BEYOND THE CLASSROOM: THE TRANS-FORMATIVE ROLE OF TEACHERS IN THE SOCIETY OF THE FUTURE. A CASE STUDY

OLTRE L'AULA: IL RUOLO TRAS-FORMATIVO DEGLI INSEGNANTI NELLA SOCIETÀ DEL FUTURO. UNO STUDIO DI CASO

Stefania Maddalena
Università degli studi Gabriele d'Annunzio, Chieti-Pescara
stefania.maddalena@unich.it

Pompilio Cusano
Università Telematica Pegaso
pompilio.cusano@unipegaso.it

Vincenzo del Giudice
Università degli Studi Suor Orsola Benincasa, Napoli
vincenzo.delgiudice@unisob.na.it

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ABSTRACT

This article explores the transformative role of teachers in the society of the future through a qualitative case study conducted with in-service and prospective primary and secondary school teachers. The study aims to understand, from the point of view of "privileged witnesses", which practices and competences are crucial for preparing students for a changing future and for building an inclusive, equitable and sustainable future society.

Questo articolo esplora il ruolo trasformativo degli insegnanti nella società del futuro, attraverso uno studio di caso qualitativo condotto con insegnanti in servizio e futuri insegnanti di scuola primaria e secondaria di primo e secondo grado. Lo studio mira a comprendere, dal punto di vista di "testimoni privilegiati", quali pratiche e competenze siano fondamentali per preparare gli studenti a un futuro in continua evoluzione e per la costruzione di una società futura inclusiva, equa e sostenibile.

KEYWORDS

Teacher training, Inclusion, digital citizenship, sustainability

Formazione degli insegnanti, Inclusione, cittadinanza digitale, sostenibilità.

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Introduction

The contemporary educational landscape is crossed by waves of change of epochal significance, generated by profound transformations at a social, cultural, and technological level. In this rapidly evolving scenario, the need for a substantial redefinition of the teacher's professional profile emerges forcefully. At the heart of this transformation lies a complex and interconnected set of key competences, indispensable for effectively addressing the unprecedented challenges that the future presents to the world of education. The responses collected from the participants in the case study presented here offer an illuminating insight into the awareness, both of practicing teachers and future teachers, regarding the urgency of acquiring a range of skills that transcend mere technical, digital, and methodological preparation, also embracing the socio-emotional and relational spheres.

Skills such as empathy, active listening, constructive conflict management, resilience in the face of difficulties, and a predisposition to teamwork prove to be fundamental elements for the effectiveness of teacher action and constitute fundamental pillars for the establishment of meaningful relationships, for the facilitation of learning processes, and for the management of complex interpersonal dynamics within the classroom context. From this perspective, the educational relationship ceases to be a mere vehicle for the transmission of disciplinary content, transforming itself into a formative content of primary importance, a competence to be cultivated and valued with attention.

The teacher of the future must possess the ability to interpret the complexity of the class group, to recognize the specificities of each student, and to adopt teaching strategies that guarantee substantial equity in access to learning, valuing individual differences not as obstacles, but as precious resources for collective enrichment (Booth & Ainscow, 2002; Portera, 2006). This pedagogical sensitivity translates into the ability to personalize teaching, to adopt flexible methodologies, and to create a positive classroom climate, made up of mutual respect and acceptance.

1. The transformative role of the teacher as an agent of social and cultural change

The advent and continuous evolution of the knowledge society have made not only desirable, but imperative, a profound revision of consolidated educational and school practices. The primary objective of education no longer lies in the simple

transmission of a static corpus of notions, but in the development of a solid autonomy in learning and in the ability to constantly update one's own set of skills, starting from the ability to design and implement deeply contextualized training proposals. This implies a constant commitment to educational innovation, through the methodology of action-research and pedagogical experimentation, and in a systemic and fruitful interaction with all the training realities present in the area. This interaction takes the form of the creation and consolidation of inter-school networks, aimed at sharing effective practices, co-designing innovative educational interventions and overcoming competitive logics in favor of a collaborative synergy oriented towards the common good of education.

In this scenario, the teacher represents a key figure in the strengthening of a constructive dialogue between school and family, based on the principle of educational co-responsibility, and in the development of collaborative synergies with all the other educational actors present in the area, despite the diversity of their specific educational functions. His role undergoes a significant metamorphosis: from a mere dispenser of knowledge, he is transformed into a facilitator of learning, capable of guiding students in the acquisition of the tools necessary for research, critical analysis and personal re-elaboration of information. The directives issued at European level promote continuous professional development, with particular attention to the development of digital skills and research skills and critical evaluation of information[1].

The organic integration of teacher training pathways within the university offers significant added value, as it allows to provide future educators with a solid foundation in educational scientific research (Mialaret, 1989), providing them with the fundamental conceptual and practical tools to solve daily professional challenges with innovative and methodologically appropriate solutions. The primary objective is not to transform each teacher into a full-time researcher, but rather to promote their professional autonomy and their continuous growth through an integrated learning path that is articulated through several crucial phases: the accurate evaluation of the students' starting levels, the precise analysis of the learning objectives to be achieved, the conscious application of the most up-to-date scientific evidence in the field of education, the development of cognitive and technical-instrumental skills for an effective didactic intervention and, finally, critical reflection and rigorous documentation of the educational results achieved. In this way, teachers become active protagonists of personal professional

[1] For further exploration of the topic: https://www.european-agency.org › default › files
https://education.ec.europa.eu/focus-topics/digital-education/action-plan

development, acquiring the ability to constantly improve the quality of their teaching (Baldacci, Nigris, Riva, 2020).

Scientific research, both nationally and internationally, agrees on the crucial importance of qualified teacher training for the educational success of students.

A good preparation of teachers is the fundamental pillar for the construction of quality schools as it directly affects the effectiveness of teaching-learning processes, the management of the learning environment, assessment, the development of key competences, innovation, pedagogical leadership and the promotion of equity. Investing in the initial and continuous training of teachers represents, therefore, a crucial strategic investment for the overall improvement of the educational system and for the educational success of each student[2].

However, the issue of the overall quality of teacher education remains a complex issue that is the subject of ongoing debate. It is not just about having academic degrees and formal certifications, but about developing a broad spectrum of soft skills, such as the ability to communicate effectively with students and their families, to manage the classroom in an inclusive way and to adapt teaching to the individual needs of each student. For this reason, the continuous training of teachers represents a fundamental and strategic investment for the future of education. It is necessary to actively promote a culture of lifelong learning, which values the professional experience of teachers, encourages educational innovation and supports teachers in their crucial role as facilitators of learning in a society in continuous and rapid evolution. In this regard, the studies by Dozza and Loiodice offer significant contributions, highlighting how reflection on experience and the adoption of innovative methodologies are central to teachers' professional development. Their studies show that a truly effective teacher education process must simultaneously cultivate a deep capacity for self-analysis and a proactive engagement with the evolving landscape of pedagogical practice. This dual emphasis ensures that teachers are not simply recipients of training, but active agents of their own growth, continually refining their craft to meet the complex and dynamic demands of modern education (Dozza, 2012; Loiodice, 2014).

It is essential, therefore, to consider continuing education not as a mere fulfilment of a professional obligation, but as an essential and forward-looking investment for the future of education as a whole. It is a fundamental pillar for the progress of the education system and for the continuous professional development of teachers. In a world characterized by increasingly rapid and pervasive social, technological and cultural changes, teachers are called upon to constantly update their skills and

[2] https://www.oecd.org/en/about/programmes/talis.html

knowledge in order to respond effectively to new pedagogical challenges and to adequately prepare students to face a complex and, at times, uncertain future. As lucidly expressed by Elsa Maria Bruni (2008):

> The problem that today revolves around school education and from which its crisis derives, lies precisely in the discrepancy or, if you like, in the difficult conjunction between what the school produces in terms of knowledge and what the subject needs to develop the skills necessary for his professional life. […] The challenge, one of the main and perhaps the most important and necessary, that today's era entrusts to schools and universities is an epistemological challenge that has in itself precisely the same risk that affects man today. Reinterpreting training tasks for educational institutions is equivalent to relocating knowledge according to itineraries from multiple points of view; it is equivalent to expanding the cognitive space in a creative and constructive way and thinking of an original encyclopedia of knowledge and skills on a permanent journey (pp. 42,43)

Proactive adaptation to the changes taking place is one of the primary reasons why continuous training is configured as a crucial and unavoidable element. New digital technologies, for example, offer innovative teaching tools and open up new and stimulating learning possibilities. At the same time, society itself is constantly changing, with new needs and expectations constantly emerging and which teachers must also take charge of through continuous training courses.

The theories of *lifelong learning* (Delors, 1996) and reflective professionalism (Schön, 1983) offer a valuable theoretical framework for fully understanding the need for a model of continuing education centered on practical experience, critical reflection and constructive peer comparison. In this sense, communities of practice (Wenger, 1998) represent a concrete and effective proposal: groups of teachers who actively share experiences, teaching tools and innovative pedagogical strategies, building knowledge together and promoting innovation from below. An operational proposal could be represented by the systematic introduction, within educational institutions, of structured spaces dedicated to pedagogical comparison, such as permanent laboratories of innovative teaching, *peer tutoring* activities between teachers, participatory research-action paths and *mentoring* programs specific for newly hired teachers (Fiorucci & Moretti, 2022). Facing the challenges of change effectively also implies designing and implementing joint activities that provide for the active involvement of the educational community in the broadest sense: students' families, local authorities, social services, cultural and sports associations. The teacher who is configured as a true agent of change cannot act in isolation, but must activate networks of collaboration and build strategic alliances that strengthen the educational pact between the school and civil society

as a whole. In this sense, the model of ecological education proposed by Bronfenbrenner (1979) offers a useful theoretical framework for analyzing the complex interactions between the school institution and its reference context. Some virtuous experiences already present on the Italian territory, such as schools open in the afternoon with laboratory activities, *service learning* projects that integrate learning with community service, or integrated educational *campuses* that offer a training continuum, go precisely in this direction. Despite their diversity, these experiences represent concrete and promising responses to the educational challenges of our time. They are alternative models to predominantly transmissive teaching, promoting active, experiential learning that is deeply connected with the real world. It is essential to underline that their full diffusion and their rooting in the Italian education system require a broader and more structured political, institutional and cultural commitment, capable of recognizing and supporting these initiatives as a strategic investment for the future of our society.

2. Research design, methodologies and data analysis tools

Although an extensive national and international literature has already explored in depth issues such as teacher professionalism, the profile of the expert teacher and the competences required for the exercise of the profession, the rapid evolution of educational and social contexts, together with the emergence of new challenges such as the integration of advanced digital technologies (including AI) and the increasing complexity of relational, inclusive and intercultural dynamics, make it imperative to constantly survey the perceptions of those working in the field. Previous studies, on reflective practice, (Schön 1983; Demetrio 1996; Striano Melacarne & Oliverio 2016) or on the knowledge and skills that should characterise teachers (Perrenoud, 2010; Del Gobbo & Federighi, 2021; Shulman, 1986;), as well as research on teacher professional identity (Baldacci, 2023; Fabbri, Bracci & Romano, 2021; Day & Sachs, 2004) or on initial and continuing teacher education (Domenici, 2018; Fiorucci & Moretti 2023; Massa 2023), have provided solid theoretical frameworks and numerous empirical outcomes. However, the specific ways in which these dynamics manifest in the contemporary Italian context, particularly with regard to emerging technologies and inclusion management, require further empirical validation and contextual updating.

This study therefore aims not only to confirm or challenge existing trends but, above all, to capture new nuances and critical issues as perceived by teachers and educators, offering fresh and contextually grounded data to inform the updating of

educational policies and teacher training programs. The objective is to identify which competencies are perceived as most urgent and which strategies are deemed most effective in a rapidly changing educational landscape, thereby providing an empirical foundation for future interventions.

The case study was conducted using a mixed-methods approach, combining both qualitative and quantitative methodologies to provide a richer and more nuanced understanding of teacher professionalism. The aim was to integrate the depth of qualitative analysis with the broader generalizability of quantitative data, in order to explore the perceptions, experiences, and challenges that teachers and educators face in their professional development. Particular attention was paid to regional contexts and the different levels of the school system.

The sampling method adopted to select both in-service and pre-service teachers was probabilistic (random sampling), with efforts made to ensure representativeness across school levels and regional distribution.

To gather perceptions from teachers and prospective teachers, an online questionnaire was administered between January and February 2025 via social media on a voluntary basis. While participation was voluntary, the broad dissemination through social media channels and the deliberate inclusion of various school levels and geographic regions contributed to the formation of a diverse and representative sample.

However, the specific ways in which these dynamics manifest themselves in the contemporary Italian context, particularly with regard to the integration of emerging technologies and the management of inclusion, need to be verified and updated. This survey therefore aims not only to confirm or not confirm the trends already known, but above all to capture the nuances and new criticalities perceived by teachers and educators, providing fresh and situated data that can support the updating of training and teaching policies. The aim is to identify which competences are perceived as most urgent and which strategies are considered most effective in a rapidly changing scenario, providing an empirical basis for future interventions.

The questionnaire items were constructed using a mixed approach: some were adapted from validated measurement scales used in prior research on teacher professionalism and instructional competencies (TALIS-OECD; TSES - Tschannen-Moran & Woolfolk Hoy 2007; Danielson Framework; Teacher Professional Competence - Voss et al.; Italian scales such as VALeS)[3], while others were

[3] For further details, please refer to the publications available at the following links:

- https://www.fondazionescuola.it/indagine-ocse-2023-pubblicata-la-site-note-coltivare-lapprendimento-socio-emotivo/

developed ad hoc to explore emerging themes such as the use of AI and the management of innovative learning environments. These items were grounded in an initial review of the literature on contemporary pedagogical challenges. The questionnaire predominantly comprised closed-ended questions (including 5-point Likert scales assessing agreement and perceived importance, as well as multiple-choice items) to facilitate quantitative analysis, complemented by a limited number of short open-ended questions to capture qualitative insights and nuances.

2.1 Data Analysis and Inferences

A total of 971 answers were collected through the administration of the questionnaire. The sample, aged between 23 and 57 years, consisted of 76% women with an average age of 36 years. The sample consisted of both in-service teachers (38%) and trainee teachers (55%); all those who did not fall into these two categories were excluded from the data analysis, as they were not relevant to the survey. All teachers (both those in service and those in training) were divided by school level as follows: 33% secondary school and 54% secondary school.

Quantitative data were analyzed using descriptive statistics (frequencies, percentages, means, and standard deviations) to illustrate response distributions. To explore relationships among variables and identify significant differences, inferential statistical techniques were employed, specifically: *Chi-square tests* to examine associations between categorical variables (e.g., professional role vs. perceptions of change), Analysis of variance and Pearson correlation coefficients to compare mean values among different groups (e.g., primary vs. lower and upper secondary school teachers, in-service vs. pre-service teachers) and to investigate relationships between continuous variables (e.g., age and perceived importance of digital technologies).

This approach made it possible not only to describe general perceptions, but also to highlight specificities and differences within the sample in relation to the main aspects investigated, as can be seen from the graphs in the tables below.

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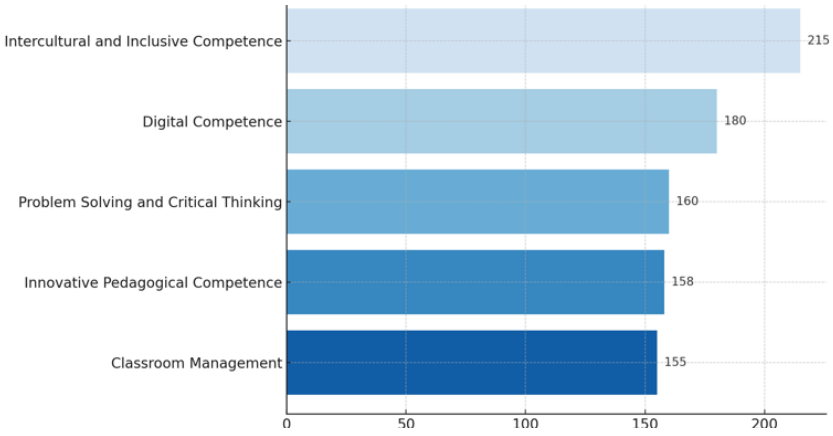

Figure 1. Key competencies for teachers

As shown in the graph in Figure 1, today's teachers value a wide range of skills beyond subject knowledge. The most frequently selected responses include innovative pedagogical skills, digital skills and classroom management, all aligned with active learning and inclusive teaching models. Notably, emotional and interpersonal skills such as empathy, active listening and teamwork are also widely recognised as essential, underlining a holistic view of teaching. This indicates a shift from the teacher as a transmitter of knowledge to a facilitator of learning and emotional support, particularly relevant in increasingly diverse and complex classrooms. These findings reflect a strong awareness of the need for multidimensional professional competencies, in line with international frameworks on 21st century education and teacher development.

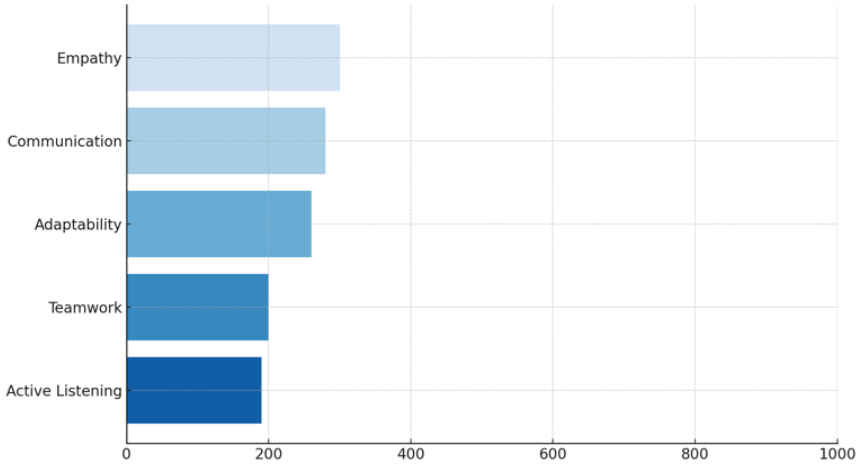

Fig. 2. Teachers skills for inclusive education

Interesting are the answers provided by our sample with respect to soft skills for implementing inclusive educational pathways, as shown in the graph in figure no. 2. Teachers widely acknowledge the critical role of soft skills in professional effectiveness. Among the top-rated abilities are empathy, adaptability, stress management, and creativity. These attributes support the creation of emotionally safe, dynamic, and responsive classrooms—particularly important in times of rapid educational change and diverse learning needs. The results confirm the view of the teacher as a relational and emotional anchor in the learning process, where interpersonal competence is as vital as pedagogical and digital skills.

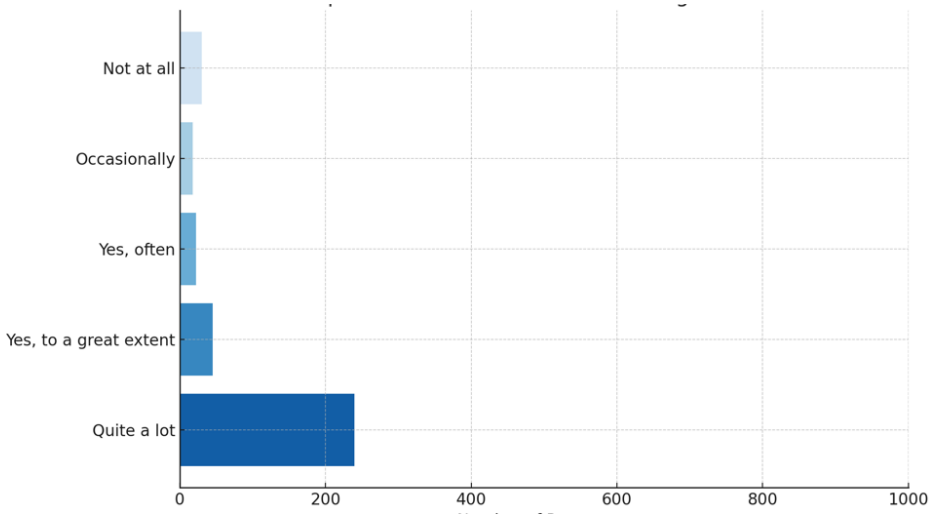

Figure 3. Experience with innovative teaching methods

From Figure 3, it emerges that a significant portion of the teachers report having at least occasional experience with innovative didactic strategies such as project-based learning, flipped classroom, and cooperative learning.

The data shows that while many educators are familiar with such methodologies, only a smaller group applies them consistently. This gap reflects a broader trend: interest in innovation is present, but systematic implementation is still limited—often due to lack of time, support, or structured training.

These results suggest that professional development should focus not only on promoting innovation, but also on equipping teachers with practical tools to translate theory into everyday practice.

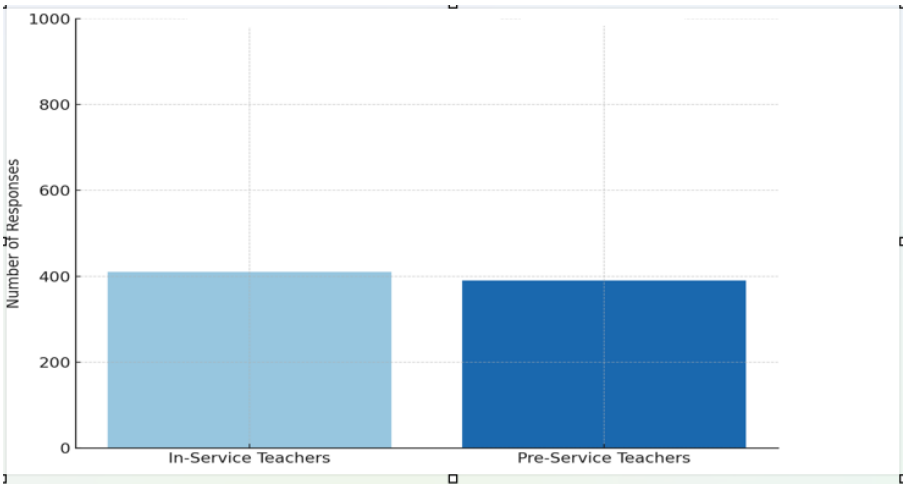

Fig. 4. Professional role vs. perceived change in teaching

This chart (in fig. 4) illustrates how in-service teachers and teachers in training perceive the evolution of their professional role over recent years.
A large majority of both groups selected high values (4 and 5) on the Likert scale, indicating a strong and widespread perception of transformation.
In-service teachers report slightly more intense perceptions of change, likely due to direct experience with educational reforms, digitalization, and inclusive challenges.
This confirms the idea that the teaching profession is increasingly dynamic and multifaceted, requiring ongoing adaptation and upskilling.

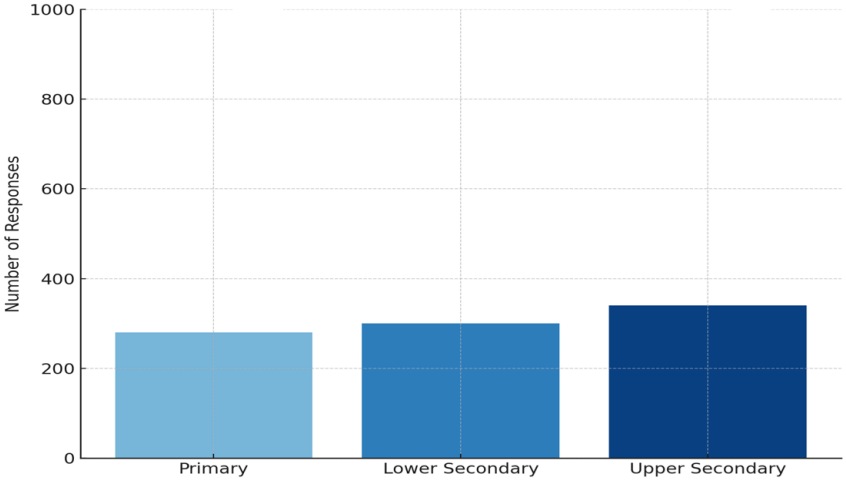

Fig.5. School level vs. perception of technology's importance

This chart compares the perceived relevance of digital technologies for inclusion and personalization across different school levels (primary, lower secondary, upper secondary). Responses are largely concentrated on level 4 and 5, regardless of school level, indicating a broad consensus among teachers. Slight differences emerge: secondary school teachers tend to show slightly higher agreement, possibly due to greater exposure to digital tools or pedagogical flexibility. These results highlight that teachers across all levels recognize technology as a strategic asset for enhancing equity and tailoring instruction.

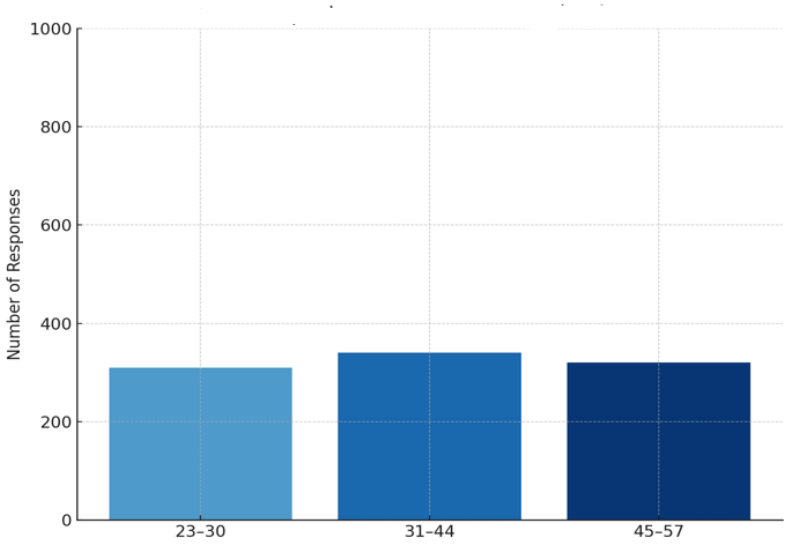

Fig. 6. Perceived importance of digital technologies by age group

Although based on aggregate estimates, the graph in Figure 6 provides an illustrative view of how different age groups evaluate the use of digital technologies in education. All three groups show high agreement, with the 31-44 age group showing the strongest and most consistent endorsement of the role of technology in education. Younger teachers (23-30) and older teachers (45-57) show slightly more different perceptions, which may reflect different levels of experience, training or comfort with digital tools.

However, the overall picture is one of positive intergenerational alignment, reinforcing the belief that digital innovation is central to current school and education scenarios.

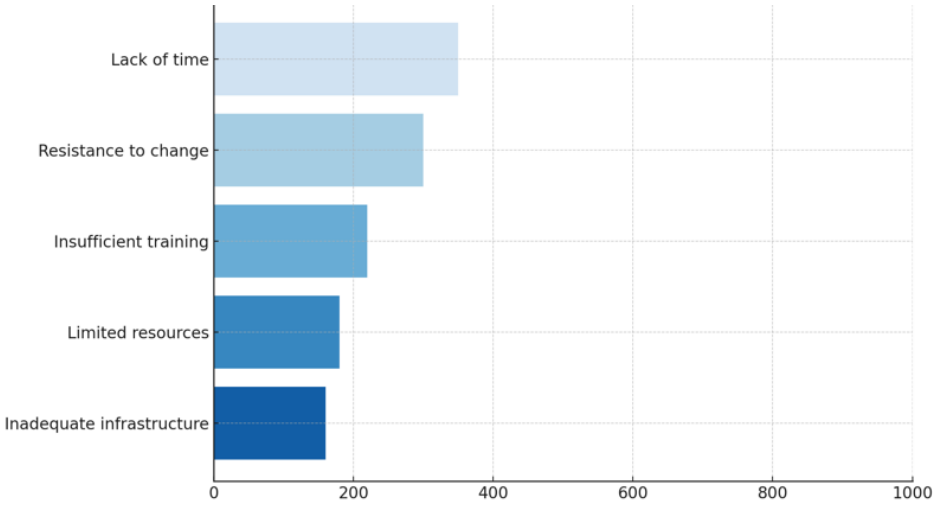

Fig.7. Barriers to innovation

From the graph shown in fig. 7, it is possible to understand how teachers and future teachers identified several systemic barriers to adopting innovative learning environments. The most frequent responses were inadequate school infrastructure, resistance to change, and lack of specific training. These insights align with broader research indicating that educational innovation is often hindered not by lack of willingness, but by structural and cultural inertia. Teachers are open to change but need concrete conditions and support to enact it. Addressing these obstacles requires coordinated action: policy reforms, targeted investment, and leadership at the school level to foster a culture of experimentation and continuous improvement.

Ultimately, the analysis of the responses underlines a persistent difficulty in facing the complex challenges of today's school. It clearly emerges that future teachers have yet to develop a full reflective awareness for their professionalisation. Many do not fully understand that their professional actions must be nurtured by a critical posture that recognises and values the situated dimension of teaching, with its generative potential. This implies constant attention to key elements such as the contexts, experiences and knowledge of students, differences as opportunities, the frameworks within which innovative technologies and methodologies can be embedded, and the importance of communicative, collaborative and cooperative dimensions in practices.

3. Strategies and proposals for addressing the imperatives of change

The inexorable advancement of technological innovation, with its capacity to remold human interactions and access to knowledge; the escalating heterogeneity of student populations, a consequence of migratory phenomena and heightened awareness of individual diversities; the dynamic evolution of learning modalities, progressively oriented towards active and participatory paradigms; and the emergent, salient socio-cultural exigencies pertaining to sustainability, global citizenship, and the cultivation of critical thought, necessitate an analytical reflection and a fundamental reconceptualization of the very architecture of the educational institution and the increasingly pivotal role of the pedagogical agent. A critical juncture concerns the compartmentalization of knowledge into discrete disciplinary domains that continues to characterize traditional scholastic trajectories (Morin, 1999). Such epistemological fragmentation impedes the development in learners of a unitary and systemic apprehension of reality (Piaget, 1970). An educational praxis that does not foster the capacity to establish transdisciplinary linkages across diverse knowledge domains exposes students to the risk of acquiring conceptual instruments inadequate for comprehending the complexity of real-world problems and for informed and efficacious agency (Bateson, 1972).

The urgency of curricular and methodological-didactic re-engineering thus transcends a mere exercise in content updating or the adoption of novel technologies; rather, it constitutes a more profound epistemological transformation that invests the very conceptualization of the educative act. Didactic methodologies, in turn, ought to prioritize heuristic and participatory approaches, conducive to stimulating epistemic curiosity, critical-reflective thinking, the capacity to formulate meaningful inquiries, and the co-construction of knowledge in an autonomous and collaborative manner (Bruner, 1960). Preparing individuals to navigate conditions of uncertainty assumes particular salience within the contemporary milieu, characterized by rapid technological, social, and environmental vicissitudes (Bauman, 2000).The findings of our case study reveal a widespread awareness of these epochal challenges, albeit one that frequently encounters tangible impediments, difficulties that render the full implementation of genuinely innovative pedagogical approaches, capable of responding effectively to the complexities of the present and the future, arduous.

Primarily, a resistance to change is evident, one that does not solely manifest as an individual disposition of aversion to novelty but is often rooted in a perceived deficit of structural and cultural support from scholastic institutions as a whole.

Frequently, innovations are introduced in the absence of adequate formative support, a clear articulation of anticipated benefits, or a systematic valorization and dissemination of positive emergent grassroots experiences.

In contradistinction to this potential negative trajectory, the imperative to invest decisively in educational leadership at all echelons of the educational system emerges forcefully (Leithwood et al., 2006). School leaders capable of fostering a culture of innovation, providing commensurate support and resources to educators, creating collaborative contexts, and valuing efficacious practices become pivotal figures in instigating and sustaining significant change processes. Concurrently, the professional development of educators who embody the role of change agents (Hargreaves & Fullan, 2012) constitutes a far-sighted strategy.

Within this context of pedagogical renewal, the construct of physical literacy assumes strategic centrality. It is not merely a sectoral educational objective, confined to the psychomotor domain (Cusano, 2025), but rather a foundational element for promoting the harmonious and holistic development of learners (Whitehead, 2010; Dudley et al., 2017). Physical literacy transcends the mere acquisition of physical skills, inextricably interweaving the cognitive, affective, and socio-relational dimensions of learning. Through conscious and competent movement, it significantly contributes to the formation of autonomous, motivated individuals fully capable of active and responsible participation in community life (Sport England, 2023). The practice of movement, in this perspective, becomes a potent and versatile vehicle for holistic learning, capable of synergistically promoting the physical, psychological, and emotional well-being of students, overcoming traditional mind-body dualisms.

A construct intrinsically linked to physical literacy and of fundamental import for the integral development of learners is emotional education. It constitutes a foundational pillar in the harmonious development of individuals, and its organic integration within the scholastic setting, particularly through physical education, proves crucial. The competence to understand and regulate one's own emotions is essential not only for successfully navigating the specific challenges inherent in motor learning but also for traversing the relational and cognitive complexities of the world. Physical education offers a unique and privileged environment wherein emotions can be explored, expressed, and regulated safely and constructively through bodily activity and social interaction (Larson & Brown, 2007). It is widely acknowledged that emotions profoundly modulate students' motivation, attention, interest, and behavior during physical activities, with significant repercussions across other learning domains. The theories of emotional intelligence articulated by Salovey and Mayer (1990), which define it as the capacity to monitor,

discriminate, and utilize one's own and others' emotions to guide thought and action, underscore its close correlation with engagement and success within the realm of physical literacy. Individuals possessing high emotional intelligence tend to better manage the frustrations inevitably associated with the acquisition of novel motor skills and to persist with greater determination in the face of challenges (Yildirim et al., 2020).

Within the specific domain of physical literacy, emotional education plays a propulsive role. Confidence in one's motor competencies, the constructive management of frustration in the face of failure, the capacity for effective peer collaboration, and the scrupulous adherence to the rules of play are all emotional competencies that are actively developed and consolidated through motor experience. A positive and supportive learning environment, wherein students feel secure in expressing themselves and experimenting without fear of judgment, significantly fosters the development of physical literacy and the construction of a healthy and positive relationship with movement (Jefferies et al., 2019). Recent research corroborates the efficacy of integrating Social and Emotional Learning (SEL) programs within the school curriculum, organically including physical education. These studies demonstrate significant improvements in students' socio-emotional competencies and an augmentation of their active engagement in physical activities (Casel, 2023; Learning Policy Institute, 2023). The primary aim of such programs resides in equipping students with the tools to recognize and manage their emotions, cultivate empathy towards others, establish positive interpersonal relationships, make responsible decisions, and resolve conflicts constructively, elements that positively influence their full and conscious participation in community life.

A further aspect warranting profound valorization within the context of educational transformation is the strategic integration of technology in physical education. It offers unprecedented and significant opportunities to enrich motor learning and promote the development of physical literacy in students (Goodyear et al., 2014). Technological instruments can provide immediate and personalized feedback on motor performance, enhance student motivation and engagement, and create more inclusive and accessible learning environments for the development of fundamental motor skills. Furthermore, technology possesses the potential to facilitate and potentiate communication and collaboration between students and educators, contributing to the creation of a more cohesive and supportive learning community for the exploration of movement in all its facets. The utilization of online platforms for the sharing of individual and collective progress, motor challenges, and reflections on embodied experience can strengthen the sense of

group belonging and encourage reciprocal support in the development of physical literacy (Kaliisa et al., 2019). It is paramount to reiterate that the primary objective should not be a mere substitution of traditional activities with digital tools, but rather a conscious and strategic integration of technology within a well-defined and coherent pedagogical framework. The enthusiastic adoption of technology must not obscure crucial considerations, including accessibility, equity, and digital literacy. It is indispensable to ensure that all students, irrespective of their socio-economic background or their prior digital competencies, have equitable opportunities to benefit from these innovations, thereby precluding the creation of new forms of the digital divide. The integration of technology in education cannot and must not be configured as a mere juxtaposition of digital instruments to consolidated didactic practices. Conversely, it necessitates a profound and continuous pedagogical reflection that critically analyzes its real added value for learning and for the integral development of students. This reflection leads to an interrogation of the modalities through which digital technologies can effectively potentiate the acquisition of knowledge, the development of complex competencies, the promotion of critical thinking and creativity, and the support of inclusion and equity. Technology, when deployed with pedagogical intelligence and sensitivity, can amplify and enrich the experiences of embodied and emotional learning. For instance, motion sensors and dedicated applications can provide immediate and personalized feedback on motor performance, augmenting body awareness and intrinsic motivation of students within the domain of physical literacy. Interactive platforms and virtual environments can create safe and stimulating contexts for the exploration and regulation of emotions, supporting emotional education pathways. Online collaboration and digital creation tools can foster communication, teamwork, and self-expression, crucial elements for both the development of physical literacy (through group motor activities and the sharing of strategies) and emotional education (through the narration of experiences and the sharing of sentiments). However, this synergy is not automatic; it demands a profound understanding on the part of educators of the pedagogical principles underpinning physical literacy and emotional education, as well as the affordances and constraints of technological instruments. Only through an integrated and conscious pedagogical vision will it be possible to fully leverage the transformative potential of technology to promote meaningful learning and the integral development of students, wherein the physical, emotional, cognitive, and social dimensions mutually nourish each other in a trajectory of harmonious and complete growth. It is not merely a matter of utilizing applications or devices, but of integrating them consciously within a well-defined pedagogical framework. The

enthusiastic adoption of technology must not obscure crucial considerations: accessibility, equity, and digital literacy are indispensable aspects to consider, and it is fundamental to ensure that all students, irrespective of their socio-economic background or their prior digital competencies, have equitable opportunities to benefit from these innovations.

4. Renewing learning environments and methodologies: The role of digital citizenship in the education of the future.

The teacher has the task of reflecting daily on his own way of teaching in order to improve and seek new stimuli and develop new teaching strategies also in order to follow the laws and ministerial guidelines that gradually follow one another with a certain frequency, also to keep up with the great and very rapid technological developments of this era, which require teachers to be constantly updated.
Law no. 92 of 20 August 2019 established the school teaching of civic education, and art. 5 provided for the essential skills to be developed in the curricula of the Institute, gradually and taking into account the age of the students. In particular, Article 5, paragraph 2 of the Law, provides that teachers must promote the activity of empowerment and promotion of a real culture of "digital citizenship", through which they teach students to carefully evaluate what they deliver of themselves to others on the net, therefore not only the use of IT tools, but also and above all the type of approach to them.
The new Guidelines for the teaching of civic education starting from the year 2024/2025[4], identify as a useful support tool, the Digital Competence Framework for Citizens – DigComp2.2, which provides examples of knowledge, skills and attitudes in the digital field, also with reference to artificial intelligence, which can on the other hand be a very useful tool to encourage the personalization of teaching and learning[5].
The objectives for digital skills are as follows:
1. Develop the ability to access information, sources, digital content, in a critical way
2. Interact with others through the digital technologies allowed, identifying forms of communication appropriate to the different contexts of relationship, adopting and respecting the behavioral rules of each communication context

[4]https://www.mim.gov.it/documents/20182/0/Linee+guida+Educazione+civica.pdf/9ffd1e06-db57-1596-c742-216b3f42b995?t=1725710190643
[5] https://www.agid.gov.it/sites/agid/files/2024-05/digcomp_2.2_italiano.pdf

3. Manage digital identity and network data, safeguarding one's own and others' security in digital environments, avoiding threats to the health and physical and psychological well-being of oneself and others" (see Amplius: Guidelines for the teaching of civic education by the Ministry of Education and Merit, which lists a series of skills and knowledge to be transferred to students, also based on age)
The skills required are:

1. Develop the ability to access information, sources, digital content, in a critical, responsible and conscious way.
2. Identify appropriate forms of digital communication, adopting and respecting the rules of conduct of each communication context.
3. Manage digital identity and network data, safeguarding one's own and others' security in digital environments, avoiding threats to the health and physical and psychological well-being of oneself and others" (see amplius: Guidelines starting from the 2024/2025 school year for the teaching of civic education issued by the Ministry of Education and Merit, which lists a series of skills and knowledge to be transferred to students, also based on age)

At the end of the training course, students are expected to have acquired the ability to:

1. Critically analyze and evaluate digital sources, recognizing their reliability and credibility. It will be important to be able to distinguish facts from opinions, interpret data and content in a conscious and responsible way, and correctly apply copyright and licensing regulations when creating and sharing content online.
2. Consciously use technologies, respecting the correct practices of citation and attribution of sources. Students will be able to distinguish between automatically generated content and that created by human intervention, and to organize and analyze open data ("Open Data") in a critical way.
3. Communicate and collaborate responsibly within digital environments, using online services in an effective, respectful and constructive way. It will be essential to recognize and respect cultural and generational differences, adapting communication methods to promote inclusion, and to manage digital identity and privacy, knowing digital rights and regulations related to the protection of personal data. Students will need to learn how to protect themselves and others from online risks, understand the privacy policies of digital services, and prevent negative phenomena such as cyberbullying. In addition, they will have to recognize the environmental impacts of the use of digital technologies and adopt responsible and sustainable behaviors.

The Digital Competence Framework (DigComp), a fundamental tool for digital guidance, at the same time promotes and supports the acquisition of these skills.
The European Union, through the European Skills Agenda and the Digital Education Action Plan, is committed to improving the digital skills of all citizens, with ambitious goals such as 80% of the population with basic digital skills and the training of 20 million ICT specialists by 2030. These objectives are essential to foster digital transformation and promote active and aware citizenship.
DigComp 2.2 identifies 5 areas of digital skills for citizens: Literacy on

- Information and data literacy
- Communication and Collaboration
- Digital Content Creation
- Safety
- Troubleshoot

The first three areas of expertise relate to specific digital activities and concrete uses of technologies. Areas 4 and 5, on the other hand, have a transversal character, as they apply to any activity carried out with digital tools.
In particular, aspects related to the ability to solve problems are present in all skills, but a dedicated area has been created to emphasize how fundamental it is to develop this skill to consciously use technology and integrate it into daily practices.
The skills acquired will be, also in line with the provisions of the guidelines, the following: being able to clearly identify one's information needs, effectively search for and find relevant data, content and digital information, critically evaluating the quality, reliability and relevance of the sources with respect to personal and professional objectives; be able to organize and manage digital information in a structured way, using appropriate tools for archiving; communicate and collaborate through digital technologies, enhancing cultural and generational diversity, and actively participate in civic life through a conscious use of public and private digital services; secure management of digital identity and online reputation, as well as the production and modification of digital content in compliance with current copyright and licensing regulations, are key competencies; know how to interact with IT systems through clear and understandable instructions, also with a view to automation, adopt responsible behaviors for the protection of devices, personal data and privacy, and promote a balanced and inclusive use of technologies for physical and mental well-being; develop awareness of the environmental impact of digital technologies, promote sustainable practices, critically address problems in digital environments through innovative solutions, and keep constantly updated on technological evolution, cultivating an open attitude to change and innovation.

For each lens, the DigComp 2.2. provides different levels of skills, from basic to highly specialized, helps in identifying the level achieved through the prediction of different learning scenarios, provides tools to self-assess and improve digital skills

- Europass CV Online: allows you to enter digital skills into your CV according to the DigComp model, including used software and completed projects.
- Digital Skills and Jobs Platform: offers a free online test to assess your digital level and receive suggestions on courses and areas for improvement.
- DigCompSat: in-depth questionnaire (82 questions) to reflect on the 21 competencies of DigComp and identify strengths and areas for development.

From the complex picture that has emerged, from the objectives that the competent national and European bodies aim to achieve in a short time, it is clear that the prudential approach of teachers towards self-training, in favor of the preference of training acquired through training courses, is widely shared. Acquiring digital skills in a structured way aligned with a European-recognized framework such as DigComp not only increases teachers' confidence in their abilities, but also provides them with a common language and reference standards to communicate and collaborate with colleagues and institutions.

Conclusions

The key competences for the future of education that emerged from the results of the survey outline a highly articulated professional profile of the teacher, in which the technical dimension is intertwined with the relational, digital, inclusive and motivational one. The teacher is no longer a simple transmitter of knowledge, but a facilitator, a designer of learning environments, a cultural mediator and a promoter of well-being. This complex vision requires a continuous commitment to professional training, pedagogical reflection and a constant dialogue between theory and practice.

Investment in key skills can only start from a forward-looking educational policy, capable of recognizing the centrality of the teaching figure in building a more equitable, innovative and humane education.

The teacher as an agent of change is a complex, dynamic, constantly evolving figure. The results of the questionnaire show that teachers are ready to take on this role, but need support, training and favourable conditions to be able to carry out a real

educational renewal. Being agents of change means knowing how to read the school reality in a transformative key, orienting one's choices starting from solid pedagogical principles and promoting an education that is not limited to transmitting knowledge, but that forms aware, critical and responsible citizens.
Change is not an abstract goal, but a concrete process that requires awareness, planning and accompaniment. ,,,Designers, as the results of the questionnaire show, are ready to innovate, but they must be supported through:

- Coherent, permanent and participatory training;
- Spaces for reflection and professional comparison;
- adequate structural and digital resources;
- Social and institutional recognition of the teaching role.

Only in this way will it be possible to move from a system that resists innovation to an educational "ecosystem" that learns, evolves and includes.

Author contributions

This work is the result of the collaboration between the authors; however, for academic recognition purposes, the paragraphs are attributed as follows: Stefania Maddalena, paragraph 1 and 2; Pompilio Cusano, paragraph 3; Vincenzo del Giudice, paragraph 4. The introduction, conclusions, and bibliography are equally attributable.

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