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Learning about Artificial Intelligence

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With the event “Artificial Intelligence at Martini: Educational Materials in Action,” the New Generation AI project comes to a close. The initiative lays the groundwork for building a community of educational practices among upper secondary school teachers involved in the program. Its aim: to foster a critical and informed interaction with new technologies.

On Saturday, May 24, 2025, Martini High School at Mezzolombardo hosted an event dedicated to artificial intelligence, featuring interactive workshops, expert-led talks, and real-world demonstrations of AI applications.

It marked the final stage of the New Generation AI project, a two-year journey during which the school collaborated with FBK and the Trento-based Artigianelli Institute – made possible thanks to funding from the CARITRO Foundation (2023 “Teacher Training” Call).

“This project,” said school principal **Valentina Zanolla**, *“arose from the need to meet the demand for interdisciplinary training on AI, to bring new educational skills into classrooms. The idea originated from earlier collaborations with FBK—especially the SHIFT project—and, more simply, from a strong desire to bring a serious and well-founded AI initiative into our school. So, we pooled together energy and human resources, and that’s how the “New Generation AI” project was initiated. The teachers had a clear goal: to create generative collaborations across subjects and to apply knowledge concretely through teaching units to be implemented in the classes. The result was the creation of highly engaging pathways for students, who learned to understand the machine and delve into the decision-making processes it entails.”*

The project aimed to help **teachers acquire and deepen** specific competencies in the fields of **AI and Data Science**, with the goal of innovating teaching in a medium- to long-term perspective and within a framework of conscious and inclusive technology use.

The numbers are significant: 46 schoolteachers and 7 FBK trainers took part, totaling 630 hours of training; 10 Learning Units were designed and tested in at least 16 classes; the workshop saw participation from 71 teachers and 4 principals from 32 schools in Trentino and one school from Treviso.

The event started with institutional greetings and the screening of a pre-recorded video message from the Vice President of the Chamber of Deputies, Ms. Anna Ascani, testifying to the institutions' strong interest in the project.

In the morning, during parallel sessions, five hands-on activities led by Martini High School students were conducted. Each focused on a different topic and served as a platform to share, test, and discuss some of the produced teaching units:

1. How AI influences the economy: the Spotify case
2. Let's evaluate AI through play!
3. Political decisions with AI, an application across chemistry, physics, and mathematics
4. English & AI: Toward interactive and personalized teaching
5. From Ancient Greece to AI, an application combining history and geography

Example of a Hands-On Lab

Through group work, teachers engaged in practical exercises to collectively examine and progressively understand the logic behind the algorithms that power the AI we use. For example, in the Spotify case study, participants went from exploring B.A.R.T.— machine learning algorithm

that scores songs based on parameters like energy and danceability using a KNN (k-nearest neighbors) classification system—and then moved on to analyze the platform's cost structure (including royalties, algorithms, and streaming infrastructure) and revenue streams from advertising and subscriptions. In doing so, they reconstructed the business model and discovered "how and how much the digital giant earns." Developed by Spotify around twelve years ago, B.A.R.T. consists of three main factors (bitrate, listening history, and shuffle mode), and its use explains the platform's success. The subjects involved in developing this specific Learning Unit were business economics, marketing, and computer science.

Working Method

In general, the innovative teaching activities created through the project did not aim for a wow effect but instead focused on practically understanding and applying the identified teaching methods in everyday classroom life. Teachers Maria Giovanna Franch, Stefano Bacchi, and Giulia Garegnani, who designed and developed the initiative in close collaboration with FBK, followed the entire two-year training and implementation process. They involved colleagues and students, spreading awareness and curiosity about this topic throughout the school. In the afternoon plenary session, three vertical focus areas were presented—environment, energy, and automotive—each with a dedicated guest speaker:

- AI and the environment: data and algorithms for sustainability – with Luca Coviello from Enogis, "the digital vineyard management software";
- AI and photovoltaics: the energy of innovation – with David Moser, Managing Director of Becquerel Institute Italy (Advanced Intelligence & Research on Solar Photovoltaics);
- AI behind the wheel: the autonomous driving technology of Waymo Driver – with Davide Crespi (Technical Program Manager at Waymo).

These three presentations sparked discussion around examples of AI application in various fields and showcased an AI agent in action, capable of adapting its language to the user—rather than the other way around. The convergence of descriptive, predictive, generative, and decision-making models signals an imminent future shaped by hybrid AI-human collaboration. These are profound and large-scale changes already having a significant impact on the transformation of work activities, accelerating automation and boosting productivity. It's a disruptive innovation that requires clear boundaries—starting with the risks addressed by the European AI ACT, which emphasizes the need for humans to retain the final say depending on the context ("human in the loop").

An alliance for the local area

This project aligns with the working group on the "Digital Plan for Trentino Schools" (Resolution No. 676 of 05/16/2025) in the educational-teaching field. The group includes IPRASE, UNITN, FBK, the University of Bologna, and representatives of teachers and principals. The initiative will become part of the best practices and planning experiences reviewed by the group."

At FBK, in addition to the Scholars and the PhD Program Unit, key figures such as Paolo Traverso—Director of Strategic Planning and a leading researcher in the field of AI—and Prof. Michela Milano, head of the Center for Digital Society (DIGIS), are also actively involved.

“Our long-standing commitment to younger generations,” said **Claudia Dolci**, Head of the Scholars and PhD Program Unit*, “takes shape through ongoing dialogue with schools and teachers—an essential element for fostering a conscious approach to the use of technologies, and AI in particular. We strive to cultivate a shared culture that not only explores what is possible, but also thoughtfully considers what is responsible—balancing potential with ethical and educational implications. This project has been a meaningful experience, where the dedication of teachers—both during the training phases and in classroom experimentation—demonstrated an extraordinary willingness to share and engage in interdisciplinary dialogue, which are key elements for starting to bring real change to schools.”*

Next steps

The materials produced—namely, the Learning Units—will be shared with all the teachers who took part in the two-year program. These teachers are also invited to provide feedback on their use of the materials in class and on any adaptations they make. In this way, a progressively evolving collaborative community of practice is being built, enriched by the experience of interacting with student groups. To be continued….

The teachers involved in the project

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