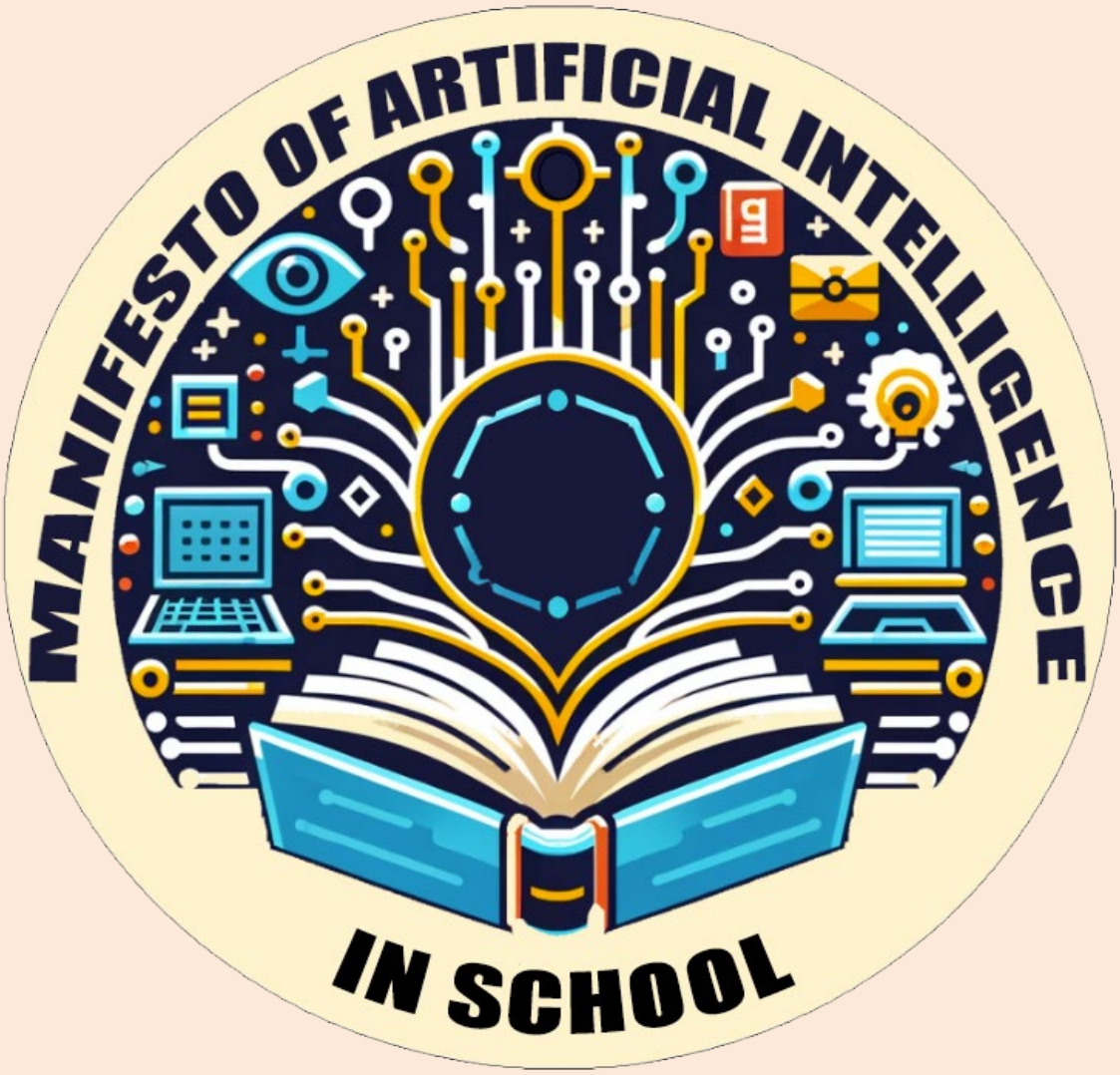
Manifesto of Generative Artificial Intelligence in School



"Some people fear that GenAI will make us feel inferior, but in reality anyone in their right mind should have an inferiority complex every time they look at a flower."
(Cit. Alan Kay, scientist)

By ISIS EUROPA - Team Leader: prof. Roberto Castaldo

Our Vision

From Alan Turing to our classrooms

The history of **Artificial Intelligence (AI)** began many years ago, when scientists and inventors began to theorize and dream of the creation of intelligent machines, capable of imitating the wonders of the human mind.

Alan Turing with his historic article "**Computer Machinery and Intelligence**"[1] gave rise to the development of a scientific discipline which in the 1950s, starting from his question "*Can a machine think?*", began to create the first programs capable of playing chess or solving mathematical problems.

Today AI is everywhere: it helps us to search for information on the internet, to recognize faces in photos, to drive self-driving cars, to suggest the films to watch and the music to listen to online, to diagnose diseases well in advance and even to dialogue with each of us: in fact, on November 30, 2022, version 3.5 of **ChatGPT**[2], a chatbot[3] based on Generative Artificial Intelligence created by OpenAI, a company founded, among others, by Elon Musk.

> **Generative Artificial Intelligence** is a technology that allows machines to simulate human intelligence and the behavior of a human being, creating new and original content each time, which can be texts, images, music or even programming codes, starting from what they have " learned" (**Machine Learning**) during a training process. The latter is based on enormous quantities of data: for example, to teach an artificial intelligence system to generate texts, it is provided with vast archives of text; similarly, to teach them to create images, endless collections of photographs or drawings are used. The heart of this system is made up of complex algorithms known as **neural networks**, which imitate the way the human brain works: these algorithms are capable of recognizing patterns, relationships and structures in the training data and using this information to generate new content that is consistent with that seen during training.

But why is it so important to talk about GenAI at school? Because in the first two months of life ChatGPT reached and exceeded 100 million users, and because every day new applications and platforms based on GenAI are born, which probably promise to change the world we live in, the way we work, study and even how we interact with each other. And it is highly probable that in the near future the long wave of GenAI will have invested and profoundly revolutionized all our activities, all professions, all trades.

It was immediately understood that **many of the traditional teaching activities, such as the drafting of summaries, syntheses and translations, can be achieved without apparent difficulty, and in a few moments, by free GenAI applications**, which are however not free from

[1] http://www.jstor.org/stable/2251299
[2] https://chat.openai.com
[3] Software that simulates and processes human conversations (written or spoken), allowing users to interact with digital devices as if they were communicating with a real person.

a large variety of possible errors and inaccuracies, and which can transfer into their productions a whole series of prejudices and misconceptions that are originally present in the models on which they operate, generated during the training phase.

But on the other hand, the same free applications can also be used by teachers, managers, staff and students for much more interesting support and optimization activities:

- **Teachers**:
  - create and correct tests (not just banal multiple choice tests), supporting in the identification of areas for improvement;
  - design teaching plans, single lessons or thinking activities, up to entire complex and structured learning units, with final expert tests;
  - personalize teaching contents and learning processes, based on specific needs and the explicit and implicit feedback of each student (or groups of students);
  - offer personalized consultancy for scholastic and professional orientation, analyzing students' interests, skills and aspirations;
  - monitor signs of stress or discomfort in students through the analysis of learning and behavior patterns, allowing early intervention.
- **Managers/Staff/Administrative Personnel**
  - automate repetitive administrative tasks such as attendance recording, enrollment management and time scheduling, reducing staff workload and improving efficiency;
  - optimize the use of school resources, such as classrooms, laboratories and equipment, reducing waste;
  - predict future resource needs, enabling proactive planning and efficient budget allocation;
  - improve effectiveness and efficiency of the design of Learning Units, standardized tests, evaluation rubrics;
  - facilitate communication between school and families, personalizing the information sent and making parent involvement more effective;
  - improve school safety by analyzing images from surveillance cameras in real time to detect suspicious behavior or dangerous situations.
- **Students**:
  - use artificial intelligence applications not only by typing questions on the keyboard, but - in a more inclusive way - also by interacting with your own voice and listening to the answers pronounced by the speech synthesis;
  - analyze the learning style and pace of each student, adapting the teaching contents to meet personal needs, thus improving understanding and effectiveness of study;
  - be guided to discover topics to explore further through targeted questions and comments based on the answers given;
  - explore interactive learning environments where you can learn coding, where you can explore complex concepts in science, technology and mathematics in an interactive and engaging way;

- use GenAI as a personalized tutor for languages, being able to benefit from tailor-made exercises, simulated conversations and real-time feedback to improve pronunciation, grammar and vocabulary;
- get suggested routes and activities with the aim of enhancing critical thinking;
- have a personalized advice line for educational and career guidance, helping students explore career paths in line with their interests and skills;
- obtain immediate and personalized feedback on your work, making it easier to understand your mistakes and encouraging the improvement process in real time.

... all while always taking care to check the validity of the results obtained from time to time, looking for not unlikely errors or "hallucinations[4]".

Challenges and risks

It can be stated with reasonable certainty that the integration of GenAI in the educational context offers countless opportunities to enrich and improve learning, teaching and the great variety of organizational and administrative activities which in fact have a decisive impact on the quality and functioning of the learning environments of any educational institution.

All of this, it is worth highlighting, also brings with it challenges and risk profiles that require attention and conscious management from all the actors involved.

Identifying the problems and potential risks is the first step towards the conscious and effective adoption of any innovation, be it methodological, social or technological. GenAI is certainly capable of massively and irreversibly influencing all three levels, which requires an organic approach that includes continuous training, ethical governance policies, investments in organization, software, equipment, security and privacy, and a collective effort to guarantee that GenAI is perceived and considered correctly, avoiding unmotivated hysteria or uncritical enthusiasm, and therefore **used by everyone so that it enriches the educational experience of our students, without replacing the human and social elements, relationships, smiles and looks, which are indispensable today more than ever**.

1. **Privacy and Data Security**
    a. **Challenge**: Protect students' personal information from being exposed or misused by GenAI systems;
    b. **Risk**: Privacy violations, which can compromise student safety and trust in educational institutions;

2. **Ethics of Using GenAI**
    a. **Challenge**: Practice and teach ethical and sensible use of GenAI, considering the long-term implications on people and society;
    b. **Risk**: Abuses or irresponsible uses of GenAI that can have negative consequences for people and the community;

[4] So-called “hallucinations” occur when a generative chatbot encounters non-existent models or objects, consequently creating nonsensical or completely inaccurate responses.

3. **Bias and Fairness**
    a. **Challenge**: GenAI algorithms inherit, and sometimes present to users, biases and misconceptions present in the data on which they are trained, leading to erroneous, unfair or discriminatory results;
    b. **Risk**: Emphasize inequalities and perpetuate discrimination against disadvantaged individuals or groups;
4. **Addiction to Technology**
    a. **Challenge**: The excessive and incorrect use of GenAI tools can limit the development of critical and creative skills in students;
    b. **Risk**: Reduced ability for critical thinking, autonomous problem solving and human interaction;
5. **Replacement of Human-Human Interaction**
    a. **Challenge**: Learning is a social, relational, inclusive activity! The improper and exclusive use of GenAI could replace precious moments of direct interaction between students and teachers, and between peers;
    b. **Risk**: Debasement of the value of empathy, understanding and emotional support that only a human being can realistically offer;
6. **Quality and Reliability of Content Generated by GenAI**
    a. **Challenge**: Ensure that GenAI-generated content is accurate, reliable and appropriate for students;
    b. **Risk**: Dissemination of misleading or inaccurate information that can negatively affect learning;
7. **Accessibility and the Digital Divide**
    a. **Challenge**: Ensure that all students have equitable access to GenAI technologies, regardless of their socioeconomic background and any disability status;
    b. **Risk**: Introduce or amplify the digital divide, excluding students from the learning opportunities offered by GenAI;
8. **Impact on the teaching profession**
    a. **Challenge**: Address the belief that GenAI can replace the role of teachers rather than support it;
    b. **Risk**: Anxiety and professional insecurity among educators, which can be a reason for resistance in the adoption of GenAI.

GenAI at School

For all these reasons, it is essential that at school we begin to learn not only what GenAI is and how it works, but also how all of us, students, teachers, administrators, managers... in short, we can all use it in a productive, wise and responsible way.

This is where ours come into play **two Manifestos**, in which all the considerations on opportunities, challenges and risks made so far have converged:

- the first manifesto is dedicated to teachers, managers, trainers and designers of training courses...

- the second is instead addressed directly to students, so that they can understand how important their intervention and activation is for the purposes of their own educational success.

Two Manifestos in one, because the School cannot afford to "call itself out" by closing itself in its shell and repudiating its educational role, and because we are all directly involved in the ongoing revolution and called to do our part in knowing, adopting and using it in a critical and aware of GenAI-based technologies, in order to be able to fully benefit from them without creating inconvenience to ourselves and other members of the Community, in compliance with good practices and current and future regulations.

Our hope is that all members of our Educational Communities decide to understand how to make the most of GenAI to learn, organize, administer, teach and grow as individuals and professionals, preparing to live in an increasingly "smart" future, without that no machine - no matter how "intelligent" - can replace the most extraordinary and wonderful thinking machine that has ever existed on this and other planets, our Brain!

"*Some people call this intelligence artificial, but the reality is that this technology will improve us. So instead of artificial intelligence, I think we will increase our intelligence*". (Cit. Ginni Rometty, former president and CEO of IBM)

The frame of reference

In the contemporary educational context, the integration of Generative Artificial Intelligence (GenAI) into training courses represents an innovative and indispensable frontier that promises to revolutionize the way we teach and learn concretely and irreversibly. It is therefore necessary to design and implement new training courses that incorporate GenAI into curricula, so as to effectively respond to the needs of a rapidly digitizing society and at the same time provide inclusive, accessible and future-oriented education.

The premises on which the development of these is based **two posters** are multiple: we believe it is essential to start from **Pedagogy**, from the most established and tested learning theories, already present at various levels in the **Italian Ministerial indications**: according to this vision, the adoption of GenAI in schools cannot fail to be guided by consolidated teaching methodologies and learning theories that aim to emphasize interaction, personalization and a holistic approach to education.

Here, in a nutshell, are some of the pedagogical and methodological references that inspired the birth of the two manifestos, and which, by integrating with the potential offered by artificial intelligence, will allow the creation of dynamic and deeply customizable innovative learning environments:

1. **Constructivism (Piaget, Bruner, Vygotsky, Papert, Jonassen...)**
    - **Principle**: Students actively construct their own knowledge through meaningful learning experiences;
    - **Application with GenAI**: Use GenAI to create interactive learning environments that stimulate curiosity and exploration, allowing students to direct their own learning path;
2. **Personalized Learning**
    - **Principle**: Education must adapt to each student's needs, interests and pace of learning;
    - **Application with GenAI**: Employ GenAI systems to analyze student performance and preferences, personalizing content and teaching approaches to optimize individual learning;
3. **Theory of Socio-Cognitive Development (L. Vygotsky)**
    - **Principle**: Learning is a social process that occurs through interaction with others and the surrounding environment;
    - **Application with GenAI**: Encourage the use of GenAI-supported collaborative environments that encourage discussion, group learning and peer tutoring, leveraging technology to broaden social learning opportunities;
4. **Problem Based Learning**
    - **Principle**: Students learn best when faced with real, relevant problems to solve;
    - **Application with GenAI**: Develop GenAI-based projects and challenges that require students to apply knowledge in practical contexts, stimulating critical thinking and problem solving;
5. **Multimodal Learning Theory**

- **Principle**: Students benefit when information is presented through multiple modalities (visual, auditory, kinesthetic);
- **Application with GenAI**: Use GenAI to generate learning materials in various formats, allowing students to interact with the content in the way they prefer;

6. **Skill-Based Learning**
   - **Principle**: The emphasis is placed on the development of practical skills, to be applied to new contexts, in addition to the simple acquisition of theoretical knowledge;
   - **Application with GenAI**: Use GenAI to monitor and evaluate the skills acquired by students, providing personalized paths for strengthening specific skills;
7. **MLTV (Make Learning and Thinking Visible)**[5]
   - **Principle**: The primary objective is to enhance disciplinary knowledge, skills and competences and at the same time the development of thought in its various declinations: critical, creative, logical-mathematical, reflective, decision-making, systemic (def. Avanguardie Educative - Indire);
   - **Application with GenAI**: Use GenAI to develop multidisciplinary and transversal thinking activities (Thinking Routine), and to give immediate feedback to students;
8. **Flipped Classroom**
   - **Principle**: Students access educational content and "lessons" outside the classroom, dedicating time in the classroom to in-depth study and practical exercises;
   - **Application with GenAI**: Leverage GenAI to provide personalized learning resources accessible from home, enabling more effective use of classroom time for interactive and dialogue-based activities, also manageable via GenAI;
9. **Debate-Based Learning**
   - **Principle**: Learning through debate helps develop skills and competences such as critical thinking, articulating arguments, active listening and understanding perspectives other than one's own;
   - **GenAI application**: Use GenAI systems capable of stimulating and supporting structured debates on complex topics, providing students with data, facts and different perspectives in real time to enrich the discussion. This may involve the use of GenAI chatbots as virtual moderators or debate adversaries, who suggest topics, ask provocative questions and guide critical reflection, ensuring that all aspects of a topic are explored;
10. **Metacognition**
    - **Principle**: Learning is maximized if students are aware of their own thinking processes and know how to regulate their own learning process;
    - **Application with GenAI**: Using GenAI to help students track their progress, reflect on learning strategies, and adapt their study methods to improve effectiveness.

[5] https://innovazione.indire.it/avanguardieeducative/integrazione-mltv

Furthermore, a great source of inspiration was provided to us by the study of **Manifesto[6] and Ideas[7] of Indire's Educational Avant-gardes**, the principles and guidelines of **UDL[8] (Universal Design for Learning)**, from the digital skills framework **DigComp 2.2[9]** and from the very recent **European legislation on artificial intelligence[10]**, knowing full well that they must include in the manifestos not only references to the purely technological aspects of this revolution, but also the ethical and regulatory principles that must necessarily regulate the use of GenAI.

- **Educational Avant-gardes - Indire**:
  The *Educational vanguards* they are an innovation movement that identifies and aims to bring into the system the most significant experiences of transformation of the organizational and didactic model of the school, and establishes itself as a model of innovation "from below" through dissemination - which is hoped to be "viral" - of the so-called "Ideas", each of which constitutes not an independent unit, but rather the methodological piece of a mosaic which "aims to revolutionize the organization of *Teaching*, of the *Time* and of *Space* of 'doing school'".
- **Universal Design for Learning (Universal Design for Learning - UDL)**: promotes the creation of learning environments capable of proactively addressing the different needs of students, offering them multiple ways of involvement, access to information and expression. The adoption of UDL as a guiding principle ensures that the integration of GenAI into training paths not only enriches the educational experience but also makes it profoundly fair and inclusive.
- **European Digital Competence Framework (DigComp 2.2)**: provides an essential structure for understanding and developing the digital skills of students, more generally of citizens, in the GenAI era.
  Our vision aligns with DigComp's goal to promote the development of adequate digital skills in all citizens, including online safety, digital communication, problem solving using digital tools and the ability to critically evaluate online information .
- **European legislation on Artificial Intelligence**: provides, for the first time, a concrete response to the need for shared regulation and highlights the importance of a responsible and ethical approach to the use of GenAI, underlining the need to guarantee transparency, data security and compliance of human rights. This aspect is particularly relevant in the educational context, where the protection of student data and the promotion of ethical use of technologies are of primary importance.

The following Manifestos are therefore the result of careful reflection on how **pedagogical theories on learning and current regulatory frameworks can be translated into innovative and effective teaching practices**, and were conceived as a starting point for managers, teachers, trainers, designers of educational paths and students who wish to exploit the enormous

[6] https://innovazione.indire.it/avanguardieeducative/il-manifesto
[7] https://innovazione.indire.it/avanguardieeducative/le-idee
[8] http://www.cast.org/our-work/about-udl.html
[9] https://ec.europa.eu/jrc/en/digcomp/digital-competence-framework
[10] https://digital-strategy.ec.europa.eu/en/policies/european-approach-artificial-intelligence

potential of GenAI to optimize the achievement of the educational objectives of each educational institution

The principles (ten) and guidelines (five for each principle) proposed have been developed with the aim of maximizing the effectiveness and efficiency of existing teaching processes, promoting a progressive integration of GenAI that is at the same time innovative and rooted in a solid pedagogical substratum, convinced of the need to break down distances and boundaries between disciplinary areas, individual disciplines and knowledge, in favor of an increasingly closer approach **to the fusion - which we have always firmly hoped for - between Digital Humanities and STEAM**.

"Nobody puts it that way, but I think GenAI is almost a humanities discipline. It's really an attempt to understand human intelligence and human cognition."
(Cit. Sebastian Thrun, researcher, professor and entrepreneur)

Manifesto of Generative Artificial Intelligence at School

10 Principles dedicated to **managers, teachers, administrators, trainers and designers** of educational paths

1. Embrace GenAI as a Teaching Aid
2. Disclose Ethics, Responsibility, Security and Privacy
3. Support the Development of Critical and Creative Thinking
4. Promote Interdisciplinarity and Connection between Teachings
5. Develop Emotional and Social Skills through GenAI
6. Support Collaboration and Communication
7. Promote Inclusivity and Accessibility
8. Adopt Holistic Assessment
9. Experiment and Update Continuously
10. Build a Broad and Supportive Learning Community

By ISIS EUROPA - Team Leader: prof. Roberto Castaldo

Manifesto of Generative Artificial Intelligence at School

10 Principles and 50 Guidelines dedicated to **managers, teachers, administrators, trainers and designers** of educational paths

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1. Embrace GenAI as a Teaching Aid

Incorporate GenAI into the curriculum according to the DigComp 2.2 framework, using GenAI not only to support your activities, but also to enhance and personalize your students' learning, adapt content to the needs and learning pace of each of them and provide them with immediate and personalized feedback, thus improving the effectiveness of teaching and learning.

1. **Knowledge of GenAI**: Approach GenAI with an open and critical mind, starting from the basics and exploring concrete examples; experience first-hand and build your knowledge and experience base of GenAI and its applications in the world of education. Your personal "**art of teaching**" (G. Gentile) will not be mortified, but on the contrary you will be able to enrich it with new ideas and inspirations.
2. **Curricular Integration**: Start integrating GenAI into the curriculum in a gradual and transversal way, connecting it to the specific learning objectives of each teaching and to those of the UdA.
3. **Personalization and Learning Feedback**: Adopt GenAI tools to analyze students' learning style and pace, personalizing content and paths and being able to provide real-time feedback on their performance.
4. **Dynamic Teaching Resources**: Create or use GenAI teaching resources capable of dynamically interacting with the student.
5. **Class projects with GenAI**: Encourage the development of class projects that use GenAI tools to address real-world problems.

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2. Disclose Ethics, Responsibility, Security and Privacy

Guide students. their families and colleagues to the knowledge, understanding and application of the ethical principles present in DigComp 2.2, encouraging responsible and conscious use of technologies, taking care to respect European legislation regarding GenAI and data protection, implementing (where applicable your relevance) robust security protocols to ensure the confidentiality of student and teacher information.

1. **Ethics training**: Integrates specific training moments on GenAI ethics into the curricula, discussing case studies and real scenarios, also providing for the creation of mixed ethical review committees to evaluate GenAI projects developed within the school.
2. **Bias awareness**: Raise awareness among students and colleagues about how biases (prejudices and misconceptions) can influence GenAI algorithms and how to avoid them when creating content and projects.

3. **Digital Rights**: Educates about digital rights legislation and how it applies to the use of GenAI.
4. **Responsible Use of GenAI**: Promote responsible and sustainable use of GenAI, also involving your students' families and highlighting the legal, social and environmental consequences of the use and abuse of these technologies.
5. **Data Security and Privacy Protocols**: Implement and maintain robust security protocols for all GenAI applications used at school, in compliance with data protection regulations.

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3. Support the Development of Critical and Creative Thinking

It stimulates the use of GenAI with the aim of developing students' critical and creative thinking and getting them used to understanding and governing the complexities of our world, through projects and activities that require innovative solutions, data analysis and advanced problem-solving.

1. **Projects Based on Real Problems and Data**: Imagine and implement projects that require the use of GenAI to formulate and aid in the resolution of complex problems, including using real datasets for data analysis tasks.
2. **Critical Analysis of Sources**: Teach students to critically evaluate GenAI-generated information.
3. **Conscious Approach to Technology**: Organize debates and discussions on the impact of GenAI on society and the birth of new professions.
4. **Creative Workshops**: Host workshops where students can experiment with GenAI to create art, music, or creative writing.
5. **Idea Competitions**: Promote idea competitions, hackathons, role-playing games and simulations focused on the creative and critical use of GenAI.

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4. Promote Interdisciplinarity and Connection between Teachings

It encourages the use of GenAI to create and highlight connections between different teachings and knowledge, highlighting how technology can serve as a bridge between the human, social, natural and mathematical sciences.

1. **Shared Multidisciplinary and Transversal Projects**: Create projects, including involving students from different classes, that require the use of GenAI to explore themes that span multiple courses.
2. **Digital Concept Maps**: Use GenAI-based software to create concept maps that connect concepts from different teachings.
3. **Meetings with Professionals**: Invite professionals who use GenAI in their fields to talk about interdisciplinarity and transversality in business and professional realty.
4. **Creative Writing Workshop**: Use GenAI to generate creative writing activities that cross-reference different teachings.
5. **Interdisciplinary Database**: Create a collection of GenAI resources and projects that can be used in different teachings.

5. Develop Emotional and Social Skills through GenAI

Promote the use of artificial intelligence to develop emotional, inclusive and social skills in students, such as empathy, interpersonal communication, negotiation and conflict management. This approach not only enriches their educational experience through experiential learning, but also prepares students to successfully face real-world personal, social and professional challenges, where life skills are as crucial as technical and academic skills.

1. **Language Analysis**: Use GenAI tools to analyze language and promote effective communication.
2. **GenAI Scenarios and Role Playing Games**: Create role-playing scenarios with GenAI applications and platforms to practice negotiation, conflict resolution and reflect on group dynamics during collaborative projects.
3. **Emotional Feedback**: Leverage GenAI systems that provide feedback on the empathetic and emotional aspects of presentations or group work.
4. **Peer Coaching con GenAI**: Implement GenAI-powered coaching systems to improve social awareness and leadership.
5. **GenAI Mindfulness exercises**: Incorporate GenAI-driven exercises into daily learning activities to promote emotional well-being and mindfulness

6. Support Collaboration and Communication

Encourages the use of GenAI platforms that facilitate remote collaboration, the formation of learning groups, sharing and effective communication, between managers, administrators, teachers and students, reflecting the typical working practices and dynamics of the 21st century, and also the reference regulations[11].

1. **Online Collaborative Projects**: Create projects that require online collaboration, using GenAI tools to coordinate, improve and streamline teamwork and communication, even remotely.
2. **Project Management with GenAI**: Use GenAI-powered project management tools to plan, track and evaluate team projects.
3. **Feedback Peer-to-Peer con GenAI**: Implement GenAI-supported peer feedback systems to improve the quality of collaborative work.
4. **Interactive Online Seminars**: Organize online seminars where GenAI facilitates role distribution and discussion moderation.
5. **Communications Analysis**: Use GenAI to analyze group communications and provide suggestions on how to take action to improve their effectiveness.

[11] Legislative decree no. 150/2009:https://www.gazzettaufficiale.it/atto/serie_generale/caricaDettaglioAtto/originario?atto.dataPubblicazioneGazzetta=2009-10-31&atto.codiceRedazionale=009G0164

7. Promote Inclusivity and Accessibility

Make sure your use of artificial intelligence (GenAI) supports current regulations[12] and the principles of Universal Design for Learning (UDL), offering multiple modes of engagement, representation and expression. Any GenAI tool adopted must be accessible and usable by all students, including those with special educational needs, thus promoting equitable and inclusive learning.

1. **Accessibility Training**: Informed and trained on current regulatory requirements regarding accessibility and inclusion, and on how to make lessons and educational content accessible with the use of GenAI.
2. **Accessibility Auditing**: Continuously evaluate GenAI tools to ensure they meet accessibility standards for all students.
3. **Reading and Assisted Communication Tools**: Adopt GenAI tools that make reading easier for students with learning or vision difficulties and support communication for students with language or communication difficulties.
4. **Encouragement of Participation**: Use GenAI tools and platforms to promote alternative ways of participation for students with different abilities.
5. **Multimodal Didactic Materials**: Create educational materials that use GenAI to offer different learning modes (visual, auditory, tactile) and adapt to everyone's specific needs.

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8. Adopt Holistic Assessment

It uses evaluation methods, also supported by GenAI and in any case consistent with its new potential and functionality, which reflect the continuum of all the activities carried out by the student, and also a holistic approach to learning, evaluating transversal and disciplinary skills in innovative ways and personalized, for example by favoring orality.

1. **GenAI-Based Assessment Tools**: Adopt assessment tools that use GenAI to support a holistic assessment of student skills.
2. **Continuous Feedback**: Use GenAI systems to provide students with continuous feedback that supports their individual learning.
3. **Reflection on Learning**: Promote the use of GenAI tools that help students reflect, even independently, on their learning.
4. **GenAI-Assisted Peer Review**: Implement GenAI-assisted peer review systems to promote critical evaluation and constructive peer feedback.
5. **Analysis of Learning Data**: Use data analytics to understand and improve learning and teaching processes.

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[12] "Stanca" Law 4/2004:https://www.gazzettaufficiale.it/eli/id/2004/01/17/004G0015/sg

9. Experiment and Update Continuously

Adopt and maintain an open and flexible approach to teaching innovation with GenAI, in full Long Life Learning spirit, promoting continuous updating by the entire school community and experimenting with new tools and approaches to adapt to continuous technological evolutions and emerging educational needs.

1. **Specific training for teachers, administrators and collaborators**: Promote and participate in training courses on the pedagogical and administrative use of GenAI, including practical examples and case studies.
2. **Innovative Projects**: Encourages the development of innovative projects that explore new uses of GenAI in educational contexts, continuously testing new GenAI tools to evaluate their effectiveness and impact on learning.
3. **Sharing Networks**: Create or participate in sharing networks with other schools to exchange experiences and best practices on the use of GenAI.
4. **Feedback from Students**: Collect regular feedback from students about the use of GenAI and their learning experiences.
5. **Partnerships with external bodies**: Promote and create partnerships with companies and universities to access the latest GenAI innovations.

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10. Build a Broad and Supportive Learning Community

Together we win! Develop a school culture in which students, teachers, parents, administrators and external experts are actively involved in the educational use of GenAI, promoting a collaborative and supportive learning environment.

1. **Mixed working groups**: Form working groups that include students, teachers, administrators, and external experts to guide the integration of GenAI into school life.
2. **Discussion Forum**: Create or participate in online forums for discussion and support among students, teachers, and parents about the use of GenAI.
3. **GenAI-Assisted Mentorship and Tutoring**: Implement mentorship and tutoring programs that use GenAI to support personalized learning.
4. **Accessible Online Resources**: Make resources and tutorials on using GenAI tools for self-paced learning available online.
5. **Community Events:** Organize community events to showcase good practices and student GenAI projects and promote understanding of GenAI in the educational context.

Manifesto of Generative Artificial Intelligence at School

10 Principles dedicated to **students and individuals in learning situations.**

1. Embrace GenAI as a Learning Tool
2. Act with Ethics and Responsibility
3. Cultivate Your Critical and Creative Thinking
4. Explore Interdisciplinarity
5. Develop Emotional and Social Skills
6. Collaborate and Communicate Effectively
7. Committ to Inclusivity and Accessibility
8. Actively Participate in the Holistic Assessment
9. Be Open to Exploration and Updating
10. Contribute to the Learning Community

By ISIS EUROPA - Team Leader: prof. Roberto Castaldo

Manifesto of Generative Artificial Intelligence at School

10 Principles and 50 Guidelines dedicated to **students and individuals in learning situations.**

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1. Embrace GenAI as a Learning Tool

Consider GenAI not just as a subject of study but as a learning companion. Use it to personalize your educational path, using GenAI tools capable of adapting to your learning style and pace. Explore different platforms that offer immediate and personalized feedback to continuously improve and grow.

1. **Know and Explore GenAI**: Know and experiment with different GenAI applications and software to discover and understand how they work.
2. **Personalize Your Learning**: Configure GenAI app settings to fit your learning style.
3. **Set your Learning Objectives**: Use GenAI to set and track your personal educational goals.
4. **Document Your Progress**: Use GenAI tools to track your progress and areas for improvement.
5. **Ask GenAI Feedback**: Use platforms that offer automated feedback to strengthen your skills.

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2. Act with Ethics and Responsibility

Be aware of the importance of ethics, security and privacy when using GenAI. Learn about digital rights and best practices, and committ to using technology responsibly. Reflect on the impact of your digital actions on yourself and others.

1. **Can you use GenAI?**: Make sure you are old enough and eligible to access the GenAI platform you intend to use, consult your teachers and always inform your parents.
2. **Conscious Use of GenAI**: Inform yourself and discuss your digital identity, your rights and your duties with classmates and teachers. Reflect on the impact of your actions when using GenAI and avoid harmful behavior.
3. **Respect the Privacy Policy**: Make sure you comply with privacy regulations when using GenAI tools that collect data.
4. **Avoid Bias in GenAI**: Learn to recognize and counter biases in GenAI systems.
5. **Sustainable Use of GenAI**: Know and consider the environmental impact of using GenAI and promote sustainable practices.

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3. Cultivate Your Critical and Creative Thinking

Govern GenAI to stimulate your creativity and critical thinking. Participate in projects that require innovative solutions, data analysis and advanced problem solving. Use GenAI not to replace your wonderful intelligence, but as a new tool to get to know yourself better, explore new ideas, challenge your beliefs and improve your learning.

1. **Critically Examine GenAI Sources**: Learn to evaluate reliability and the presence of errors and biases (prejudices and misconceptions) in the information generated by GenAI.
2. **Reflect on the Impact of GenAI**: Consider how GenAI can impact society, the world of work, your own behaviors, and your personal beliefs.
3. **Use GenAI to Bring New Ideas to Life and Explore**: Employ GenAI to generate new concepts and approaches in your creative projects such as art, music or writing.
4. **Develop a Growth Mindset**: Learn to value every mistake you make and to consider difficulties and challenges as learning opportunities.
5. **Discuss the use of GenAI with teachers and classmates**: Promote and actively participate in classroom discussions about the ethical and creative use of GenAI.

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4. Explore Interdisciplinarity

Life is not divided into disciplines, but is much more articulated, complex and fun! Use GenAI to create bridges between different areas of study, and let it guide you (without forgetting to use your intelligence and verify the correctness of the results obtained) to discover how technology can integrate into the human, social and natural sciences, enriching your knowledge, understanding and skills in multiple fields. Participate in interdisciplinary and transversal projects that allow you to consider and apply knowledge holistically.

1. **Use GenAI for Interdisciplinary Research**: Apply GenAI tools in research projects that cover multiple areas of knowledge.
2. **Analyze the Global Impact of GenAI**: Be aware of how GenAI affects different aspects of life - related not only to subjects, disciplines and school teachings - and the world of work.
3. **Participate in interdisciplinary study groups**: Join teams exploring the use of GenAI in various fields.
4. **Explore Databases and Digital Archives**: Access GenAI-powered interdisciplinary resources to broaden your knowledge.
5. **Document and Share Your Discoveries**: Keep a journal or blog where you talk about how GenAI has helped you connect different fields of study.

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5. Develop Emotional and Social Skills

Use GenAI to improve your social and emotional skills. Through digital role-playing games, simulations and virtual reality platforms, you can practice and enhance empathy, communication, negotiation and conflict management. Recognize the importance of life skills in the digital and real world.

1. **Reflect on GenAI Interactions**: After using GenAI in social settings, take a moment to reflect on the emotional and social impact of your experience.
2. **Participate in GenAI Role Playing Games**: Use role-playing games, also based on Virtual Reality and GenAI, to exercise empathy, social skills and interpersonal understanding.
3. **Learn from GenAI**: Critically welcome feedback on social skills from dedicated GenAI tools.
4. **Create Group Projects with GenAI**: Work in teams on projects that require the use of GenAI, promoting collaboration and leadership.
5. **Practice Mindfulness with GenAI**: Use GenAI-powered mindfulness apps to improve your awareness and emotional well-being.

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6. Collaborate and Communicate Effectively

Take advantage of GenAI platforms to work in teams, even remotely. Use tools that facilitate collaboration, idea sharing and effective communication. Learn to work with others in digital environments, preparing you for the work dynamics of the future.

1. **Use GenAI Collaborative Tools**: Employ GenAI-based study and group work platforms for school projects and to optimize learning.
2. **Share Resources**: Use GenAI to collect and share study materials with your classmates.
3. **Constructive Feedback**: Learn to give and receive constructive feedback using GenAI platforms.
4. **Online Security**: Always keep security practices in place when collaborating and communicating online.
5. **Participate in Online Forums**: Join forums and discussion groups where GenAI facilitates communication and the exchange of ideas.

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7. Committ to Inclusivity and Accessibility

Promote and support the use of GenAI tools that are accessible to all, including your peers with special educational needs. Be proactive in helping create an equitable and inclusive learning environment where technology meets everyone's needs.

1. **Inclusion in Class Activities**: Make sure you understand the concepts of accessibility and inclusion, and that GenAI-based activities are inclusive and open to all.
2. **Celebrate Diversity**: Use GenAI to learn about and celebrate cultural and personal differences.
3. **Personalized Learning**: Explore how GenAI can be customized to fit various learning styles, even yours.
4. **Assistance to Companions with Special Needs**: Help your classmates use assistive technologies, including GenAI-based, that can support their learning.
5. **Awareness campaigns**: Participate in or organize campaigns that promote the importance of accessibility in the use of GenAI.

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8. Actively Participate in the Holistic Assessment

View the evaluation as an opportunity for growth. Use GenAI tools to self-assess and receive constructive feedback. Leverage platforms that offer a holistic overview of your skills, helping you understand your strengths and areas for improvement.

1. **Explore New Assessment Methods**: Be open-minded to experimenting with new assessment methods, including GenAI-based ones, proposed by teachers.
2. **Self-assessment and Feedback**: Employ GenAI tools to self-assess, get an objective assessment of your skills, and identify areas for improvement.
3. **Reflection on Learning**: Take time to reflect on how GenAI has affected your learning and skills.
4. **Peer-to-Peer Evaluation**: Participate in peer reviews using GenAI platforms to get a different perspective on your work.
5. **Set Growth Goals**: Use GenAI to help you set specific personal and academic growth goals.

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9. Be Open to Exploration and Updating

Keep an open and flexible mind towards new GenAI technologies. Actively explore new tools and stay informed about the latest trends, ready to adapt your learning strategies. Curiosity and the will to grow will be your best travel companions.

1. **Get informed and experiment**: Keep up to date with the latest news and developments in the field of GenAI through blogs, news and academic journals. Don't hesitate to explore new GenAI tools and applications that could enrich your learning.
2. **Personal Projects**: Use GenAI for personal or extracurricular projects, exploring how it can be applied to contexts other than the school environment.
3. **Critically Evaluate Technologies**: Develop the ability to critically evaluate new GenAI technologies, considering their benefits and potential risks.

4. **Adaptability**: Develop a flexible approach to learning, being ready to adapt your study strategies with the introduction of new GenAI tools.
5. **Comparison with Experts**: Take every opportunity to engage with experts in the field of GenAI, who can offer valuable perspectives and advice.

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10. Contribute to the Learning Community

Together we win! Participate actively in the life of your educational community, sharing your experiences with GenAI and supporting your classmates. Work with teachers, parents and professionals to create a collaborative and supportive learning environment where technology can enrich everyone's experience.

1. **Share Your Knowledge**: Participate in collaborative projects and study groups, help your classmates by providing explanations and tutorials on the GenAI tools you know well.
2. **Mentorship**: If you have advanced skills in GenAI, consider mentoring students who are just starting to explore this field.
3. **Blog, Podcast o Social**: Create a blog, podcast, or social channel where you share your experiences and learnings about GenAI, inspiring other students.
4. **Study Groups**: Form study groups dedicated to learning and discussing GenAI, fostering a mutually supportive environment.
5. **Organize Events**: Help organize or participate in events, such as art fairs, science fairs, or hackathons, that promote the use of GenAI among students.

Conclusion

This document has attempted to outline a clear and pragmatic path for the integration of artificial intelligence in teaching in schools, considering the different perspectives of teachers, managers, administrators and trainers on the one hand, and of students and individuals in learning situations on the other hand.

Through the proposed manifestos, their principles and their guidelines, we wanted to provide not only a reference for the responsible and innovative adoption of GenAI, but also indicate a direction for an educational approach that looks to the future, without losing sight of the fundamental values of equity, inclusion and ethical responsibility.

The adoption of GenAI in the educational context represents a significant challenge, but above all an extraordinary opportunity to transform learning and teaching.

Artificial intelligence tools, if used wisely and according to the principles outlined in this document, can significantly enrich the educational experience, offering students personalized growth and learning paths, managers and administrators solutions capable of optimizing the effectiveness and efficiency of their actions and decisions, and teachers with very powerful tools to concretely support their daily work.

However, it is essential that this path of innovation is initiated and managed with full awareness of the ethical, regulatory and pedagogical challenges it entails. Education in the critical and conscious use of GenAI must be at the center of every initiative, ensuring that students, managers, administrators and teachers are not simple consumers of technology, but active protagonists of a digital citizenship whose meaning continues to evolve and extend.

Furthermore, it is essential that the entire educational community maintains an open and continuous dialogue with researchers, legislators and GenAI developers, to ensure that technological innovations are always aligned with educational needs and ethical and social values. Only through multidisciplinary collaboration and a constant commitment to critical reflection can we hope to navigate the complex, sometimes choppy, waters of technological innovation in such a way that all, absolutely all, of our students benefit from it.

Ultimately, the success of integrating GenAI into education will depend on our ability to adapt, learn and grow alongside the technologies we adopt. These posters are not a point of arrival, but the beginning of a path that we know is not simple and bumpy: an invitation to commitment and concrete action for pedagogists, educators, educational designers and policy makers, to explore the possibilities offered by artificial intelligence with an informed, open, critical and creative approach.

And above all, these two posters were not created to remain unchanged, statically always the same as themselves, but by their very nature they are in a state of

"perpetual beta"[13], to enrich ourselves daily thanks to the suggestions, contributions, ideas and constructive criticism of those who want to participate in their evolution.

We face the challenges and opportunities presented by GenAI with a sense of collective responsibility and with the aim of enriching and renewing education to prepare our students to become active, critical individuals open to innovation.

Let's make sure that it is technology that prostrates itself to humanity and to each of its members to promote a School, our School, which is truly inclusive, fair and capable of giving life to a new generation ready for the challenges of today and tomorrow.

[13] Projects and documents that are updated almost continuously, so quickly that the distinction between test and final versions no longer exists.

Sources and Resources Used:

- Indire's Educational Avant-garde Manifesto: https://innovazione.indire.it/avanguardieeducative/il-manifesto
- Ideas from Indire's Educational Avant-gardes: https://innovazione.indire.it/avanguardieeducative/le-idee
- Universal Design for Learning (UDL): http://www.cast.org/our-work/about-udl.html
- European Digital Skills Framework (DigComp 2.2): https://ec.europa.eu/jrc/en/digcomp/digital-competence-framework
- European Regulation on Generative Artificial Intelligence: https://digital-strategy.ec.europa.eu/en/policies/european-approach-artificial-intelligence

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