

Digital Empathy in Online Learning: Can Virtual Classrooms Teach Emotional Intelligence

Naufal Hisyam Mulyadi¹, Destra Yogi Arifin², Dzikri Lunar³

¹ Universitas Muhammadiyah Jakarta 1

² Universitas Muhammadiyah Jakarta 3

³ Universitas Borobudur 3

Correspondence: dzikrilunnar12@email.com

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ABSTRACT

This study examines the potential of virtual classrooms to foster emotional intelligence through the development of digital empathy in online learning environments. The primary objective is to analyze how empathetic competencies are manifested and cultivated in digitally mediated interactions. A qualitative approach was employed using a multiple-case study design, selected for its capacity to provide in-depth and context-sensitive insights into complex social phenomena. The research was conducted at two higher education institutions in Indonesia that actively implement online learning systems. A total of twenty-five informants, consisting of students, lecturers, and academic coordinators, were purposively selected based on their direct engagement in virtual classrooms and their ability to provide rich, reflective perspectives. The findings indicate that digital empathy emerges through structured interaction, reflective communication, and supportive instructional practices, supported by the integration of emotional intelligence, social presence, and community of inquiry principles. The study concludes that virtual classrooms can effectively support the development of emotional intelligence when designed intentionally. It is recommended that educators incorporate empathetic pedagogical strategies and leverage interactive technologies to enhance emotional engagement in online learning.



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INTRODUCTION

The rapid expansion of online learning environments has transformed the landscape of education, redefining not only how knowledge is delivered but also how interpersonal dynamics are experienced. Virtual classrooms, once considered supplementary, have become central to educational systems worldwide, particularly following the acceleration of digital adoption during global disruptions. While considerable attention has been devoted to cognitive outcomes and technological efficiency, less emphasis has been placed on the affective dimension of learning, particularly the cultivation of emotional intelligence. Emotional intelligence, which encompasses self-awareness, empathy, and social skills, is widely recognized as a critical component of holistic education (Tajuddin et al., 2024). In traditional face-to-face settings, these competencies are often developed through direct social interaction, non-verbal communication, and spontaneous interpersonal exchanges (Jain & Mitra, 2025). However, in online learning contexts, such interactions are mediated by digital interfaces, raising important questions about whether and how empathy can be effectively fostered in virtual spaces. This study addresses the emerging concept of digital empathy, defined as the capacity to understand and respond to others' emotions within technologically mediated environments, and examines its role in online education (Pira et al., 2025).

Recent studies have explored various aspects of online learning, including student engagement, digital literacy, and instructional design (Solih et al., 2024). Research indicates that while virtual platforms offer flexibility and accessibility, they may also lead to feelings of isolation, reduced social presence, and diminished emotional connection among participants (Mohammed & Khalid, 2025). Some scholars have begun to investigate the role of social presence theory and community of inquiry frameworks in enhancing online interaction, suggesting that meaningful communication can partially mitigate these challenges (Al-Freih & Bali, 2023). Additionally, advancements in educational

technology, such as video conferencing tools, discussion forums, and AI-driven feedback systems, have been leveraged to create more interactive and personalized learning experiences (Villacís-Guerrero et al., 2025). Despite these developments, the integration of emotional intelligence training within virtual classrooms remains underexplored (Gutierrez et al., 2025). Existing literature tends to focus on either technological affordances or cognitive outcomes, often overlooking the intersection between digital environments and emotional development (Nunes et al., 2025). This gap highlights the need for a more comprehensive understanding of how empathy can be cultivated in online learning settings.

The primary problem addressed in this research lies in the apparent disconnect between the increasing reliance on digital learning platforms and the limited attention given to students' emotional and social development. As education becomes more digitized, there is a risk that essential human competencies, such as empathy, may be neglected or inadequately addressed. This issue is particularly significant in contexts where learners have limited opportunities for face-to-face interaction, making virtual classrooms the primary site for both academic and social engagement. Furthermore, educators may lack the necessary strategies or tools to intentionally foster emotional intelligence in online settings, resulting in a gap between pedagogical intentions and actual learning outcomes. Consequently, this study seeks to investigate whether virtual classrooms can effectively support the development of emotional intelligence, with a specific focus on digital empathy.

The research gap identified in this study pertains to the limited empirical and conceptual integration of emotional intelligence frameworks within online learning research. While prior studies have acknowledged the importance of affective factors, they often treat them as secondary to cognitive performance or engagement metrics (Zhi et al., 2024). Moreover, there is a lack of consensus on how digital empathy can be operationalized, measured, and integrated into instructional design (Gkintoni et al., 2025). Few studies have systematically examined the pedagogical strategies that can enhance empathy in virtual environments, nor have they sufficiently addressed the role of instructors, peer interaction, and technological tools in facilitating emotional learning (Deckker & Sumanasekara, 2025). This study aims to bridge this gap by providing a nuanced analysis of digital empathy within the context of online education, thereby contributing to both theoretical and practical advancements in the field.

The novelty of this research lies in its interdisciplinary approach, combining insights from educational psychology, digital pedagogy, and communication studies to conceptualize and analyze digital empathy. Unlike previous studies that focus primarily on engagement or technological efficiency, this research positions emotional intelligence as a central outcome of online learning. It introduces a conceptual framework that integrates digital empathy into the design and implementation of virtual classrooms, highlighting specific strategies such as reflective discussion, empathetic communication prompts, and collaborative learning activities. Additionally, the study proposes new indicators for assessing digital empathy, offering a more comprehensive evaluation of student development in online environments. This contribution is expected to advance current understanding and provide a foundation for future research.

Based on the identified problems and research gaps, this study is guided by several key research questions. It seeks to explore how digital empathy is manifested in online learning environments, what factors influence its development, and to what extent virtual classrooms can effectively foster emotional intelligence among learners. Furthermore, the study examines the role of instructional design, teacher facilitation, and technological tools in supporting empathetic interactions. These questions are intended to provide a structured inquiry into the complex relationship between digital learning and emotional development.

The primary objective of this research is to analyze the potential of virtual classrooms in cultivating emotional intelligence through the development of digital empathy. Specifically, it aims to identify effective pedagogical strategies, evaluate the impact of digital tools on empathetic interaction, and propose a framework for integrating emotional intelligence into online learning design. By achieving these objectives, the study seeks to contribute to the enhancement of both educational theory and practice.

The significance of this research can be viewed from multiple perspectives. From a theoretical standpoint, it contributes to the advancement of knowledge by integrating emotional intelligence into the discourse on online learning, thereby expanding existing frameworks that have traditionally prioritized cognitive outcomes. Academically, the study provides valuable insights for researchers and educators, offering a basis for further investigation and curriculum development. It also enriches the scholarly conversation by addressing an underexplored dimension of digital education. Practically, the findings of this research have implications for educators, instructional designers, and policymakers, as they provide actionable recommendations for fostering empathy in virtual classrooms. By emphasizing the importance of emotional intelligence, the study supports the development of more inclusive, supportive, and effective learning environments.

Despite its contributions, this research is not without limitations. The study may be constrained by factors such as the diversity of online learning platforms, variations in student demographics, and the subjective nature of measuring emotional intelligence. Additionally, the rapidly evolving nature of educational technology may limit the generalizability of the findings over time. The reliance on specific methodological approaches, such as self-reported data or case studies, may also introduce potential biases. These limitations should be considered when interpreting the results and highlight the need for cautious generalization.

Future research is encouraged to build upon the findings of this study by exploring digital empathy across different educational contexts, including diverse cultural settings and varying levels of education. Longitudinal studies could provide deeper insights into the development of emotional intelligence over time, while experimental designs may offer more robust evidence of causality. Additionally, further investigation into the role of emerging technologies, such as virtual reality and artificial intelligence, could reveal new opportunities for enhancing empathetic learning experiences. By addressing these areas, future studies can continue to advance the understanding of digital empathy and its role in shaping the future of education.

LITERATURE REVIEW

The growing integration of digital technologies in education has generated renewed scholarly interest in the intersection between cognitive development and socio-emotional competencies within online learning environments. In the context of the study titled *Digital Empathy in Online Learning: Can Virtual Classrooms Teach Emotional Intelligence?*, the literature review draws upon three major theoretical foundations that are widely recognized in educational and psychological research: Emotional Intelligence Theory, Social Presence Theory, and the Community of Inquiry (CoI) Framework (Nuryana et al., 2023). These theories collectively provide a robust conceptual basis for understanding how empathy and emotional awareness can be cultivated in digitally mediated learning environments.

Emotional Intelligence Theory, popularized by Daniel Goleman in 1995, who was affiliated with Harvard University in the United States, serves as the primary theoretical lens for this study (Anwar, 2024). Goleman conceptualized emotional intelligence as a set of competencies including self-awareness, self-regulation, motivation, empathy, and social skills (Hamad et al., 2024). His work built upon earlier research by Peter Salovey and John D. Mayer (1990), who initially defined emotional intelligence as the ability to perceive, understand, manage, and utilize emotions effectively (Abdelhamid, 2023). Within the framework of this research, Goleman's model is particularly relevant due to its emphasis on empathy as a core dimension of emotional intelligence. The conceptual structure of this theory highlights how individuals interpret emotional cues and respond appropriately in social contexts. In online learning, however, these cues are often filtered through digital interfaces, which may limit the richness of emotional expression. Contemporary developments of this theory have extended its application to digital contexts, giving rise to the concept of digital emotional intelligence, where learners must navigate emotions through text-based communication, video conferencing, and other virtual tools (Al-Khatib, 2023). Scholars in recent years have argued that emotional intelligence is not diminished in online settings but rather transformed, requiring new competencies such as interpreting

tone in written communication and demonstrating empathy through mediated interaction (Maoulida et al., 2023).

The second theoretical foundation is Social Presence Theory, originally developed by John Short, Ederyn Williams, and Bruce Christie in 1976 at University College London in the United Kingdom (Elrayah & Alshiha, 2024). This theory posits that the degree of social presence in a communication medium influences the quality of interpersonal interaction (Dede & Lidwell, 2023). Social presence is defined as the ability of participants to perceive each other as real and emotionally connected individuals within a mediated environment (Falola et al., 2025). In virtual classrooms, achieving a high level of social presence is crucial for fostering engagement and emotional connection. The conceptual framework of this theory emphasizes immediacy, intimacy, and the salience of interpersonal relationships in communication. In relation to digital empathy, social presence serves as a critical mechanism through which emotional intelligence can be expressed and developed. When learners perceive a strong sense of presence, they are more likely to engage in empathetic communication and collaborative learning. Recent advancements in this theory have incorporated digital communication tools such as video conferencing, avatars, and interactive platforms, which enhance the perception of presence (Kayyali, 2024). Contemporary scholars have expanded the concept to include cognitive and emotional presence, recognizing that effective online learning requires not only the exchange of information but also meaningful emotional engagement (Zaurbekova & Altynbekkyzy, n.d.).

The third theoretical underpinning is the Community of Inquiry (CoI) Framework, introduced by D. Randy Garrison, Terry Anderson, and Walter Archer in 2000, with affiliations to the University of Alberta in Canada. This framework provides a comprehensive model for understanding online learning as a process shaped by three interdependent elements: cognitive presence, social presence, and teaching presence (Pervez et al., 2024). The CoI framework is particularly relevant to this study as it integrates both cognitive and affective dimensions of learning. Social presence within this model overlaps significantly with the concept of empathy, as it involves the ability of learners to project themselves socially and emotionally in a community. Teaching presence, on the other hand, highlights the role of instructors in facilitating not only knowledge acquisition but also emotional engagement. The conceptual structure of the CoI framework underscores the importance of interaction, collaboration, and reflective discourse in creating meaningful learning experiences. Over time, this framework has evolved to incorporate emerging technologies and pedagogical strategies, including the use of artificial intelligence, adaptive learning systems, and immersive environments (Tikadar et al., 2024). Current developments emphasize the need for a balanced integration of all three presences to support holistic learning outcomes, including emotional intelligence (Karaferye, 2024).

From the perspective of these three theories, several key insights emerge regarding the development of digital empathy in online learning environments. Goleman's Emotional Intelligence Theory provides a foundational understanding of empathy as an essential human competency, while Social Presence Theory explains how digital environments can either facilitate or hinder empathetic interaction. The Community of Inquiry Framework further integrates these perspectives by demonstrating how instructional design and facilitation can support both cognitive and emotional engagement. Together, these theories form a comprehensive conceptual framework for analyzing the potential of virtual classrooms to teach emotional intelligence.

In relation to the main problem of this research, which concerns the limited attention to emotional development in online learning, these theories offer critical explanatory power. Emotional Intelligence Theory highlights the importance of empathy as a learning outcome, Social Presence Theory identifies the conditions necessary for empathetic interaction, and the CoI framework provides practical guidance for designing learning environments that support these outcomes. However, despite their relevance, existing studies often apply these theories in isolation, resulting in fragmented insights (Mo, 2025). This fragmentation represents a significant research gap, as there is limited integration of these theoretical perspectives in the study of digital empathy (ANDRADE et al., 2025).

Furthermore, the research gap is also evident in the lack of empirical studies that operationalize digital empathy within these theoretical frameworks (Imjai et al., 2024). While Emotional Intelligence Theory has been extensively studied in traditional settings, its application in online learning remains underdeveloped (Anand et al., 2025). Similarly, Social Presence Theory has primarily focused on communication effectiveness rather than emotional intelligence outcomes (Phumeechanya, 2024). The CoI framework, although comprehensive, has not fully explored the role of empathy as a distinct construct within its model (Akintayo et al., 2024). This study seeks to address these gaps by synthesizing the three theories into a unified framework that explicitly incorporates digital empathy as a key component of online learning.

The integration of these theories also informs the formulation of the research questions, which aim to explore how digital empathy is manifested, what factors influence its development, and how virtual classrooms can be designed to support emotional intelligence. The theoretical framework guides the identification of variables such as social presence, teaching strategies, and emotional competencies, which are essential for answering these questions. Additionally, the theories provide a basis for defining the objectives of the research, which include analyzing the effectiveness of virtual classrooms in fostering empathy and proposing strategies for enhancing emotional intelligence in online education.

In terms of theoretical, academic, and practical contributions, the integration of these three theories offers significant value. Theoretically, it advances the understanding of emotional intelligence in digital contexts by bridging gaps between psychology and educational technology. Academically, it provides a comprehensive framework that can be used by researchers to study similar phenomena. Practically, it offers actionable insights for educators and instructional designers, enabling them to create more empathetic and engaging online learning environments.

In conclusion, the literature review demonstrates that Emotional Intelligence Theory, Social Presence Theory, and the Community of Inquiry Framework collectively provide a strong foundation for examining digital empathy in online learning. The synthesis of these theories addresses the main research problem, identifies critical gaps in the literature, and supports the development of a novel conceptual framework. By linking these theoretical perspectives to the research questions, objectives, and expected contributions, this study offers a meaningful advancement in understanding how virtual classrooms can support the development of emotional intelligence. The integration of these theories not only highlights the importance of empathy in digital education but also underscores the need for more holistic approaches to online learning that consider both cognitive and emotional dimensions.

RESEARCH METHODS

The present study adopts a qualitative research approach to explore the phenomenon of digital empathy in online learning environments, particularly in relation to the question of whether virtual classrooms can effectively foster emotional intelligence. A qualitative methodology is considered most appropriate for this research because the concept of digital empathy involves complex, subjective, and context-dependent experiences that cannot be adequately captured through numerical measurement alone (Sharma & Bhargava, 2023). Emotional intelligence, especially in digitally mediated interactions, is deeply embedded in personal perceptions, communication patterns, and social dynamics, all of which require in-depth exploration. Therefore, a qualitative approach enables the researcher to gain rich, nuanced insights into participants' lived experiences, interpretations, and emotional responses within virtual learning contexts (Souza & Jacomuzzi, 2025).

The research design employed in this study is a case study design, specifically a multiple-case embedded design. This design allows for an in-depth examination of digital empathy practices across different virtual classroom settings while maintaining a focus on specific units of analysis such as student interaction, instructor facilitation, and technological mediation. The choice of a case study design is grounded in its strength in investigating contemporary phenomena within real-life contexts, particularly when the boundaries between the phenomenon and context are not clearly defined. In this study, the phenomenon of digital empathy cannot be separated from the technological and pedagogical environments in which it occurs. By examining multiple cases, the research enhances its analytical

depth and allows for cross-case comparison, thereby strengthening the validity and transferability of the findings (Brillo et al., 2024).

The research was conducted in selected higher education institutions that have implemented fully online or hybrid learning systems, particularly those utilizing synchronous and asynchronous virtual classroom platforms such as Zoom, Google Meet, and Learning Management Systems (LMS). The primary research location is a private university in Indonesia, referred to under the pseudonym “Nusantara Digital University,” complemented by a secondary site, “Global Learning Institute,” which represents an institution with a more advanced integration of digital pedagogy. The selection of these locations is based on several considerations, including their active use of virtual classrooms, diversity of student populations, and institutional commitment to digital innovation in teaching and learning. These settings provide a relevant and fertile context for examining how digital empathy is manifested and facilitated in real-world online learning environments.

The participants in this study consist of both students and instructors who are actively engaged in online learning. A purposive sampling technique was employed to select participants who have direct experience with virtual classrooms and are able to provide rich and relevant information related to the research topic (Zakopoulos et al., 2023). The study involved a total of twenty participants, comprising twelve students and eight instructors. The students are undergraduate learners from various disciplines, while the instructors include lecturers with experience in delivering online courses. Each participant is assigned a pseudonym to ensure confidentiality and ethical compliance (Aladini et al., 2024). For instance, student participants are referred to as “Student A,” “Student B,” and so forth, while instructors are identified as “Lecturer X,” “Lecturer Y,” and similar designations.

The selection of participants is guided by specific criteria, including their level of engagement in online learning, familiarity with digital communication tools, and willingness to reflect on their emotional and social experiences in virtual settings. Students were chosen based on their active participation in online discussions and collaborative activities, while instructors were selected for their experience in facilitating virtual classrooms and implementing interactive teaching strategies. The rationale for including both students and instructors is to capture a holistic perspective on digital empathy, encompassing both the recipients and facilitators of the learning process.

In addition to participants, the study also identifies key informants who provide deeper insights into the institutional and pedagogical dimensions of online learning. A total of five informants were included, consisting of academic coordinators and instructional designers. These informants are referred to using pseudonyms such as “Coordinator Alpha,” “Designer Beta,” and so on. Their roles involve overseeing curriculum implementation, designing online learning experiences, and supporting faculty in digital pedagogy. The inclusion of these informants is essential for understanding the structural and strategic factors that influence the integration of emotional intelligence in virtual classrooms. Their perspectives complement the experiential data obtained from students and instructors, thereby enriching the overall analysis.

Data collection in this study was carried out through multiple qualitative techniques, including in-depth semi-structured interviews, participant observation, and document analysis (Thaler, 2023). Semi-structured interviews were conducted with all participants and informants to explore their perceptions, experiences, and practices related to digital empathy. This method allows for flexibility in probing deeper into specific issues while maintaining a consistent framework across interviews (Khan et al., 2025). Participant observation was conducted by attending virtual classes and analyzing interaction patterns, communication styles, and the use of digital tools. This approach enables the researcher to observe real-time dynamics and contextualize participants’ responses. Document analysis involved reviewing course materials, discussion forums, and institutional guidelines to identify how emotional intelligence and empathy are addressed in the curriculum.

To ensure the credibility and trustworthiness of the data, the study employs several validation strategies, including triangulation, member checking, and peer debriefing (Melweth et al., 2023). Triangulation is achieved by combining multiple data sources and methods, thereby enhancing the robustness of the findings (Thuy, 2024). Member checking involves sharing preliminary interpretations

with participants to verify the accuracy of the data and interpretations (Shao et al., 2025). Peer debriefing is conducted by engaging with fellow researchers to critically examine the analytical process and minimize potential bias (Liao, 2023). These strategies are essential in maintaining the rigor and integrity of qualitative research (Boz & Uçar, 2025).

The data analysis process follows a thematic analysis approach, which involves systematically identifying, analyzing, and interpreting patterns within the data (Lam, 2025). The analysis begins with data familiarization, where interview transcripts, observation notes, and documents are reviewed repeatedly to gain a comprehensive understanding. This is followed by initial coding, where meaningful segments of data are labeled and categorized. The codes are then grouped into broader themes that reflect key aspects of digital empathy, such as emotional expression, responsiveness, and social connection. These themes are further refined and interpreted in relation to the theoretical framework and research questions.

The technique for drawing conclusions in this study is based on an inductive reasoning process, supported by iterative analysis and constant comparison (Arslan et al., 2024). The researcher continuously compares data across different participants, cases, and data sources to identify similarities, differences, and emerging patterns. This process allows for the development of a coherent narrative that explains how digital empathy is experienced and facilitated in virtual classrooms. The conclusions are not derived from a single data point but are built upon a comprehensive synthesis of evidence, ensuring that they are grounded in the data.

Furthermore, the study adopts an interpretive paradigm, which emphasizes the subjective meanings constructed by individuals in their social contexts (Mujallid, 2024). This paradigm aligns with the focus on emotional intelligence and empathy, as these constructs are inherently subjective and relational. By adopting this perspective, the research acknowledges the diversity of experiences and avoids imposing rigid or predetermined interpretations. Instead, it seeks to understand how participants make sense of their interactions and how these meanings influence their emotional and social development.

Ethical considerations are carefully addressed throughout the research process. Participants are informed about the purpose of the study, their rights, and the measures taken to ensure confidentiality. Informed consent is obtained prior to data collection, and all data are anonymized to protect participants' identities (Shifa et al., 2025). The use of pseudonyms and secure data storage further ensures compliance with ethical standards in academic research (Kumar et al., 2024).

In conclusion, the methodological framework of this study is designed to provide a comprehensive and in-depth understanding of digital empathy in online learning. The use of a qualitative case study approach, combined with purposive sampling, multiple data collection methods, and rigorous analysis techniques, ensures that the research is both credible and meaningful. By capturing the perspectives of students, instructors, and institutional stakeholders, the study offers a holistic view of how emotional intelligence can be cultivated in virtual classrooms. This methodological approach not only supports the research objectives but also contributes to the broader discourse on the integration of affective dimensions in digital education.

RESULTS AND DISCUSSION

The findings of this study reveal that digital empathy emerges as a dynamic and context-dependent construct within online learning environments, shaped by the interplay between technological affordances, pedagogical strategies, and interpersonal engagement. In addressing the primary research problem namely the limited attention to emotional intelligence development in virtual classrooms the data demonstrate that while online learning platforms initially appear to constrain emotional interaction, they simultaneously offer alternative pathways for cultivating empathy through intentional design and facilitation. Participants consistently reported that emotional understanding and responsiveness are not absent in digital contexts; rather, they are reconfigured through mediated communication. This finding aligns closely with Goleman's Emotional Intelligence Theory (1995), which emphasizes empathy as a learnable competency, suggesting that even in the absence of physical co-presence, individuals can develop emotional awareness through reflective and adaptive interaction

(Alvarez & Angeles, 2025). From the perspective of Social Presence Theory (Short, Williams, & Christie, 1976), the results indicate that the perception of others as “real” and emotionally accessible is a critical factor influencing empathetic engagement (Mayang, 2025). Furthermore, the Community of Inquiry framework (Garrison, Anderson, & Archer, 2000) is reflected in the observed integration of social, cognitive, and teaching presence, which collectively support the development of digital empathy (Qiu, 2025).

The empirical evidence shows that the implementation of synchronous tools such as video conferencing significantly enhances emotional connection among participants, as visual and auditory cues allow for more nuanced interpretation of emotions. Students noted that features such as live discussions, breakout rooms, and real-time feedback foster a sense of immediacy and interpersonal closeness, thereby strengthening social presence. However, asynchronous platforms such as discussion forums also contribute to empathy development by encouraging reflective communication, where students have more time to process and articulate their responses. This dual modality suggests that digital empathy is not limited to a single type of interaction but is facilitated through a combination of synchronous and asynchronous engagement. In this context, Emotional Intelligence Theory is operationalized through students’ ability to interpret emotional tone in written and verbal communication, while Social Presence Theory explains how these interactions are perceived as meaningful and authentic (Henriksen et al., 2025). The Community of Inquiry framework further contextualizes these findings by highlighting the role of teaching presence in structuring activities that promote both reflection and interaction (Mejías-Acosta et al., 2024).

In relation to the identified research gap, which concerns the lack of integrated theoretical application in studying digital empathy, the findings provide evidence that combining the three theoretical perspectives yields a more comprehensive understanding of the phenomenon. The study demonstrates that Emotional Intelligence Theory alone is insufficient to explain how empathy is enacted in digital spaces without considering the mediating role of social presence and instructional design. Similarly, Social Presence Theory, while useful in explaining perceived connectedness, does not fully account for the internal processes of emotional regulation and understanding emphasized in Emotional Intelligence Theory. The Community of Inquiry framework bridges these limitations by offering a holistic model that incorporates both individual and contextual dimensions of learning. The implementation of these theories in practice is evident in the instructional strategies employed by educators, such as the use of empathetic language, personalized feedback, and collaborative tasks designed to encourage perspective-taking. These strategies not only address the research gap but also contribute to the development of a more integrated conceptual framework for digital empathy.

The findings also directly respond to the research questions formulated in this study. First, regarding how digital empathy is manifested in online learning environments, the data indicate that empathy is expressed through various forms of communication, including supportive comments, active listening during virtual discussions, and responsiveness to peers’ emotional cues. Students reported that they developed a heightened awareness of tone, word choice, and timing in their interactions, which are essential components of digital empathy. This manifestation is consistent with Goleman’s conceptualization of empathy as the ability to understand and respond to others’ emotions, while Social Presence Theory explains how these behaviors contribute to the perception of a connected learning community (Zwoliński et al., 2025). The Community of Inquiry framework further supports this finding by demonstrating how social presence facilitates open communication and group cohesion (Nurhasanah et al., 2024).

Second, in addressing the factors that influence the development of digital empathy, the study identifies several key elements, including the role of instructors, the design of learning activities, and the affordances of digital tools. Instructors who actively model empathetic behavior, such as acknowledging students’ challenges and providing constructive feedback, play a crucial role in fostering an emotionally supportive environment. This aligns with the teaching presence component of the Community of Inquiry framework, which emphasizes the importance of instructional design and facilitation (Papoutsis et al., 2024). Additionally, the use of interactive tools such as polls, chats, and

collaborative platforms enhances engagement and provides opportunities for empathetic interaction. From the perspective of Social Presence Theory, these tools increase the salience of interpersonal relationships, while Emotional Intelligence Theory underscores the importance of practicing emotional skills in authentic contexts (Rachmad, 2023).

Third, concerning the extent to which virtual classrooms can teach emotional intelligence, the findings suggest that while online environments present certain limitations, they are indeed capable of supporting the development of emotional competencies when designed and facilitated effectively. Participants reported improvements in their ability to recognize and respond to others' emotions, particularly in text-based communication, which requires greater attentiveness to subtle cues. This indicates that digital empathy is not merely a substitute for face-to-face interaction but represents a distinct form of emotional intelligence adapted to digital contexts. The integration of the three theoretical frameworks provides a comprehensive explanation for this outcome, highlighting the interplay between individual competencies, perceived presence, and instructional design (Maity et al., 2025).

The achievement of the research objectives is evident in the identification of specific pedagogical strategies that enhance digital empathy in virtual classrooms. These strategies include structured reflective activities, peer feedback mechanisms, and the incorporation of emotionally engaging content. The findings demonstrate that such approaches not only improve students' emotional awareness but also contribute to a more inclusive and collaborative learning environment. From a theoretical perspective, this supports the extension of Emotional Intelligence Theory into digital domains, while Social Presence Theory and the Community of Inquiry framework provide practical guidelines for implementation (Alshammari & Alkhwalidi, 2025). The alignment between the research objectives and the findings underscores the validity and relevance of the study.

The implications of this research are significant across theoretical, practical, and academic dimensions. Theoretically, the study advances the understanding of emotional intelligence by situating it within the context of digital learning, thereby addressing a gap in existing literature (Lyanda & Owidi, 2025). The integration of the three theories offers a novel conceptual framework that can be used to guide future research. Practically, the findings provide actionable insights for educators and instructional designers, emphasizing the importance of intentional design and facilitation in fostering digital empathy. For instance, incorporating opportunities for reflective dialogue and encouraging empathetic communication can enhance both emotional and cognitive outcomes. Academically, the study contributes to the broader discourse on online learning by highlighting the role of affective factors in shaping educational experiences. These contributions are closely linked to the theoretical foundations, as each theory provides a distinct yet complementary perspective on the development and implementation of digital empathy.

In the broader discussion of the findings, it is important to situate the results within the context of previous research. Earlier studies have often highlighted the challenges of online learning, particularly in relation to social isolation and reduced emotional engagement (Zahra et al., 2025). However, the findings of this study suggest that these challenges can be mitigated through deliberate pedagogical strategies and the effective use of technology. This perspective aligns with recent research that emphasizes the potential of digital tools to enhance interaction and engagement, while also extending these insights by focusing specifically on emotional intelligence (Rambaree et al., 2023). The integration of Emotional Intelligence Theory, Social Presence Theory, and the Community of Inquiry framework provides a more nuanced understanding of how these outcomes are achieved.

In relation to the research gap identified earlier, the findings confirm that there is a need for a more integrated approach to studying digital empathy. Previous research has often treated emotional intelligence, social presence, and instructional design as separate domains, resulting in fragmented insights (Adeoye, 2024). This study addresses this limitation by demonstrating how these elements interact to shape learning experiences. The findings also highlight the importance of context, as the effectiveness of digital empathy strategies may vary depending on factors such as class size,

technological infrastructure, and cultural norms. These insights provide a foundation for future research to explore these variables in greater depth.

The discussion also reinforces the relevance of the research questions and objectives, as the findings provide clear and comprehensive answers to the issues raised. The manifestation, influencing factors, and outcomes of digital empathy are all examined in detail, demonstrating the feasibility of teaching emotional intelligence in virtual classrooms. This has important implications for the design and implementation of online learning, particularly in light of the increasing reliance on digital education.

Finally, the study underscores the broader significance of integrating emotional intelligence into online learning. By demonstrating that virtual classrooms can support the development of empathy, the research challenges the assumption that digital education is inherently impersonal (Sun & Li, 2024). Instead, it highlights the potential for technology to facilitate meaningful human connection, provided that it is used thoughtfully and intentionally. The findings contribute to a growing body of literature that advocates for a more holistic approach to education, one that recognizes the importance of both cognitive and emotional development (Poveda-Brotons et al., 2024).

In summary, the results of this study provide compelling evidence that digital empathy can be cultivated in online learning environments through the integration of Emotional Intelligence Theory, Social Presence Theory, and the Community of Inquiry framework. The findings address the main research problem, bridge existing gaps in the literature, and offer practical and theoretical contributions that enhance our understanding of emotional intelligence in digital contexts. By linking the results to the research questions, objectives, and broader academic discourse, the study offers a comprehensive and meaningful contribution to the field of online education.

CONCLUSION

The findings of this study lead to the conclusion that digital empathy constitutes a viable and essential dimension of emotional intelligence within online learning environments, and that virtual classrooms, when intentionally designed and effectively facilitated, are capable of fostering such competencies. Drawing upon the results and discussion, it becomes evident that the initial concern regarding the potential erosion of emotional engagement in digital education is not entirely substantiated. Instead, the study demonstrates that emotional intelligence, particularly empathy, is not diminished in virtual settings but rather transformed into a context-specific skill that requires adaptation to digitally mediated communication. This transformation is shaped by the interaction between individual emotional competencies, technological affordances, and pedagogical practices.

The study confirms that the manifestation of digital empathy occurs through diverse communicative behaviors, including supportive dialogue, reflective responses, and sensitivity to linguistic and contextual cues. These behaviors, identified in the findings, illustrate that learners are capable of recognizing and responding to emotional expressions even in the absence of physical presence. The discussion further reinforces that such capabilities are closely aligned with the principles of Emotional Intelligence Theory, particularly in relation to empathy and social awareness. At the same time, the role of Social Presence Theory is evident in explaining how learners perceive emotional connectedness in virtual environments, emphasizing that the sense of “being with others” is a critical determinant of empathetic engagement. The Community of Inquiry framework provides an integrative perspective by illustrating how social, cognitive, and teaching presence interact to support both emotional and intellectual development.

In addressing the primary research problem, which concerns the limited integration of emotional intelligence in online learning, the study concludes that this gap can be effectively addressed through intentional instructional design and facilitation. The results indicate that educators play a pivotal role in modeling empathetic behavior and creating a supportive learning climate, thereby enabling students to engage more meaningfully with their peers. The discussion highlights that strategies such as structured interaction, timely feedback, and collaborative learning activities

contribute significantly to the development of digital empathy. These findings suggest that the success of virtual classrooms in teaching emotional intelligence is contingent not merely on technological infrastructure but on the pedagogical approaches employed.

Furthermore, the study provides a clear response to the identified research gap by demonstrating the importance of integrating multiple theoretical perspectives. The findings reveal that a single theoretical framework is insufficient to fully capture the complexity of digital empathy. Instead, the combination of Emotional Intelligence Theory, Social Presence Theory, and the Community of Inquiry framework offers a more comprehensive understanding of how empathy is developed and sustained in online learning environments. This integrative approach not only addresses the limitations of previous studies but also contributes to the development of a more holistic conceptual model for future research.

The conclusions also reflect the study's response to the research questions, particularly regarding how digital empathy is expressed, what factors influence its development, and whether virtual classrooms can effectively teach emotional intelligence. The findings affirm that digital empathy is both observable and measurable through patterns of interaction and communication, and that it is influenced by factors such as instructional design, technological tools, and the quality of social presence. Moreover, the study confirms that virtual classrooms, despite their inherent limitations, can serve as effective platforms for cultivating emotional intelligence when these factors are appropriately aligned.

In relation to the research objectives, the study successfully identifies and analyzes key strategies for fostering digital empathy, evaluates the role of digital tools in facilitating emotional interaction, and proposes an integrated framework for embedding emotional intelligence in online learning design. The discussion underscores that these objectives are not only achievable but also essential for enhancing the overall quality of digital education. By linking the findings to these objectives, the study provides a coherent and comprehensive account of how emotional and cognitive dimensions of learning can be integrated.

The implications of the study, as derived from the findings and discussion, extend across theoretical, practical, and academic domains. Theoretically, the research contributes to the advancement of knowledge by situating emotional intelligence within the context of digital learning, thereby expanding existing frameworks. Practically, it offers actionable insights for educators and instructional designers, emphasizing the need for intentional and empathetic teaching practices. Academically, the study enriches the discourse on online education by highlighting the significance of affective dimensions, which have often been overlooked in favor of cognitive outcomes.

In conclusion, the study establishes that virtual classrooms are not inherently deficient in fostering emotional intelligence; rather, they present unique opportunities for developing digital empathy as a contemporary form of emotional competence. The integration of theoretical perspectives, supported by empirical findings, demonstrates that emotional intelligence can be effectively cultivated in online learning environments through deliberate and context-sensitive approaches. This conclusion not only addresses the central research question but also provides a foundation for future exploration into the evolving relationship between technology, education, and human emotion.

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