Journal of Inclusive Methodology and Technology in Learning and Teaching
ISSN 2785-5104
Anno 6 n. 4 (2026)

EDIZIONI UNIVERSITARIE ROMANE
editoria scientifica dal 1952

Qualitative Analysis of Open-Ended Questions from the AI-Teachers Questionnaire

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Abstract:
The pervasive and rapid integration of Artificial Intelligence (AI) into educational environments represents not merely a technological shift, but a profound epistemological and ecological transformation. While traditional psychometric models—such as the Technology Acceptance Model (TAM) (Davis, 1989) or UTAUT (Venkatesh et al., 2003) —have long dominated the assessment of digital adoption, they exhibit clear heuristic limitations when applied to Generative AI, often reducing complex educational dynamics to metrics of perceived usefulness and ease of use. This study examines the qualitative open-ended responses from the first national administration of the *AI-Teachers Questionnaire*, involving a sample of 415 Italian educators across all school levels. Adopting a Sequential/Concurrent Mixed-Methods Design and utilizing Mayring's Qualitative Content Analysis (QCA) ($\kappa = 0.84$), this paper explores teachers' perceptions regarding algorithmic dysfunction and epistemic errors, long-term systemic and ethical risks, and concrete optimization desiderata.
The findings reveal that open-ended narrative sections serve as essential heuristic tools to uncover the hidden dimension of the teaching profession, capturing emotional experiences, ethical concerns regarding data privacy and cognitive delegation, as well as emerging micro-practices. The study highlights the urgency of moving beyond instrumental prompt engineering toward a critical, emancipatory AI literacy anchored in a Human-Centric Approach. Ultimately, the research demonstrates that the future of AI in education depends on preserving and enhancing pedagogical agency, teaching autonomy, and the intersubjective maieutic relationship between teacher and student.
Keywords: Artificial Intelligence in Education; AI-Teachers Questionnaire; Mixed-Methods Research; Qualitative Content Analysis; Pedagogical Agency; Human-Centric AI; Teacher Professional Identity; AI Literacy.

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Introduction

The pervasive, sudden and systemic introduction of Artificial Intelligence (AI)-based technologies into contemporary learning environments is not simply a technological turning point, but an epistemological and ecological one. The entry of algorithmic agents — in particular large-scale language models (LLMs) and multilevel generative systems — into everyday school life is leading to an epochal reconfiguration of teaching practices, socio-emotional classroom dynamics and the very professional identity of teachers.
In recent decades, the scientific literature has investigated the integration of digital resources in educational institutions mainly using theoretical models of psychometric and behavioral matrix, including the *Technology Acceptance Model* (TAM), originally formulated by Davis and subsequently integrated into its TAM 2 and TAM 3 declinations, which represented the hegemonic reference point for estimating and predicting behavioral *intention*.

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editoria scientifica dal 1952

TAM bases its predictive capacity on two main key constructs: perceived utility, the degree to which an individual believes that the use of a particular system can improve his or her work performance; perceived ease of use, the degree to which a person believes that the use of the system is free of physical or mental effort.
However, the advent of Generative Artificial Intelligence (GenAI) makes evident the heuristic and explanatory limits of these reductionist models. Unlike traditional software — characterized by deterministic logics and predominantly instrumental user-machine interaction — AI systems are configured as "active algorithmic agents" with an apparent generative autonomy, decision-making opacity or *black box* dynamics (Pasquale, 2015) and high adaptive capabilities. In this scenario, the teacher's decision to adopt, reject or reshape the use of AI does not end in a rational calculation between ease of use and perceived utility. On the contrary, it is mediated by complex emotional experiences, ethical-value evaluations and the perception of the risk of de-professionalization and weakening of teaching autonomy.
For these reasons, the most recent research highlights the urgent need to integrate traditional quantitative models with qualitative approaches and *mixed-methods*. The fundamental objective is to grasp the complexity of teachers' perceptions, avoiding the theoretical saturation of the object of study and enhancing the "living voice" of school actors.
The adoption of AI in school ecology requires a redefinition of the pedagogical relationship. When the algorithm enters the classroom, it does not act as a mere technical support (for example, a video projector or a spreadsheet), but takes on the role of a cognitive intermediary capable of formulating texts, solving complex problems, evaluating papers and personalizing training paths. This generates a profound reorganization of roles:

1. *erosion or redefinition of pedagogical agency:* teachers are faced with the fear of losing control over the student's cognitive path. If AI provides immediate and structured answers, the teacher risks being relegated to a role of passive supervisor of automated processes;
2. *emergence of the ethical burden and bureaucratization:* the use of algorithmic tools introduces ethical dilemmas regarding the privacy of student data, the intellectual property of content and evaluative fairness. In addition, there is a risk that AI will be imposed from above to optimize performance, reducing the methodological component of teaching to a technical task;
3. *professional resistance as a critical positioning:* the reticence or hesitation expressed by many teachers in the face of AI should not be interpreted simplistically as an irrational "resistance to change" or as a form of Neo-Luddism. In most cases, resistance configures a reflective and defensive pedagogical posture, aimed at safeguarding the centrality of human relationships, empathy and intersubjectivity in the teaching process.

As highlighted by Selwyn's (2022) research, the automated introduction of technology into schools risks dehumanizing the educational act if not governed by critical awareness. The rational and emotional dynamics that guide teachers' behavior in the face of AI can be schematized in the following theoretical matrix:

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editoria scientifica dal 1952

Size	Traditional quantitative approach	Qualitative approach/mixed-methods
Core constructs	Perceived Utility (PU), Ease of Use (PEOU), Behavioral Intention (BI).	Pedagogical agency, AI *anxiety*, professional identity, ethical burden.
Strengths	Statistical generalizability, identification of trends on large samples, empirical verifiability	Interpretative depth, detection of latent meanings, contextualization of experiences
Limitations in AI analysis	Risk of reductionism; opacity with respect to deep motivations and ethical fears.	Less statistical generalizability; complexity in encoding large textual data
Subject of investigation	"How much" and "what" tool is used.	"How", "why" and with what pedagogical meanings the tool is integrated or rejected

Table 1. *The methodological value of broad-answered questions in mixed-methods*

Within the educational research landscape, the adoption of *Mixed-Methods Research Design* satisfies the strategic need for data triangulation. Such triangulation is not limited to confirming or denying quantitative results through qualitative data (or vice versa), as its main heuristic value lies in the ability to expand, problematize and re-signify the understanding of the object of study.
To meet this need, the methodological choice of putting the "living voice" of teachers at the center is perfectly aligned with the strategic orientations expressed by the main international agencies for education and culture.
UNESCO (2023), in its *Guidance for Generative AI in Education and Research*, emphasizes that the adoption of AI in schools must be subordinated to the principle of the Human-Centric Approach, which establishes three inescapable pillars: protection of relational centrality, which sees Artificial Intelligence must never replace human, relational and empathic interaction between teacher and student; protection of teaching autonomy: teachers must maintain primary and exclusive responsibility for curricular, pedagogical and evaluation choices, preventing algorithms from taking on autonomous decision-making roles; development of critical *AI literacy*: training teachers does not simply mean teaching them the mechanical use of software (*prompt engineering*), but developing a systemic understanding of the ethical, epistemic and social implications of the algorithm.
A similar stance is taken by the European Commission in *the Ethical Guidelines on the use of Artificial Intelligence and Data in Teaching and Learning for Educators*, which reiterates the importance of Explainable AI and the protection of fundamental rights within European school ecosystems.

2. Contextualization of the study, research objectives and design of AI-Teachers

This study is part of the survey framework conducted on the Italian national territory through the administration of the *AI - Teachers Questionnaire*, a standardized tool designed and validated by Nuzzaci and Orecchio (2025-2026). The original tool is divided into several sections, aimed at investigating basic digital skills, the frequency of use of AI software, the perception of usefulness and technological anxiety, supplemented by a series of open-ended sections strategically positioned to collect some opinions from the participants in the sample.
The textual corpus analyzed in this article comes from the analysis of the questions opened by the first administration of the tool on a national scale, which involved a sample of 415

EDIZIONI UNIVERSITARIE ROMANE
editoria scientifica dal 1952

teachers belonging to schools of all levels (from kindergarten to upper secondary school) of the Italian education system.

The targeted inclusion of open questions within a predominantly structured questionnaire offers multiple methodological advantages:

- *overcoming the saturation of a priori categories:* closed questions with a Likert scale bind the respondent within a conceptual perimeter predefined by the researcher. In this sense, even within closed tools or alongside them, qualitative tools of a different nature with possible open questions offer the teacher a free and unconstrained space for expression, allowing the emergence of *emerging* categories that were not foreseen in the design phase of the application;
- *decoding AI anxiety and ambivalences:* textual responses make it possible to detect the gradient of inner contradiction experienced by teachers, who can simultaneously recognize the high technical usefulness of AI (high quantitative data) and at the same time manifest intense anxiety from professional alienation or a deep sense of inadequacy (qualitative data);
- *provision of contextual and narrative elements:* micro-narratives of practical experiences, technical failures or educational successes provide adequate illumination to explain the underlying causes of the statistical variances that emerged from the quantitative scales.

2.1 Sample characteristics

The first national administration of the tool involved an overall sample of teachers belonging to the Italian education system ($N = 415$). The distribution of the sample reflects the transversal representativeness with respect to the different levels of school and levels of professional experience, as summarized in Table 1.

Variable	Category	n	%
Order/Grade of School	Kindergarten	41	9.9%
	Primary School	128	30.8%
	Lower Secondary School	114	27.5%
	Upper Secondary School	132	31.8%
Years of Service	6-15 years	62	14.9%
	6-15 years	145	34.9%
	Over 15 years	208	50.2%
Gender	Female	328	79.0%
	Male	83	20.0%
	Undeclared / Other	4	1.0%

Table 1. *Socio-demographic and occupational distribution of the sample* ($N = 415$)

The methodological attention of this contribution focuses on the textual answers provided by the 415 professors to three specific aspects with a broad response:
Item – *Analysis of technological and epistemic dysfunctions*

- *Framework:* this item requires teachers to describe in detail and explicitly experiences of failure, paradoxes, conceptual errors, hallucinations or misleading answers directly encountered during the application use of AI systems.

EDIZIONI UNIVERSITARIE ROMANE
editoria scientifica dal 1952

- *Objective:* to map the types of technical dysfunction and detect the emotional-professional impact (frustration, loss of confidence, activation of critical control) caused by algorithmic inaccuracy.

Item – *Long-term systemic and ethical visions*

- *Framework:* reserves a narrative space to bring out the conceptual knots of teachers on the future of the school institution and society in general. The item stimulates reflections on the risks of atrophy of critical thinking, impoverishment of memory, relational isolation of students and mechanization of evaluation.
- *Objective:* to extract the ethical and ecological-relational macro-themes that condition the deep acceptance of technology beyond the parameters of usability.

Item – *Development Wish and Optimization Guidelines:*

1. *Framework:* focused on intercepting concrete proposals, development priorities and professional aspirations oriented towards optimizing AI for the school context.
   - *Objective: To* identify teachers' demands on EdTech developers and policy makers (e.g., algorithmic transparency options, certified accuracy of sources, ethical and protected interfaces).

Research questions

The systematic analysis of the textual corpus collected through the items subjected to analysis aims to answer the following research questions:

- **RQ1:** *What types of technical, epistemic and perceptual errors are identified as a priority by Italian teachers in the use of AI? What professional and emotional reactions are determined towards technology?*
- **RQ2:** *What are the main ethical, cultural and systemic issues expressed by teachers regarding the impact of AI on students' cognitive and socio-relational processes?*
- **RQ3:** *What functional, pedagogical and ethical requirements (desired) do teachers consider indispensable for a conscious, safe and safeguarding integration in the school of the future?*

3. Qualitative analysis methodology

3.1 Research design and data triangulation

The theoretical framework of the survey is located within the research designs with mixed methods with integrated qualitative priority (*Sequential/Concurrent Mixed-Methods Design*). Although the primary investigation of the *AI-Teachers Questionnaire* collects quantitative metrics on large samples, the analysis section presented here isolates the textual

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editoria scientifica dal 1952

corpus with a broad response to conduct an exploration of the content, theme and semiotics of teachers' perceptions.

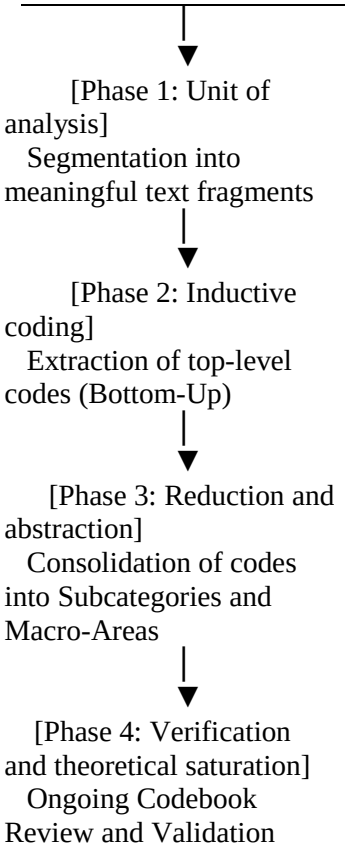
The triangulation of the data made it possible to validate the results according to the principles established by Creswell & Creswell (2018): the quantitative evidence relating to the scales of frequency of use and technological anxiety is here contextualized, contested or made comprehensible through the spontaneous statements of the teachers.

Qualitative analysis does not act as a mere illustrative corollary, but represents an indispensable hermeneutic framework for deciphering the meaning attributed by teachers to their professional practice in the presence of algorithmic systems.

The procedure for analyzing the textual corpus — consisting of over 1,200 narrative fragments extracted from the 415 questionnaires — strictly followed the criteria of the Qualitative Content Analysis (QCA) theorized by Philipp Mayring (2014). This methodology guarantees high standards of replicability, transparency and traceability through a systematic, inductive and recursive coding process.

Raw Textual Corpus (415 Professors)

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editoria scientifica dal 1952



The analytical process was structured in the following operational phases:

1. *definition of the Unit of Analysis*: identification of the relevant text units (from single clauses to micro-clauses) carrying an autonomous meaning with respect to the reference item;
2. *inductive development of categories (category building):* progressive abstraction of codes directly from teachers' answers (*bottom-up*), avoiding superimposing pre-established rigid theoretical categories;
3. *formalization of the Codebook:* explicit definition of each category, correlated with rules of inclusion/exclusion and guiding empirical examples taken from the text;
4. *recursive cycles of revision*: iterative re-reading of the textual material when 20% of the coding is reached to refine the definitions and verify the theoretical saturation of the categories;
5. *abstraction level:* consolidation of codes into general thematic macro-areas and analytical subcategories.

3.3 Coding protocol and reliability assessment

To ensure methodological rigor and eliminate subjective biases, the coding was conducted by two independent researchers. The level of agreement between the coders (*Inter-Coder Reliability*) was formally calculated using the Fleiss Kappa index (κ), obtaining an average coefficient of $\kappa = 0.84$, an indication of an exceptional concordance between the evaluations.

In cases of interpretative discrepancy, the units of analysis were subjected to a process of "collegial conciliation" based on the contextual redefinition of the *Codebook*, thus ensuring maximum transparency of the analytical process.

4. Results and discussion

The results that emerged from the content analysis show a rich, multifaceted and highly polarized conceptual map. The content analysis compared to what has been elaborated is presented below.

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editoria scientifica dal 1952

				pages"
	Cultural and gender bias	Reproduction of cultural and gender stereotypes	22.1%	*"In generating examples of scientific professions, he always used the masculine, relegating the feminine to the roles of care"*
	Anachronisms and inaccuracies	Historical contextualization errors	16.4%	*"It placed historical events of the 20th century in medieval conceptual frameworks with an absolutely peremptory tone"*
Lecturer reactions	Critical Control Activation	Rejection of automatism and verification	42.0%	*"The mistake forced me to become a constant 'fact-checker'; I can't trust anything without verifying"*
	Frustration and mistrust	Feeling of wasting time and inadequacy	28.3%	*"It generates deep insecurity: it takes me twice as long to correct its errors as it does to write it manually"*

Table 2. *Taxonomy of technological-epistemic dysfunctions and teacher reactions emerging from Qualitative Content Analysis (N = 415)*

Analysis of technological and epistemic dysfunctions

This analysis focused on the answers of the teachers, who were invited to describe in detail the technical criticalities, errors and paradoxical responses encountered in the direct use of AI tools. The inductive analysis made it possible to classify the phenomena described into two macro-areas: technical-epistemic dysfunctions of the algorithm and emotional-professional reactions of the teacher.

Algorithmic hallucinations and unreliability of sources

The most reported criticality concerns the so-called hallucinations of language models (38.5%). As described in the literature on large language models as 'stochastic parrots' (Bender et al., 2021), professors highlight how the seriousness of these errors lies in their *stylistic structure*: AI expresses inaccuracies, historical falsehoods, incorrect scientific concepts or completely invented bibliographic citations with fluid, assertive and formally irreproachable prose.

Example: *"In requesting a summary of the hermetic literature, the system quoted entire verses attributing them to Ungaretti, but upon closer inspection they were verses totally invented by the algorithm. The verisimilitude of the form makes the trap extremely dangerous for students"* (Teacher 87, Secondary School)

This "formal correctness of error" represents the main factor of "educational risk" identified by teachers, where the safe language of the software undermines the ability of students to exercise methodical doubt, inducing them to passive acceptance of the output.

Macro-area	**Subcategory**	**Coding category**	**Relative Frequency (%)**	**Example guide from the textual corpus**
Epistemic dysfunctions	Algorithmic hallucinations	Generation of invented but plausible facts	38.5%	*"He invented bibliographic citations that never existed, attributing them to real authors complete with chapters and*

EDIZIONI UNIVERSITARIE ROMANE
editoria scientifica dal 1952

worldview.

Example: "*I asked the AI to structure a scenario for a corporate problem-solving problem and one for school assistance: in management roles it automatically inserted male names, while in executive and support roles only female names. This apparent neutrality is a vehicle for silent indoctrination"* (Teacher 204, Lower Secondary School).

The impact on the teacher's posture: from disorientation to critical vigilance

On an emotional and professional level, the impact with algorithmic dysfunction does not necessarily lead to the rejection of technology, but leads to a redefinition of the workload. The teacher is transformed from a content provider to a critical validator of automated outputs. This transition, while stimulating epistemic vigilance (42.0%), generates a strong sense of frustration (28.3%), linked to the increase in the time needed to review and "reclaim" machine-generated texts.

Long-term systemic and ethical visions

The analysis of item 35 allowed to explore the conceptual representations of teachers on the future of the school institution and on the long-term anthropological and cognitive effects determined by the integration of AI

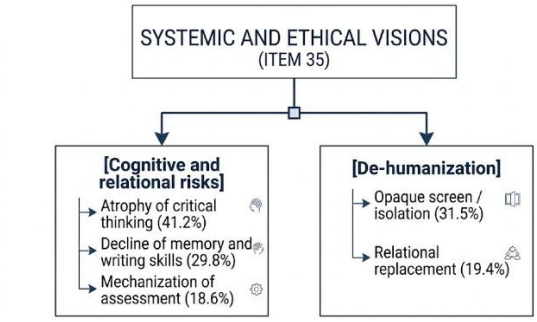


Figure 1. *Conceptual map of long-term systemic and ethical visions regarding AI integration in education (Item 35, N = 415)*

The atrophy of basic cognitive skills

The dominant concern expressed by the sample (41.2%) concerns the atrophy of critical thinking, the capacity for autonomous synthesis and the structuring of logical-argumentative discourse in students. Immediate access to prepackaged answers eliminates the so-called "fatigue of thinking" — that phase of incubation and cognitive effort fundamental for the development of synapses and for the internalization of concepts.

Example: *"If the student delegates the planning, drafting and revision phase of a text to the algorithm, he is not simply using a tool: he is outsourcing the very architecture of his thought. We risk raising a generation unable to support complex reasoning without a digital tutor to suggest the words"* (Teacher 112, High School)

Teachers report a drastic decline in handwriting skills, working memory and resistance to cognitive frustration when faced with complex or ambiguous texts (29.8%).

Cultural, gender biases and homogenizing drift

A further problematic issue that emerged concerns the intrinsic presence of information biases and socio-cultural biases (22.1%).

Teachers denote how AI tends to reproduce a heterodirected, predominantly Anglocentric, Eurocentric and gender-stereotyped

dimension, the fear of the dehumanization of the educational act emerges strongly (31.5%). The intensive and individual use of AI risks erecting an "opaque screen" between teacher and learner and between the students themselves, fragmenting the community and socio-emotional dimension of the classroom.
Example: *"Teaching is not the transfer of information, but empathic relationship, gaze, encouragement in the moment of failure. No algorithm, no matter how sophisticated, can replace the human presence that recognizes the emotional value of a mistake and supports the student"* (Teacher 341, Primary School)
A further critical element lies in the risk of mechanization of evaluation (18.6%), in which the adoption of automated grading systems reduces evaluation to a quantitative measurement devoid of pedagogical sensitivity.

Development Wishes and Optimization Guidelines
The analysis of the desires (Item 36) demonstrates the mature awareness of the teaching staff about the prevailing attitude, which shows not a priori or Luddite rejection of AI, but a pragmatic demand for regulation, transparency and pedagogical co-design.

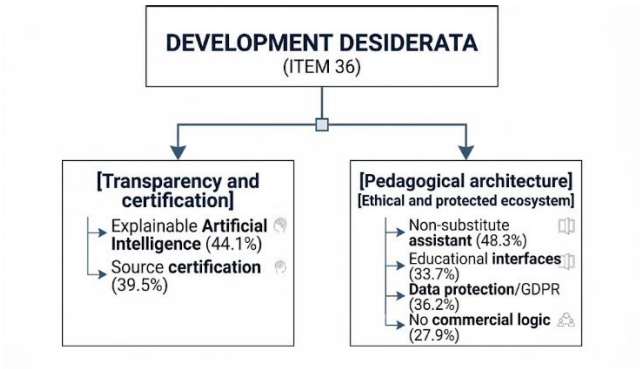


Figure 2. *Conceptual map of development desiderata and optimization requirements for AI integration in schools (Item 36, N = 415)*

Algorithmic transparency and scientific-bibliographic certification
The absolute priority expressed by teachers concerns overcoming the *black box* logic through the request for *Explainable AI* (XAI) (44.1%), aligning with broader multidisciplinary concerns regarding the opportunities, risks, and implications of generative conversational AI in educational practices (Dwivedi et al., 2023). Teachers demand systems capable of showing the traceability of sources, the probabilistic logic followed in the generation and the level of reliability of the information provided.

1. Certification of sources (39.5%): integration of validated and searchable academic databases, with citations verifiable in real time.
2. Control over training datasets: ensuring that school tools are trained on corpus free of cultural biases and stereotypes.

AI as a teaching assistant and not as a substitute for the teacher
In perfect accordance with international guidelines (UNESCO, 2023), educators require that AI be expressly designed as a sort of "subordinate teaching assistant" (48.3%).
"We don't want software that pretends to teach or evaluate students for us. We ask for intelligent tools that free us from bureaucratic tasks, from the correction of standardized tests or from the drafting of minutes, to give us back the most precious asset: the time to devote to the individual care of our students" (Teacher 53, Lower Secondary School).

The erosion of the educational relationship and the isolation of the student
In addition to the cognitive

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editoria scientifica dal 1952

Technology ecosystem requirements and school interfaces
The operational proposals put forward by the sample for the design of future EdTech software are summarized in the following taxonomy:

Development scope	Specific requirement	Pedagogical/functional objective
User Interface	Integrated educational dashboards	Provide clear, distraction-free work environments modeled on the phases of curriculum design.
Security and privacy	GDPR Compliance and "Walled Gardens"	Create secure environments where student data and products are not reused for business model training.
Personalisation	Modules for Special Educational Needs (BES/DSA)	Develop adaptive tools for LIS translation, advanced voice synthesis, and accessible conceptual simplification.
Formative assessment	Processual and Non-Summative Feedback	Design software that provides the student with guided self-correction suggestions instead of grades or immediate solutions.

Table 3. *Taxonomy of technological ecosystem requirements and pedagogical interface design desired by teachers (N = 415)*

5. Educational implications and training policies

The interpretative framework that emerged from the teachers' narrative responses calls for a profound theoretical and institutional review of the strategies for integrating Artificial Intelligence into school contexts. The teachers' statements unequivocally show how educational policies focused on mere instrumental training or on the acquisition of decontextualized procedural skills — such as simple *prompt engineering* or training in the use of specific commercial software — prove to be dramatically insufficient and, sometimes, even potentially misleading.
Framing AI literacy (Long & Magerko, 2020) within a purely technical framework risks fueling a double perverse effect, which sees, on the one hand, an uncritical and passive acceptance of the logic of automation, and, on the other, a reaction of technophobic rejection dictated by the anxiety of de-professionalization. As clarified by the teachers' reflections, AI Literacy must be reconceptualized as a theoretical-critical, epistemological and ethical paradigm.
The initial and continuous training courses of teaching staff cannot be limited to teaching "how to use" a linguistic model, but must provide the interpretative keys to understand "what the algorithm is", what its epistemic assumptions are, on which datasets it is based and what economic and ideological logics orient its architecture. An idea of emancipatory literacy emerges from the perceptions and opinions of teachers, which must be articulated along some transversal lines:

1. *media epistemology and automation architecture:* understanding the probabilistic and statistical functioning of generative AI is the indispensable premise for demystifying the myth of infallibility;
2. *knowledge of the machine:* recognize the linguistic and non-cognitive nature of the models and contextualize the phenomenon of hallucinations and information biases;

EDIZIONI UNIVERSITARIE ROMANE
editoria scientifica dal 1952

3. *Data ethics and protection of fundamental rights:* developing a mature awareness of the implications related to data mining, digital surveillance, intellectual property and compliance with the GDPR in the school ecosystem;
4. *management of professional anxiety and safeguarding of agency*: to offer spaces for didactic re-elaboration in which the natural hesitation in the face of technology is not dismissed as incompetence, but valued as a reflective posture to protect the educational relationship and didactic autonomy.

In this perspective, in the words of the interviewees, teacher training is configured as a real strategic antidote against technological anxiety and professional alienation. Only a critically literate teacher is able to govern technology rather than suffer it, transforming the introduction of AI into an opportunity to reaffirm the centrality of educational action.
In addition, the wishes expressed by teachers directly challenge educational technology (*EdTech*) developers and policy makers. There is an urgent need to overcome the *top-down* logic, in which tools designed for commercial or corporate purposes are placed with authority in the classroom without any contextual mediation. A new season of educational co-design must be inaugurated, in which teachers, pedagogues, ethicists and developers work synergistically to design transparent, secure, bias-free and scientifically validated digital learning environments.
The adoption of AI at school, as reiterated by the guidelines of UNESCO and the European Commission, must remain firmly anchored to the principle of the *Human-Centric Approach*. The algorithm can and must take on the role of an efficient assistant to urge the teacher from bureaucratic tasks or to support didactic personalization for students with special educational needs. However, the responsibility for curricular choices, the act of evaluation and, above all, the care of the social-emotional and relational dimension of teaching must remain an irreplaceable prerogative of the human being.

6. Conclusions and limitations of the research

The qualitative analysis conducted on the open-ended answers of the *AI-Teachers Questionnaire* has amply demonstrated how systematic and rigorous integration between quantitative tools and narrative sections constitutes a methodological choice of primary relevance for contemporary educational research. In an educational context marked by radical epistemological uncertainty and accelerated technological evolution, traditional models for detecting acceptance — including the *Technology Acceptance Model* (TAM) or UTAUT — show obvious interpretative limits. If applied in isolation, in fact, these metrics risk returning a partial, static and decontextualized photograph of the school reality, reducing the complex dynamics of innovation to the sole evaluation of perceived usefulness and ease of use. The adoption of a *mixed methods approach*, on the other hand, makes it possible to embrace the complexity of the school ecosystem according to a deeper heuristic perspective: if on the one hand quantitative data offer a structured and generalizable mapping of general attitudes, on the other hand the narrative corpus brings out the submerged dimension of the teaching profession. Through the words of the teachers, emotional experiences emerge — ranging from enthusiasm for new forms of co-design to performance anxiety and the perception of threatened self-efficacy — together with ethical and pedagogical resistance linked to the transparency of algorithms, data protection and the fear of cognitive delegation to the machine. At the same time, a rich panorama of emerging micro-practices and daily experiments emerges that inevitably escape quantitative surveys. Giving voice to teachers' statements means accessing the “practical wisdom” of the teaching staff, transforming open-ended answers from simple illustrative elements to real tools of mediation between pedagogical theory and classroom ecology.

EDIZIONI UNIVERSITARIE ROMANE
editoria scientifica dal 1952

Overcoming the reductionism of functionalist metrics in favor of an integrated epistemology is therefore a fundamental precondition not only for assessing the real impact of Artificial Intelligence at school, but also for orienting educational policies, the design of responsible technologies and continuous training paths towards an authentically pedagogical and human sustainability.

In conclusion, the study testifies that the future of Artificial Intelligence in schools will not be played on the computing power of algorithms or the usability of graphical interfaces, but on the ability of the education system to preserve and enhance pedagogical agency, teaching freedom and the intersubjectivity of the maieutic relationship between teacher and student.

Although the present survey has achieved its objectives, it nevertheless has some limitations that must be taken into account in the interpretation of the results. The first limitation is linked to the reference sample which, although large ($N = 415$), refers exclusively to the Italian school context and to the first phase of standardization of the tool; this suggests caution in the generalization of the data. Secondly, the written and synthetic nature of the questionnaire's open-ended answers, however rich, does not allow the same level of in-depth analysis and interaction as in in-depth qualitative interviews or focus groups (conducted within the same research, but which for reasons of space it has not been possible to account for here).

Starting from these considerations, future research perspectives will be oriented towards the realization of a longitudinal survey capable of monitoring the evolution over time of teachers' perceptions and teaching practices as AI becomes established in schools. It will also be appropriate to extend the *mixed methods approach* through direct observation sessions in the classroom and recursive *focus groups*, integrating the perspective of teachers with that of students and school leaders, in order to outline an ecological and systemic framework of the digital transition in education.

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