HOW AI CAN FOSTER EMOTIONAL LITERACY IN FUTURE LEARNING SUPPORT TEACHERS: AN EXPLORATORY STUDY

COME L'INTELLIGENZA ARTIFICIALE PUÒ PROMUOVERE LA COMPETENZA EMOTIVA NEI FUTURI INSEGNANTI DI SOSTEGNO: UNO STUDIO ESPLORATIVO

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Double Blind Peer Review

Citation
Viola, I., Campitiello, L., d'Angelo, R., Di Tore, S., & Aiello, P. (2025). How ai can foster emotional literacy in future learning support teachers: an exploratory study. *Giornale italiano di educazione alla salute, sport e didattica inclusiva*, 9(Suppl.1).

Doi:
https://doi.org/10.32043/gsd.v9i2_Sup.1529

gsdjournal.it
ISSN: 2532-3296
ISBN: 978-88-6022-515-3

ABSTRACT
Recent educational policies and international literature emphasize the role of Artificial Intelligence (AI) in teacher training, as well as the need to develop socio-emotional competencies. In line with these premises, the present study explores the use of an AI-based chatbot, designed to be accessible and provide immediate feedback, with the aim of promoting emotional awareness among future learning support teachers. The research initially involves the administration of validated tests to assess Emotional Quotient levels and related dimensions, along with a questionnaire aimed at investigating attitudes toward inclusive practices. The study aims to provide insights into how AI-based tools can foster greater emotional awareness and self-regulation in teacher education, promoting more inclusive practices and opening new directions for research in the field.

Le recenti politiche educative e la letteratura internazionale sottolineano il ruolo dell'Intelligenza Artificiale (IA) nella formazione degli insegnanti, nonché la necessità di sviluppare competenze socio-emotive. In linea con tali premesse, il presente studio esplora l'utilizzo di un chatbot basato su IA, progettato per essere accessibile e fornire feedback immediato, con l'obiettivo di promuovere la consapevolezza emotiva nei futuri docenti di sostegno. La ricerca prevede inizialmente la somministrazione di test validati per valutare il Quoziente Emotivo e le dimensioni ad esso correlate, insieme a un questionario volto a indagare gli atteggiamenti verso le pratiche inclusive. Lo studio intende offrire spunti su come gli strumenti basati sull'IA possano favorire una maggiore consapevolezza emotiva e autoregolazione nella formazione docente, promuovendo pratiche più inclusive e aprendo nuove direzioni di ricerca nel settore.

KEYWORDS
Chatbot, Emotional Intelligence, Learning support teacher training
Chatbot, intelligenza emotiva, formazione degli insegnanti sostegno

Received 20/06/2025
Accepted 22/07/2025
Published 30/07/2025

1. Introduction

In recent years, teacher training has assumed an increasingly strategic role in responding to ongoing social, cultural, and educational transformations. In this context, the need for targeted preparation becomes evident, particularly for learning support teachers who are confronted daily with high-intensity relational and emotional situations. Italian legislation has acknowledged this specificity, outlining comprehensive training pathways that consider the multiple competencies required for effective and inclusive teaching (Cottini, 2018; D'Alonzo, 2009; Ianes & Demo, 2019; D.L. 62/2024; UNESCO, 2020). Among these, emotional competence emerges as a transversal and crucial dimension (Disegno di Legge n. 2943, Art. 2, Formazione dei docenti per lo sviluppo di competenze non cognitive nei percorsi scolastici).

This competence enables teachers to recognize, understand, and regulate both their own emotions and those of others, contributing to the quality of relationships, stress management, and school well-being (Salovey & Mayer, 1990; Brackett et al., 2010). In this regard, the construct of emotional intelligence, as defined by Bar-On (1997), is particularly relevant. He describes it as "a set of emotional and social abilities, competencies, and facilitators that influence how we understand and express ourselves, relate to others, and cope with daily demands." In line with Bar-On, Nussbaum (2004) reminds us that emotions are not separate from thought: "they contain thoughts or, from a cognitive perspective – one that involves receiving and processing information – they are themselves always thought-emotions" (p. 42).

This means that, through educational dialogue in its Socratic form, emotions can be recognized, brought to awareness, and transformed. In a society devoid of pain (Chul-Han, 2022), it is crucial to "engage with the chaotic material of pain and love, of anger and fear, and with the role these tumultuous experiences play in thinking about what is good and just" (Nussbaum, 2004, p. 18).

Therefore, the teacher is not only a facilitator of learning but also a generator of contexts—one who identifies and reduces barriers, promoting environments in which everyone can feel welcomed, safe, and valued. To fulfill this role, it is essential—as emphasized by Porges' Polyvagal Theory (2017)—to foster positive neuroception, or a perception of safety within relationships. Ensuring such safety activates coregulation processes, which represent the biological foundation of inclusion. When teachers engage in coregulation with students, they offer a model for interpreting and managing their emotional and bodily states, guiding them

toward self-regulation. As Porges (2017, p. 25) notes: “Reciprocal, synchronous interactions between individuals that define coregulation function as a neural exercise that enhances the capacity for self-regulation in the absence of coregulatory opportunities.”

In this framework, Artificial Intelligence can provide a complementary contribution. Its accessibility makes it suitable for supporting teachers in their professional development, without replacing the experiential dimension inherent to human beings (Benasayag, 2024). Several studies (UNESCO, 2021; Celik et al., 2022; Salas-Pilco et al., 2023) have highlighted the potential of conversational agents, such as chatbots, in promoting emotional literacy. When well-designed, digital environments can offer safe spaces to express emotional experiences, reflect on them, and develop metacognitive awareness (Kooli, 2023; Dadawy, 2023), while also reducing desirability bias. In this sense, they represent a flexible and integrative resource within teacher training, capable of supporting the development of socioemotional competencies.

This paper aligns with this perspective, aiming to explore the potential of an educational chatbot designed to promote emotional awareness and strengthen social-relational competencies. In its initial phase, the study analyzes future teachers' levels of emotional intelligence and their representations of inclusion, with the goal of validating the chatbot as a personalized educational tool to support teachers’ professional and personal well-being.

2. AI as a Tool to Foster Socio Emotional Skills in Teacher Training

The learning support teacher plays a central role in the design of individualized educational plans, collaborating with general education teachers to promote school inclusion (Decreto Legislativo 66/2017). In this regard, the literature highlights the crucial role of the learning support teacher in enhancing and strengthening inclusive processes (Cottini, 2018; D'Alonzo, 2009; Ianes & Demo, 2019), thanks to specific competencies (Bellaciccio, 2019; Calvani et al., 2017; Cajola & Ciraci, 2018; Ciraci & Isidori, 2017; Dovigo, 2015; Guerini, 2020). These include: skills in educational interaction and relationships with students; the ability to cooperate and collaborate with families; competencies in multidimensional observation and evaluation of human functioning according to the ICF model (WHO, 2001; 2007; 2020); the ability to co-monitor and co-lead innovative projects; advanced pedagogical skills in the design and implementation of Individualized Education Plans (IEP) and the Life Project (Decreto Legislativo 62/2024); and both theoretical

and practical knowledge in the field of special pedagogy and didactics (Decreto Ministeriale, 2011, pp. 7–8). Among these, emotional competence is particularly fundamental, as it fosters the understanding and regulation of one's own emotions and those of others (Salovey & Mayer, 1990; Panwar, 2023). Brackett et al. (2010) have shown that emotional competence positively influences teachers' job satisfaction. Consistently, further studies (Cooper, 1997, p. 33; Sharma & Bindal, 2012; Kauts & Saroj, 2010) confirm its effectiveness in stress management and in promoting students' wellbeing, with favorable effects on the classroom environment as a whole. In fact, several studies have found that the presence of disruptive behaviors in the classroom can reduce teachers' emotional regulation (Aloe et al., 2014; Carson, 2007; Chang, M.-L., 2013). In light of this evidence, it is crucial that teachers are equipped with tools to manage challenging behaviors, such as the ability to positively cope and regulate their emotions. In recent years, Artificial Intelligence (AI) has emerged as an effective system, establishing itself as a transformative force in the educational landscape (UNESCO, 2021; European Digital Education Action Plan 2021–2027; National Digital School Plan [PNSD], 2023). AI offers new opportunities to enhance and personalize teaching and learning processes (Celik et al., 2022; Ji et al., 2023; Salas-Pilco et al., 2023) and is increasingly recognized as a valuable means of supporting teachers' emotional literacy. One of the most promising applications is the use of chatbots, designed to offer emotional support. These conversational agents facilitate the expression of emotions and personal concerns within a digital environment perceived as safe (Kooli, 2023). Supporting this, Kooli (2023), in a study involving students, highlights how chatbots, through continuous dialogue, can provide personalized guidance and targeted resources for emotional management, thus fostering emotional awareness.

Similarly, a study conducted in Saudi Arabia (Badawy et al., 2023) found a positive correlation between the use of AI and key dimensions of emotional intelligence, such as empathy and self-awareness. Moreover, teachers with higher levels of emotional intelligence are more inclined to integrate AI into their teaching practices (Badawy et al., 2023). Notably, in Spain, a study introduced *CuentosIE*, an educational chatbot based on fairy-tale narratives with targeted content, designed to develop emotional intelligence among students of various age groups. The results showed a positive impact—reflected in a satisfaction rating of 7.82 out of 10—on the acquisition and enhancement of emotional competencies, confirming the effectiveness of AI-supported educational approaches (Ferrández et al., 2024).

Additionally, in Italy, several studies have confirmed the effectiveness of Information and Communication Technologies (ICT) in enhancing emotional awareness and promoting the inclusion of students with disabilities and special education needs (Dettori & Letteri, 2021). However, the literature notes that the interaction of the educational community with new technologies and chatbots remains an emerging field of research (Gallo, 2023), despite the growing interest in AI in education, as acknowledged by the National Digital School Plan (PNSD, 2023), the Artificial Intelligence Act (2024), and the well-established link between emotional intelligence and the professional success of learning support teachers (Caci, 2010). This is further reinforced by the recent Law No. 22/2025, which, although not explicitly mentioning artificial or emotional intelligence, introduces a focus on the development of non-cognitive and transversal skills within the Italian school system.

3. Design and Development of an Intelligent Conversational Agent

In the present research project, an educational chatbot was designed and developed to support teachers in developing emotional awareness and managing social-relational dynamics, with the aim of strengthening socioemotional skills essential for effectively addressing the challenges in school environments. The intelligent agent, accessible and highly customizable, was implemented within the *Unity 3D* graphics engine, a virtual environment that enables the design of interactive three-dimensional interfaces and the management of user-machine interaction dynamics.

The conversational infrastructure is based on the integration of the *LLaMA2* language model (Large Language Model Meta AI), a high-performance transformer-based neural architecture capable of generating responses tailored to the user's profile. The model underwent *fine-tuning* on a selected corpus of texts related to theories of emotional intelligence (Salovey & Mayer, 1993) and the rational-emotive education approach (Ellis, 2013; Di Pietro, 1999), with the aim of supporting users in restructuring dysfunctional thoughts and promoting more adaptive emotional patterns. Additionally, linguistic datasets containing metacognitive strategies for emotion regulation were integrated to improve the accuracy and usefulness of the chatbot's replies. To complete the process, the model was further refined through *Reinforcement Learning from Human Feedback* (RLHF), a technique that allows response optimization based on human evaluations, thereby improving its relevance and effectiveness. During the interaction, the

intelligent agent guides the user through structured conversational paths that include phases of emotion identification, analysis of the triggering context, metacognitive reflection, and the proposal of coping strategies. Each path has been modeled as a dynamic sequence of dialogue states integrated into a finite-state machine engine, with adaptive management of the dialogue flow based on the user's responses.

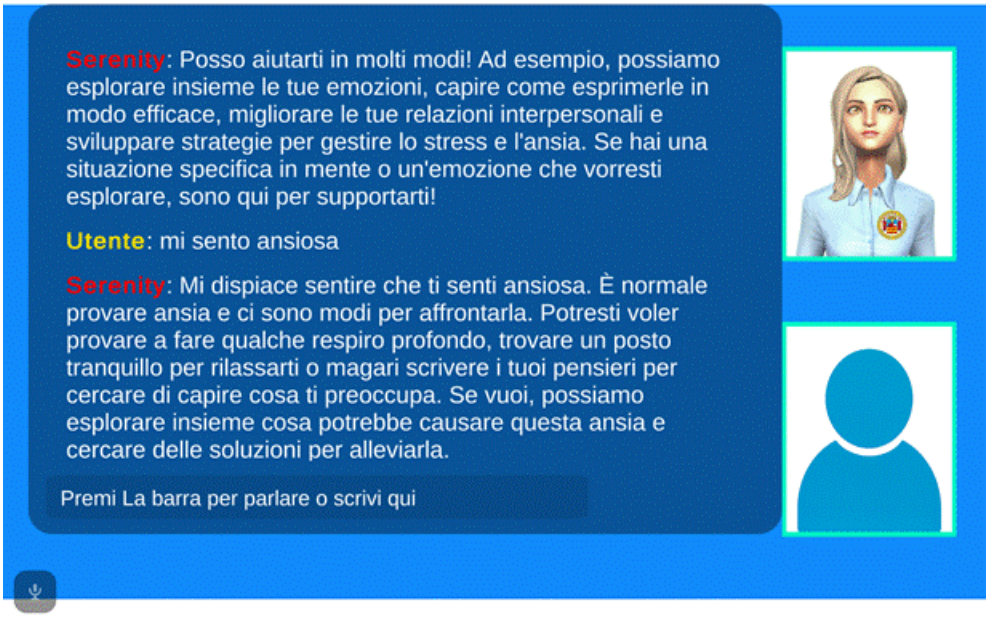

Figure 1. Example of interaction between the user and the chatbot during an emotional support activity.

The conversational interface was designed according to the principles of user-centered design (Lanter & Essinger, 2017) and inclusive design, incorporating facilitating visual and textual elements, the option to access content via text-to-speech to support accessibility. The system's modular structure allows for adaptation to various school contexts and educational levels, with the potential to extend the model to initial teacher training as well. The introduction of AI-based educational chatbots in educational settings aligns with the most recent perspectives on integrating artificial intelligence into teacher training pathways, particularly in relation to burnout prevention and the improvement of educational relationships. Therefore, the capacity to deliver tailored emotional assistance plays

a role in shaping more inclusive educational settings that are attuned to the requirements of both educators and learners.

4. What Emotion Am I Feeling? An Exploratory Study on the Use of a Chatbot to Promote Emotional Literacy.

4.1 Objective

This study, which is part of a broader research project, aims to validate the use of a chatbot designed to promote, through interaction, greater emotional literacy among teachers. This survey presents the first phase of the research, which is to detect the levels of emotional intelligence of future learning support teachers and their opinions, attitudes, and concerns regarding inclusion—data that will also be useful for improving the interaction with the chatbot.

4.2 Methods and Tools

Sample and Procedure

The study involved the online administration of a questionnaire created through the Google Forms platform to 80 future learning support teachers enrolled in the 9th cycle (2023/2024) of the Specialization Course for Support Activities for lower secondary school in April 2025. The sample was selected through non-probability sampling.

Tools

The questionnaire is divided into three sections.
The first section collects the socio-demographic data of the participants and their educational-professional background, with questions aimed at detecting gender, age, highest academic qualification obtained, as well as work experience in the school context prior to accessing the special education specialization course. Additionally, through a specific question, participants were asked whether they had significant interactions with people with disabilities.

The second section includes the Emotional Quotient Inventory (EQ-i), developed by Bar-On (1997) and later adapted to the Italian population by Franco and Tappatà (2009), a tool consisting of 133 items designed to assess emotional intelligence (EQ) on a scale from 1 (Not at all true about me) to 5 (Absolutely true about me). According to the author, emotional intelligence is a complex of non-cognitive capacities, competencies, and skills that significantly affect the individual's quality in managing pressures and challenges imposed by the context and situational

conditions (Bar-On 1997, p.14). The Bar-On questionnaire is a multidimensional tool, divided into five main scales:

- Intrapersonal (RAeq): assesses the individual's deepest self
- Interpersonal (EReq): assesses the person's relational abilities
- Adaptability (ADeq): considers the subject's ability to adapt to the challenges of the surrounding context
- Stress Management (SMeq): examines the individual's ability to withstand stress without losing control
- General Mood Scale (GMeq): measures the individual's ability to derive satisfaction from everyday pleasures and to develop a positive outlook on life (Franco & Tappatà, 2009, pp.36–37)

Each scale in turn includes specific subscales that allow for the assessment of the total Emotional Intelligence level (EQ-I total) (Bar-On, 1997; Franco & Tappatà, 2009):

- The Intrapersonal scale includes: Self-Regard (SREG), Emotional Self-Awareness (ESA), Assertiveness (ASS), Independence (IND), and Self-Actualisation (SACT)
- The Interpersonal scale includes: Empathy (EMP), Social Responsibility (SREP), and Interpersonal Relationship (INTREL)
- The Stress Management scale consists of: Stress Tolerance (STOL) and Impulse Control (IMPCON)
- The Adaptability scale consists of: Reality Testing (REALTEST), Flexibility (FLEX), and Problem Solving (PROBSOL)
- Finally, the General Mood scale includes: Optimism (OPT) and Happiness (HA)

The questionnaire provides four validity indexes—percentage of omissions, Negative Impression Index (NI), Positive Impression Index (PI), and Inconsistency Index (IncX)—aimed at monitoring the reliability of the responses provided by the participant. Moreover, the Negative (NI) and Positive (PI) Impression indices, including item 133 — *I believe I responded frankly and honestly to the above statements* — are excluded from the calculation of the total EQ-I score (Franco & Tappatà, 2009, p.35).
Item 133 represents a sincerity indicator: if the score assigned to this item is below 3, the response protocol is considered invalid and the participant excluded from the sample (Bar-On, 1997; De Weendt & Rossi, 2012).

The third and final section of the questionnaire includes the 15 items of the Sentiments, Attitudes, and Concerns about Inclusive Education Revised (SACIE-R) tool (Aiello et al., 2016). In the revised version, the number of items was reduced to 15, and the response format was expanded to a six-point scale (1 = "Strongly

Disagree" to 6 = "Strongly Agree") to ensure greater internal consistency of the questionnaire (Aiello et al., 2016).
An open-ended question was also included: *As confirmed by the literature, knowledge and awareness of how one's emotions influence behavior: in your opinion, how can such awareness affect teachers' opinions and attitudes towards the inclusion of students with disabilities?*

4.3 Data Analysis

A descriptive analysis was conducted on background data and the EQ-i (1997) and SACIE-R (Aiello et al., 2016) test scores, to detect the mean, standard deviation, distribution characteristics (skewness and kurtosis), and the internal consistency of the scales using Cronbach's alpha. A confirmatory factor analysis was then conducted on the SACIE-R test to decide whether to adopt the three-factor model (Forlin, 2014) or the four-factor model (Aiello et al., 2014). This was followed by a correlational analysis between the subtest and EQ scores and the scores of the factors investigated by the SACIE-R, as well as some contextual data. Lastly, a cluster analysis was conducted based on the responses to the open-ended question.

4.4 Results

From the analysis of the background data, it emerged that 69% (N=56) of participants were female and 29% (N=24) were male. The average age of participants was 39.85. 48% (N=39) had already worked as teachers before starting the training to become learning support teachers, while 36.8% (N=35) had never had experience in this regard, and 14% (N=14) had taught and were currently working as teachers. Additionally, 56.8% (N=46) had numerous and significant interactions with people with disabilities, compared to 42% (N=34).

From the EQ data analysis, as shown in Fig. 1, it emerged that 20% of the sample had below-average emotional intelligence.

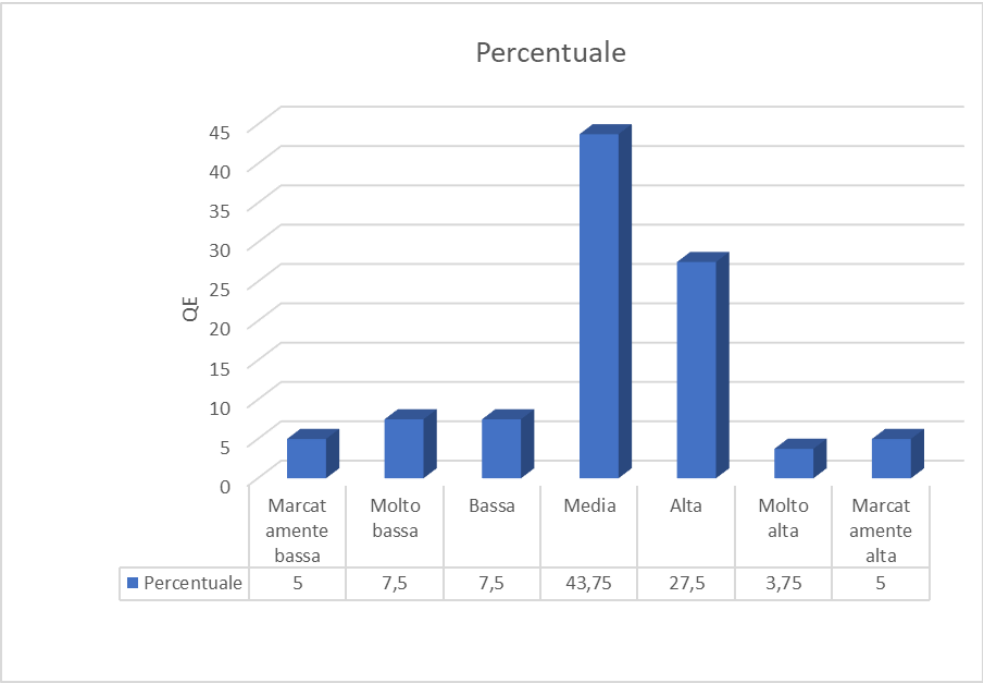

Fig. 2 – Histogram of frequencies related to the Emotional Quotient

The analysis of the frequencies related to the scores obtained shows a distribution mainly concentrated on average and high values. In particular, 35 participants (43.75%) fall within the "average" category, while 22 participants (27.5%) report a "high" level, suggesting that over 70% of the sample is positioned between medium-high levels of the variable considered. The extreme categories, "markedly low" and "markedly high," each show a similar frequency (4 participants, 5%), indicating some symmetry in the scores most distant from the average. The "very low" and "low" categories each account for 6 participants (7.5%), while only 3 participants (3.75%) fall within the "very high" range.
Overall, 16 participants (20% of the sample) fall within the lower ranges: "markedly low" (4 participants, 5%), "very low" (6 participants, 7.5%), and "low" (6 participants, 7.5%). This figure indicates a contained but significant presence of below-average scores, which could suggest the presence of critical elements or specific conditions deserving further investigation.

As for the SACIE-R, a confirmatory factor analysis was conducted on the sample (N = 80) and showed a significant chi-square ($\chi^2(84) = 178$, $p < .001$), indicating a poor model fit. The fit indices were below recommended thresholds: CFI = .781, TLI = .726, and RMSEA = .120 (90% CI: [.095 – .144]). In particular, the RMSEA exceeds the .08 threshold, suggesting unsatisfactory fit (Tab.2). However, it is noted that the reduced sample size (N = 80) may have negatively affected the

incremental indexes, which are known to be sensitive to sample size (Marsh et al., 2004). In summary, the results indicate that the model needs revision and improvement, while taking into account the sample size limitation.

χ^2	df	p
178	84	<.001
CFI	**TLI**	**RMSEA**
.781	.726	.120

Tab. 1 – Confirmatory Factor Analysis SACIE-R four-factor model

Scale	Minimum	Maximum	Mean	Std. Dev.	Skewness	Kurtosis	Reliability (α)
SEPD	1	5	1.48	0.826	2.244	5.208	0.648
FHD	1	6	3.42	1.559	–0.144	–1.102	0.594
ALSN	5	6	5.83	0.340	–2.108	3.385	0.738
CIES	1	6	2.89	1.092	0.179	–0.207	0.704

Tab. 2 Descriptive analysis and reliability index of the SACIE-R scales (Aiello, 2016)

The data in Table 2 show internal consistency levels ranging from .594 to .738, generally satisfactory for the four SACIE-R subscales. ALSN and CIES show good internal consistency, while SEPD and FHD show lower but still acceptable values.

Descriptive Results and Correlations:
SEPD shows very low average values (M = 1.48), high positive skewness (2.24), and peaked distribution (kurtosis = 5.21). ALSN shows very high mean (M = 5.83), strong negative skewness (–2.11), and kurtosis = 3.39. CIES has an intermediate mean (M = 2.89), relatively symmetrical distribution (skewness = 0.18), and near-zero kurtosis (–0.21). FHD shows a mean of 3.42, slight negative skewness (–0.14), and negative kurtosis (–1.10), suggesting a flatter distribution.

Correlation analysis confirms expected relationships. SEPD is positively correlated with CIES (r = .471, p < .001), moderately, and with FHD (r = .251, p = .027), and negatively with ALSN (r = –.371, p = .001). FHD is positively associated with CIES (r = .295, p = .009), but not significantly with ALSN (r = –.202, p = .076). CIES and ALSN are weakly but significantly negatively correlated (r = –.229, p = .044), suggesting that higher concerns are associated with lower inclusion acceptance.

Correlation analysis also shows relationships between background variables and EQ dimensions. Age is positively associated with total EQ (r = .287, p = .010), and with dimensions such as Self-awareness (r = .298, p = .007), Self-actualisation (r = .258, p = .021), Reality Testing (r = .272, p = .015), and Optimism (r = .238, p = .033), confirming what is reported in the literature (Bar-On, 2006) about greater emotional maturity with age.

The variable "having had significant interactions with people with disabilities" (1 = yes) is negatively correlated with total EQ (r = –.268, p = .016); Self-awareness (r = –.384, p < .001); Self-actualisation (r = –.331, p = .003); Assertiveness–Independence (r = –.285, p = .010); Interpersonal relations (r = –.275, p = .013). Since the coding was 1 = yes and 2 = no, the negative correlations indicate that those with direct experience of disability tend to have higher emotional scores, especially in personal awareness and relationship management. This supports contact theory (Allport, 1954), according to which intergroup contact reduces stereotypes and strengthens mutual understanding. Interaction with people with disabilities seems to foster emotional reflection and learning that go beyond theoretical knowledge, promoting an emotionally inclusive profile.

Conversely, having prior teaching experience does not correlate with EQ, suggesting that generic work experience is not enough unless accompanied by meaningful contact with disability.

Lastly, a statistical-textual analysis using T-Lab software (Lancia, 1999) was conducted on the responses to the following question:
As confirmed by the literature, knowledge and awareness of one's emotions influence behavior. In your opinion, how can such awareness affect teachers' opinions and attitudes toward the inclusion of students with disabilities?

From the thematic analysis of elementary contexts, after lemmatization and corpus definition, three clusters emerged, as reported in Table 3.

Cluster	Central Theme	Most Relevant Lemmas (χ^2)
01 – ROLE	Educational role and teacher responsibility	*fundamental* (25.738), *knowledge* (17.166), *teacher* (16.326), *important* (16.326), *role* (13.982), *act* (9.306)
02 – STEREOTYPE	Overcoming fears and stereotypes	*face* (17.753), *constructive* (14.664), *stereotype* (13.671), *discomfort* (10.409), *fear* (5.840), *emotional* (5.814)
03 – EMPATHY	Empathic relationship and acceptance	develop (8.933), contribute (7.510), welcoming (5.926), empathy (5.455), toward (4.598), influence (4.281)

Table 3 – Thematic clusters and distinctive lemmas (significant chi-square values)

Interpretation of clusters:

Cluster 1 – Role

Keywords: fundamental, knowledge, teacher, important, play, role, social
Interpretation:
This cluster highlights the importance attributed to the teacher's role in promoting inclusion. Respondents emphasize that emotional awareness and self-knowledge are essential elements for positively influencing both the educational and social environment. The teacher is seen as a key figure who "plays a social role" through conscious educational agency.

Cluster 2 – Stereotype

Keywords: address, constructive, stereotype, discomfort, peer, openness, fear, emotional
Interpretation:
This group focuses on how emotional awareness enables overcoming stereotypes and emotional discomfort related to disability. It underlines a shift from fear-based or defensive attitudes to more constructive and open perspectives. The educator is portrayed as someone who can transform the challenge of inclusion into a process of growth and acceptance.

Cluster 3 – Empathy

Keywords: develop, contribute, welcoming, empathy, toward, need, influence
Interpretation:
The focus here is on the empathic dimension. Emotional awareness is seen as a key driver for developing empathy and contributing to a welcoming environment that respects others' needs. Emotional influence operates "toward the other," fostering positive attitudes and inclusive relationships.

5. Conclusions and Discussion

The results from this initial phase of the research present a multifaceted picture. On one hand, the sample shows a high predisposition toward the acceptance of diversity and a low level of relational discomfort toward individuals with disabilities—encouraging elements for inclusive education. On the other hand, the fact that 20% of participants exhibit an emotional quotient below average is an element that should not be underestimated, especially considering the delicate

relational, emotional, and modeling role that learning support teachers are expected to play in the domain of emotional self-regulation. This finding highlights the need for targeted reinforcement of socioemotional competencies within initial teacher training, ensuring that all educators possess the necessary resources to face educational challenges with balance and awareness.

Specifically, the descriptive and reliability analyses related to the SACIE-R confirm the instrument's solid psychometric properties across the four explored dimensions, with Cronbach's alpha values ranging from .594 to .738—aligned with findings in international literature (Forlin et al., 2010; Sharma et al., 2015). In particular, the very low scores on the SEPD scale (M = 1.48) and the high mean score on the ALSN scale (M = 5.83) suggest an overall positive attitude toward school inclusion, characterized by low levels of personal discomfort and high acceptance of diversity. These results confirm the effectiveness of training programs in promoting inclusive attitudes (Avramidis & Norwich, 2002; Florian & Black-Hawkins, 2011).

However, the intermediate average score on the CIES scale (M = 2.89) and the relatively high average on the FHD scale (M = 3.42), together with the correlations among SEPD, CIES, and FHD, reveal the persistence of certain ambivalences. In particular, discomfort toward disability is associated with greater concerns about inclusion (r = .471) and a stronger fear of acquiring a disability (r = .251). This suggests that, although future teachers generally demonstrate positive attitudes, fears and uncertainties remain—often unaddressed in initial training programs (Deal, 2007; Goodley, 2011).

Confirmatory factor analysis indicated a suboptimal model fit (CFI = .781, RMSEA = .120), pointing to the need for further refinement of the instrument, particularly considering the specificity of the sample and the small sample size, a variable known to negatively affect fit indices (Marsh et al., 2004).

The Emotional Quotient (EQ) data add a significant dimension to the overall interpretation. The fact that 20% of participants score below average is notable, given the critical role of emotional intelligence in managing inclusive settings. Emotional intelligence is, in fact, a central resource for effectively handling relational challenges, conflict resolution, and building welcoming school environments (Jennings & Greenberg, 2009). This underscores the urgency of strengthening not only didactic skills in initial teacher education but also reflective and emotional competencies.

The analysis of background variables shows that age is positively associated with EQ and with key components such as Self-awareness, Self-actualization, and Reality Testing (Bar-On, 2006), suggesting greater emotional maturity among older participants. Even more significant is the impact of having had meaningful interactions with people with disabilities: such experience correlates with higher total EQ scores and with specific dimensions such as Interpersonal Relations and Assertiveness. This finding is consistent with contact theory (Allport, 1954), which posits that direct interaction with members of a stigmatized group can reduce prejudice and increase understanding and empathy.

Conversely, previous teaching experience does not appear to be significantly associated with EQ, suggesting that professional exposure alone does not necessarily lead to emotional growth unless accompanied by structured reflection or meaningful contact with disability.

Finally, the textual analysis conducted with T-Lab identified three central thematic clusters in participants' representations: role, overcoming stereotypes, and empathy. The "Role" cluster highlights awareness of the teacher's social and pedagogical function in the inclusive context. The "Stereotype" cluster emphasizes the importance of emotional awareness in addressing fears and prejudices. The "Empathy" cluster underscores the recognition of empathy as a transformative lever in educational relationships. These themes reflect a mature and articulated view of inclusion that integrates cognitive, emotional, and relational aspects (Loreman, 2010; Saloviita, 2020).

Overall, the data suggest that future learning support teachers possess emotional resources and generally favorable attitudes toward inclusion, but also reveal the need for deeper training that addresses more critical personal dimensions—such as fear of disability or the management of one's own insecurities. Training in emotional awareness, reflection, and emotional intelligence is therefore not an accessory task but an integral part of preparing teachers for inclusive professionalism (Trotman et al., 2019).

The information gathered in this phase will be fundamental for designing more effective interaction with the chatbot, specifically aimed at enhancing future learning support teachers' emotional self-awareness.

Author contributions

The article is the result of scientific discussion and collaboration among the authors. However, the attribution of scientific responsibility is as follows: Ilaria Viola wrote paragraphs 1: “Introduction”, 4. “What Emotion Am I Feeling? An exploratory Investigation into The Adoption of a Chatbot to Promote Emotional Literacy”,5. “Conclusions”. Lucia Campitiello is the author of paragraphs 3. “Design and Development of an Intelligent Conversational Agent”. Rosa d’Angelo is the author of paragraph 2. “AI as a Tool to Promote Socioemotional Skills in Teacher Training” and co-author of section of the third paragraph “Tools” with Ilaria Viola. Stefano Di Tore and Paola Aiello are the scientific coordinators of the research.

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