ARTIFICIAL INTELLIGENCE, EMOTIONAL WELL-BEING, AND DIFFICULT DIALOGUES IN SCHOOL SETTINGS

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ABSTRACT
In school contexts characterized by competitive dynamics and the vulnerabilities typically associated with adolescence, many students experience forms of social exclusion and emotional distress. Such experiences significantly affect emotional regulation processes and learning dynamics. Within this framework, artificial intelligence (AI), as highlighted by the DigComp 2.2, may serve as a valuable resource for supporting students' emotional well-being by fostering self-awareness, metacognition, and self-regulation. In particular, conversational agents and social robots can facilitate the exploration of personal experiences and enhance student engagement, partly due to the perception of social presence they are capable of generating. However, their use requires a continuous critical and reflective approach, as it entails numerous ethical, pedagogical, and relational risks. Algorithms should therefore be regarded as supportive tools rather than substitutes for educational relationships. From this perspective, teachers retain a central role in promoting students' personal growth, recognizing both their vulnerabilities and their potential.

KEYWORDS
Artificial Intelligence; emotional well-being; critical approach; educational relationship; difficult dialogues.

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1. Introduction

Many students experience rejection, delegitimization, and relational exclusion. Particularly during adolescence, when developmental vulnerabilities are more pronounced, such experiences may be understood as forms of social pain (Panksepp, 1998). Neuroscientific evidence shows that social pain activates neural circuits that partially overlap with those involved in the processing of physical pain, suggesting a close neurobiological relationship between these experiences (Eisenberger et al., 2003). These experiences significantly affect emotional regulation and, consequently, learning processes by influencing students' motivation, engagement, and participation in educational activities. According to Nussbaum (2001), emotions should not be regarded as irrational or purely instinctive reactions but as cognitively structured phenomena, grounded in evaluative judgments about what is meaningful for individual well-being and human flourishing. From this perspective, addressing students' emotional dimension is essential not only for academic achievement but also for their long-term personal development (Weber et al., 2016). International assessment frameworks such as OECD-PISA have increasingly incorporated indicators related to students' well-being and sense of belonging, reflecting a broader conception of learning that extends beyond cognitive achievement to include emotional, relational, social, and civic dimensions.

The design of emotionally meaningful learning experiences can enhance students' well-being and engagement, including through the use of artificial intelligence (AI), particularly conversational technologies capable of creating simulated environments that adapt to users' expressed emotional states. Within this framework, emotions are not considered ancillary to learning but rather a structural component of the educational experience, shaping motivation, participation, and learning outcomes. This objective may be pursued through intelligent conversational systems that combine Natural Language Processing techniques with affective computing models to detect, interpret, and respond to users' emotional states.

In particular, empathic conversational agents (Ortega-Ochoa et al., 2024) are designed to elicit empathic responses (Hall & Woods, 2006) while creating highly personalized learning environments by adapting content, feedback, and task difficulty to learners' emotional conditions. Such systems support adaptive learning experiences in which emotional states become active variables in regulating instructional pathways. For example, they may simplify learning scenarios and provide greater guidance under conditions of stress, whereas they can introduce more challenging tasks when learners display high levels of

motivation. Furthermore, these technologies can deliver both cognitive and affective feedback, promoting encouragement, scaffolding, and positive reinforcement.

These theoretical and design-oriented potentials find an initial, albeit not yet conclusive, empirical basis in the literature on the relationship between conversational AI and adolescent well-being (Bruno et al., 2026; Li et al., 2023). Although Artificial Intelligence has demonstrated potential in supporting learning and academic performance, its use as a tool to promote the well-being of secondary school students remains relatively underexplored. In this context, a scoping review by Lamb et al. (2026) examined the potential of AI-based conversational agents to promote adolescent well-being, considering indicators such as stress, depressive symptoms, and affective states. The findings indicate overall promising effects, particularly in reducing stress and depressive symptoms, with more consistent evidence emerging for interventions based on cognitive behavioural therapy. However, the available evidence remains heterogeneous, and overall effectiveness cannot yet be considered firmly established, owing to the limited methodological quality of the studies, the diversity of the tools and technologies employed, and the relatively small sample sizes. Overall, the literature therefore suggests a potential convergence between the ability of conversational AI to adapt interactions to users' emotional states and its potential role in supporting students' well-being. Nevertheless, this potential requires further investigation through more rigorous empirical studies capable of clarifying the conditions under which, and the mechanisms through which, conversational technologies may effectively contribute to students' well-being and educational experiences. In light of this evidence, human–AI interaction can therefore be understood as a dynamic dialogical process, capable of supporting not only knowledge acquisition but also the relational dimension of learning.

Along these lines, the European LifeComp framework identifies well-being, self-regulation, and the mindful management of learning as fundamental dimensions of personal, social, and learning competences.

Accordingly, AI can potentially support students' emotional well-being by promoting self-awareness, metacognition, and self-regulation. Conversational agents and social robots may facilitate reflection on emotional experiences; however, their effective integration into educational settings depends not only on the quality of their design and their ability to recognize linguistic, affective, neural, and physiological cues but also on teachers' capacity for continuous critical reflection regarding the ethical and pedagogical implications of their use. As also emphasized in the Italian National Curriculum Guidelines (2025), AI algorithms should be regarded as educational support tools rather than substitutes for authentic educational relationships. Within this perspective,

teachers retain a central role in fostering students' personal development (Bellotti, 2024; Smakmanet al., 2021; Mouta et al., 2024) by recognizing both their uniqueness and vulnerability and by adopting pedagogical strategies that contribute to the creation of learning environments oriented toward well-being (Frison & Funari, 2025).

This theoretical contribution, developed in the form of an argumentative essay, adopts a critical-hermeneutic approach aimed at interpreting educational phenomena and critically examining their pedagogical implications. In this context, it explores the potential of conversational agents and social robots in school settings as complementary tools to support students' emotional well-being, inclusion, and participation in difficult dialogues, without replacing the educational relationship. The contribution brings together perspectives on AI in education, the pedagogy of emotions, and the pedagogy of dialogue, with a particular focus on the concepts of emotional well-being, empathic agents, and brave spaces. The analysis considers the potential, limitations, and ethical implications of these technologies, identifying pedagogical mediation as a fundamental condition for their responsible use and for promoting students' well-being and inclusion (Fields et al., 2025).

2. Hybrid Ontologies and Artificial Empathy for Students' Emotional Well-Being

The use of conversational agents in school settings introduces both opportunities and challenges at the educational, relational, and ethical levels. The literature, in fact, highlights several challenges associated with the use of AI in educational contexts, including privacy protection, the management of students' personal and sensitive data, and the potential presence of algorithmic biases (Alfredo et al., 2024; Zhu et al., 2025). These concerns are compounded by the possibility of developing forms of excessive reliance on conversational systems, with potential implications for students' autonomy and cognitive processes (Zhai et al., 2024).

While these technologies can support learning processes, foster self-reflection, and provide personalized assistance, they also raise important questions regarding the relationship between humans and artificial systems, the quality of educational interactions, and the impact of intelligent technologies on learning and social relationships, particularly with respect to the construction and transformation of students' sense of agency.

The tendency to humanize intelligent machines emerges primarily through dialogic question-and-answer interactions, which encourage users to attribute intentionality to computational systems and reinforce anthropomorphic perceptions, thereby blurring the distinction between technical artifacts and social agents (Turkle, 2005). This tendency is further strengthened when virtual

assistants or humanoid robots are endowed with a human-like voice. Vocal interaction contributes to humanizing technological artifacts by moving them beyond the condition of mere objects, traditionally associated with silence and the absence of communicative agency. In this sense, voice appears to confer a form of ontological legitimacy and, at a more speculative level, an appearance of self-awareness historically associated with the capacity for language (Gambardella, 2024). Likewise, the ability of AI systems to reproduce linguistic patterns resembling empathic communication—despite lacking consciousness and situated relational experience—may foster unwarranted anthropomorphism and communicative illusions, leading users to attribute genuinely human characteristics to purely computational entities.

Another critical issue concerns the risk of emotional standardization. AI models are generally trained on large linguistic corpora that are often shaped by Anglophone cultural contexts and normative communication patterns. Consequently, they may oversimplify the interpretation of emotions and generate affective representations that fail to reflect the diversity and complexity of different cultural settings.

Research on the humanoid robot Robovie, for example, has shown that both children and adults tend to attribute emotions, intelligence, and even a degree of moral status to the robot. Participants considered it unfair to mistreat the robot and assigned it partial responsibility for its mistakes, while still distinguishing it from a human being. These findings suggest that intelligent robots are perceived as hybrid entities occupying an intermediate position between inanimate objects and social actors, raising important ethical questions concerning moral responsibility and human–machine relationships (Kan et al., 2012).

Drawing on the concept of artificial empathy, Canducci (2025) describes the affective relationships that individuals may establish with intelligent systems while remaining aware of their non-human nature. This perspective highlights empathic technologies not merely as operational tools but also as relational devices capable of supporting the emotional dimensions of human experience. In educational contexts, they may enhance students' well-being by fostering feelings of connection and understanding, particularly where opportunities for social interaction are limited or communication is challenging, as in the case of learners with special educational needs (Koegel et al., 2025; Kewalramani et al., 2021).

Natural Language Processing (NLP) techniques enable the analysis of students' written texts and transcribed oral productions to identify their emotional states and attitudes. In particular, sentiment analysis can determine whether language expresses positive, negative, or neutral emotions and, in some cases, detect more specific affective states such as enthusiasm, frustration, confusion,

or anxiety. In educational settings, these approaches can support the monitoring of students' emotional engagement, providing valuable information for adapting instructional strategies and creating learning environments that are more responsive to affective and relational dimensions (Panciroli, 2021).

The emergence of anxiety or other emotional states during self-reflective activities mediated by generative conversational systems—for example, anxiety related to examinations or teacher–student interactions—may activate supportive responses aimed at emotional regulation while simultaneously promoting greater awareness of one's internal experiences. At the same time, these interactions may provide teachers with valuable insights for reconsidering their instructional approaches and assessment practices (Troia, 2025). Nevertheless, such activities should always be followed by teacher-guided reflection to critically process the experience and strengthen students' self-regulation skills. Within this perspective, AI functions as a pedagogical mediator and support tool rather than a substitute for the educational role of the teacher.

The constant availability of a virtual assistant may also create a psychologically safe and non-judgmental space (Monsurrò & Grappi, 2025), encouraging students—particularly those who are shy, introverted, or emotionally vulnerable—to express feelings they might hesitate to share in group settings or during direct interactions with teachers. Such conditions can foster participation, strengthen students' sense of self-efficacy, and increase engagement. Conversational virtual assistants may therefore provide significant motivational, emotional, and psychological support by reproducing certain dynamics of teacher–student interaction while assuming multiple educational roles, including instructor, teammate, operational assistant, and mentor. However, these technologies should never be regarded as substitutes for human relationships or as mechanisms for delegating educational responsibility. Rather, they should be employed to strengthen students' emotional awareness, self-regulation, and interpersonal communication skills. The dialogic space created through interaction with AI systems should be understood as a protected and temporary environment that prepares for, supports, and complements authentic interpersonal dialogue without replacing it, thereby reinforcing rather than diminishing the educational function of human relationships.

3. AI-Mediated Difficult Dialogues: Toward the Pluralization of Perspectives

According to Daniel Goleman, schools should pursue not only objectives related to the acquisition of disciplinary knowledge and skills but also promote the development of students' socio-emotional competencies, fostering self-awareness, emotional regulation, and the ability to cope with conflicts. These

competencies are essential both for individual well-being and for adequate preparation for adult life; conversely, their absence may increase young people's vulnerability to dysfunctional and risk-related behaviours. This perspective highlights the importance of curricular interventions aimed at developing relational skills, emotional self-regulation, and problem-solving abilities, with the goal of transforming schools into educational contexts capable of promoting the holistic well-being of individuals.

Numerous studies (OECD, 2018; Govorova, Benítez, & Muñiz, 2020; Anderson et al., 2022) have demonstrated a significant relationship between students' participation, sense of belonging, well-being, and academic motivation. In particular, the quality of the school climate, together with opportunities for assuming responsibility and participating in decision-making processes, can influence not only students' psychological well-being but also their educational achievement. Moving beyond the transmissive teaching models with which Italian schools have often been associated—characterised by considerable distance between teachers and students, limited attention to relational dimensions, and rigid organisational structures (Pastori & Pagani, 2025)—it becomes necessary to place greater emphasis on students' active participation, focusing on the quality of educational relationships between teachers and learners as well as among peers.

In this context, empathy, understood as the ability to recognise, understand, and share another person's emotional states, represents both the foundation and the method of educational relationships and dialogue (Bellingreri, 2013), constituting a fundamental element in the construction of a positive school climate. Through his person-centred learning theory, Carl Rogers identified empathy as one of the essential conditions of the educational relationship, alongside congruence and unconditional positive regard. According to Rogers (1995), an empathic teacher is capable of understanding the student's inner world "as if" it were their own, while maintaining awareness of the distinction between self and other. Empathy therefore contributes to reducing interpersonal distance and fostering dynamics based on listening, mutual understanding, and cooperation, thereby supporting the creation of inclusive, participatory educational environments oriented toward students' well-being.

Rogers' approach thus emphasises the central role of relationships grounded in active listening, recognition of students' personal experiences, and the quality of the relational environment. In order for this approach to be effectively implemented within contemporary educational systems, a profound redefinition of the ways in which teaching and learning are conceptualised is required. Teachers are therefore called upon to foster participatory classroom environments based on mutual trust and authentic dialogue, where every student can feel recognised, valued, and welcomed in their personal entirety,

while simultaneously developing the motivation, willingness, and courage to express their own perspectives, including within difficult dialogues.

In socio-educational literature, the expression “difficult dialogues” refers to forms of communicative interaction addressing sensitive, controversial, and emotionally charged issues, such as segregation, violence, social inequalities, and questions of equity (Burbules, 2000; Arao & Clemens, 2013). By their very nature, these dialogical contexts may generate discomfort, tension, and conflict, particularly among individuals with plural identities or belonging to minority groups, as they make visible differences in experiences, values, and social positioning, revealing vulnerabilities and relational asymmetries. Accordingly, difficulty does not necessarily constitute an obstacle to the educational process; rather, it may be understood as an integral component of transformative dialogue, provided that it is accompanied by appropriate forms of pedagogical mediation and embedded within contexts that support dialogue, mutual recognition, and critical reflection (Arao & Clemens, 2013; Love et al., 2016).

Building on this idea, and paraphrasing Love et al. (2016), teachers should aim to construct not merely “safe spaces” but rather “brave spaces”: educational environments that do not seek to eliminate conflict or discomfort but instead encourage their critical and transformative exploration. A potential limitation of an approach focused on reducing distress is that it may implicitly prioritise the perspectives of individuals who are already socially and symbolically privileged, often belonging to dominant socioeconomic and cultural groups, thereby reproducing dynamics of differential inclusion. In order to facilitate the participation of multiple perspectives, it is therefore necessary to carefully consider classroom relational dynamics and existing power relations, thus creating “brave spaces”.

The recognition and valorisation of students’ diverse lived experiences highlight the importance of constructing common ground as a preliminary and foundational condition for initiating meaningful dialogical processes and consolidating trust within educational contexts (Wright Fields & Conyers, 2025).

The design of hybrid learning experiences, based on the integration between interaction with artificial intelligence systems and human intelligence (Zhang, 2024), may represent a particularly effective educational strategy for promoting inclusive and reflective learning processes. From this perspective, interaction with a conversational agent or robot can be interpreted, in continuity with Douglas Kellner’s (2000) reflections, as a form of cultural and dialogical mediation through which communicative devices and materials support the exploration of complex issues and the understanding of the lived experiences of individuals belonging to different sociocultural contexts.

Such interactions may contribute to the development of empathic, interpretative, and dialogical competencies, enhancing students' ability to critically engage with the plurality of human perspectives and experiences. However, particular attention should be paid to interactions with conversational agents and AI companions, as their increasingly relational and affective nature may, under certain conditions, contribute to the development of forms of attachment or emotional dependence (Sun, 2026; Kim et al., 2026). This issue is particularly relevant during adolescence, a developmental stage characterised by significant processes of social, emotional, and relational development.

Within this framework, the conversational agent can be conceived as a complementary tool for supporting students' emotional well-being while, at the same time, preparing them to engage with "difficult dialogues". Its use could, for example, be integrated into a three-stage instructional process: a preliminary preparation phase, during which students can identify and articulate their emotions in relation to a controversial issue; a simulation phase, in which interaction with the agent enables students to explore different perspectives and ways of managing disagreement within a protected environment; and a concluding reflection phase, aimed at processing the emotions experienced and the communication strategies adopted during the exchange.

Within this model, the conversational agent would serve a cognitive and emotional scaffolding function, fostering awareness, self-regulation, active listening, and perspective-taking, while the teacher retains a central role in pedagogical mediation and in facilitating the dialogue that takes place in the classroom. The aim is therefore not to eliminate the discomfort associated with engaging with sensitive issues, but rather to create the conditions under which such discomfort can be acknowledged, processed, and transformed into an opportunity for learning. In this way, the conversational agent may contribute to the development of "brave spaces", not by replacing the educational relationship, but by supporting students in preparing for and reflecting on the emotional and relational experiences associated with "difficult dialogues".

The role of the conversational agent does not consist in replacing the teacher or the educational relationship, but rather in functioning as a supportive tool for processes of communication, reflection, and participation. In particular, it can facilitate students' gradual engagement with difficult dialogues by providing explanations, examples, and reformulations that make sensitive and controversial issues more accessible. This process may foster the development of confidence in students' communicative abilities and strengthen the courage required to express their ideas and participate actively in discussions.

Dialogue with a chatbot, whether occurring in individual or collaborative contexts, may also support processes of metacognitive and emotional reflection, helping students identify their own beliefs, implicit biases, and emotional responses while promoting greater self-awareness. Furthermore, conversational agents can contribute to improving the quality of communication by supporting the reformulation of potentially conflictual statements, identifying stereotypes and overgeneralizations, and encouraging the adoption of more inclusive forms of language. In this way, they may facilitate respectful, reasoned, and open-ended exchanges that acknowledge the plurality of perspectives without restricting freedom of expression.

A further contribution concerns the possibility of expanding the range of perspectives represented within classroom discussions. By proposing alternative viewpoints, counterarguments, and different interpretative frameworks, conversational agents can stimulate critical thinking, dialogical reflection, and students' ability to engage with the complexity of the issues under examination. In this sense, artificial intelligence may support the construction of "brave spaces", oriented toward dialogue, mutual understanding, and individual and collective growth.

The educator's role does not therefore consist in eliminating the emotional dimensions that emerge within difficult dialogues, but rather in managing group dynamics (Arao & Clemens, 2013) and establishing pedagogical conditions that allow these emotions to be constructively processed. In this regard, practices such as the development of a "common ground", the promotion of mutual trust, and the creation of "brave spaces" play a central role not only from a cognitive perspective but also in relation to students' emotional well-being, as they contribute to reducing the risk of exclusion, humiliation, or silencing.

In the absence of an adequate climate of relational safety and mutual recognition, individuals may withdraw from dialogue or become increasingly entrenched in their own positions. Conversely, in contexts characterised by active listening and validation of subjective experiences, even discussions involving painful or controversial issues can become opportunities for growth, critical elaboration, and the development of empathy.

Ultimately, students' emotional well-being is deeply interconnected with the quality of educational dialogue, not as an additional or secondary dimension, but as an epistemological and pedagogical condition necessary for ensuring that discussions concerning inequality, power, and social justice can become transformative learning processes rather than mechanisms of defensive closure or unproductive conflict. The construction of "brave spaces" may therefore be supported by artificial intelligence insofar as AI enables emotional tensions to be transformed into questions, prompts, and opportunities for reflection.

However, this process remains fundamentally relational, situated, and deeply human, with the teacher's presence playing an irreplaceable role in the pedagogical regulation of the context, the management of power dynamics, and the educational mediation of dialogue.

Addressing "difficult dialogues" and constructing "brave spaces" does not represent a challenge exclusively for students; it also involves teachers, who must critically reflect on their own implicit biases, personal educational experiences, and identity positions, while developing an in-depth understanding of their students and the educational contexts in which they operate. Such awareness is essential for recognising the nature of the risks that students are asked to undertake when they are invited to participate in these forms of dialogue—risks that may involve cognitive, emotional, and relational dimensions (Arao & Clemens, 2013; Burbules, 2000).

According to Paulo Freire's pedagogical perspective, as a leading scholar of dialogical education, the teacher–student relationship is situated within a problem-posing approach to pedagogy, in which each participant is simultaneously understood as both teacher and learner. This perspective entails overcoming the traditional opposition between teacher-centred instruction and classroom discussion, requiring educators to adopt a flexible, reflective, and situated stance, capable of continuously recalibrating teaching practices in response to the evolving dynamics of classroom dialogue (Love et al., 2016).

The educational relationship is therefore conceived as a shared process of meaning-making (Follett, 1970), within which all members of the learning community participate co-responsibly in processes of individual and collective growth and development (Freire, 2011).

Within this framework, interaction with conversational systems may foster reflection on emotions, the development of self-regulation strategies, and the practice of socio-relational competencies, including empathy, perspective-taking, and conflict management.

Artificial intelligence thus assumes a mediating and supportive function within educational processes, without replacing the value of human relationships or the formative role of the teacher.

4. Conclusion

Emotional well-being in schools is achieved when students feel welcomed, listened to, respected, and valued in their individual differences. In particular, the promotion of dialogue contributes to the development of a positive school climate grounded in mutual respect and in the recognition of diverse cultural, linguistic, and social identities. An environment open to discussion and participation enables students to develop meaningful relationships, strengthen

their sense of belonging, and experience school as an inclusive and supportive space.

The most recent data from the OECD Programme for International Student Assessment (PISA), based on the 2022 survey, and the World Health Organization reports related to the Health Behaviour in School-aged Children (HBSC) study, published in 2024, highlight a significant decline in students' foundational competencies and a progressive deterioration in indicators of adolescents' psychological well-being compared with previous generations. These findings draw attention to the need to promote educational environments capable of supporting not only cognitive learning but also students' emotional, relational, and social well-being.

From this perspective, strengthening educational practices oriented toward inclusion, constructive dialogue, active participation, and the valorisation of diversity becomes essential in order to foster more equitable, welcoming, and supportive school contexts. Such practices are consistent with the recommendations of the European Commission concerning education, social inclusion, and democratic citizenship, and contribute to the holistic development of individuals.

Artificial intelligence, through the use of advanced conversational systems and simulation-based environments, may represent a complementary tool for supporting students' well-being in school and the development of their socio-relational competencies. In particular, such systems can provide opportunities for reflecting on one's emotional experiences, practising listening and communication skills, and exploring constructive strategies for conflict management within protected and pedagogically structured environments. In this sense, interaction with conversational systems may foster forms of technology-mediated affective engagement and support processes of emotional awareness and self-regulation, without, however, being conceived as a substitute for human relationships or for the teacher's educational mediation. These potential benefits should nevertheless be considered in light of the current empirical evidence: further rigorous and longitudinal studies are needed to assess their actual effectiveness in promoting students' well-being in school and to identify pedagogically appropriate, safe, and sustainable ways of implementing such technologies. The construction of "brave spaces", in which students can engage with difficult dialogues concerning sensitive issues, may prove particularly effective when supported by conscious language practices and the implementation of targeted educational strategies. Within such contexts, initial conditions of tension, anxiety, and discomfort can be progressively re-elaborated and transformed into meaningful and engaging interactions. This process enables transformative learning dynamics that

contribute to the creation of educational environments based on openness, mutual respect, and inclusion.

Artificial intelligence can support these processes not as a substitute for human relationships, but as a tool for dialogical mediation, assisting in the design of educational activities aimed at constructive engagement, such as simulations of discussions on controversial topics or guided reflective pathways. In these cases, technology functions as a form of cognitive and emotional scaffolding, helping students organise their thinking and making complex relational dynamics more accessible.

However, the use of artificial intelligence must always be guided by clearly defined educational purposes and conceived as a complement to teaching relationships, rather than as a replacement for the teacher's formative role or the importance of human interaction. Students' learning experiences can be enhanced through the construction of a complementary relationship between the teacher as facilitator and the conversational system, by drawing upon their respective strengths and affordances.

Without qualified pedagogical mediation and integration with authentic relational experiences, there is a risk of reducing the complexity of human dialogue to simplified or artificial forms of interaction. For this reason, artificial intelligence should be understood as a supportive educational device aimed at preparing, facilitating, and deepening dialogical processes, while never replacing the educational value of interpersonal relationships and genuine human interaction.

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