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The moderating role of emotional self-efficacy and gender in teacher empathy and inclusive education

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The role of teacher empathy is recognized as a key factor in improving teacher–student interaction, motivation and academic performance. Despite the importance of teacher empathy, its role in promoting inclusive education is still largely unknown. High levels of empathy are not necessarily associated with greater ability to implement inclusive education, as they can lead to excessive emotional engagement and stress, which negatively affect teachers’ abilities. Therefore, the present study explored whether the relationship between high empathy and perceived ability to implement inclusive education could be moderated by other variables, such as emotional self-efficacy and gender. A large sample of Italian support teachers ($N = 739$; $M_{age} = 37.7$; females = 86.9%) was recruited for this study. We found that higher levels of empathy were related to higher levels of self-efficacy in inclusive education, especially when levels of emotional self-efficacy were higher. This relationship was only found for female teachers. The results contribute to knowledge about the role of teachers’ empathy for inclusion as well as the moderating role of the ability to regulate negative emotions. The study has implications for pre-service teacher education and in-service teacher training.

Keywords Support teacher, Inclusive education, Emotional self-efficacy, Empathy, Gender differences

Empathy is defined as “the understanding of a person from their frame of reference rather than one’s own, or the vicarious experiencing of that person’s feelings, perceptions, and thoughts”¹. Empathy is a multidimensional construct that includes affective and cognitive components. The cognitive component refers to the ability to understand another person’s perspective in a given situation, while the affective component involves feeling warmth and concern for others and sharing another person’s emotions².

Empathy is recognized as a core competency for people working in relational and caring professions, such as physicians, nurses, teachers and educators³. In particular, empathy in teachers is increasingly recognized as a critical element in improving teacher–student interactions as well as in elevating student outcomes across academic, motivational, and psychosocial dimensions⁴. This multifaceted construct, encompassing cognitive and affective domains, is central to understanding and responding to students’ nuanced experiences, thereby creating a supportive and effective learning atmosphere^{5,6}.

The importance of empathy extends beyond individual interactions and impacts the broader educational landscape by promoting social justice and understanding of students’ diverse backgrounds⁷. Empathic teachers are not just facilitators of content, but rather advocates and facilitators of student engagement and development⁸.

Empathy is therefore an essential part of the teaching–learning process, especially in situations where learners are experiencing difficulties and for which inclusive education is required. Inclusive education, as defined in General Comment No. 4 Article 24⁹, is a system in which students of all abilities, including those with disabilities, learn together in the same environment, adapting the system to individual needs, rather than isolating or integrating students without adequate support. It emphasizes quality education for all and requires system-wide changes to ensure full participation and optimal outcomes for every student. The few studies on teacher empathy and inclusive education emphasize that higher teacher empathy is associated with more positive attitudes towards students with disabilities^{10–12}, and attitudes are known to be an important predictor of behavioral intentions¹³.

Teacher empathy, then, appears to be one of the factors that promote inclusion, but it is also a skill that is constantly challenged. Teachers working with students with special educational needs (SEN) (understood as learning disabilities, physical impairments and mental disorders) are exposed to an extremely stressful environment as they are confronted with a high level of responsibility towards students, the uncertainty of being able

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to meet their needs, personal frustration and the need for continuous professional development^{14,15}. Maintaining relationships with families, educators and healthcare professionals can be another source of stress¹⁶. Being empathic in these circumstances can be associated with suffering and personal stress, especially if the person is overwhelmed by the other person's negative emotions². Excessive emotional identification with other people's suffering can lead to a state of exhaustion known as empathy fatigue¹⁷ or compassion fatigue¹⁸, which in turn is related to stress and burnout in caring professions.

The few studies involving teachers showed that high levels of empathy were associated with stress in both mainstream and special school teachers¹⁹ and that the affective aspect of empathy in particular was a predictor of teacher stress²⁰. Teachers dealing with students with special educational needs are at risk of developing empathy fatigue¹⁷, especially when dealing with students with mental health problems²¹.

These studies suggest that high levels of empathy are not necessarily associated with greater ability to implement inclusive education, as it can lead to excessive emotional engagement and stress, which negatively impacts teachers' abilities. Therefore, the present study investigated whether the relationship between high empathy and perceived ability to implement inclusive education could be moderated by other variables such as emotional self-efficacy and gender.

Emotional self-efficacy is the perceived ability to regulate and express one's emotions²². Specifically, self-efficacy in dealing with negative emotions refers to the belief that one is able to improve negative emotional states and avoid being overwhelmed by emotions such as anger, irritability, dejection and discouragement²³. Emotional self-efficacy has been shown to counteract the negative effects of high levels of empathy²⁴, although its role in teachers has not yet been investigated.

Related constructs, such as emotion regulation, have been examined in the literature^{25,26}, albeit not extensively within the realm of inclusive education. Emotion regulation is of particular importance for teachers working with students with SEN as it helps to manage the high levels of stress associated with dealing effectively with pupils' diverse needs.

Finally, previous evidence suggests gender differences in the variables of interest, with women generally reporting higher empathy²⁷ and lower emotional self-efficacy²⁴. According to the literature female teachers place more emphasis on the emotional component of teaching compared to their male colleagues^{28,29}. For this reason, gender was considered in the present study as a second moderator of the relationship between teacher empathy and perceived ability to implement inclusive education, in addition to emotional self-efficacy.

In sum, the present study had the following aims:

1. to investigate the relationships between teacher empathy and self-efficacy in implementing inclusive education and the potential moderating role of emotional self-efficacy. Higher levels of empathy were expected to be related to higher levels of self-efficacy for inclusive education, especially when levels of emotional self-efficacy are higher.
2. To investigate whether gender further moderates the relationships between empathy, emotional self-efficacy and self-efficacy in implementing inclusive education. This analysis was exploratory in nature and no specific hypotheses were formulated (Fig. 1).

Method

Design of the investigation

This study employed a cross-sectional design to analyze the moderating role of emotional self-efficacy and gender on the relationship between empathy and self-efficacy for inclusive education among support teachers. The population consisted of 739 support teachers from northern Italy who voluntarily participated in the study. Data collection took place at the beginning of the academic year (October 2023), before the start of the classes, through an online questionnaire completed via the LimeSurvey platform.

To be more specific, teachers were recruited on a voluntary basis from among those enrolled in a graduate university course on topics related to the activities of the support teacher and inclusive education. In Italy, students with SEN are integrated into regular classes at all levels of education, avoiding segregation in special schools or separate classes. Support teachers are specialized educators who not only support individual students with SEN, but also improve the learning environment for the whole class, addressing both individual needs and collective challenges.

Inclusion criteria of this study were being a support teacher with at least one year of work experience and currently teaching in a primary or secondary school (both middle and high). After providing informed consent, all participants completed the anonymous online questionnaire. Only those who signed the informed consent were allowed to complete the questionnaire. The questionnaire was anonymous, and respondents' IP was not stored.

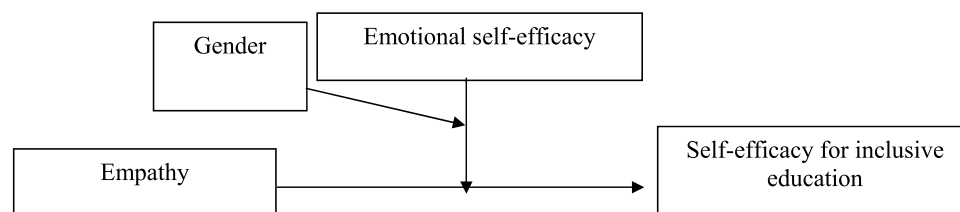


Fig. 1. The hypothesized three-way interaction model.

Participants did not receive benefits for participating in the study. This study followed ethical guidelines of the Italian Association for Psychology (AIP) set forth regarding informed consent, data confidentiality, and voluntary participation. It was approved by the Bioethics Committee of the University of Turin (Prot. N. 0,513,134).

Participants

A convenience sample of 756 support teachers from Northern Italy participated in the study, with 739 responses considered valid. Most participants were female (86.9%, $N = 642$; 13.1% male, $N = 97$), reflecting the current Italian gender distribution of teachers^{30,31}. They were aged between 22 and 62 ($M_{\text{age}} = 37.7$, $SD = 8.4$). 246 (33.3%) were working in primary schools and 493 (67.12%) in secondary schools (middle schools = 199, 26.9%; high schools = 294, 39.8%). The average years of teaching experience was 3.7 years ($SD = 2.5$, range 1–24 years). In terms of educational qualification, most participants hold a bachelor's degree ($N = 625$, 84.8%), the remaining a diploma ($N = 78$, 10.6%), or a postgraduate degree ($N = 34$, 4.6%).

Measures

The instruments used in this study aimed to assess several constructs related to teachers' empathy, emotional self-efficacy and self-efficacy in teaching inclusive classes. The validity and reliability of these instruments was verified prior to the study. The survey used in this study had four sections: (1) demographic information, (2) Empathy Questionnaire, (3) Emotional self-efficacy Questionnaire, and (4) Self-efficacy to implement inclusive education Questionnaire.

Demographic information

We asked participants to report their demographic characteristics, such as gender, age, educational qualification, and professional variables, such as the type of school they currently teach and years of service as support teachers.

Empathy

Teachers were administered a brief form of the Interpersonal Reactivity Index³² derived from a widely used standardized self-report measure of disposition to empathic responsiveness². For the present study, three subdimensions were considered, namely Empathic Concern (EC) (e.g., item "I often have tender, concerned feelings for people less fortunate than me"), Personal Distress (PD) (e.g., "In emergency situations, I feel apprehensive and ill-at-ease"), and Perspective Taking (PT) (e.g., "Before criticizing somebody, I try to imagine how I would feel if I were in their place"). Each subscale is composed of 4 items on a 5-point Likert scale ranging from 1 (it does not describe me at all) to 5 (it describes me very well) (total 12 items, range 12–60, Cronbach's alpha in the present study = 0.77). For the final analysis, we used the total score of Empathy.

The total score of Empathy was calculated by summing the scores of the three subdimensions (Empathic Concern, Personal Distress, and Perspective Taking), resulting in a composite score that reflects the overall empathic disposition of the participants. Composite Reliability (CR) and McDonald's Omega (Ω) were calculated, resulting in $CR = 0.82$ and $\Omega = 0.84$. Convergent validity was assessed using the Average Variance Extracted (AVE), which was 0.60. A Confirmatory Factor Analysis (CFA) was performed to evaluate the validity of the construct. The fit indices were as follows: Relative Chi-Square (χ^2/df) = 2.45, P -value = 0.03, Incremental Fit Index (IFI) = 0.91, Goodness of Fit Index (GFI) = 0.92, Adjusted Goodness of Fit Index (AGFI) = 0.90, Comparative Fit Index (CFI) = 0.93, and Root Mean Square Error of Approximation (RMSEA) = 0.05.

Emotional self-efficacy

Teachers completed the Multidimensional Negative Regulatory Emotional Self-Efficacy Scale²³. The scale is composed of 15 items that evaluate the perceived ability to regulate negative affect (anger, sadness, fear, shame, guilt) (e.g., item, "How able do you feel not let yourself become overcome with fear when you are threatened?"), rated on a 5-point Likert scale ranging from 1 (not able at all) to 5 (very able) (range 15–75, Cronbach's alpha in the present study = 0.79). The CR and Ω were calculated, with $CR = 0.85$ and $\Omega = 0.86$, and the AVE was 0.62. The CFA for this construct showed the following fit indices: Relative Chi-Square (χ^2/df) = 2.30, P -value = 0.04, IFI = 0.92, GFI = 0.93, AGFI = 0.91, CFI = 0.94, and RMSEA = 0.04.

Teacher self-efficacy to implement inclusive education

Teachers completed the attitudes toward Inclusive Education For All questionnaire (IEFA)³³, which evaluates both attitudes toward inclusion and self-efficacy in implementing inclusive education. For the present study, only the subdimension of self-efficacy for inclusive education was considered: the scale is composed of 9 items, evaluating the perceived ability to implement inclusive strategies (e.g., "How able do you feel to accommodate learning tasks to respond to the individual needs of all students?") and managing students' behaviors in the classroom (e.g., "How able do you feel to control disruptive behavior in the classroom?"). Consistent with the definition of an inclusive school, the items in the IEFA do not refer to students with SEN or other categories but to students in the whole class. Each item is rated on a 5-point Likert scale ranging from 1 (not able at all) to 5 (very able) (range 9–45, Cronbach's alpha in the present study = 0.78). The CR and Ω were calculated as 0.80 and 0.82, respectively, with an AVE of 0.58. The CFA results for this construct were: Relative Chi-Square (χ^2/df) = 2.50, P -value = 0.02, IFI = 0.90, GFI = 0.91, AGFI = 0.89, CFI = 0.92, and RMSEA = 0.05.

Data analysis

The percentage of missing data for the study variables was less than 10% and the Missing Completely at Random (MCAR) test³⁴ showed not significant results for all the study variables; thus, missing were imputed in SPSS using the Expectation–Maximization (EM) procedure.

Descriptive statistics, including means, standard deviations, and bivariate correlations among the study variables, have been calculated.

The internal consistencies of the constructs were confirmed by Cronbach's alpha, CR³⁵ and McDonald's omega (Ω) coefficients³⁶. The criterion of Average Variance Extracted (AVE) was used to measure convergent validity³⁷. These reliability and validity measures show that a considerable percentage of the variation is explained by the constructs and thus the reliability and validity of the scales used in this study.

Harman's single-factor test was used to assess common method bias³⁸. The test results indicated that a single factor accounted for 19% of the variance, suggesting that common method bias was not a significant concern.

Univariate normality for the t-tests was assessed using the Kolmogorov–Smirnov test³⁹. The test results showed that the normality assumption was met for all study variables ($p > 0.05$).

Effect size differences were calculated using Hedge's g , which is appropriate given the unequal number of participants in the groups being compared⁴⁰.

The hypothesized three-way interaction model was tested through the PROCESS SPSS macro (Model 3), which is based on ordinary least squares (OLS) regression⁴¹. Empathy was entered in the regression model as the independent variable, self-efficacy to implement inclusive education as the dependent variable, whereas emotional self-efficacy and gender as first and second moderators, respectively. Years of teaching were entered as covariates. We tested all 2-way interactions and the 3-way interaction. Continuous variables were mean-centered. The statistical significance of the moderation effect was evaluated through a bootstrapping procedure (95% confidence intervals with 5000 bootstrap samples). Confidence intervals that do not contain zero indicate a statistically significant effect. To interpret significant interactions, a simple slope analysis was performed, testing the relationship between the independent (empathy) and the dependent variable (self-efficacy to implement inclusive education) at low (mean -1 sd) and high (mean +1 sd) levels of the moderator (emotional self-efficacy) in the two groups (males vs females). All statistical analyses were performed with SPSS Statistics 29.

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. The research was approved by the Bioethics Committee of the University of Turin (Prot. N. 0,513,134).

Informed consent

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

Results

Descriptives

Means, standard deviations, and correlations among the study variables are reported in Table 1.

A positive correlation was found between teachers' empathy and self-efficacy in relation to inclusive education ($r = 0.1$, $p < 0.01$), indicating an association between higher levels of empathy and greater confidence in implementing inclusive education practices. Similarly, emotional self-efficacy showed a positive correlation with self-efficacy for inclusive education ($r = 0.39$, $p < 0.01$). This suggests an association between the belief in the ability to manage emotions effectively and the perceived ability to create and maintain inclusive classrooms. Gender differences were also examined, and female teachers were found to have a slightly higher correlation between empathy and self-efficacy in inclusive classrooms compared to male teachers ($r = 0.10$, $p < 0.05$). In addition, the correlation between emotional self-efficacy and self-efficacy in inclusive education appeared to be stronger for female teachers ($r = 0.22$, $p < 0.05$).

Table 2 details the outcomes of independent samples t-tests assessing mean differences in psychological constructs relative to support teachers' gender and years of teaching experience.

For self-efficacy in inclusive education, the analysis revealed no significant difference between male ($M = 32.12$, $SD = 4.61$) and female ($M = 31.86$, $SD = 4.24$) support teachers; the result of the t-test was $t(739) = 0.57$, $p < 0.05$,

Variables	M (SD) or %	1	2	3	4	5
1. Gender	F = 86.9%	–				
2. Age	37.7 (8.4)	0.04	–			
3. Teaching experience	3.7 (2.5)	–0.05	0.35**	–		
4. Empathy	35.8 (6.4)	–0.02	–0.12**	–0.09*	–	
5. Emotional self-efficacy	28.8 (5.1)	0.23**	0.14**	0.02	–0.05	–
6. Self-efficacy for inclusion	31.9 (4.3)	0.02	0.04	0.10**	0.16**	0.39**

Table 1. Bivariate correlations between study variables (N = 739). Gender (1 = male, 0 = female); * $p < .05$, *** $p < .001$.

	Group	M(SD)	Comparison group	M(SD)	t(df)	Cohen's <i>d</i>	Hedge's <i>g</i>
Self-efficacy for inclusion	Male	32.12 (4.61)	Female	31.86 (4.24)	0.57 (739)	0.06	0.06
Empathy	Male	35.48 (6.11)	Female	35.87 (6.42)	-0.56 (739)	-0.06	-0.06
Emotional Self-efficacy**	Male	31.83 (5.02)	Female	28.33 (4.93)	6.51 (739)	0.71	0.71
Self-efficacy for inclusion*	With more teaching experience	32.39 (4.27)	With less teaching experience	31.55 (4.25)	2.69 (739)	0.20	0.20
Empathy*	With more teaching experience	35.13 (6.32)	With less teaching experience	36.43 (6.32)	-2.80 (739)	0.21	0.21
Emotional Self-efficacy	With more teaching experience	29.03 (5.29)	With less teaching experience	28.64 (4.94)	1.05 (739)	0.08	0.08

Table 2. Mean differences by gender and years of teaching experience in study variables (t-test). * $p < .05$; ** $p < .01$.

with an effect size Hedge's $g = 0.06$. Empathy also showed no significant differences between male ($M = 35.48$, $SD = 6.11$) and female ($M = 35.87$, $SD = 6.42$) teachers, as shown by $t(739) = -0.56$, $p < 0.05$, and Hedge's $g = -0.06$.

A significant gender difference was observed in emotional self-efficacy, with male support teachers reporting significantly higher values ($M = 31.83$, $SD = 5.02$) than female teachers ($M = 28.33$, $SD = 4.93$), resulting in $t(739) = 6.51$, $p < 0.01$, and a medium to large effect size Hedge's $g = 0.71$.

Regarding teaching experience, a small but statistically significant difference was found in self-efficacy for inclusive education, with more experienced support teachers scoring higher ($M = 32.39$, $SD = 4.27$) compared to their less experienced colleagues ($M = 31.55$, $SD = 4.25$), $t(739) = 2.69$, $p < 0.05$, and Hedge's $g = 0.20$. Empathy was higher among the less experienced support teachers ($M = 36.43$, $SD = 6.32$) than among those with more experience ($M = 35.13$, $SD = 6.32$), $t(739) = -2.80$, $p < 0.05$, and Hedge's $g = -0.21$. There was no significant effect of teaching experience on emotional self-efficacy, as shown by $t(739) = 1.05$, $p < 0.05$, and Hedge's $g = 0.08$, with similar values for more experienced ($M = 29.03$, $SD = 5.29$) and less experienced ($M = 28.64$, $SD = 4.94$) support teachers.

Moderation analyses

To investigate the influence of empathy and emotional self-efficacy on self-efficacy in inclusive education, empathy was included as an independent variable in the regression model, with emotional self-efficacy and gender acting as first and second moderators, respectively. Additionally, years of teaching experience was included as a covariate to adjust for its potential influence on the outcome variable.

The analysis examines interaction effects, including 2-way interactions (empathy \times emotional self-efficacy, empathy \times gender, and emotional self-efficacy \times gender) and a 3-way interaction (empathy \times emotional self-efficacy \times gender), to discern the moderation effects on self-efficacy for inclusive education. The test results for the highest order unconditional interaction are as follows: R^2 -change = 0.0052, $F(1, 730) = 4.7988$, $p = 0.0288$. Results are shown in Table 3.

Significant coefficients for empathy and emotional self-efficacy highlight their contribution to self-efficacy for inclusive education. Specifically, empathy is associated with self-efficacy for inclusive education, with a coefficient of 0.1375 ($p < 0.0001$, 95% CI [0.0904, 0.1845]). Emotional self-efficacy also shows a significant positive effect ($b = 0.3255$, $p < 0.0001$, 95% CI [0.2638, 0.3872]).

The interaction between empathy and emotional self-efficacy reveals a significant moderation effect ($b = 0.0119$, $p = 0.0065$, 95% CI [0.0033, 0.0205]). Moreover, the 3-way interaction among empathy, emotional self-efficacy, and gender is significant ($b = -0.0283$, $p = 0.0288$, 95% CI [-0.0537, -0.0029]), indicating the relationship between empathy and self-efficacy for inclusive education is influenced by both emotional self-efficacy

	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>	Bootstrapping CI 95%	
					LL (lower limit)	UL (upper limit)
Intercept	31.33	0.26	120.3	<0.0001	30.8	31.8
Empathy	0.13	0.02	5.74	<0.0001	0.09	0.18
Emotional Self-efficacy	0.32	0.03	10.36	<0.0001	0.26	0.38
Gender	-1.04	0.48	-2.16	0.0306	-1.98	-0.09
Teaching experience	0.18	0.05	3.24	0.0012	0.07	0.29
Empathy x Emotional Self-efficacy	0.01	0.004	2.73	0.0065	0.003	0.02
Empathy x Gender	0.05	0.08	0.64	0.5200	-0.11	0.22
Emotional Self-efficacy x Gender	0.08	0.08	1.03	0.3019	-0.07	0.25
Empathy x Emotional Self-efficacy x Gender	-0.02	0.02	-2.19	0.0288	-0.05	-0.002

Table 3. Predictors of teacher efficacy for inclusive education (regression analysis).

and gender. This significant three-way interaction indicates that the relationship between empathy and self-efficacy for inclusive education is influenced by both emotional self-efficacy and gender.

Gender is found to affect self-efficacy for inclusive education significantly ($b = -1.0424$, $p = 0.0306$, 95% CI $[-1.9870, -0.0978]$), with males reporting lower levels of self-efficacy for inclusive education than females.

The 3-way interaction term slightly increases the explained variance of the model with a R-square change of 0.0052, $F(1,730) = 4.79$, $p = 0.028$. The R-square of the final model is 0.2157, indicating that approximately 21.57% of the variance in self-efficacy for inclusive education is accounted for by the model, $F(8, 730) = 25.0990$, $p < 0.0001$.

The test of simple slopes indicates that the interaction between empathy and emotional self-efficacy is significant, specifically when considering the gender variable, with a notable impact observed for females. Specifically, for females with higher levels of emotional self-efficacy, increased empathy is significantly associated with higher self-efficacy for inclusive education ($b = -0.0283$, $p = 0.0288$, 95% CI $[-0.0537, -0.0029]$) (Fig. 2).

Discussion

The present study investigated the relationship between teacher empathy and self-efficacy in inclusive education in a large sample of Italian support teachers. In addition, the moderating role of emotional self-efficacy and gender was explored. We found that higher levels of empathy were related to higher self-efficacy for inclusive education, especially when the perceived ability to regulate negative emotions was higher. This relationship was only found for female teachers.

Contrary to findings in the existing literature^{2,24,29}, empathy levels in our study did not differ by gender; however, consistent with previous research, emotional self-efficacy was found to be higher in males. Longer teaching experience was associated with lower empathy scores, suggesting a possible increase in the capacity for emotional detachment or alternatively defensive disengagement. This observation raises the question of whether prolonged contact with the profession and possibly also with the associated relationship stresses could lead to a strategic reduction in empathic engagement as a form of self-protection.

The literature has found^{16,17} that prolonged exposure to stressful relational experiences, such as those experienced by support teachers, reduces professional empathic engagement. This reduction could be interpreted as a defense mechanism, but could also indicate an improved ability of experienced teachers to moderate their emotional engagement. This moderation allows for the maintenance of a basic level of emotional empathy while protecting against exaggeration. This alternative interpretation is consistent with the finding of increased emotional self-efficacy in experienced teachers.

It can be postulated that the ability to regulate negative emotions can effectively reduce the overall perception of empathy. This diminished perception does not necessarily imply a lack of empathic ability, but rather may reflect a sophisticated balancing act in which emotional self-regulation ensures that empathy remains a sustainable professional practice.

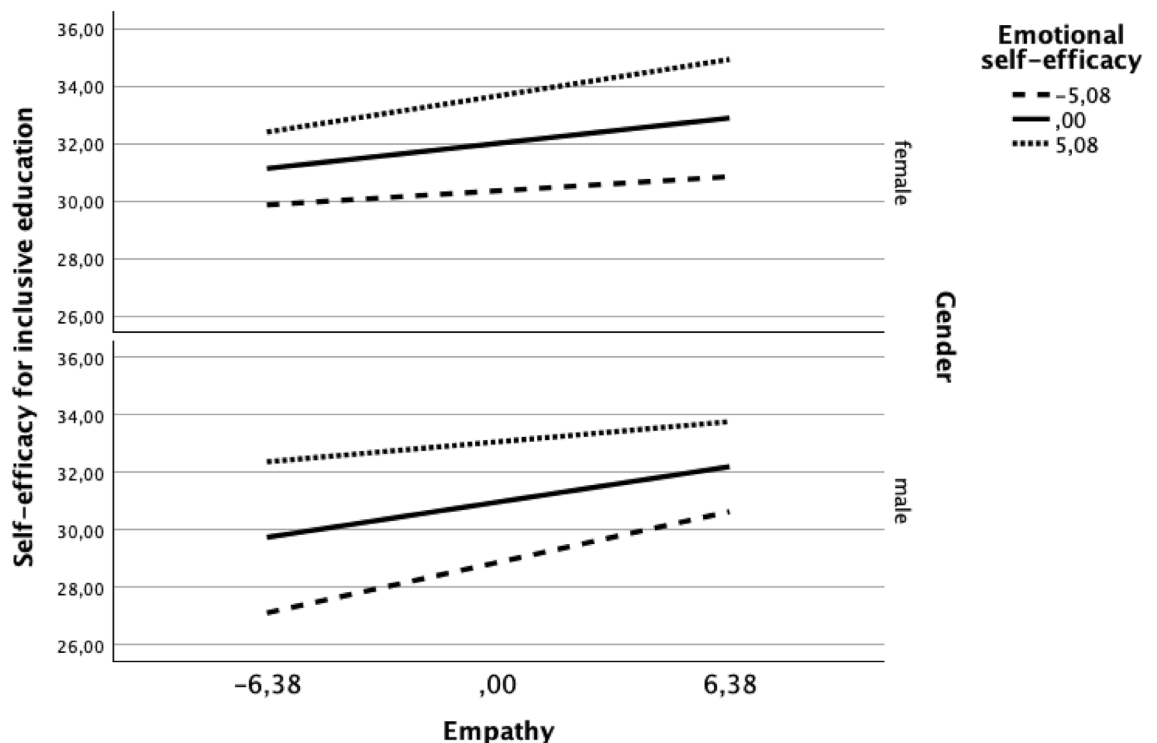


Fig. 2. Moderating effects of emotional self-efficacy and gender on the relationship between teacher empathy and self-efficacy for inclusive education.

Results of the moderation model expand on previous findings^{10–12} showing that empathy can foster the implementation of an inclusive approach to education especially when teachers feel able to regulate negative emotions.

As expected, empathy has become a core element that contributes to self-efficacy in the field of inclusive education. The significant positive correlation underscores the prominent role of empathic dispositions in fostering a school environment conducive to inclusion. This conclusion is consistent with previous research showing that empathy for students' diverse needs and perspectives is essential for a successful inclusive learning environment^{10–12,42}.

Emotional self-efficacy was also found to be a significant predictor of self-efficacy in inclusive education. This finding is consistent with the theoretical framework which states that in inclusive contexts, teachers' beliefs regarding their ability to cope with emotional difficulties and maintain psychological resilience are essential^{43,44}. The analysis also revealed a significant interaction between empathy and emotional self-efficacy, indicating a moderation effect. This interaction suggests that the effect of empathy on self-efficacy in inclusive education is dependent on the level of emotional self-efficacy. This means that the positive effect of empathy on teachers' self-efficacy in inclusive education can be enhanced by emotional self-efficacy, highlighting the potential synergistic effects of empathy and emotional self-efficacy in improving inclusivity.

Moreover, the three-way interaction between empathy, emotional self-efficacy and gender introduced a complex layer to the model, suggesting that the combined influence of empathy and emotional self-efficacy on self-efficacy in relation to inclusive education differs between genders. Specifically, female teachers feel more able to apply inclusive education when they not only have high levels of empathy but also report higher levels of emotional self-efficacy. This pattern suggests that the key factor that can help or hinder the translation of empathy into meaningful inclusion practices, particularly for female teachers, is the ability to manage negative emotions.

Limitations

The study is subject to some limitations that warrant careful consideration while providing valuable insights into the factors that influence self-efficacy for inclusive education in the teaching profession. First, participants were not randomly assigned to groups, which may be a source of limitation, and the results may not be generalizable to the other population. As the allocation of subjects to the two groups was not randomized, this could also lead to selection bias. It is also suggested that future studies should use random sampling to increase the credibility of the results. Second, the generalizability of the results to the broader target population is limited by the reliance on the volunteer participant pool. This limitation is an indication that the conclusions of this study should be taken with caution when extending to other sample sizes. Third, the limitations of causal inference from observed relationships are due to the cross-sectional design of the study. The snapshot presented in this design provides useful correlational results, but does not provide insight into the trajectory of these variables. Longitudinal studies are therefore urgently needed to more clearly determine causal relationships and to confirm the results of the current study in a temporally extended setting. Fourth, we did not examine the actual inclusive behaviors implemented by teachers in the classroom, so future studies should include measures of these behaviors. In addition, the study's focus on a single cultural context may preclude its applicability to different educational systems, particularly due to differences in national legislation and policies regarding opportunities for inclusion. In applying the Convention on the Rights of Persons with Disabilities⁹, Italy is one of the few countries worldwide attempting to fully realize the concept of inclusive education⁴⁵, and this relates specifically to the context of the study.

In order to explore the generality of the proposed relationships and account for contextual differences in inclusive educational practice, future research efforts should aim to replicate this study and extend it to a diverse socio-cultural setting.

Implications

Despite these limitations, the study has implications for pre-service teacher education and in-service teacher training.

The study supports the integration of empathy and emotional self-efficacy into pre-service and in-service teacher training programs to provide them with the emotional and empathic skills needed to promote an inclusive learning environment. By managing their negative emotions in classroom, teachers can be empowered to engage more deeply with their students and thus promote inclusion. The observed moderating effect of gender leads us to reconsider the dynamics of teacher education programs and calls for a tailored approach which takes into account gender specificities and views on inclusion in the classroom.

A final consideration concerns training aimed at improving empathy for inclusive teaching. These programs could put teachers, especially female teachers, at greater risk of emotional overload if they are not coupled with activities to promote emotional self-efficacy.

Conclusion

The aim of this study was to investigate the relationship between teachers' empathy and self-efficacy in dealing with inclusive education in Italian support teachers and to determine how emotional self-efficacy and gender influence this relationship. The results showed that higher levels of empathy corresponded with higher levels of self-efficacy in teaching and implementing inclusive education, especially among female teachers with high emotional self-efficacy.

Interestingly, this research did not confirm previous literature that there are significant gender differences in empathy levels. Male teachers scored higher on emotional self-efficacy than their female counterparts. Moreover, there was a weak negative correlation between levels of empathy and teaching experience; furthermore, higher levels of teaching experience were related to lower levels of empathy. These results may suggest that teachers with

a longer teaching experience are more likely to suppress their emotions as part of an adaptive response, but this assumption could be furtherly explored.

The implications of the study findings emphasize the role of emotional self-efficacy in enhancing the benefits of empathy for inclusive education. Teachers who are able to effectively regulate negative emotions are better able to implement inclusive practices and create a supportive learning environment. Therefore, the importance of not only incorporating empathy into the teacher's image but also taking steps to improve their ability to regulation emotions is emphasized.

The study also confirmed that there is a significant interaction effect between empathy and emotional self-efficacy; it explains that the overall effect of the two factors depends on gender. In addition, the results showed that female teachers with higher emotional self-efficacy reported an even stronger positive relationship between empathy and self-efficacy in terms of classroom integration.

It is therefore suggested that further research in this area, considering the limitations regarding the non-randomized methods of participant selection and the cross-sectional nature of the study in question, should be pursued by using approaches based on longitudinal study and random sampling methods. To gain a better understanding of what the actual implementation of inclusion in the classroom looks like and how the research can be transferred to other cultural contexts.

In summary, this study highlights the synergistic role of empathy and emotional self-efficacy in promoting inclusive education. These insights have significant implications for teacher education and professional development and highlight the need to equip educators with the skills to effectively support all students in inclusive contexts.

Data availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Code availability

For this research we used SPSS 29 software available from our University.

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Author contributions

FG contributed to the definition of study design, performed the statistical analysis, interpreted data and wrote the manuscript, SM performed the statistical analysis, interpreted data and wrote the manuscript, AM supervised data collection and contributed to manuscript writing, CM supervised the study, EC contributed to the definition of study design and data interpretation and supervised the study. All authors read and approved the final manuscript.

Competing interests

The authors declare no competing interests.

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