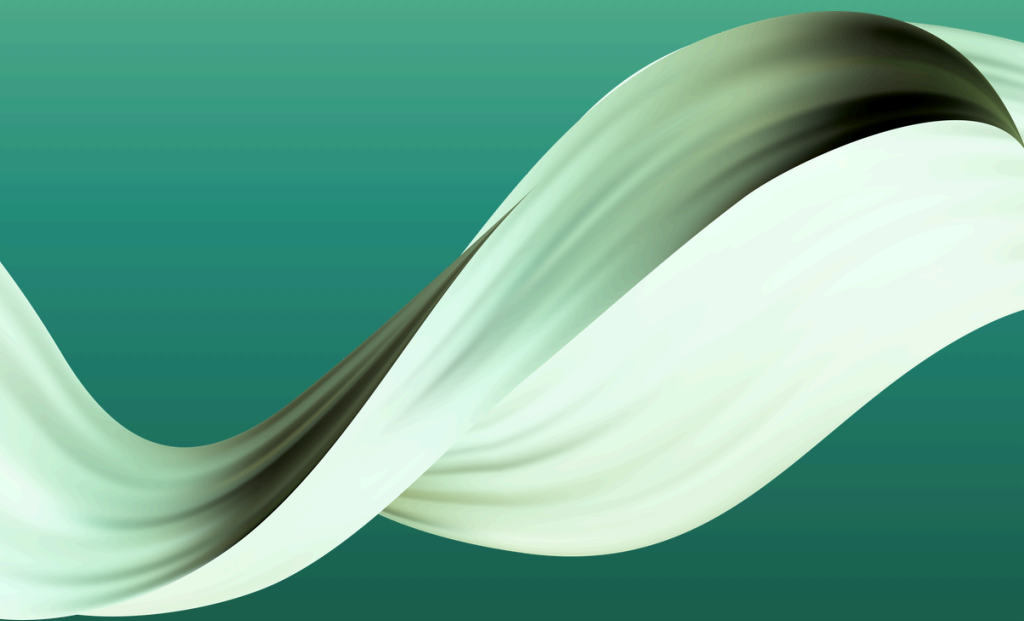




ALGORITHMIC HEARTBEATS

*Affective Education in the Age
of the Fourth Revolution*



Edited by

FRANCESCO PELUSO CASSESE

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Giovanni Porzio Street 4, Centro Direzionale, Isola F2, 80143 Naples, Italy

cares@pecimprese.it

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Teachers' Cultural Positionings and Attitudes of Artificial Intelligence in Education: Evidence from an Italian Descriptive Study

*Fiorucci Andrea
Bevilacqua Alessia*

Artificial Intelligence (AI) is playing an increasingly significant role in educational contexts, offering new opportunities for learning personalization, instructional design support, and the inclusion of students with diverse educational needs. At the same time, the spread of generative AI systems and intelligent teaching tools raises questions regarding the ethical, professional, and pedagogical aspects of their use. National and international literature highlights how teachers' attitudes constitute a central variable in the processes of acceptance and integration of innovative technologies, significantly influencing teaching practices and school innovation pathways (Wilson, 2023; Galindo-Domínguez et al., 2024; Perla et al., 2025).

Within this framework, the present study aims to explore Italian teachers' attitudes toward AI in educational contexts, with particular attention to its applications in teaching–learning processes and in supporting students with disabilities. The study seeks to understand teachers' level of familiarity with such technologies and to analyze how they interpret the opportunities and limitations of AI in school contexts.

The research adopted a quantitative descriptive-exploratory design using a self-administered online questionnaire. The sample consists of 682 Italian teachers, of whom 52.5% are special education teachers and 47.5% are general education teachers. Data collection took place between March and September 2025 via Microsoft Forms. The instrument used derives from the questionnaire developed by Alsudairy and Eltantawy (2024), subsequently validated in the Italian context through exploratory and confirmatory factor analysis (Fiorucci & Bevilacqua, 2026). The final version includes 32 items organized into two correlated factors; items were assessed using a three-point Likert scale.

The results show a predominantly low-to-medium level of familiarity with AI-based technologies, reported by 77.9% of the sample.

Regarding attitudes, the overall score ($M = 2.31$), obtained as the mean of the 32 questionnaire items corresponding to the two identified dimensions (Factor 1 and Factor 2), indicates a generally positive orientation toward AI in educational contexts. This value suggests that, overall, teachers tend to recognize the potential of AI as a resource for improving teaching and learning processes, showing a prevalence of favorable evaluations over disagreement. However, consistent with the findings emerging from the analysis of the individual dimensions, the overall result also reflects a non-uniform attitude. Alongside a generally positive evaluation, a component of caution emerges, particularly with regard to the practical applications of AI in teaching practice and in assessment and inclusion processes.

Therefore, the overall score confirms a favorable perception of AI among teachers, although this openness is accompanied by a degree of prudence that highlights the need for further training initiatives and the progressive strengthening of digital and pedagogical competences related to the use of such technologies.

Analyzing the two factors separately, the first factor shows that teachers recognize the potential of AI mainly in relation to learning personalization, the diversification of teaching strategies, and the adaptation of materials for students with disabilities. Particularly high levels of agreement emerge regarding the use of AI to create simulated lessons, support understanding of technological principles, and optimize the time required to adapt instructional resources.

However, this openness does not translate into unconditional acceptance of the technology. Items suggesting the delegation of educational decisions to AI show very high levels of disagreement. Teachers reject the idea that intelligent systems can replace teachers' professional judgment or assume

an autonomous role in complex decision-making processes. This finding suggests a view of AI as a support tool rather than a substitute for educational action.

The second factor also shows a generally positive orientation. Participants recognize the technology's potential to provide feedback, support the understanding of complex concepts, simplify information, and enhance accessibility in learning. At the same time, many items show high percentages of neutral responses, particularly those related to advanced personalization of learning pathways, assessment of students with disabilities, and the promotion of lifelong learning. This neutrality appears to reflect not a rejection, but rather a cautious evaluation, as noted above, stemming from limited direct experience with such tools.

The analysis of composite scores confirms this orientation. Factor 1 shows a mean of 2.43, while Factor 2 shows a mean of 2.20. The difference between the two dimensions suggests that acceptance of the theoretical potential of the technology is higher than confidence in its concrete implementation in educational settings.

The results allow teachers' attitudes to be interpreted not as a simple favorable/unfavorable dichotomy, but as complex professional positions in which interest, selective trust, caution, and training needs coexist. AI is perceived as a useful resource for promoting inclusion, personalization, and pedagogical innovation, but its use appears to be conditioned by the maintenance of educational responsibility and the central role of teachers in decision-making processes.

The study therefore highlights the need to invest in both initial and in-service teacher education pathways aimed not only at developing technical skills, but also at fostering a critically grounded and pedagogically informed AI literacy (Vrasidas & McIsaac, 2001; Ertmer, 2005). From this perspective, the integration of AI in schools requires professionals capable of critically interpreting the opportunities offered by technology, assessing its limitations, ethical implications, and educational consequences. Innovation, in fact, does not depend solely on the availability of tools, but on the capacity of professional communities to guide their use toward inclusive and educational goals (Di Martino, 2024; Nirchi et al., 2025; Nazaretsky et al., 2022).

Fiorucci Andrea – University of Salento - andrea.fiorucci@unisalento.it

Bevilacqua Alessia – University of Macerata - a.bevilacqua11@unimc.it

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