Research Article

Ethical and Emotional Commitment as a Pillar of Teaching: A Study on the Empathic Training of Future Teachers

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Abstract: This article analyzes the role of empathy as a key competence in initial teacher training. It is assumed that empathy must be a priority in teacher training programs, not only as a relational skill, but also as an essential component for building truly inclusive educational contexts. The teaching profession certainly requires the ethical and emotional commitment of teachers' staff. Based on this, we aim to know the impact that the university training period exerts on the level of empathy of students who are pursuing Early Childhood Education and Primary Education Degrees. A quantitative approach is adopted by carrying out a descriptive and exploratory study whose sample comprises 58 student teachers from both programs. A purposive, non-probability sampling was used to select the sample subjects. In fact, the Cognitive and Affective Empathy Test (CAET) is used because it is standardized and assesses the main dimensions of empathy: perspective taking, emotional understanding, empathic joy, and empathic stress. While the results show a striking level of empathic stress in all the future teachers surveyed, there is evidence of an unequal impact on their global empathy level and by dimensions, depending on the training program to which they belong. In Primary Education Degree, for example, university training appears to fulfil its purpose of stimulating students' emotional growth. However, the content and methodologies of Early Childhood Education Degree need to be reconsidered to integrate effectively the socioemotional dimension of professional learning and, above all, strengthen students' cognitive empathic competencies. The study highlights that the lack of systematic work on this competence compromises the professional development of future teachers and limits their ability to draw attention to diversity, among other training challenges of the 21st century.

Keywords: teacher training, teaching ethics, empathy, emotional skills, training needs

1. Introduction

Education is currently facing more complex challenges than ever before, owing to the diversity of the student body and constant changes in society. As classrooms become increasingly diverse, educational quality no longer depends solely on the implementation of innovative methodologies or the adaptation of teaching resources, but also on teachers' emotional and social skills (López et al., 2020). In this context, it is essential for educators to develop technical as well as interpersonal competencies that allow them to connect meaningfully with their students. Along these lines, studies

show a strong positive correlation between teachers' emotional competencies and students' emotional education, emphasizing the need for educators with emotional skills to foster holistic development of pupils (Acosta, 2023).

This is where empathy takes on fundamental importance, as one of the most relevant socio-emotional competencies in teacher training, since it enables teachers to establish meaningful bonds with their students, understand their needs, and respond sensitively and appropriately to the diversity of today's educational context (Miranda & Daturi, 2021).

Despite the growing recognition of its value, empathy continues to occupy a secondary place in many university curricula. Teacher training tends to focus primarily on technical and pedagogical aspects, leaving the development of skills linked to emotional intelligence, ethics, and human commitment in the background (Romero, 2021). Specifically, the study conducted by García-Vila et al. (2021) highlights a potential training gap. This situation justifies the need to review and strengthen the role of emotional competencies in teacher education curricula.

1.1 *Commitment to ethical teacher training*

Within the framework of ethical training, regarding ethical-emotional competencies, empathy is recognized as a fundamental aspect of education, especially in teacher training.

Teaching ethics concerns the behavior expressed in the practice of values; therefore, "this ethics is considered to be constructed through teaching practice" (Ibarra, 2021, p. 287). In other words, it is not only translated into the application of moral principles, since "it is not limited to the ethical and deontological codes developed by teaching groups to prescribe moral norms and duties focused on guiding teaching practice" (Ibarra, 2021, p. 287).

Teachers' professional ethics can also be manifested in everything that is implicitly expressed but demonstrated through actions. Sometimes what teachers opt not to do or fail to act in the educational environment may convey more than what could be openly explained (Ruiz et al., 2024, p. 7). In fact, teacher ethics is directly reflected in the teaching-learning process, where teachers are committed to fundamental principles such as respect for human rights, equal opportunities, and ensuring quality education for all. This construct goes beyond teachers' specific actions, including values, principles, etc. that should be oriented towards creating an inclusive and respectful environment for all students, regardless of their characteristics or conditions.

However, recent investigations highlight significant deficiencies in teacher ethics training (Santaella & Romero, 2024), emphasizing its crucial role in professional development and in addressing contemporary challenges (Mancilla, 2023). Zambrano (2021) also underscores gaps in teachers' knowledge and application of strategies related to emotions, empathy, and listening skills.

Voices such as Mazurek and Canese (2024, p. 78) point out that "an emotionally intelligent teacher not only improves their own educational practice, but also exercises leadership that motivates and supports students, promotes a climate of respect and collaboration, and facilitates the achievement of institutional objectives". If we know that an ethical teacher can connect more effectively with their students on both a cognitive and emotional level, it is urgent to rethink initial teacher training. Without a comprehensive training foundation that encompasses both theoretical and ethical aspects, it is difficult for future teachers to act as role models in building a more just and egalitarian society, in line with UNESCO's objectives established in the Agenda of 2030.

2. The present study

Based on the theoretical frameworks presented, this work arises from a desire to understand how empathy is constructed and evolves in the university context, and from the need to highlight its importance as a backbone of teaching practice. Addressing this issue will open a space for critical reflection on the preparation of future teachers and on the type of school that we hope to build from that training, a more approachable, respectful, understanding, and humane school.

Are future teachers being trained in the ethical and emotional competencies necessary to responsibly and sensitively address the challenges posed by today's society? This is the central question that gives meaning to this research. This question takes on relevance when considering that it is during the initial training period that the foundations of a teacher's professional identity are formed. Hence, this study focuses on the role that university education plays-or should play-in developing empathy in future teachers, understanding that these professionals are not

only key players in the implementation of inclusive practices, but also primarily responsible for translating ethical and educational principles into concrete actions within the classroom.

The general objective of this study is to assess the impact of university training on the development of empathy in students pursuing a degree in Early Childhood Education and Primary Education at the Faculty of Education, Economy, and Technology of Ceuta of the University of Granada, Spain.

3. Method

This research is informed by a quantitative approach; specifically, the study is descriptive and exploratory, as it seeks to test, in an exploratory manner, the impact that the initial teacher training period has on the level of empathy after students have completed several academic years of the degree. At this point, we must clarify that when we refer to the "impact" of the training program, we are referring to the impact of the teaching degree curriculum itself; no specific intervention or training plan was designed to assess the development of empathy in students before and after the ad hoc training. The present study sought to assess the effect of education degree curricula on this variable, which is key to being a teacher, by comparing groups of students (future early childhood and primary education teachers) at a given moment, without pre-test and post-test measurements.

3.1 *Population and sample*

The population consists of students enrolled in the early childhood education and primary education programs, who are in their third year of teaching career during the 2024-2025 academic year. Depending on the degree course, the early childhood education program totals 47 students, and the primary education program totals 59.

A purposive, non-probability sampling was used to select the sample subjects, selecting students who, having passed the halfway point of their training program, are currently taking a required subject in their third year of their teaching career, in both programs. In this regard, it should be noted that the students, who are pursuing different education degrees, completed the test during a third-year subject in their respective programs. No students were excluded; all students present in the university classroom completed the instrument. Specifically, 32 future early childhood education teachers (31 women and 1 man) and 26 future primary education teachers (17 women and 9 men) participated.

We are aware that this type of sampling may mean that the sample is not proportionally representative of the population, and we understand what this implies in terms of a cautious interpretation of the results obtained. We have also reflected on the sample size, being aware that small sample sizes also limit statistical power. These are undoubtedly methodological limitations that must be taken into account without undermining the potential and scientific value of the study developed for the academic and scientific community in education.

3.2 *Data collection instrument*

The Cognitive and Affective Empathy Test (CAET) by López-Pérez et al. (2008) was used to collect data. This instrument was selected for two main reasons: first, because it is a standardized instrument that meets the prerequisites for reliability and validity, and second, because it allows for the assessment of empathy as a whole and in its different dimensions. The test makes it possible to evaluate a person's empathic capacity in different emotional situations, providing an accurate measurement of its two fundamental dimensions: cognitive and affective.

Specifically, the test consists of 33 items with a Likert-type response scale, ranging from 1 (Strongly disagree) to 5 (Strongly agree). The items are organized into four scales, grouped around two dimensions that measure different aspects of empathy. These dimensions are as follows:

(a) Cognitive empathy, which includes:

- Perspective Taking (PT): Refers to the intellectual or imaginative ability to put oneself in another person's shoes.

- Emotional Understanding (EU): Is the ability to recognize and understand another person's emotional states, intentions, and impressions.

(b) Affective empathy, which assesses:

- Empathic Stress (ES): is the ability to share another person's negative emotions.
- Empathic Joy (EJ): refers to the ability to understand another person's emotions and share their positive emotions.

According to the Test standards, optimal levels of empathy have been established for quality teaching. These levels are determined based on the assessments obtained in each of the scales and dimensions:

(a) Cognitive empathy (must be high):
- In PT, with a score of 8 to 40 points, the ideal score is between 31 and 35 points.
- In EU, with a maximum of 45 points, the recommended range is between 32 and 37 points.

(b) Affective empathy (must be medium or low):
- In ES, with a score of 9 to 40 points, the appropriate range is between 17 and 33 points.
- In EJ, with a maximum of 40 points, the optimal range is considered between 25 and 38 points.

Based on the above, an optimal empathic profile for teachers is located between the 69th and 93rd percentiles in the cognitive dimension, and between the 7th and 93rd percentiles in the affective dimension (López-Pérez et al., 2008).

3.3 Data collection procedure and ethical considerations

First, we would like to point out that this study does not violate any of the ethical principles required in research. The participating subjects, through their informed consent, were informed of the research, as well as the purposes of data collection and their participation. Thus, data collection was conducted in person in university classrooms, with the test administered in paper format. Informed consent was obtained from both the faculty teachers responsible for the selected subjects and the participating students. This consent ensured that participants understood the purpose of the study, its voluntary nature, and the confidentiality of the data collected, thus complying with the ethical principles established for educational research. This decision was made to guarantee on-site response collection, ensuring that participants completed the test at the time of administration, avoiding delays or lost responses.

3.4 Data analysis

First, the test was graded both manually and online. The online test grading platform (TEAcorrects) was used for online grading. Since this tool had a limited number of uses, some answers had to be graded manually. To do this, after considering the test grading guidelines in the manual, the direct scores and corresponding percentiles were obtained. Subsequently, the cutoff points corresponding to the mean of each scale were used to establish the teacher profiles.

For data analysis, we followed the test's own guidelines, which offer a clear interpretation of the results through percentile scores and T-transforms, facilitating a detailed and personalized examination without the need for additional tools.

4. Results

A summary of the main results is presented below.

4.1 Empathy levels of future early childhood education teachers

Thirty-two future early childhood education teachers participated. The mean score for Global Empathy was 109.34, with a median of 108. The standard deviation was 9.81.

Specifically, by dimension analyzed, we see the following. In Perspective Taking, the mean score was 26.87, a median of 27, and a standard deviation of 4.1. In Emotional Understanding, the mean score was 27.78, the median score was 27, and the standard deviation was 3.9. For Empathic Stress, the mean score was 25.46, the median score was 26, and the standard deviation was 4.5. In EJ, the mean score was 29.78, the median score was 30, and the standard deviation was 4.1.

A more detailed analysis (see Table 1) shows that, regarding Global Empathy-resulting from the cognitive and affective scales-of the total number of participating students in the third year of the early childhood education program, 3.13% (n = 1) scored at an extremely high level, and 37.5% (n = 12) at an average level. However, 50% (n = 16) had

a low level of empathy, and 9.38% (*n* = 3) had an extremely low level. Regarding gender, the majority of the students were at the average and low levels, with three cases at the extremely low level and one at the extremely high level. Only one male participated, at an average level.

In PT, 6.25% (*n* = 1) of the students were at the extremely high level, and another 6.25% (*n* = 1) were at the high level. The majority of the students, 93.75% (*n* = 15), were at the average level. 81.25% (*n* = 13) were at the low level, and 12.5% (*n* = 2) were at the extremely low level. Regarding gender distribution, the only male was at the average level. The remaining participants, all women, were distributed among the extremely high, high, average, low, and extremely low levels.

In EU, 3.13% (*n* = 1) of the participants were at the high level, while 25% (*n* = 8) were at the medium level. The majority of female students, 62.5% (*n* = 20), were at the low level, and 9.38% (*n* = 3) were at the extremely low level. Regarding gender, the only male was at the medium level. The remaining participants, all women, were distributed across extremely high, high, medium, low, and extremely low levels.

Concerning Empathic Stress, 6.25% (*n* = 2) were at the extremely high level, while 15.63% (*n* = 5) were at the high level. 37.5% (*n* = 12) are at the average level, the same percentage is at the low level, and 3.13% (*n* = 1) are at the extremely low level. Regarding gender, the distribution follows a similar pattern to the previous dimensions, with the only male at the average level.

Finally, in EJ, 3.03% (*n* = 1) of the students are at the high level, 51.52% (*n* = 17) at the average level, 30.3% (*n* = 10) at the low level, and 12.12% (*n* = 4) at the extremely low level. Regarding gender, the only male is at the average level. However, the remaining female students are now distributed across the high, average, low, and extremely low levels.

Table 1. Dimensions of empathy distributed by levels according to gender and percentages of the Early Childhood Education Degree

Dimension	Extremely high level	High level	Medium level	Low level	Extremely low level
Global empathy (total)	1 woman (3.13%)	-	11 women, 1 man (37.5%)	16 women (50%)	3 women (9.385)
PT	1 woman (6.25%)	1 woman (6.25%)	14 women, 1 man (93.75%)	13 women (81.25%)	2 women (12.5%)
EU	-	1 woman (3.13%)	7 women, 1 man (25%)	20 women (62.5%)	3 women (9.38%)
ES	2 women (6.25%)	5 women (15.63%)	11 women, 1 man (37.5%)	12 women (37.5%)	1 woman (3.13%)
EJ	-	1 woman (3.03%)	16 women, 1 man (51.52%)	10 women (30.30%)	4 women (12.12%)

Source: Created by the authors

4.2 *Empathy levels of future primary education teachers*

Twenty-six students from the primary education program participated. The mean score for Global Empathy was 126.34, the median was 130, and the standard deviation was 14.3.

In the PT dimension, the mean was 31.11, the median was 31, and the standard deviation was 4.6. In EU, the mean was 32.69, the median was 32, and the standard deviation was 5.1. In ES, the mean was 28.11, the median was 28, and the standard deviation was 4.9. In EJ, the mean was 34.57, the median was 36, and the standard deviation was 4.3.

A more thorough analysis (see Table 2) shows that, regarding Global Empathy, of the total participating students in their third year of teaching career, 42.31% (*n* = 11) scored at an extremely high level, 26.92% (*n* = 7) at a high level, and 19.23% (*n* = 5) at a medium level. On the other hand, 11.54% (*n* = 3) had a low level of empathy. Looking at the gender variable, male students were distributed between the medium and low levels, with a single case at the extremely high level, while female students were mainly grouped into the medium, high, and extremely high levels, with a greater concentration at the latter level.

In Perspective Adoption, 23.08% ($n = 6$) are at an extremely high level, 23.08% ($n = 6$) at a high level, and 30.77% ($n = 8$) at a medium level. On the other hand, 19.23% ($n = 5$) are at a low level, and 3.85% ($n = 1$) at an extremely low level. Regarding the sex variable, it is observed that women tend to concentrate at the upper levels of the scale, predominating at the extremely high, high, and medium levels. Men, on the other hand, are mostly at the lower levels, although they are also represented at all levels, including the highest.

In EU, 19.23% ($n = 5$) of the students were at an extremely high level, 11.54% ($n = 3$) at a high level, 53.85% ($n = 14$) at a medium level, and 15.38% ($n = 4$) at a low level. Regarding gender distribution, the majority of females were at the medium level, with 10 women, followed by 3 women at the extremely high level and 2 at the high level. As for males, they were distributed across all levels: 2 at the extremely high level, 1 at the high level, 2 at the medium level, and 2 at the low level. Females (two cases) were also present at the low level.

In ES, 7.69% ($n = 2$) were at the extremely high level, 42.31% ($n = 11$) at the high level, 34.62% ($n = 9$) at the medium level, 15.38% ($n = 4$) at the low level, and 3.85% ($n = 1$) at the extremely low level. Regarding gender, all students at the extremely high ($n = 2$) and high ($n = 11$) levels were female. At the medium level, the majority were male ($n = 6$). At the low level, three students were male and only one female. Finally, at the extremely low level, only one male student was found.

Finally, in EJ, 26.92% ($n = 7$) of the students were at the extremely high level, and 23.08% ($n = 6$) were at the high level. However, the majority of students, 38.46% ($n = 10$), are at the intermediate level, and 11.54% ($n = 3$) are at the low level. Regarding gender, women predominate at the highest levels. At the extremely high level ($n = 7$), all students are women. At the high level ($n = 6$), there is one male and five female students. At the intermediate level ($n = 10$), there is a balanced number of males and females, five in each case. And, at the low level ($n = 3$), there are only three males.

Table 2. Dimensions of empathy distributed by levels according to gender and percentages of the Primary Education Degree

Dimension	Extremely high level	High level	Medium level	Low level	Extremely low level
Global empathy (total)	1 man, 10 women (42.31%)	7 women (26.92%)	2 men, 3 women (19.23%)	1 man, 2 women (11.54%)	-
PT	6 women (23.08%)	6 women (23.08%)	1 man, 7 women (30.77%)	3 men, 2 women (19.23%)	1 man (3.85%)
EU	2 men, 3 women (19.23%)	1 man, 2 women (11.54%)	2 man, 10 women (53.85%)	2 men, 2 women (15.38%)	-
ES	2 women (7.69%)	11 women (42.31%)	6 men, 3 women (34.62%)	3 men, 1 woman (15.38%)	1 man (3.85%)
EJ	7 women (26.92%)	1 man, 5 women (23.08%)	5 men, 5 women (38.46%)	3 men (11.54%)	-

Source: Created by the authors

4.3 Optimal empathy score ranges

In accordance with the standards established by López-Pérez et al. (2008), a comparison was made of the results obtained from the participating group of future teachers in relation to the criteria that define an optimal empathic profile, as explained in the methodological section. Regarding the optimal range that an empathic teacher profile should achieve as a reference, we found the following.

On the one hand, the mean scores of future early childhood education teachers in PT are below the ideal range, indicating that they do not reach the optimal level in the cognitive dimension. In EU, they are also below the recommended range, suggesting that, as in PT, this dimension does not reach the ideal range for cognitive empathy. In ES, the score is within the appropriate range. And, in EJ, the score is within the optimal range.

On the other hand, the mean scores of future primary education teachers in PT are within the ideal range, indicating that they reach the optimal level of cognitive empathy in this dimension. In EU, the score is also within the

recommended range, suggesting that this dimension achieves the desired level for cognitive empathy. In ES, the score is within the appropriate range, with future teachers exhibiting the expected level of affective empathy. Finally, in EJ, the score is within the optimal range, reflecting a favorable score in this affective dimension.

4.4 *Comparative analysis of differences in empathy levels across university degrees*

The analysis of empathy levels among students in the bachelor's degrees in early childhood education and primary education reveals significant differences in the development of this competency throughout their university studies. Broadly, the bachelor's degree in Primary Education shows more positive levels in the different dimensions of empathy. It is striking that in the bachelor's degree in early childhood education, there are considerable concentrations of students with low or even extremely low levels of empathy (see Table 3).

Table 3. Descriptive statistical measures of the students of the Degrees in Early Childhood Education and Education Primary

Dimension analyzed by university degree		Mean	Median	Standard deviation	Percentiles
Global empathy (total)	Early childhood education degree	109.34	108	9.81	35
	Primary education degree	126.34	130	14.3	80
PT	Early childhood education degree	26.87	27	4.1	35
	Primary education degree	31.11	31	4.6	70
EU	Early childhood education degree	27.78	27	3.9	30
	Primary education degree	32.69	32	5.1	70
ES	Early childhood education degree	25.46	26	4.5	55
	Primary education degree	28.11	28	4.9	75
EJ	Early childhood education degree	29.78	30	4.1	30
	Primary education degree	34.57	36	4.3	75

Source: Created by the authors

In Global Empathy, future primary education teachers achieve higher averages and show greater presence of high and optimal levels. In contrast, future early childhood education teachers are at average or low levels, failing to achieve the desirable standards of global empathy.

Regarding PT, one of the cognitive dimensions of empathy, a marked difference is also observed. While future primary education teachers reach the optimal range, future early childhood education teachers are below the ideal range, which seems to indicate a disconnect or lack of relationship between academic progress and their empathic development.

Focusing attention on EU, a similar pattern is repeated. The degree in primary education concentrates a majority of students at high and medium levels, reaching the ideal range. In contrast, in degree in early childhood education, scores remain insufficient and fall below the recommended range for an adequate empathic profile.

In ES, both future primary and early childhood education teachers present scores within the adequate range.

Finally, in the EJ dimension, a slight decline in this ability is detected for future early childhood education teachers. For future primary education teachers, the situation is much more favorable, showing greater ability in this dimension, with a significant presence at high and extremely high levels.

Thus, when comparing optimal empathy ranges, future primary education teachers, already advanced in their training program, reach ideal levels in all dimensions of the test. In contrast, future early childhood education teachers

only reach the appropriate range in the affective dimensions (Stress and Empathic Joy), but not in the cognitive ones (Perspective Taking and Emotional Understanding). This scientific evidence shows that, in the primary education degree, a complete empathic profile is best developed, while in the early childhood education degree, some training deficiencies are noted among students, especially in the formation and development of cognitive empathy, which is key to teaching.

5. Discussion of results

The findings of this study allow for an in-depth assessment of the impact of university education on the development of teacher empathy. The analysis of the different dimensions that comprise empathy, using the CAET framework, reveals divergent trajectories between the degree in early childhood education and the degree in primary education, highlighting the influence that the training program has on the emotional development of future teachers. This disparity suggests that, beyond the academic content, the pedagogical approaches adopted in each degree generate different emotional and reflective experiences.

Regarding the global empathy profile, the results point to clear mastery among students of the bachelor's degree in primary education, who excel in their ability to perceive, understand, and connect with the emotions of others in an integrative way. This indicates that the training program effectively contributes to consolidating an empathic sensitivity consistent with the challenges of teaching practice. In contrast, students of the bachelor's degree in early childhood education do not show significant levels of mastery, reflecting that, although they may have an initial empathic predisposition, the training they receive does not reinforce, deepen, or enhance this competence. Perhaps this lack of training or development of the skill points to a formative weakness, which could have consequences for the quality of interaction with children (Romero, 2021), especially at the most sensitive stages of development.

Cognitive and affective empathy, analyzed through their dimensions, allow us to better understand these differences. In the degree in primary education, these dimensions appear to have developed in a balanced way, presenting a training program that integrates both the rational understanding of emotions and their affective experience. This balance is key to teaching that is conscious and emotionally adjusted (Panchana-Mosquera & Venet-Muñoz, 2024). However, in the degree in early childhood education, a disconnect is observed between the two dimensions: while the affective component remains at acceptable levels, the cognitive component shows signs of formative deficits. This result could indicate that emotional training in this degree program is not sufficiently promoting critical reflection or the development of the ability to adopt the perspective of others, fundamental skills for quality pedagogical practice in the classroom. Recent research underscores the relevance of these components in teacher training. Valarezo-Cueva (2024) highlights that both critical reflection and perspective-taking are key competencies for moving towards inclusive education.

One of the most relevant findings relates to Perspective Taking and to students in the degree in early childhood education. The evidence obtained is especially significant, as it suggests a lack of a key skill: the ability to put oneself in another's shoes, interpret their needs, and act accordingly. This result may indicate that, as students' progress through their degree, they face academic or practical demands that are not accompanied by guided emotional reflection. In contrast, in the degree in primary education, the presence of this skill is strong, indicating that its training does stimulate these types of competencies, possibly through methodologies more focused on reflection and the analysis of interpersonal situations.

Regarding ES, the data reveal an extremely high level in the final years of both degrees, particularly in the degree in early childhood education. However, this high level, if not accompanied by the development of appropriate tools for its regulation, could translate into a lack of training in emotional self-regulation. This finding is particularly relevant, since inadequate management of empathic stress can lead to both emotional exhaustion and an emotional disconnection with students. Various studies have shown a significant relationship between emotional intelligence, empathy, and burnout levels in the educational field. In this sense, teachers with higher levels of emotional intelligence tend to experience lower professional burnout, especially with regard to exhaustion and cynicism (Andreu-Moñino & Martínez-Ramón, 2024). Likewise, significant correlations have been identified between empathy and teacher burnout, highlighting that PT-as a form of cognitive empathy-has a strong positive relationship with the sense of personal achievement (Romero,

2019).

Regarding EJ, future primary education teachers show a greater willingness to share positive emotions and establish healthy emotional bonds in the school context. This has a direct impact on motivation, well-being, and the emotional climate in the classroom. On the other hand, future early childhood education teachers do not exhibit optimal levels in this dimension, which they should strengthen, considering the importance of positive emotional connection in the preschool stage. This situation may be associated with emotional exhaustion or a lack of spaces that promote the development of satisfactory emotional relationships during initial training.

EU also shows a differentiated behavior. While in the primary education degree, the ability to recognize and process the emotions of others is progressively strengthened, in the early childhood education degree, this skill remains at low levels, indicating a persistent difficulty in adequately interpreting the emotional states of others. This limitation can compromise future teachers' ability to respond sensitively to students' emotional needs, particularly at younger ages.

Be that as it may, the above findings show that, in primary education degree, university training fulfills its purpose of stimulating the emotional growth of future teachers. In contrast, in early childhood education degree, training content and methodologies should be reconsidered to more effectively integrate the socio-emotional dimension of professional learning. Previous studies indicate that future early childhood education teachers have less developed emotional competencies compared to future primary education teachers, highlighting a potential training gap (García-Vila et al., 2021). This could result in professionals who are less prepared to face the socioemotional demands of working with early childhood.

In this context, recent research highlights the importance of rethinking teacher training and educational leadership in order to firmly integrate socio-emotional competencies, given their impact on academic performance, school climate, and citizenship training (Lagos & López-López, 2020; López et al., 2020). In fact, it is widely recognized that these skills are essential for educational leadership in the 21st century and must be present in both curricula and educational policies at all levels (Aranda & Elizabeth, 2024). Consistent with this approach, UNESCO (2015) underlines the importance of integrating knowledge, values, and socio-affective skills into the organization of educational content and processes in educational systems.

6. Conclusions, implications, limitations, and future research

While the results show a striking level of empathic stress in all the future teachers surveyed, there is evidence of an unequal impact on their global empathy level and by dimensions, depending on the training program to which they belong. Specifically, there is a training gap in terms of socio-emotional development among future early childhood teachers. There is no doubt that the content of the curriculum for this degree needs to be reviewed.

The following implications for teaching practice can be derived from the results obtained:

(a) It is essential to address the training with which students enter university, encompassing both its personal and academic dimensions. This implies the need to establish training pathways starting at prior educational levels, such as Compulsory Secondary Education, in order to identify the areas for improvement and promote comprehensive development that includes socio-emotional competencies from early stages.

(b) University training must be comprehensive and integrative, considering the development of social, emotional, and ethical skills, in addition to specific disciplinary knowledge.

(c) Empathy is a complex construct that comprises cognitive and affective dimensions, each influenced by different factors and conditions. Therefore, it is necessary to address it in a systematic and planned manner, designing training interventions that promote the balanced development of all its facets.

(d) The situation observed and analyzed among student teachers enrolled in Early Childhood Education and Primary Education indicates that curricular programs should be evaluated and adjusted to strengthen cognitive empathic competencies, especially within Early Childhood Education, ensuring that future teachers are prepared to understand and respond to children's emotional needs.

(e) The increase in empathic stress, without adequate management, among future early childhood education teachers underlines the need to include specific training in emotional self-regulation and stress management in curricula to prevent emotional burnout and improve their emotional health and professional effectiveness.

With a view to implementing some of these curricular and/or teaching measures, two research projects currently being developed at the University of Granada are worth highlighting. Attitudinal commitment and pedagogical responsibility are the guiding threads of the two funded projects. In the first project, entitled Ethical Teacher Leadership as a Discriminating Element in Initial Teacher Training, we studied whether future teachers possess the profile of an ethical teaching professional or leader. In the recently approved second project, entitled Training for Ethical Leadership in the Teaching Profession: Diagnosis and Analysis, we want to delve deeper into this question. Our intention is to identify the ethical leadership competency as a viable characteristic to consider in the selection of future teachers, in line with the current line of work of the Conference of Deans of Education on access to the teaching career in Spain, in the midst of the reform of the curricula leading to the Master's degree. To this end, we propose: (1) analyzing the specific training students receive to become ethical leaders in the teaching profession, (2) designing and implementing an intervention plan on professional ethics in teaching, and (3) analyzing whether there has been a change in ethical attitudes after students participation in the intervention program. This is an innovative proposal in the context of Spanish universities. It is necessary to include parameters of responsibility that guarantee commitment to training and to society, as required by international bodies (Buxarrais, 2021).

Our work presents certain limitations, mainly related to the specific context in which the research was conducted, and thus could restrict the generalization of the results to other educational institutions. Furthermore, the research focused solely on early childhood and primary education programs, so it would be interesting to explore how other degrees or teaching disciplines may influence the development of empathy. From a critical and reflective point of view, we must take into account the methodological limitations of this study, such as the choice of non-probabilistic sampling, the small sample size, and the specific population of the context. All of this has an impact on the process of interpreting the results, which requires us to exercise the utmost caution and prudence.

Future research could focus on analyzing specific interventions within teacher training that enhance the development of empathy, as well as on the implementation of socioemotional training programs (that include the design and development of social-emotional activities, case studies, simulations...) for students and in-service teachers. It would also be relevant to investigate possible variables that may influence empathic development, such as the type of educational practices, classroom diversity, or the students' sociocultural background. Although these data do not allow for conclusive generalizations, they could serve as a starting point for future research on possible differences in empathic development between men and women in predominantly female educational contexts. In this sense, it would be especially relevant to delve deeper into the impact that the limited presence of male figures in education can have, not only in terms of diversity and balance of perspectives, but also in how this distribution can influence the development of socio-emotional competencies, such as empathy, and the perception of the teaching role from a gender perspective.

Finally, it would be important to delve deeper into the impact of socioemotional training and the creation of an educational environment that fosters academic learning alongside the emotional and social development of all participants in the educational process. Likewise, it would be valuable to explore the relationship between teachers' empathy levels and students' well-being and performance throughout their academic development. Overall, these results underscore the need to review the curriculum for the early childhood education degree, by incorporating teaching approaches or subjects aimed at strengthening empathy and other emotional competencies, at the theoretical and practical levels. It would also be beneficial to conduct longitudinal follow-ups to assess how these skills evolve throughout the program, as well as to expand the sample in future research to improve representativeness and comparative analysis.

Highlighting the interest and implications of the present study, the academic and scientific community in education must take into account and assume that the absence of systematic work focused on ethical and emotional competence would compromise the professional development of future teachers and limit their ability to address student diversity in the classroom, among other training challenges of the 21st century (Latorre et al., 2025).

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Conflict of interest

The authors have disclosed no conflicts of interest.

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