (affective empathy)—the level of emotional responsiveness and compassion—as quantified and assessed by the Toronto Empathy Questionnaire (TEQ), and does not extend to the investigation of the cognitive dimension (cognitive empathy).

Participants

The target population comprised Primary Education teachers (elementary school teachers, kindergarten teachers, and specialist subject teachers) and parents of students attending public schools in the Prefecture of Drama. Due to practical and time constraints, as well as limited access to a randomized framework, a convenience sampling method was employed (Cohen et al., 2018). Additionally, the snowball sampling technique was employed to expand the sample. The process began with the identification of an initial group of 'seeds,' consisting of ten teachers and ten parents, selected based on their availability. After completing the questionnaire, these initial participants were asked to forward the electronic research link to colleagues and other parents within their social and professional

networks (Parker et al., 2019).

In total, 99 individuals from the Prefecture of Drama participated in the study. The sample was divided into two groups: the first comprised 50 Primary Education teachers, and the second 49 parents whose children are enrolled in Primary Education. It should be noted that the parent group consisted exclusively of mothers. This outcome is consistent with research findings in the Greek educational context, which indicate that mothers typically assume the primary role in school-family communication and child-rearing (Poulou & Matsagouras, 2007). This sample size is considered satisfactory for conducting comparative statistical analyses and exploring statistical power (Mazokopaki, 2021).

Research instrument

For the quantitative measurement of empathy in the present study, the Toronto Empathy Questionnaire (TEQ) was utilized, a psychometrically validated tool developed by Spreng et al. (2009). The TEQ is a unidimensional scale consisting of 16 items, with a clear focus on assessing affective empathy. The emotional dimension of empathy measured by this scale is directly linked to emotional contagion, sympathetic arousal, and the tendency towards altruism (Spreng et al., 2009; Kourmousi et al., 2017).

The focus of the present study on the affective dimension of empathy is both theoretically and methodologically justified. According to Spreng et al. (2009), affective empathy –the capacity for emotional responsiveness and compassion–is directly linked to prosocial motivation and the developing of interpersonal bonds (Decety & Cowell, 2014). Within the context of school-family relationship, affective empathy is considered particularly important, as it forms the foundation for developing trust and mutual understanding (Hannon & O'Donnell, 2022; Aldrup et al., 2022). While cognitive empathy (perspective-taking) is also important, the affective dimension was selected as the focus of the present study because: (a) it is reliably measured by the TEQ, a tool validated in the Greek educational context (Kourmousi et al., 2017); (b) it is directly connected to the emotional prerequisites of effective communication; and (c) it represents the core of "empathy as action" that fosters collaboration (Cline, 2023).

In the original English version, the questionnaire demonstrates high internal consistency, with a Cronbach's alpha coefficient ranging from a= 0.85 to 0.87 (Spreng et al., 2009). In the Greek version, the reliability of the TEQ was found to be a= 0.72 in a sample of 3,955 teachers (Kourmousi et al., 2017), a value considered acceptable for social science research. This makes the questionnaire an appropriate tool for the present comparison between professionals (teachers) and parents. In the current sample, the internal consistency of the TEQ was acceptable for teachers (a= 0.71), while for parents, it was marginally acceptable (a= 0.66).

The lower reliability reported for the parent group can be attributed to the increased heterogeneity of this sample. While teachers form a professional group with a shared educational background, parents represent a non-selected population (laypeople), which often leads to greater variance in the interpretation of self-report items (Tavakol & Dennick, 2011). Perhaps the most significant factor influencing the alpha coefficient is the reduced number of scale items. According to the Greek adaptation of the TEQ (Kourmousi et al., 2017), item 11 is excluded from the total score calculation, resulting in a scale comprising 15 items instead of the original 16. As Cronbach's alpha coefficient is positively dependent on the number of items (Tavakol & Dennick, 2011), this adaptation contributes interpretatively to the marginal reliability value, particularly when combined with the smaller parent sample size (N=49).

Despite the marginally acceptable reliability coefficient for the parent group, the value is considered sufficient for exploratory research in a new population (Tavakol & Dennick, 2011). Furthermore, validation within the Greek context has been conducted in other professional sectors, such as medical students (Kourmousi et al., 2021), reinforcing its reliability for measuring participants' emotional profiles. Items are scored on a 5-point Likert scale (1: Never – 5: Always).

Research procedure

The study was conducted according to the principles of quantitative methodology and was structured into four stages, following Creswell (2014). Initially, the research questions were defined and the data collection scale was selected. The second stage involved sample selection, including Primary Education teachers in Drama, regardless of specialty, and parents or guardians of students.

The third stage involved data collection, which took place during the first half of October 2025. The questionnaire consisted of two parts: one on participants' demographic information and a second containing the TEQ. The questionnaire link was distributed to teachers electronically (email or social media groups) and to parents using the snowball sampling method, in which initial participants forwarded the link to their social circles. For the snowball sampling procedure for the parent group, the initial participants ('seeds') were identified through the researchers' professional and personal networks, including teachers and parents from school units in the Prefecture of Drama. These initial participants were selected based on their willingness to participate and their access to broader parental social networks, following the recommendations of Cohen et al. (2018) and Naderifar et al. (2017) to maximize the effectiveness of the method. Each initial participant was asked to forward the questionnaire link to acquaintances who met the inclusion criteria, thereby creating referral chains. Although this method does not ensure random sampling, it is considered appropriate for exploratory studies involving populations with limited accessibility (Biernacki & Waldorf, 1981).

Despite researchers' efforts to recruit male parents through multiple channels (school parent associations, social media groups, and direct contact), all participants who completed the questionnaire were mothers. This reflects the well-documented reality of minimal paternal involvement in school-related activities in the Greek educational context (Papadopoulos & Gkaintatzi, 2023), where mothers typically serve as the primary liaisons between family and school.

In the final stage, data coding, analysis, and the extraction of findings and conclusions were conducted according to the Greek validation guidelines for the TEQ (Kourmousi et al., 2017). Internal consistency was verified using Cronbach's alpha coefficient (0.71 for teachers and 0.66 for parents). Data processing was performed in Microsoft Excel, utilizing built-in functions and the Analysis ToolPak add-in.

The choice of Microsoft Excel with the Analysis ToolPak add-in for statistical analysis was determined by the nature of the required analyses and considerations of accessibility and transparency. The statistical procedures employed in this study–descriptive statistics, independent samples t-tests, Pearson correlation coefficients, and Cronbach's alpha reliability coefficients–are based on well-established mathematical formulas that are implemented identically across statistical software platforms (Field, 2018). To ensure methodological rigor, all analyses were conducted according to standardized protocols: (a) formulas and functions were cross-verified using Excel's built-in function library and the Analysis ToolPak; (b) key results (e.g., t-test outcomes) were independently recalculated using manual formulas to confirm accuracy; and (c) effect size indices (Cohen's d) were calculated following conventional guidelines (Cohen, 1988). Furthermore, the use of widely accessible software enhances the replicability of the analytical procedures for researchers in resource-constrained educational contexts (Cohen et al., 2018). While specialized software such as SPSS or R offers advanced capabilities for complex modeling, the analytical scope of this study did not require such functionalities. Nevertheless, the authors acknowledge this as a methodological consideration and recommend the use of dedicated statistical software for future research involving more complex multivariate analyses.

The analysis first identified the characteristics of the two participating groups. Subsequently, empathy levels were then calculated at both individual and group levels, followed by intergroup comparisons. Descriptive statistics, including mean, standard deviation, minimum and maximum values, and median, were used to determine the empathy levels of each group. To compare the results between the two groups, an Independent Samples t-test was conducted, considering both equal and unequal variances, after confirming that the standard deviations were similar (SD = 0.38 for teachers, SD = 0.39 for parents). Finally, the correlation between empathy levels and demographic characteristics was examined using Pearson's correlation coefficient between individual empathy scores and demographic variables for each group separately. A digital open-access calculator was used to determine statistical significance (p-values).

To compare the means, in addition to the t-statistic and the corresponding p-value, Cohen's d effect size index was utilized. Cohen's d is an established measure of the magnitude of the difference between two independent groups, independent of sample size (Cohen, 1988). Based on conventional reference values (0.20 = small, 0.50 = medium, 0.80 = large effect size), the d-index allows assessment of the practical significance of the findings, complementing the information provided by the p-value.

Results

Regarding the demographic characteristics of the teachers, 50 Primary Education professionals from the Prefecture of Drama participated, the majority of whom were female (68%). The largest portion of participants were aged 51 years and older (38%). Overall, the sample is characterized by high professional experience, with 42% of teachers having over 21 years of service. Most were married (74%) and held permanent employment status (84%). In terms of specialty, most were classroom teachers (74%), while 26% taught specialty subjects. Finally, a significant percentage of educators had additional academic qualifications, with 44% holding a Master's degree and 52% having completed further studies.

Table 2 presents the demographic characteristics of the 49 parents/guardians of Primary Education students in the Prefecture of Drama who participated in the study. All participants were female. The majority belonged to the age groups of 31–40 years (53.1%) and 41–50 years (40.8%). Most were married (91.8%) and had either two or three children. Regarding educational attainment, more than half held a university degree, while a significant percentage possessed postgraduate degrees or other further qualifications. Almost all participants had at least one child attending elementary school, while smaller percentages reported children in kindergarten, junior high school, preschool/nursery, and high school.

Empathy levels

The empathy levels of teachers and parents are presented in the following table:

Table 1. Demographic characteristics of teachers (N=50)

Item	Category	N,(%)
A1. Gender:	Male	16 (32%)
	Female	34 (68%)
A2. Age:	20-30	3 (6%)
	31-40	15 (30%)
	41-50	13 (26%)
	51 and above	19 (38%)
A3. Marital status:	Single	10 (20%)
	Married	37 (74%)
	Divorced	3 (6%)
A4. Employment status:	Permanent	42 (84%)
	Substitute	8 (16%)
A5. Teaching experience:	1 - 5 years	5 (10%)
	6 - 10 years	11 (22%)
	11 - 15 years	3 (6%)
	16 - 20 years	10 (20%)
	21 years and above	21 (42%)
A6. Specialty:	Classroom Teacher	37 (74%)
	Subject Specialist Teacher	13 (26%)
A7. Additional education:	Second Bachelor's Degree	5 (10%)
	Master's Degree	22 (44%)
	Doctorate / PhD	1 (2%)
	None	24 (48%)
	Other	3 (6%)

Table 2. Sociodemographic characteristics of parents/guardians

Item	Category	N, %
A1. Gender:	Male	0 (0%)
	Female	49 (100%)
A2. Age:	20-30	1 (2%)
	31-40	26 (53,1%)
	41-50	20 (40,8%)
	51 and above	2 (4,1%)
A3. Marital Status:	Single	3 (6,1%)
	Married	45 (91,8%)
	Divorced	1 (2%)

Item	Category	N, %
A4. Number of children in the family:	1	4 (8,2%)
	2	31 (63,3%)
	3	10 (20,4%)
	4	3 (6,1%)
	5 and above	1 (2%)
A5. Educational Level of Attendance:	Preschool	7 (14,3%)
	Kindergarten	10 (20,4%)
	Primary School	48 (98%)
	Lower Secondary School	13 (26,5%)
	Upper Secondary Education	2 (4,1%)
	Other	3 (6,1%)
A6. Educational level of parent/guardian:	Primary School Graduate	0 (0%)
	Lower Secondary School Graduate	0 (0%)
	Upper Secondary School Graduate	12 (24,5%)
	University Graduate	27 (55,1%)
	Other	10 (20,4%)
A7. Additional Qualifications	Second Bachelor's Degree	3 (6,1%)
	Master's Degree	9 (18,4%)
	Doctorate / PhD	0 (0%)
	None	34 (69,4%)
	Other	3 (6%)

Table 3. Descriptive statistics of empathy levels per group (N = 99)

Group	N	Mean (M)	Standard Deviation (SD)	Minimum	Maximum	Median
Teachers	50	3.2	0.40	2.13	4.00	3.27
Parents	49	3.3	0.39	2.00	3.87	3.27

As observed, both groups report high levels of empathy, as the mean scores exceed the value of 3.2, which is also referenced in the Greek validation study of the TEQ (Kourmousi et al., 2017). This is illustrated in the following figure:

Reliability analysis of the questionnaire

The internal consistency of the TEQ was acceptable for the teacher group (Cronbach's alpha = 0.71), while for the parent group, it was marginally acceptable (alpha = 0.66). As previously discussed, according to Tavakol & Dennick (2011), values above 0.60 are considered sufficient in exploratory research involving a new population, as is the case in the present study.

Intergroup comparison (t-test)

An independent samples t-test was conducted to compare the mean empathy scores. As the standard deviations of the two groups were similar (SD_1 = 0.40, SD_2 = 0.39), the analysis utilized the Welch's t-test (assuming unequal variances) for robustness.

The results indicated no statistically significant difference between the two groups, $t(97) = 0.23$, $p = 0.819 > 0.05$. The mean difference (0.02 units) was minimal and non-significant. Furthermore, the effect size (Cohen's d) was calculated at 0.05, which is considered negligible. Consequently, Hypothesis 3 was rejected, as no statistically significant difference in empathy levels was found between teachers and parents.

As a supplementary analysis addressing the gender composition imbalance, an additional independent

samples t-test was conducted comparing empathy scores between female teachers (n=34, M=3.33, SD=0.36) and mothers (n=49, M=3.25, SD=0.39). The results revealed no statistically significant difference between the two groups, t(81) = 0.96, p = 0.341, Cohen's d = 0.21. This supplementary analysis provides preliminary evidence that the observed equivalence in affective empathy is not solely attributable to the gender composition differences between the original groups, although the small effect size suggests minimal practical difference.

However, the interpretation of the lack of statistically significant difference should be approached with necessary caution (cautionary interpretation), taking into account the marginal reliability of a = 0.66 in the parent group. This value suggests that while the findings highlight a clear trend of balanced empathy levels between the two groups, the internal consistency of the parents' responses necessitates a more moderate approach toward the generalization of the results. Consequently, the failure to reject the null hypothesis for this group should be viewed as an indication rather than a definitive conclusion for the entire parent population.

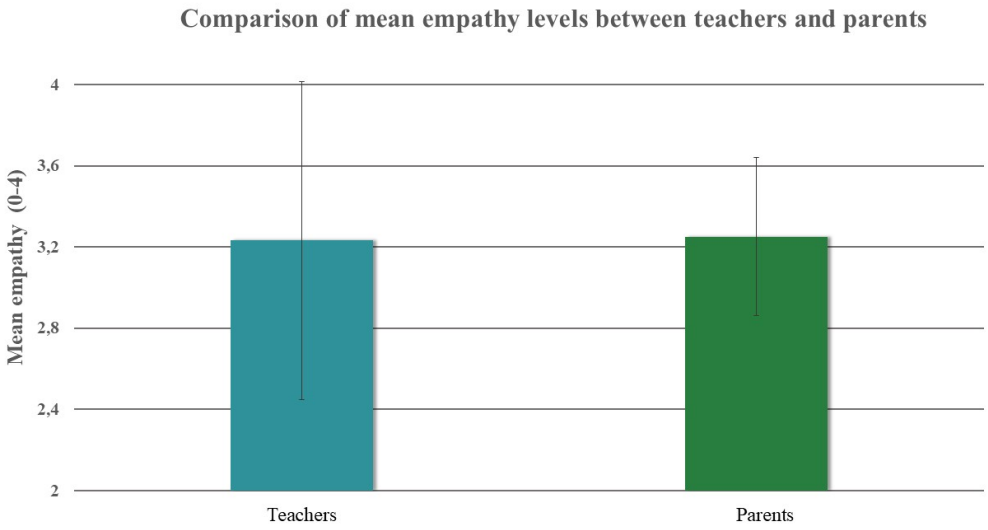

Figure 1. Comparison of mean empathy levels between teachers and parents (N = 99). Error bars represent the standard deviation

Note. The parent sample consisted exclusively of mothers.

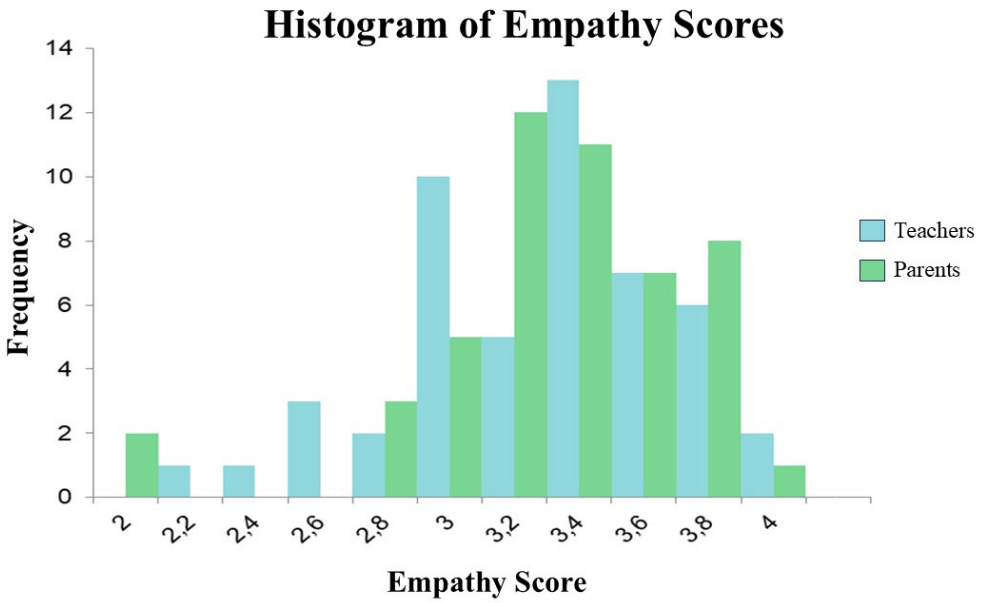

Figure 2. Distribution of individual empathy scores (0–4) for teachers (light blue) and parents (light green). The distributions exhibit an approximately normal form, justifying the use of parametric statistical tests, such as the t-test

Note. The parent sample consisted exclusively of mothers.

Correlations with demographic characteristics

For the teacher group, empathy demonstrated a statistically significant correlation with gender (r = 0.35, p = 0.012), with female teachers reporting higher levels. The effect size (r = 0.35) is interpreted as small to medium (Cohen, 1988). No significant correlation was observed with age (r = -0.14, p = 0.322) or years of service (r = -0.12, p = 0.391), while the effect sizes were very small (r < 0.15).

For the parent group, since the sample consisted entirely of females, gender was not examined as a variable. However, the correlation with mothers' age (r = -0.08, p = 0.575) and the number of children (r = -0.05, p = 0.733) was analyzed, and no significant correlation was found for either variable (the coefficients were very small: r = -0.08 and r = -0.05, respectively).

Hypothesis 4 was partially confirmed, as the correlation between gender and empathy was significant only for the teacher group.

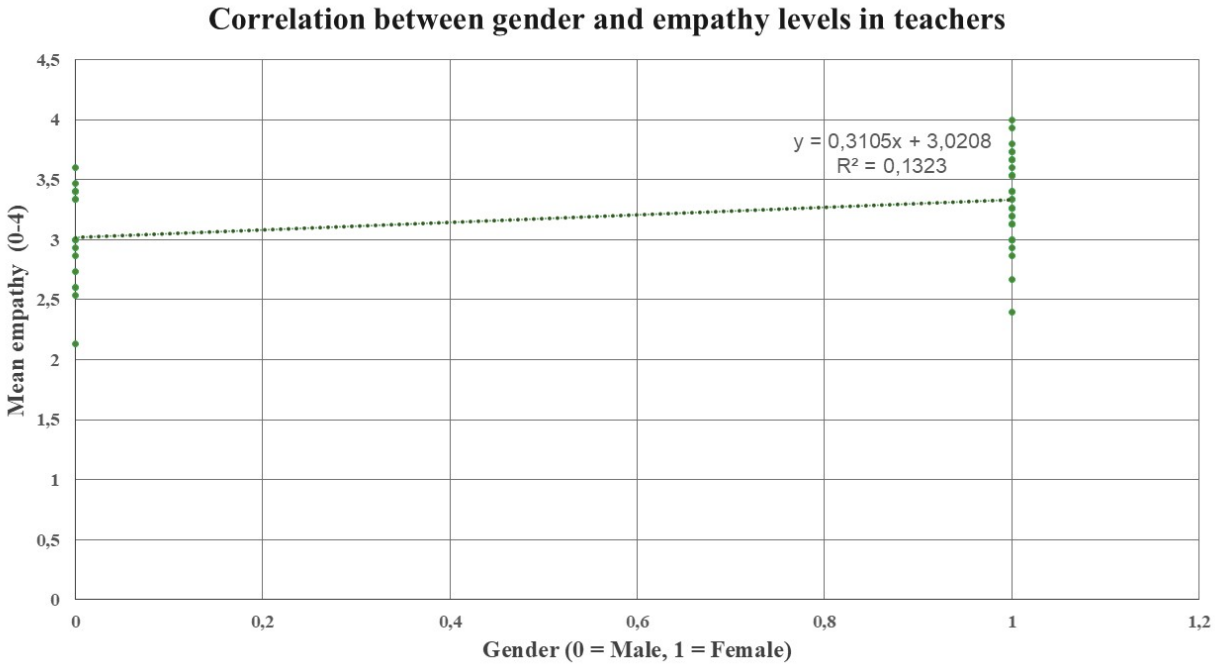

Figure 3. Correlation between gender and empathy levels in teachers (N = 50)

Note. The trend line demonstrates that female participants (x = 1) report higher empathy levels compared to male participants (x = 0) (r = 0.35, p = 0.012).

Discussion

The results of the present study show that both teachers and parents in Primary Education in the Prefecture of Drama display high levels of empathy, with no statistically significant difference between the two groups. This finding is particularly important in the context of the affective dimension of empathy measured by the TEQ. According to Spreng et al. (2009), the TEQ conceptualizes empathy more as the capacity for emotional responsiveness and compassion rather than cognitive perspective-taking—the understanding of another's thoughts without emotional involvement.

The equivalence in empathy levels indicates that both the professional (teacher) and personal (parent) roles activate similar emotional skills. The absence of a statistically significant difference (p = 0.819) is further supported by the extremely low effect size (Cohen's d = 0.05). According to Cohen's (1988) criteria, such a low d suggests that the similarity between teachers and parents is not due to low statistical power or marginal reliability of the scale in the parent group, but rather reflects a genuine convergence of affective empathy levels within this specific social context. This statistical convergence allows for the hypothesis that the structural similarities of the two roles in Primary Education transcend the methodological variances of the measurement.

This reinforces the argument that empathy is not solely a professional competency but a shared social prerequisite for caregiving and relational bonding (Borelli et al., 2021; Aldrup et al., 2022). Furthermore, the lack of a statistical difference may indicate that the roles of parents and primary school teachers psychologically "merge," as both are primarily concerned with the care and support of young children. This interpretation is further supported by supplementary analysis, which found no significant difference between female teachers and mothers specifically (p = 0.341), indicating that when comparing groups with similar gender composition, equivalence in affective empathy remains. This finding reinforces the idea that both caregiving roles—whether professional or parental—activate comparable emotional responsiveness

capacities.

Additionally, although not explicitly examined, the likelihood that a significant portion of teachers are also parents may further facilitate this role fusion. This observation can be further contextualized through Bronfenbrenner's (1979) ecological systems theory, specifically the concept of the mesosystem—the interconnections between an individual's microsystems, such as family and school. According to this framework, experiences and competencies developed in one context (e.g., parenting) can transfer to and enrich functioning in another (e.g., teaching). Finally, although unknown in the present study, the probability that a significant proportion of teachers also hold the status of a parent is a factor that reinforces role fusion and provides grounds for further investigation. This convergence of identities may act as a catalyst in smoothing out differences in empathy levels, as the daily experience of raising one's own children interacts with a professional pedagogical approach (Hargreaves, 2000; Day, 2004). Although the present study did not collect specific data on the exact number of teachers who are also parents, the absence of this distinction highlights a new research direction: investigating how parenthood influences the professional empathy of educators.

The demographic profile of the teacher sample supports this interpretation: 80% of participants reported being married or previously married, and the age distribution indicates that a substantial proportion (64% aged 41 and above) falls within the typical age range for parenthood in Greece. Although parental status was not explicitly assessed, it is statistically likely that a significant subset of teachers also have parental roles. This potential overlap may partially explain the observed similarly in affective empathy levels between teachers and participating mothers, as the emotional skills developed through parenting could reinforce those required in teaching, and vice versa. Future research should explicitly measure parental status among teachers to test this hypothesis.

The rejection of Hypothesis 3 suggests that professional training is not a primary predictor of affective empathy levels. However, given the marginally acceptable internal consistency of the scale for the parent group, this finding should be interpreted with caution. While the data indicate no significant difference, the reliability limitation implies that subtle variations between groups might not have been fully detected, warranting further investigation with larger samples before drawing definitive conclusions about the equivalence of empathy profiles.

These findings contrast with some previous studies, such as Mazokopaki (2021), which reported higher empathy among Secondary Education teachers. A possible explanation for this discrepancy is the greater direct contact and emotional engagement inherent in Primary Education, which may enhance parental compassion and thus narrow the gap between the two groups.

Moreover, the fact that both groups score near the mean empathy level of the Greek population (Kourmousi et al., 2017) suggests that socio-cultural context plays a vital role, supporting Bronfenbrenner's (1979) theory regarding the influence of the mesosystem.

The statistically significant correlation between gender and empathy in teachers ($r = 0.35$, $p = 0.012$), with females reporting higher levels, is consistent with both international (Christov-Moore et al., 2014) and Greek literature (Kourmousi et al., 2017). This can be interpreted through the lens of social roles and gender-stereotypical expectations (Eisenberg et al., 2006), which often encourage the expression of emotional sensitivity in women.

However, as the parent sample consisted exclusively of females, gender influence could not be examined in that group. This constitutes a limitation that necessitates caution in generalizing the findings, as the observed convergence in empathy levels may reflect a shared gendered approach to care and relational proximity. The absence of fathers, while limiting external validity, reflects the social reality within the Greek educational context, where school communication and the primary oversight of children's education are still predominantly performed by mothers (Poulou & Matsagouras, 2007). This underscores the need for greater involvement of fathers in the educational process, which remains a key challenge for achieving a more balanced school–family partnership.

The fifth research question of this study concerns the theoretical implications arising from the comparative analysis of empathy levels in school–family communication. The answer to this question forms the core of this section. The equivalence in empathy levels provides a favorable foundation for building mutual trust. According to Epstein's (2018) model, quality communication depends on mutual understanding, with empathy serving as the core facilitating mechanism (Cline, 2023; Hannon & O'Donnell, 2022).

The finding that both groups possess similar levels of affective empathy suggests that existing barriers to school-family communication (e.g., lack of time, one-way communication—Papadopoulos & Gkaintatzi, 2023) are not necessarily psychological but structural. Consequently, improving communication does not require the "cultivation" of empathy, but rather the implementation of structural mechanisms that allow it to flourish. Such measures include regular teacher-parent meetings with an emotional focus, training in empathic listening for both groups (Martín de Hijas-Larrea et al., 2025), and the creation of collaborative spaces beyond bureaucratic procedures (Miller & Stine, 2023).

In summary, communication barriers are not due to a lack of empathy but to inadequate support structures. Collectively, this study contributes to the field by providing the first comparative evidence of affective empathy equivalence between Greek primary teachers and parents. By challenging the assumption that professional training inherently enhances empathy, the findings shift the focus from individual psychological deficits to structural barriers in school-family communication. This offers a

theoretical validation of role overlap (Bronfenbrenner, 1979) and practical grounds for restructuring collaboration mechanisms rather than empathy training.

Conclusions

The present study comparatively investigated empathy levels, as measured by the Toronto Empathy Questionnaire (TEQ), between Primary Education teachers and parents in the Prefecture of Drama. Both groups demonstrated high levels of affective empathy, with no statistically significant difference observed between them. The research therefore rejected the hypothesis that teachers possess higher empathy levels than parents.

Within the teacher group, the only sample including both genders, a significant correlation with gender was observed, with female teachers scoring higher. No relationship was found between empathy and age, years of service, or number of children. Regarding the theoretical implications for school-family communication, the results suggest that equivalence in empathy levels provides a robust foundation for mutual understanding. This indicates that existing communication barriers are primarily structural rather than psychological. The main scientific contribution of this study lies in highlighting the 'empathy convergence' between the two groups, suggesting that effective collaboration does not require further empathy cultivation, but rather the creation of institutional 'spaces' that allow for its expression. Furthermore, highlighting the phenomenon of role fusion offers a new conceptual lens for understanding the overlap between personal and professional identity within the Greek educational context. Overall, this study provides the first comparative empirical evidence of affective empathy equivalence between Greek primary teachers and parents, thereby directing future interventions toward structural support rather than individual psychological capacities.

Research implication

Given the high levels of empathy identified in both groups, this study proposes a strategic shift from traditional "empathy training" towards developing organizational structures that actively facilitate its expression. Rather than focusing on enhancing individual psychological traits, interventions should aim to create institutional 'spaces' where the existing affective empathy of both teachers and parents can be effectively communicated. This transition requires establishing regular meetings focused on emotional content, implementing empathic listening workshops for both teachers and parents, and actively encouraging fathers' involvement in school life. Encouraging the presence of fathers is particularly crucial for addressing the current gender imbalance in school–family communication and ensuring a more representative and balanced partnership. Furthermore, it is essential to restructure school-family communication to ensure it becomes bidirectional, frequent, and substantial (Kraft & Dougherty, 2013), moving beyond the limitations of formal bureaucratic reporting.

Limitation

As with any study, the present research is subject to several limitations. First, the use of convenience sampling inherently restricts the generalizability of the findings to the broader population. Additionally, the cross-sectional methodology employed does not allow for causal interpretations of the relationships identified. A significant limitation was the gender composition of the parent sample, which consisted exclusively of females (100%), thereby precluding the examination of gender differences within this group.

This absence of male parents reflects a broader trend in the Greek educational context, where paternal involvement remains minimal, further limiting the scope of the findings. However, supplementary analysis comparing female teachers with mothers specifically revealed no significant difference ($p = 0.341$), suggesting that the main findings are not merely an artifact of gender composition.

Additionally, a significant methodological limitation concerns the marginal reliability (Cronbach's $a = 0.66$) exhibited by the TEQ scale within the parent group. The use of the Greek adaptation of the TEQ comprising 15 items (instead of the original 16) may have influenced the scale's internal consistency, as the alpha coefficient tends to decrease with a reduction in the number of items (Tavakol & Dennick, 2011). This value indicates that a portion of the score variance may be attributed to measurement error or differing interpretations of the items by participants, necessitating that the study's inferential claims be formulated with appropriate caution. Although the low effect size ($d = 0.05$) supports the validity of the comparisons, future research should focus on larger and more representative parent samples, as well as the potential adaptation of scale items to enhance internal consistency within the family context.

Another limitation pertains to the parental status of the teacher participants was not explicitly assessed. While demographic data suggest a high probability that a significant portion of teachers were also parents, the lack of direct measurement precludes a definitive analysis of how this role fusion may have influenced the observed empathy equivalence.

Furthermore, the study was constrained by the measurement tool itself, as the TEQ focuses solely on the affective dimension of empathy, leaving the cognitive aspect unassessed. Finally, due to time constraints in the design and implementation of the research, the quality of communication was not directly measured through qualitative indicators or specific practices, which could have provided a more nuanced interpretation of the findings.

Future directions

To deepen understanding of empathy dynamics and school communication, several new research approaches are proposed. Future studies could conduct comparative analyses between Primary and Secondary Education to examine whether direct engagement with early childhood affects empathy levels differently across educational stages. Additionally, implementing mixed-methods research that combines quantitative tools such as the TEQ with qualitative interviews or observations, would offer a more nuanced perspective. Expanding research to diverse geographical regions of Greece would also enable exploration of potential socio-cultural influences. Moreover, there is a pressing need for studies focusing specifically on male parents to understand their empathy levels and their relation to school involvement—a significant gap in the current Greek literature. To achieve a more comprehensive psychological profile, future research should also assess cognitive empathy using tools such as the Interpersonal Reactivity Index (IRI). Crucially, subsequent investigations should explicitly measure the parental status of teacher participants to empirically test the 'role fusion' hypothesis proposed in this study. Furthermore, linking empathy scores directly to observable indicators of communication quality (e.g., frequency of contact, conflict resolution styles) would strengthen the evidence regarding structural versus psychological barriers.

Finally, experimental interventions, such as empathic communication workshops, could evaluate the impact of targeted training on the quality of school-family relationships, potentially paving the way for innovative, empathy-centered practices in education.

Authors' contributions

Conceptualization and project supervision/administration were performed by Dafni Petkou and Eleni Doura. Eleni Doura carried out methodology, investigation and visualization. Polyxeni Zonke conducted software analysis and formal analysis. Validation was performed by Sofia Dalamitrou, Christina Kelesi and Dafni Petkou, with Sofia Dalamitrou also contributing to data curation. Christina Kelesi drafted the original manuscript, and Dafni Petkou revised and edited it.

Conflicts of interest

The authors declare no conflicts of interest.

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