Uniwersytet Komisji Edukacji Narodowej w Krakowie

Kraków

Krakowskie Forum AI w Edukacji

Od badań do praktyki szkolnej

23–24 November 2026 / Kraków

The use of generative artificial intelligence in developing social-emotional competencies – possibilities, conditions, and limitations



Stefan T. Kwiatkowski

Christian Theological Academy in Warsaw, Faculty of Social Sciences

With support from the City of Kraków and the Erasmus+ SmartStart Teacher Academy

Kuratorium Oświaty w Krakowie

Koło Naukowe Nauczyciel z Pasją

MCDN Instytucja Województwa Małopolskiego

Małopolska

smart start ERASMUS+ Teacher Academy

Co-funded by the European Union

Uniwersytet Komisji Edukacji Narodowej w Krakowie

Krakowskie Forum AI w Edukacji

Od badań do praktyki szkolnej

23–24 November 2026 / Kraków

Competencies and Responsible Use of AI



Kraków

Introduction

Social-emotional competencies

- the 2018 Council Recommendation on Key Competences for Lifelong Learning – personal, social and learning to learn competence

Artificial intelligence-based technologies offer opportunities to personalize social-emotional learning, foster student engagement, and develop empathy (Sethi & Jain, 2024) as well as the well-being of all participants in the educational process, without exception.

Key question:
Can artificial intelligence – which, naturally, does not experience emotions in the way humans do – truly support the development of human social-emotional competencies?

Social-emotional competencies and learning

Social-emotional competencies (SEC) – skills, behaviors, and attitudes that are essential for both students and adults (teachers) to effectively manage their affective, cognitive, and social spheres.

Social-emotional learning (SEL) encompasses a range of diverse and complex processes through which children, adolescents, and young adults – including preschool children, students at all educational levels, and university students – as well as the adults responsible for their education (primarily teachers, including university faculty, as well as parents, school and preschool administrators, and other school staff) have the opportunity to acquire and effectively apply knowledge, attitudes, skills, and competencies that determine the successful course of the following processes:

- understanding emotions and effectively managing them,
- setting positive life goals and achieving them,
- feeling empathy and showing it to others,
- establishing and then maintaining positive and harmonious interpersonal relationships that bring benefits to all parties involved,
- making responsible and well-considered decisions that are beneficial not only for the individuals themselves, but also for others affected by them (CASEL, 2015; Durlak, Domitrovich, Weissberg & Gullotta, 2015; Gresham, 2018).

SELF-AWARENESS: The abilities to understand one's own emotions, thoughts, and values and how they influence behavior across contexts. This includes capacities to recognize one's strengths and limitations with a wellgrounded sense of confidence and purpose. Such as:

- Integrating personal and social identities
- Identifying personal, cultural, and linguistic assets
- Identifying one's emotions
- Demonstrating honesty and integrity
- Linking feelings, values, and thoughts
- Examining prejudices and biases
- Experiencing self-efficacy
- Having a growth mindset
- Developing interests and a sense of purpose

SELF-MANAGEMENT: The abilities to manage one's emotions, thoughts, and behaviors effectively in different situations and to achieve goals and aspirations. This includes the capacities to delay gratification, manage stress, and feel motivation & agency to accomplish personal/collective goals. Such as:

- Managing one's emotions
- Identifying and using stress-management strategies
- Exhibiting self-discipline and self-motivation
- Setting personal and collective goals
- Using planning and organizational skills
- Showing the courage to take initiative
- Demonstrating personal and collective agency

SOCIAL AWARENESS: The abilities to understand the perspectives of and empathize with others, including those from diverse backgrounds, cultures, & contexts. This includes the capacities to feel compassion for others, understand broader historical and social norms for behavior in different settings, and recognize family, school, and community resources and supports. Such as:

- Taking others' perspectives
- Recognizing strengths in others
- Demonstrating empathy and compassion
- Showing concern for the feelings of others
- Understanding and expressing gratitude
- Identifying diverse social norms, including unjust ones
- Recognizing situational demands and opportunities
- Understanding the influences of organizations/systems on behavior

RELATIONSHIP SKILLS: The abilities to establish and maintain healthy and supportive relationships and to effectively navigate settings with diverse individuals and groups.This includes the capacities to communicate clearly, listen actively, cooperate, work collaboratively to problem solve and negotiate conflict constructively, navigate settings with differing social and cultural demands and opportunities, provide leadership, and seek or offer help when needed. Such as:

- Communicating effectively
- Developing positive relationships
- Demonstrating cultural competency
- Practicing teamwork and collaborative problem-solving
- Resolving conflicts constructively
- Resisting negative social pressure
- Showing leadership in groups
- Seeking or offering support and help when needed
- Standing up for the rights of others

RESPONSIBLE DECISION-MAKING: The abilities to make caring and constructive choices about personal behavior and social interactions across diverse situations. This includes the capacities to consider ethical standards and safety concerns, and to evaluate the benefits and consequences of various actions for personal, social, and collective well-being. Such as:

- Demonstrating curiosity and open-mindedness
- Identifying solutions for personal and social problems
- Learning to make a reasoned judgment after analyzing information, data, facts
- Anticipating and evaluating the consequences of one's actions
- Recognizing how critical thinking skills are useful both inside & outside of school
- Reflecting on one's role to promote personal, family, and community well-being
- Evaluating personal, interpersonal, community, and institutional impacts

CASEL, 2015

Social-emotional competencies - benefits

1. **In the short term (proximal benefits):**
- development of social-emotional competencies—it should be noted that strengthening core competencies and their components is, in itself, an invaluable benefit; enhancing empathy, self-knowledge, self-awareness, the ability to build interpersonal relationships, and the capacity to make sound, responsible decisions undeniably bolsters an individual's overall potential,
- strengthening of positive attitudes – toward oneself (increased self-esteem, self-acceptance, self-confidence, sense of self-worth, and self-efficacy), toward others, and toward the various tasks an individual faces – as well as an increased sense of school belonging, greater engagement in school-based activities, higher levels of (intrinsic) motivation for learning, and more time dedicated to school-related pursuits,
- more positive social behaviors and improved relationships with peers and teachers,
- a higher level of adjustment to the school environment and a stronger sense of belonging to the school and its community,
- a reduced risk of engaging in various types of risky or undesirable behaviors (e.g., aggression, disobedience, or bullying),
- lower levels of experienced stress (reduced symptoms of depression, anxiety, tension, or social withdrawal),
- higher levels of overall academic achievement (measured primarily through student grades and performance on various tests) (CASEL, 2015; Gresham, 2018).

2. **In the long term (distal benefits):**
- a higher level of readiness to navigate subsequent stages of education,
- a higher level of readiness to pursue higher education and, subsequently, to enter the workforce,
- a greater likelihood of achieving professional success,
- a smooth transition from being an individual whose actions are primarily determined by external factors to becoming an individual capable of acting in accordance with one's own values, attitudes, and needs,
- a greater capacity for building positive interpersonal relationships—both in personal and professional life,
- better mental health,
- a lower likelihood of engaging in unlawful behavior,
- a stronger sense of civic and prosocial orientation (manifested, among other things, through care and concern for others) (CASEL, 2015; Gresham, 2018).

SEL – new directions and methods of operation

Given that the benefits of Social and Emotional Learning (SEL) programs and interventions can be maximized by incorporating modern technologies, it is essential to reflect on how to integrate these tools into the process to enhance the development of social-emotional competencies in both students and teachers. The significance and value of technology in fostering a more holistic approach to teaching are now widely recognized, and this approach increasingly includes the integration of artificial intelligence (Sethi and Jain, 2024).

Artificial Intelligence and Social-Emotional Learning – the state of research

Sethi and Jain (2024): an analysis of the use of chatbots, virtual reality, emotion-analysis tools, and other technologies that support social-emotional learning in a broad sense.

Zhang et al. (2025) – an analysis of 172 empirical articles on the use of artificial intelligence in education: the study identified eight types of cognitive support and five types of emotional support based on artificial intelligence, all focused on using AI to facilitate affective experiences and emotional regulation during the learning process.
The most frequently employed forms of emotional support included:

- providing affective responses tailored to individual circumstances – this type of support focused on observing students' outcomes, states, and behaviors, detecting their emotions, and offering emotional suport – such as alleviating anxiety or boosting self-confidence (e.g., Cheng et al., 2024; Liang et al., 2024; Ortega-Ochoa et al., 2024)
- engaging with students in an emotionally-aware manner, focusing on providing various types of social-emotional cues (e.g., praising, encouraging, and motivating students) to foster a positive learning atmosphere and, more broadly, a positive classroom climate (Hsieh et al., 2020; Liu et al., 2022)
- reminding students to relax and/or regulate their emotions by monitoring the duration of their study sessions, their level of attention, or their level of patience (Hwang et al., 2020; Sargazi Moghadam et al., 2023).
- furthermore, fostering empathy in teachers toward their students (Ghafouri, 2024), as well as grouping students with similar levels of subject knowledge for collaborative learning – thereby avoiding the negative emotions that can arise when studying alongside someone whose knowledge significantly surpasses that of the other students (Muñoz-Merino et al., 2014).

Developing teachers' SEC – Area 1: Self-awareness and reflexivity

Sáez-Delgado et al. (2025) – a review of 57 studies on the use of digital technologies to develop teachers' social-emotional competencies.
In 37 of these studies – approximately two-thirds of the publications analyzed by this team – digital self-reflection tools were employed. These included, among others: reflective journals, educational platforms (e.g., Moodle, Padlet, Blackboard), video analysis, digital narratives, podcasts, blogs, emotional dashboards, virtual simulators (e.g., OpenSimulator), and applications utilizing generative artificial intelligence (e.g., ChatGPT).
Reupert and Dalgarno (2011): an approach encouraging digital self-reflection by designing activities that use podcasts, videos, and infographics as prompts. These materials encourage teachers to reflect on their own emotional responses to various moral dilemmas encountered in their daily work, as well as to complex or problematic situations typical of the school environment.
Näykki et al. (2022): a proposal to integrate available digital resources to stimulate emotional awareness and guided reflection.
Varanasi et al. (2024): supported by ChatGPT, they explored guided reflection, a process in which teachers engage in interaction to review their pedagogical practices and express related emotions, with the aim of deepening their understanding of their professional decisions (artificial intelligence is used here as a tool for critical and emotional thinking, fostering self-reflection through the posing of questions and the receipt of text-based feedback).

The review by Sáez-Delgado et al. indicates that, across the 49 studies analyzed (86%), teachers' self-awareness was supported by tools such as artificial intelligence, virtual reality, immersive simulations, and social networks. These technologies helped teachers identify their emotions, recognize their strengths, and reflect critically on their professional roles.
Research by Nacimba Rivera et al. (2024) and Mouw et al. (2020) confirms that digital platforms and virtual environments have fostered reflection on emotions – such as stress, anxiety, and surprise – thereby increasing awareness of one's own reactions and capabilities.
Studies by Wetcho and Na-Songkhla (2022) and Cavioni et al. (2024) describe how simulations and immersive virtual reality experiences facilitate processes related to emotional introspection and the identification of teaching strengths.
Research by Russell and Smyth (2023) and Näykki et al. (2022): the use of emotional diaries, video analysis, digital coaching, or feedback on emotions fostered self-assessment processes, in which teachers were able to observe, analyze, and recognize themselves in emotional terms.

Developing teachers’ SEC – area 2. Self-management (self-regulation)

Sáez-Delgado et al. (2025)
More than 80% of the studies included in their review addressed the issue of self-regulation.
Research by Nacimba Rivera et al. (2024) and Mouw et al. (2020) indicates that tools such as MagicSchool AI or virtual reality enabled teachers to reduce their emotional burden and test their reactions to stressful situations without facing real-world consequences.
Studies by Wetcho and Na-Songkhla (2022) and Näykki et al. (2022) suggest that immersive simulations and feedback on emotions within interactive environments provide opportunities for educational practices aimed at developing self-regulation skills. At the same time, methods such as maintaining a reflective blog (Reupert and Dalgarno, 2011), practicing mindfulness supported by virtual reality (Ong et al., 2024), or analyzing one’s own video recordings (Dai et al., 2024) also served as forms of teaching practice focused on self-regulation.
Research by Kopuz (2024) and Hashem et al. (2023) shows that the use of ChatGPT allowed teachers to cope with an excessive workload, manage their time, and reduce stress, which fostered better emotional control.
Research by Andersson (2020) and Chan et al. (2024): demonstrating how the use of mindfulness apps, emotion-tracking technologies, or digital collaboration spaces helped strengthen teachers' self-regulation by providing them with strategies to remain calm and maintain motivation in demanding working conditions.

Developing teachers’ SEC – Area 3: Simulations of challenging situations in the school environment

A study by Kasperski, Hemi, Angelini, and Chimicz (2026)

- The researchers developed multilingual simulations using generative artificial intelligence, designed to foster socio-emotional competencies within the context of teacher education.
- The study was conducted across three countries, with the analysis of participants' experiences encompassing 20 practicing teachers and 66 teacher candidates.
- Participants engaged in interactive simulations of complex educational scenarios that required them to make decisions and respond to various types of interpersonal challenges.
- A key feature of the design was the deliberate calibration of the artificial intelligence’s behavior – rather than providing immediate, ready-made solutions, the system was structured to sustain a scenario that demanded careful thought and independent response.
- An analysis of the participants' feedback revealed that the simulations elicited emotional engagement and a sense of authenticity regarding professional situations – furthermore, the challenges encountered during these interactions prompted participants to adjust their initial responses, consider alternative strategies, and engage in deeper reflection.
- The study demonstrated that generative AI can be used to create specialized training environments in which teachers have the opportunity to confront their existing modes of response with new situations and challenges.

Developing teachers' SEC – Area 4: Developing empathy and interpersonal skills

Shapira and Amzalag (2026) explore the area of professional development for teachers within a digital, multimodal environment.
The authors analyzed the experiences of 34 teachers participating in a program designed to foster interpersonal and intergroup empathy.
The program incorporated various educational technologies, including activities involving artificial intelligence. An analysis of the participants' written reflections revealed how the digital learning environment supported contemplation and critical thinking regarding empathy and relationships with others.

Returning to the aforementioned review by Sáez-Delgado et al. (2025), social awareness – which encompasses empathy – was fostered in 33 of the studies included in their analysis (58%).

- Digital technologies helped teachers develop skills such as empathy, as well as sensitivity toward the emotions and needs of those with whom they interact.
- Research by Wetcho and Na-Songkhli (2022) and Ye et al. (2023), for instance, demonstrates that the use of simulated characters and virtual students assists in recognizing the emotions of others and adapting more effectively to various situations. Meanwhile, studies by Chehayeb et al. (2024) and Bhuvaneshwara et al. (2025) illustrate how teachers developed competencies such as empathy through role-playing, engaging in simulations that reflect social norms, and utilizing feedback on emotions tailored to specific educational contexts.

Regarding interpersonal skills, as many as 68% of the works analyzed by Sáez-Delgado et al. (covering 39 studies) point to significant progress in communication, collaboration, and the development of support networks between teachers and students. Digital technologies—such as messaging platforms, simulations, blogs, forums, and collaborative work environments—create a space for practicing active listening, empathetic self-expression, and group cooperation.

- A study by Tuyakova et al. (2020) demonstrated that interactive educational technologies enhance collaboration between teachers and students.
- Research by Wetcho and Na-Songkhla (2022), Chehayeb et al. (2024), and Varanasi et al. (2024) shows that the use of simulations and digital platforms helps improve the quality of dialogue, facilitates conflict resolution, and fosters more empathetic relationships.
- Studies by Cansoy (2017) as well as Reupert and Dalgarno (2011) illustrate how virtual communities, online messaging groups, and collaborative environments promote the formation of bonds based on trust and mutual support among participants.

Using GenAI to develop students' social-emotional competencies

CuentosIE – Ferrández et al. (2024)

- CuentosIE – an educational chatbot that provides teachers with a tool to monitor students through the collection of specific indicators and data. It utilizes meaningful stories or fables („carrying a message”) to help users work on understanding emotions. Among other functions, the tool allows for searching and analyzing stories, engaging in conversations, and gathering information useful for tracking users' emotional development.
- The primary advantages of CuentosIE include the selection, collection, and classification of a highly specialized set of stories, as well as the provision of features – such as search, reading comprehension, chat, recommendations, and classification – that are valuable both for users' emotional education and for monitoring their progress in emotional development.

Selly – Kwon and Shim (2025)

- Selly is an educational chatbot designed to support the social-emotional competencies of primary school students. The tool enables students to express their emotions freely and receive immediate, personalized feedback from an artificial intelligence. The chatbot is also integrated with paper-based social-emotional learning worksheets, combining the benefits of traditional classroom instruction with the capabilities offered by digital learning environments.
- The intervention lasted four weeks and involved fifth-grade students. The results showed a statistically significant improvement in self-regulation, social awareness, and relationship-building skills among the group that used the chatbot. Furthermore, qualitative analysis indicated progress in the expression of emotions and self-reflection.
- The findings suggest that AI-supported SEL programs can be effectively implemented in primary school education.

Can artificial intelligence replace humans in the process of social-emotional learning?

Raave et al. (2026)

- An analysis of the potential for using generative AI-based pedagogical conversational agents in early social-emotional learning (SEL).
- The study is premised on the idea that such tools could help increase access to educational support, particularly in contexts where teachers are overburdened—a situation that prevents them not only from giving individual students the attention they require but also from participating in professional development designed to equip them with the necessary knowledge and skills.
- The authors highlight the limitations of current AI systems in recognizing and accurately interpreting the emotional and relational dimensions of interactions. Social-emotional learning requires more than just the transmission of information; it demands sensitivity to situational context and a student's individual experiences.
- Pedagogical conversational agents demonstrated strengths in foundational relational and instructional domains. Teachers, by contrast, excelled in facilitating in-depth SEL, guiding student reflection, and fostering social-emotional knowledge.
- This research draws attention to the complementarity of human and technological support; from this perspective, the core issue is not replacing teachers with AI, but rather determining which functions AI can support and which require direct human involvement.

The determinants of the effective use of generative AI in the field of SEL

Systematic review by Pabón Méndez et al. (2026)

- The authors analyzed 70 studies concerning the relationship between artificial intelligence, social-emotional learning, and teacher education.
- They highlighted, among other things, the potential for personalizing the learning process, while also noting significant institutional barriers and a lack of well-designed programs to prepare teachers for tasks within this domain.

Xu et al. (2026)

- The authors conducted a survey involving 550 primary and secondary school teachers in China.
- They demonstrated positive correlations between teachers' use of generative AI and students' social-emotional competencies, while also analyzing the mediating role of teachers' AI-related competencies and their self-efficacy in using this technology.

However, both publications point to the fundamental importance of adequate teacher preparation, skillfully combining the use of technology with the set pedagogical goals and taking into account the institutional context.

Limitations and risks associated with the use of AI in the field of SEL

The first group concerns the technology itself – AI systems may generate responses that are inappropriate for a given situation, misinterpret the emotional context of an interaction, or offer oversimplified solutions to complex interpersonal problems.

The second group of limitations is ethical in nature. It encompasses issues such as privacy protection, data security, the risk of stereotyping, and the necessity of maintaining human oversight over the operation of these systems.

The third group relates to the methodological limitations of existing research.

- In a review by Sáez-Delgado et al. on digital technologies designed to support teachers' competencies, small or highly specific research samples were identified as a limitation in 54 percent of the analyzed publications. In 53 percent of cases, the generalizability of the findings was noted as a limitation, while 37 percent lacked quantitative data or longitudinal observations.
- This means that even if a particular solution yields positive results in the short term, it is not always clear whether these effects persist over time or if they hold true in other educational environments.

Therefore, caution must be exercised when drawing conclusions about the effectiveness of generative AI.

Prospects for using GenAI in educational practice

For teachers, simulations of complex pedagogical situations, support for reflecting on professional experience, and practicing alternative ways of responding to interpersonal difficulties hold particular promise.

For students, an interesting solution involves chatbots that facilitate conversations about emotions, the analysis of social situations, and the completion of personalized exercises focused on self-regulation and relationship-building.

In this context, it is worth referring to a monograph edited by Marta Licardo and Alenka Lipovec (2024), which addresses both artificial intelligence-related competencies and social-emotional competencies. This publication highlights the crucial importance of jointly considering teachers' preparation for using AI and the development of their own and their students' socio-emotional competences.

The presented research therefore shows the need to treat artificial intelligence as an element of a broader educational process, also encompassing teacher actions, reflection and real social experiences.

Summary

1. Generative artificial intelligence creates entirely new opportunities for supporting social-emotional learning. Crucially, this applies to the development of social-emotional competencies of both teachers and students – a process facilitated, for instance, through dialogue, various types of simulations, and reflective activities.

2. The effectiveness of such solutions does not automatically result from the use of advanced technology. Rather, it depends on how specific activities are designed, how well teachers are prepared to lead (or participate in) them, the suitability of the tools chosen for the intended educational goals, and the consideration of the social and cultural context in which learning takes place.

3. Existing research certainly does not justify treating generative artificial intelligence as a substitute for human interaction within the realm of social-emotional learning. On the contrary, the findings clearly point to the need for a skillful and appropriate integration of new technological tools with the involvement of a teacher who is well-prepared to utilize them.

Can artificial intelligence – which does not experience emotions in the way humans do – support the development of human social-emotional competencies?

Research to date demonstrates that while AI can certainly help create conditions conducive to this process, the technology itself does not guarantee the development of these competencies; ultimately, what matters most is who is using it and in what way.

Uniwersytet Komisji Edukacji Narodowej w Krakowie

Krakowskie Forum AI w Edukacji

Od badań do praktyki szkolnej

Kraków

23–24 November 2026 / Kraków

Thank you

Questions and discussion



Stefan T. Kwiatkowski

s.kwiatkowski@chat.edu.pl

Kuratorium Oświaty w Krakowie

Koło Naukowe Nauczyciel z Pasją

MCDN Instytucja Województwa Małopolskiego

Małopolska

smart start ERASMUS+ Teacher Academy

Co-funded by the European Union

References

Andersson, R. (2020). *Effects of a mobile phone-based mindfulness intervention for teachers, and how mindfulness trait correlates with stress, wellbeing, burnout, and compassion* [Master's thesis, Halmstad University, School of Health and Welfare].
CASEL Guide: Effective Social and Emotional Learning Programs. Middle and High School Edition (2015). Chicago: Collaborative for Academic, Social and Emotional Learning.
Cavioni, V., Conte, E., & Ornaghi, V. (2024). Promoting teachers' wellbeing through a serious game intervention: A qualitative exploration of teachers' experiences. *Frontiers in Psychology*, *15*, 1339242.
Chan, W. W. L., Wu, K. C., Li, S. X., Tsang, K. K. Y., Shum, K. K., Kwan, H. W., Su, M. R., & Lam, S. (2024). Mindfulness-based intervention for schoolteachers: Comparison of video-conferencing group with face-to-face group. *Mindfulness*, *15*(9), 2291–2306.
Cheng, L., Croteau, E., Baral, S., Heffernan, C., & Heffernan, N. (2024). Facilitating student learning with a chatbot in an online math learning platform. *Journal of Educational Computing Research*, *62*(4), 907–937.
Council recommendation of 22 May 2018 on key competences for lifelong learning (2018/C 189/01).
Durlak, J. A., Domitrovich, C. E., Weissberg, R. P., & Gullotta, T. P. (Eds.). (2015). *Handbook of social and emotional learning: Research and practice*. The Guilford Press.
Ferrández A, Lavigne-Cerván R, Peral J, Navarro-Soria I, Lloret Á, Gil D, Rocamora C. CuentosIE: can a chatbot about "tales with a message" help to teach emotional intelligence? PeerJ Comput Sci. 2024 Feb 29;10:e1866.
Ghafouri, M. (2024). ChatGPT: The catalyst for teacher-student rapport and grit development in L2 class. *System, 120*, Article 103209.
Gresham, F. (2018). Effective Interventions for Social-Emotional Learning. The Guilford Press.
Hashem, R., Ali, N., El Zein, F., Fidalgo, P., & Abu Khurma, O. S. (2023). AI to the rescue: Exploring the potential of ChatGPT as a teacher ally for workload relief and burnout prevention. *Research and Practice in Technology Enhanced Learning*, *19*, 23.
Hsieh, Y. Z., Lin, S. S., Luo, Y. C., Jeng, Y. L., Tan, S. W., Chen, C. R., & Chiang, P. Y. (2020). Arcs-assisted teaching robots based on anticipatory computing and emotional big data for improving sustainable learning efficiency and motivation. *Sustainability, 12*(14), Article 5605.
Hwang, G. J., Sung, H. Y., Chang, S. C., & Huang, X. C. (2020). A fuzzy expert system-based adaptive learning approach to improving students' learning performances by considering affective and cognitive factors. *Computers and Education: Artificial Intelligence*, *1*, 100003.
Kasperski R, Hemi ME, Angelini ML and Chimicz D (2026) Multilingual Gen-AI simulations for social-emotional learning in teacher education: a cross-cultural pilot study. Front. Educ. 11:1874639. doi: 10.3389/feduc.2026.1874639
Kopuz, E. (2024). English language teachers' insights on the influence of ChatGPT on professional well-being. *Journal of Educational Studies and Multidisciplinary Approaches*, *4*(2), 138–154.
Kwon, H. & Shim, J. (2025). Development of a Generative AI-based Chatbot for Enhancing Elementary Students' Social and Emotional Learning Competencies. Journal of The Korean Association of Information Education. 29. 911-921. 10.14352/jkaie.2025.29.6.911.
Liang, H. Y., Hwang, G. J., Hsu, T. Y., & Yeh, J. Y. (2024). Effect of an AI-based chatbot on students' learning performance in alternate reality game-based museum learning. *British Journal of Educational Technology, 55*(5), 2315–2338.
Licardo,. M., Lipovec, A. (eds.) (2024). *Artificial Intelligence Literacy and Social-Emotional Skills as Transversal Competencies in Education. Verlag Dr. Kovač.*
Liu, C. C., Liao, M. G., Chang, C. H., & Lin, H. M. (2022). An analysis of children's interaction with an AI chatbot and its impact on their interest in reading. *Computers & Education*, *189*, 104576.
Mouw, J., Fokkens-Bruinsma, M., & Verheij, G.-J. (2020). *Using Virtual Reality to promote pre-service teachers' classroom management skills and teacher resilience: A qualitative evaluation*. Editorial Universitat Politècnica de València.
Muñoz-Merino, P. J., Molina, M. F., Muñoz-Organero, M., & Kloos, C. D. (2014). Motivation and emotions in competition systems for education: An empirical study. *IEEE Transactions on Education, 57*(3), 182–187.
Näykki, P., Laitinen-Väänänen, S., & Burns, E. (2022). Student teachers' video-assisted collaborative reflections of socio-emotional experiences during teaching practicum. *Frontiers in Education*, *7*, 846567.
Ortega-Ochoa, E., Pérez, J. Q., Arguedas, M., Daradoumis, T., & Puig, J. M. M. (2024b). The effectiveness of empathic chatbot feedback for developing computer competencies, motivation, self-regulation, and metacognitive reasoning in online higher education. *Internet of Things*, *25*, 101101.
Nacimba Rivera, N. O., Trávez Osorio, G. M., Moreno Corrales, A. S., & Zambrano, B. A. (2024). Evaluación cuantitativa y cualitativa del impacto de la inteligencia artificial en la satisfacción, eficacia, gestión del tiempo y reducción del estrés laboral en la jornada laboral docente ecuatoriana presencialmente o fuera del plantel. *Explorador Digital*, *8*(3), 101–122.
Ong, J., Doshi, K., Chew, K. H., Tay, J. H. M., & Foo, J. J.-C. (2024). The effectiveness of immersive VR 360 mindfulness for the reduction of stress and burnout among teachers. *Mental Health and Digital Technologies*, *2*(1), 20–31.
Pabón Méndez, M. R. ., Vargas Sánchez, A. D. ., Chiappe, A., & Martínez-Pérez, S. . (2026). Rethinking teacher education in the context of AI-powered social-emotional learning: A systematic mapping review. *Research and Practice in Technology Enhanced Learning*, *22*, 015.
Raave, D. K., Colasante, T., Roa, E. R., Martinez, J. C. R., Li, H., Mukherjee, S., Malti, T. (2026). An experimental study exploring human–AI complementarity in early social-emotional learning. *Computers and Education Open, Volume 10*.
Reupert, A., & Dalgarno, B. (2011). Using online blogs to develop student teachers' behaviour management approaches. *Australian Journal of Teacher Education*, *36*(5), 48–64.
Russell, A., & Smyth, S. (2023). Using a 10-day mindfulness-based app intervention to reduce burnout in special educators. *Journal of Research in Special Educational Needs*, *23*(4), 278–289.
Sáez-Delgado, Fabiola & Jara-Coatt, Pilar & Contreras, Fabricio & Brieba, Joaquin & Rodríguez-Gómez, Richard. (2026). *Programas de aprendizaje socioemocional para estudiantes: una revisión sistemática*. 10.22533/at.ed.356162619055.
Sargazi Moghadam, T., Darejeh, A., Delaramifar, M., & Mashayekh, S. (2023). Toward an artificial intelligence-based decision framework for developing adaptive e-learning systems to impact learners' emotions. *Interactive Learning Environments*, *32*(7), 3665–3685.
Sethi, S. S., Jain, K. (2024). AI technologies for social emotional learning: recent research and future directions. *Journal of Research in Innovative Teaching & Learning, 17* (2): 213–225.
Varanasi, R. A., Dell, N., & Vashistha, A. (2024, May 11–16). *Saharaline: A collective social support intervention for teachers in low-income Indian schools*. 2024 CHI Conference on Human Factors in Computing Systems (pp. 1–20), Honolulu, HI, USA.
Shapira N and Amzalag M (2026) Empathy and technology in schools: teachers professional learning in online multimodal environments. Front. Educ. 11:1841991.
Wetcho, S., & Na-Songkhla, J. (2022). An investigation of pre-service teachers using mobile and wearable devices for emotion recognition and social sharing of emotion to support emotion regulation in mcscl environments. *Contemporary Educational Technology*, *14*(2), ep359.
Zhang, H., Liu, Y., Jiang, M., Chen, J., Wang, M., Paas, F. (2025). Emotional Artificial Intelligence in Education: A Systematic Review and Meta-Analysis. *Educational Psychology Review,* Volume 37, article number 106.
Xu, J., Tian, M., Peng, F. *et al.* (2026). The relationship between teachers' GAI use and students' social-emotional competence: the chain-mediating roles of teachers' AI literacy and AI self-efficacy. *BMC Psychol* **14**, 689.