AI-ENTR4 YOUTH

POLICY RECOMMENDATIONS

Blending AI Literacy with Entrepreneurship Education for Youth (2023–2025)
Prepared for policy makers and relevant stakeholders

Funded by the European Union

POLICY RECOMMENDATIONS

AI-ENTR4YOUTH

01
CONTEXT: POLICY LANDSCAPE, EDUCATION TRENDS & SYSTEMIC NEEDS

02
KEY FINDINGS AND OBSERVATIONS

03
KEY POLICY RECOMMENDATIONS

04
CHALLENGES AND ENABLERS

05
SUCCESS FACTORS FOR SCALING AND SYSTEMIC ADOPTION

06
TESTIMONIALS

07
REFERENCES

01.

CONTEXT: POLICY LANDSCAPE, EDUCATION TRENDS & SYSTEMIC NEEDS

Across Europe, education systems are undergoing rapid transformation driven by the acceleration of artificial intelligence (AI), the demand for hybrid human–technical skills, and the need to prepare young people for increasingly digital labour markets. Policy frameworks such as the **Digital Education Action Plan 2021–2027, the Digital Decade 2030 Skills Targets, the OECD–EC AI Literacy Framework**, and the forthcoming requirements of Article 4 of the EU AI Act place AI literacy, data ethics, and digital competence at the center of secondary education reform. These frameworks converge on a common message: **AI literacy must become both widespread and inclusive**, going beyond technical specialist pathways to reach all students as a transversal competence.

At the same time, major education trends point toward **dual learning pathways (no code + coding), competence based and project learning, school–industry cooperation, and teacher professional development grounded in pedagogy rather than tools**. The combination of AI understanding and entrepreneurial thinking is increasingly recognized as a key enabler for adaptability, creativity, problem-solving, and employability.

Within this landscape, the JA Europe Network plays a longstanding and influential role. With **more than 100 years of experience and activities across 40+ countries**, JA equips millions of young people annually with entrepreneurship, work readiness and digital skills. Its extensive network of schools, teachers, ministries, and private sector partners provides a unique ecosystem where AI related innovations can be tested, scaled, and translated into system level policy insights. The experience accumulated through JA's programs — including multi country pilots, teacher training, and public private collaboration offers strong foundations for embedding AI literacy into mainstream entrepreneurship education ready models that are inclusive, ethically grounded, and adaptable across diverse national systems.

Junior Achievement Europe, with AI-ENTR4YOUTH Project, was selected as one of only eight case studies worldwide featured in the World Economic Forum's Insight Report of April 2024.

The initiative involved

690 students

31 teachers

45 mentors

90 AI solutions

The **AI-ENTR4YOUTH initiative** funded by the European Commission and delivered by a multistakeholder European consortium (including schools, NGOs, research institutions, and industry partners such as JA Europe, JA Spain, JA Italy, JA Portugal, ATEC, SAFA, E. Fermi, PSNC, Intel, and CRIDO) —provides actionable evidence on how to **integrate foundational AI literacy and entrepreneurial competences into secondary education.**

The project developed and tested an innovative methodology that embeds AI skills, ethical awareness, and an entrepreneurial mindset into existing learning pathways, promoting digital inclusion and alignment with EU values. Its findings offer practical guidance for scaling AI ready education models that are inclusive, ethically grounded, and adaptable across diverse national systems.

Through a largescale pilot in Spain, Italy, and Portugal, the initiative **involved 690 students, 31 teachers, and 45 mentors, leading to 90 AI based solutions** that demonstrated practical learning outcomes. The project showed that a well-structured school experience increases engagement and reduces anxiety, especially through a dual pathway model combining no code and coding options. Insights from the Advisory Committee confirmed that hybrid technical human skills, ethical awareness, and early AI exposure are key to employability.

02.

KEY FINDINGS AND OBSERVATIONS

The implementation of the **AI-ENTR4YOUTH Project** (2023–2025), supported by pilot evaluations and the valuable contributions of the multi stakeholder Advisory Committee (AC), generated robust evidence demonstrating how artificial intelligence and entrepreneurship education can be meaningfully and sustainably embedded within European education systems.

The analysis highlighted clear opportunities to enhance curricular flexibility, and further develop educator capabilities.

The following key findings and observations summarize the **most relevant lessons emerging** from the project and inform future policy, pedagogical, and institutional priorities.

Dual Pathway Effect

No Code + Coding increased inclusivity and participation; technical centers rated in depth positively, while non-technical centers benefited from accessible tools.

Teacher Capability Gap

Educators valued ethics and entrepreneurship modules but requested pedagogy-first training, clearer guides, and classroom cases.

Hybrid Skills Demand

Labor market requires AI usability, data literacy, creativity, ethical reasoning and problem-solving across sectors.

Time and Infrastructure Constraints

52 hours are challenging within rigid calendars; platform usability and lab access were uneven across schools.

Mentor Scarcity

AI experts' availability is limited; flexible, scalable engagement models are needed to provide real-world linkage.

Regulatory Pace

Curricular updates on outdated technology; policy agility and nationally recognized certification are required for continuity.

Equity and Inclusion

Territorial and socioeconomic divides (e.g., rural connectivity) risk exclusion; early, cross-curricular AI literacy mitigates divides.

Sustainability Risk

Short EU funding cycles (vs. 5-8 years of reform horizons) threaten continuity without accreditation and multi-year instruments.

03.

KEY POLICY RECOMMENDATIONS

The multi stakeholder Advisory Committee (composed of private, public and civil society, including project development team, Ministries of Education, National Agencies involved in countries') has generated critical evidence to guide the sustainable integration of Artificial Intelligence (AI) and entrepreneurship education within European education systems. Through its collaborative work, the Committee has provided valuable insights and recommendations that support the development of inclusive and forward-looking educational policies across the EU. **The analysis highlighted clear opportunities to enhance curricular flexibility, and further develop educator capabilities.**

The following key findings and observations summarize the most relevant lessons emerging from the project and inform future policy, pedagogical, and institutional priorities.

The process revealed several key findings:

Establish EU-level accreditation and national recognition

Create official accreditation for AI-Entrepreneurship programmes and certification for teachers to ensure institutional permanence beyond short funding cycles.

Mandate dual learning pathways (No Code + Coding)

Guarantee inclusivity across Member States by differentiating conceptual AI literacy from technical depth, enabling participation regardless of prior computing skills.

Refocus teacher training on pedagogy

Condition funding on practice-oriented, classroom-ready methods (lesson plans, case studies, assessment rubrics) rather than generic technical content.

Institutionalize structured Public–Private Collaboration

Regulate co-creation frameworks for curricula with companies and NGOs, ensuring ethical standards, quality assurance and regular market-relevance reviews.

Mandate early industry exposure

Incentivize internships, apprenticeships and mentorships for secondary students to bridge school-to-work transitions in AI-enabled roles.

Embed AI & data literacy as transversal competences

Require cross-curricular AI usability, data protection, bias mitigation and critical thinking from lower secondary onwards.

Accelerate regulatory agility

Align national curricula and teacher standards with the EU AI Act and DigComp 3.3 on an iterative cycle to keep pace with technology.

Invest in high-quality asynchronous resources

Fund professional video modules and micro-learning assets to reduce time pressure and support scale across regions.

Strengthen VET & lifelong learning pathways

Leverage VET and upskilling/reskilling instruments to sustain workforce adaptability and educator readiness.

Create open innovation hubs and sandboxes

Enable safe experimentation with AI in education under ethical governance to prototype, evaluate and scale effective practices.

04.

CHALLENGES AND ENABLERS

The implementation process revealed a set of structural challenges and barriers, alongside enabling factors and strategic opportunities that can support sustainable and systemic change.

CHALLENGES	ENABLERS
There is limited pedagogical expertise in teaching AI, and most professional development still focuses on tools rather than effective instructional methods.	Strong multi stakeholder consensus on AI and data literacy as core competences.
Rigid timetables; insufficient hours for project-based learning.	Validated dual pathways facilitating access for diverse profiles.
Short term funding creates a risk that the programme becomes obsolete once the project ends.	Formal programme accreditation and teacher certification help secure lasting institutional change.
Infrastructure gaps; uneven platform usability.	Open innovation hubs and Public-Private Collaboration can supply resources and iterate solutions.
Mentor scarcity; weak school industry linkage in some regions.	Structured public and private collaboration to enable internships, apprenticeships and mentoring.

05.

SUCCESS FACTORS FOR SCALING AND SYSTEMIC ADOPTION

Based on the experience gained since 2023 with the AI-ENTR4YOUTH Project, seven additional European countries from the Junior Achievement Europe network have joined the initiative to train students in AI applied to entrepreneurship. Considering all the expertise accumulated during these three years of implementation, we summarize below the success factors for scaling and systemic adoption.

- **Cross-ministerial coordination** (education, digital, labour) with clear governance.
- **Formal accreditation** of programmes and teacher certification pathways.
- **Curriculum co-creation** with industry and NGOs, aligned to ethical AI standards.
- **Critical mass in schools** (beyond pilots) to shift institutional culture.
- **High-quality asynchronous** micro-learning backed by coaching/mentoring.
- **Integration** with VET and lifelong learning for continuous upskilling.
- **Monitoring & evaluation** frameworks linked to DigComp 3.3 and AI Act literacy.

7
European countries have joined the AI-ENTR4YOUTH initiative since 2023

06.

TESTIMONIALS

"Students showed great enthusiasm and curiosity. They found the AI-ENTR4YOUTH project innovative, engaging, and relevant to their future.

The sessions sparked interest in AI and encouraged active participation, and the final hackathon became a highlight where they applied their learning creatively. Many felt the experience boosted their confidence and gave them practical problem-solving skills.

Initiatives like AI-ENTR4YOUTH make learning exciting, build essential digital and teamwork skills, and empower students to become active contributors to technological innovation.

Giorgia Martina
Teacher, E. FERMI

*"Students developed an array of skills; **problem identification**: found relevant problems with tangible economic impact; **ideation**: imagined possible solutions and found the best ones using a diverse set of criteria - from technology to societal impact; **presentation**: teams consistently displayed great ability and creativity in how the communicated making their challenge, decision process and product come across with clarity, completeness, originality and high competence.*

***Technically** they displayed an understanding of the underlying technologies - image recognition, AI, data management, app building- well above what I would expect in children of their age, and they did all this as teams - i.e. skills were not unevenly distributed but rather each team member displayed them.*

To me it was an eye opening experience and a testimony that there are ways to develop the knowledge, attitude, confidence and skills that are needed to thrive in the environment we are entering, one of fast-paced change, innovation as a constant source of value, technology as an enabler of value and competition as a way to improve products, services, and organizations.

The program fascinated me for its potential and effectiveness, and they can count with my full cooperation in the future".

Carlos Izco
Innovation and Transformation Officer Southern Europe, SAP

07.

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