

Camera-Based AI in Italian Classrooms: The State of Evidence

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1 Introduction

AI is being introduced into Italian education through national guidance, teacher use, public investment in digital infrastructure, and a limited number of school-level pilots. The publicly documented activity, however, is concentrated on intelligent tutoring, virtual assistants, generative-AI tools, and teacher support.

This white paper examines a narrower category: AI systems that use cameras or biometric data for in-class exam proctoring, behaviour and engagement monitoring, attendance management, or classroom administration.

In-class proctoring refers here to camera-based supervision inside a physical classroom or examination room. It does not include the remote webcam proctoring commonly used during online examinations. Behaviour and engagement monitoring refers to systems that analyse visible student conduct, attention, facial expressions, head position, or other classroom signals. Classroom-management applications include functions such as automated attendance, identity verification, headcount, and seating-related monitoring.

Italy has a large state-school system. In the 2024/2025 school year, 7,073,587 students were enrolled across 362,115 classes in state schools [1]. This scale creates a substantial education-technology market, but it does not by itself indicate readiness for camera-based AI. Such systems also require reliable connectivity, internal networks, compatible hardware, trained staff, and a lawful basis for processing personal and biometric data.

The evidence reviewed in this paper does not show broad deployment of camera-based classroom AI in Italy. It also does not identify a publicly documented Italian school or university research project testing physical-camera AI proctoring, classroom engagement tracking, attention detection, or emotion recognition.

The closest Italian cases concern remote university proctoring, facial-recognition-based attendance during online teaching, and biometric attendance systems for school staff. These cases are relevant because they reveal practical demand for identity and attendance verification. They are also enforcement cases rather than successful research or deployment examples.

The review draws on publications from the Italian Ministry of Education and Merit, the OECD, the European Commission, Infratel Italia, the Italian Data Protection Authority, the European Data Protection Board, and publicly available institutional sources.

2 Italian Policy and Market Conditions

2.1 National Guidelines for AI in Schools

The Italian Ministry of Education and Merit adopted the national *Guidelines for the Introduction of Artificial Intelligence in Schools* through Ministerial Decree No. 166 of 9 August 2025 [2].

The guidelines treat the introduction of AI as an institutional process rather than as an individual decision by a teacher or student. The OECD describes the Italian framework as containing guiding principles, minimum standards and criteria for adopting AI systems, together with procedural requirements for the planning, monitoring and evaluation stages [3].

Before introducing an AI system, a school is expected to identify the intended use case and evaluate whether it is consistent with the institution’s educational objectives and existing planning documents. The implementation process must also include risk management and defined activities for monitoring and evaluating results [19].

The guidelines therefore apply to the full adoption process: selecting a use case, assessing its risks, planning the implementation and reviewing its results. They do not provide evidence that Italian schools are already using camera-based AI, but they define the institutional procedure that a school would have to follow before introducing such a system.

2.2 EU AI Act

Italy is also subject to Regulation (EU) 2024/1689, the EU Artificial Intelligence Act [4].

Article 5 prohibits the use of AI systems to infer emotions in educational institutions, except where the use is intended for medical or safety reasons. An AI system marketed as detecting whether students are interested, bored, anxious, or attentive through facial or bodily signals may therefore fall within a prohibited category.

The Act treats another education use case differently. Annex III identifies AI systems intended to monitor and detect prohibited behaviour by students during tests as high-risk systems.

High-risk classification is not the same as prohibition. It means that providers and deployers face requirements concerning risk management, data governance, technical documentation, record keeping, transparency, human oversight, accuracy, cybersecurity, and monitoring.

This distinction is important for the Italian market:

- emotion-recognition systems in education face a direct prohibition, subject to the limited medical and safety exception;
- AI-supported test monitoring may be permitted, but it falls within the high-risk framework;
- identity verification and biometric attendance remain subject to data-protection requirements in addition to the AI Act.

2.3 Classroom Equipment and Digital Skills

Italy has expanded school connectivity through the *Piano Scuola Connessa*. Infratel Italia reported that, by 31 May 2026, ultra-broadband services had been activated at 27,360 school sites [5]. This total included 24,087 schools connected through Infratel interventions and 3,273 schools connected through regional public companies.

Infratel’s target of 23,594 activations had been exceeded, although some connections managed through regional companies were still pending.

Classroom modernisation has also been supported through the *School 4.0* programme. The European Commission describes the programme as a EUR 2.1 billion investment with a target of transforming 100,000 classrooms into innovative learning environments by 2025 [6].

The figure of 100,000 classrooms is the programme target stated in the European Commission project description. The cited source does not provide a final count of completed classrooms.

Digital-skills data provide additional context for the adoption of advanced education technologies. The European Commission’s 2024 Digital Decade Country Report stated that 45.8 per cent of people in Italy had at least basic digital skills, compared with an EU average of 55.6 per cent [7].

The OECD also reported that, in 2024, 25 per cent of Italian lower-secondary teachers had used AI in teaching or to support student learning during the preceding 12 months. The OECD average was 37 per cent [3].

Among the Italian teachers who reported using AI:

- 70 per cent used it to learn about or summarise a topic;
- 64 per cent used it to generate lesson plans;
- 31 per cent used it to review data on student participation or performance; and
- 27 per cent used it to assess or grade student work.

3 Documented AI Activity in Italian Schools

3.1 National Pilot in 15 Schools

On 11 October 2024, the Italian Ministry of Education and Merit formally launched a two-year AI pilot in lower- and upper-secondary schools [8]. Ministry material describes the project as involving 15 secondary schools in Lazio, Lombardy, Tuscany, and Calabria [9]. Reuters described the initial implementation unit as 15 classrooms across the same four regions [15]. The public sources do not explain the difference between these two units.

The Ministry described the aim as the personalisation of teaching, the development of students’ abilities, and additional support for students experiencing learning difficulties. The AI tools were intended to operate under teacher supervision rather than replace the teacher.

Reuters reported that the software was made available through tablets and computers already used in the participating classrooms. The tools acted as virtual assistants for students and provided teachers with information that could be used to adapt teaching to individual learning needs [15].

In practice, the published descriptions identify three functions:

- proposing learning activities adapted to an individual student’s level and progress;
- identifying topics in which a student appeared to need additional support; and
- giving teachers information that could be used to adjust subsequent assignments or explanations.

One publicly identified participant was IIS Tommaso Salvini in Rome. At that school, the trial involved fourth-year students aged approximately 17. Students accessed an online platform during lessons and while completing work at home [16].

The available public sources do not identify a commercial product or software vendor, and they do not report that students received dedicated AI-powered laptops. The Ministry also did not publish a detailed technical architecture for the system. The documented implementation was therefore an online AI-learning service accessed through ordinary tablets and computers, not a dedicated hardware deployment.

The pilot was designed to test whether personalised AI support improved learning before any broader national rollout. It did not involve classroom cameras, facial recognition, automated exam supervision, emotion recognition, or attention detection.

3.2 Friuli Venezia Giulia School Network

During the 2023/2024 school year, 55 educational institutions in Friuli Venezia Giulia formed a regional network coordinated by Liceo Classico Jacopo Stellini in Udine [17].

The participating institutions signed a network agreement covering two main activities: staff training and the preparation of shared guidance on the educational use of generative AI. The stated objective was to create a common resource that could be used and understood by all participating schools, rather than leaving each institution to develop its own rules independently.

The resulting guidelines became available on 21 May 2024. They covered:

- the use of generative AI in lesson planning and teaching;
- personalised learning activities;
- the use of AI in student assessment;
- privacy and ethical responsibilities;
- examples of prompts and classroom applications; and
- the digital competences required by teachers and students.

Liceo Stellini also published a school regulation and an ethical charter for AI use. These materials translated the regional guidance into rules that could be applied at institutional level [18].

A further output was *Mind in Class*, a ChatGPT-based assistant developed for school leaders and teachers. The tool was designed to help educators plan learning activities using concepts from

cognitive neuroscience. Its published areas of support include attention, memory, motivation, brain plasticity, classroom emotions, and the responsible use of AI in teaching [18].

The initiative is relevant because it shows organised adoption across a network of 55 schools, including staff development, common governance documents, and a practical teacher-support tool. It was not a research project on classroom cameras. Neither the regional guidelines nor *Mind in Class* used video to identify students, monitor behaviour, or measure engagement.

4 Camera and Biometric Monitoring Cases

4.1 Remote University Exam Proctoring

The most relevant Italian proctoring case concerns online university examinations rather than physical exam rooms.

In 2021, the Italian Data Protection Authority examined the use of a remote exam-monitoring system by Bocconi University. The system processed student data during online examinations, including biometric and behavioural information.

The authority found multiple data-protection infringements and initially imposed a EUR 200,000 fine in 2021. In 2022, Milan Tribunal judgment No. 8174/2022 partially upheld Bocconi University's appeal and reduced the sanction to EUR 10,000. The Italian Data Protection Authority appealed that judgment. In 2024, the Court of Cassation, order No. 12967/2024, set aside the relevant parts of the Milan judgment and remitted the case for reconsideration. Following the remand proceedings, Milan Tribunal judgment No. 8872/2026 resulted in the official Garante record being updated to state that the sanction had been reduced from EUR 200,000 to EUR 150,000 [10, 11].

This case establishes that automated proctoring was used operationally in Italian higher education during the COVID-19 period. It does not establish a research programme and it does not concern cameras installed in a physical examination room.

The case is nevertheless important for in-class proctoring. It shows that the existence of an assessment-integrity purpose does not remove the need for an adequate legal basis, transparent information, necessity, proportionality, and appropriate safeguards.

4.2 eCampus Facial-Recognition Attendance

A second case concerns eCampus University and facial recognition during online teacher-qualification courses.

According to the Italian Data Protection Authority, eCampus adopted a biometric identity-verification system from 3 April 2024. The institution stated that synchronous online classes had an average of 400 to 500 participants and that it needed to verify continuous attendance [12].

Students registered by submitting a facial image and an identity document. During a lesson, a teacher could request a new webcam image. The system compared the new image with the stored biometric template in order to confirm the student's identity and presence.

On 29 January 2026, the authority concluded that the processing lacked an adequate legal basis. It later announced a EUR 50,000 fine and ordered the university to stop the facial-recognition use [13].

This case is closer to classroom-management technology than the Bocconi case because its purpose was attendance verification rather than exam supervision.

It still differs from the scope of this paper in two ways:

- the teaching took place online rather than in a physical classroom;
- the system verified identity and presence rather than analysing engagement, attention, or behaviour.

4.3 Biometric Attendance at a Secondary School

In 2025, the Italian Data Protection Authority fined a secondary school in Tropea EUR 4,000 for using fingerprint recognition to record the presence of administrative staff [14].

The system concerned employees rather than students. It used fingerprints rather than cameras and was not described as an AI system.

The case is still relevant to education-sector procurement because the authority rejected consent as a sufficient basis in the employment relationship and emphasised necessity and proportionality.

It demonstrates that even a limited administrative attendance function can face enforcement when biometric data are used without an adequate legal basis.

5 Conclusion

The public evidence reviewed for this paper does not show broad or mature deployment of camera-based AI in Italian classrooms.

Italy has, however, taken several concrete steps towards wider AI adoption in education. Ministerial Decree No. 166 of 9 August 2025 introduced national guidelines for schools considering AI systems [2]. During the 2024/2025 school year, a two-year pilot began across 15 secondary schools to test AI-assisted personalised learning. Reuters described the initial implementation as 15 classrooms. The pilot used intelligent tutoring systems and virtual assistants to adapt assignments, identify learning gaps and provide teachers with information for additional support [8, 9, 15, 3]. By 31 May 2026, ultra-broadband services had also been activated at 27,360 school sites through the national school-connectivity programme [5].

The documented school initiatives focus on tutoring, virtual assistants, lesson planning, assessment support and generative-AI use. They do not provide public evidence of physical-camera proctoring, facial analysis, attention detection or classroom engagement tracking.

The closest monitoring cases concern remote settings. In 2021, the Italian Data Protection Authority initially imposed a EUR 200,000 fine on Bocconi University after its remote-proctoring system processed students' biometric data without an adequate legal basis and failed to provide sufficiently transparent information about the processing. Milan Tribunal judgment No. 8174/2022 subsequently reduced the sanction to EUR 10,000. In 2024, the Court of Cassation set aside the relevant parts of that judgment and remitted the case for reconsideration. Following Milan Tribunal judgment No. 8872/2026, the official Garante record now states that the sanction was reduced from EUR 200,000 to EUR 150,000 [10, 11]. In 2026, eCampus University received a EUR 50,000 fine because

its use of facial recognition to verify attendance in online teacher-qualification courses lacked an adequate legal basis [?, ?]. In 2025, a secondary school in Tropea received a EUR 4,000 fine for using fingerprint recognition to record administrative-staff attendance without an adequate legal basis; the authority also found that employee consent was not valid in the employment relationship [?].

These cases show that Italian education institutions have practical needs related to exam integrity, identity verification and attendance. They also show that biometric monitoring is subject to close scrutiny by the Italian Data Protection Authority.

For physical-camera systems, the legal distinction is important. Emotion recognition in educational institutions is prohibited under the EU AI Act, apart from limited medical and safety uses. AI systems used to monitor prohibited behaviour during examinations fall within the high-risk category and are therefore subject to strict requirements for risk management, transparency, human oversight and data governance [4].

The current evidence supports a narrow conclusion: Italy is developing an AI-in-education framework and modernising its digital infrastructure, but no publicly documented Italian school or university research project testing physical-camera AI proctoring or classroom engagement tracking was identified in the sources reviewed up to July 2026.

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