Is there a tomorrow for STEAM in European higher education policy?

‘STEAM for tomorrow’ conference, OEAD, 30 October 2025

Hugo PINTO DE ABREU, Higher Education Policy Officer at DG EAC.B1

European Commission

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Agenda

I. STEAM in higher education: a clarification
II. The STEM Education Strategic Plan
III. Behind the scenes: opportunities for a STEAM approach
IV. Funding sources
V. Conclusions

STEAM in higher education: a clarification

The specialisation trend peaks in higher education. In the first years of studies, disciplines are hyper-disaggregated, and programmes may be classified as STEM.

[…]

STEAM education is often understood as STEM plus the arts. Some academics associate it with visual arts […] In contrast, some advocate for integrating the liberal arts, social sciences, and humanities

— European Commission: Joint Research Centre, Mazzeo Ortolani, G., STEM and STEAM education, and disciplinary integration: a guide to informed policy action*, European Commission, Brussels, 2025, JRC141438*

European Commission

STEM Education Strategic Plan

We will establish a Union of Skills *– focusing on investment, adult and lifelong learning, skill retention and the recognition of different types of training to enable people to work across our Union.*

Ursula von der Leyen
Political Gudelines for the next European Commission / 2024 - 2029

You will ***develop*** *an Action Plan on Basic Skills and* ***a STEM Education Strategic Plan*** *[...] backed up by the* ***review of the Digital Education Action Plan*** *together with the adoption of* ***a Roadmap on the future of digital education and training****.*

Roxana Minzatu
Mission letter EVP

The **Union of Skills**

A strategy based on four strands of action

1

BUILD SKILLS
for quality lives and jobs

2

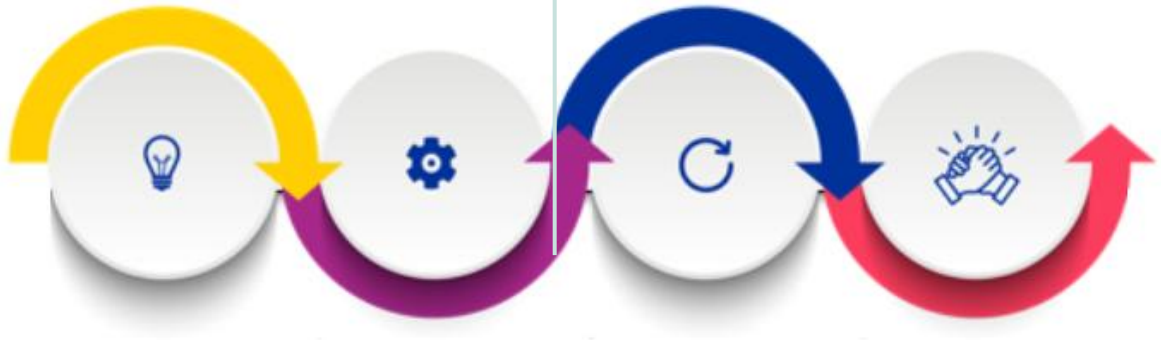
UP-AND RESKILL
for the clean and digital transitions

3

CIRCULATE SKILLS
across the EU to unlock the single market's full potential

4

ATTRACT, RETAIN AND DEVELOP
talent for Europe's future



Why focus on STEM **education**?

High performing STEM sectors are needed to tackle emerging challenges and secure **EU's competitiveness, innovation capacity and strategic autonomy.**

A stronger talent pipeline in science, technology, engineering and mathematics **starts from education, addresses underachievement and gender gap.**

LEAD
(ACTION A)

EU-level STEM targets

What?

New 2030 EU-level STEM enrolments targets to guide national and regional strategies:

- **in VET**: at least 45%, with at least 1 in 4 students female.
- **at tertiary level**: at least 32% with at least 2 in 5 students female.
- **in ICT PhD programmes**: at least 5%, with at least 1 in 3 students female.

No reporting obligations for MS. Monitoring through regular data collection (Unesco, OECD, Eurostat).

Why?

To:

- guide policy actions which will turn ambition into reality.
- address high demand for STEM-related VET profiles.
- meet the growing demand for STEM specialists.
- reverse the decline in the number of ICT specialists.

LEAD
(ACTION C)

Improve STEM skills intelligence

What?

Improve STEM skills intelligence via the future European Skills Intelligence Observatory by:

- measuring graduate outcomes in VET and tertiary education through the Eurograduate survey, the Higher Education Policy Observatory, the Research and Innovation Careers Observatory and other relevant tools.
- leveraging the common European Data Space for Skills.

Why?

to better align skills supply and demand and anticipate sector-specific skills needs.

LEVEL UP
(ACTION A)

Promote future-oriented STEM curricula in schools, VET and tertiary education

What?

A STEM competence framework by 2027.

Why?

To define measurable learning outcomes and provide guidance for curriculum development, teaching methods, and assessment practices.

What?

Piloting a European degree for engineers, building on the European Universities alliances and ongoing Erasmus+ pilots.

Why?

To increase the number of STEM students and graduates, particularly in Engineering, through joint study programmes .

LEVEL UP
(ACTION D)

Address employers' needs in VET and tertiary education

What?

Joint transnational programmes and short courses leading to microcredentials in strategic STEM sectors through the Centres of Vocational Excellence and European Universities alliances.

Why?

To:

- expand joint STEM programmes and micro-credentials.
- promote coordination and shared investments in STEM infrastructure, equipment and educational technologies among Centres and Alliances.
- Attract private investment for workforce up- and re-skilling.
- support and monitor employer -uptake of EU-backed micro-credentials.

What?

Joint education programmes and specialist training for strategic STEM sectors, leveraging the skills academies and the European Universities Alliances.

Why?

to establish or expand joint programmes in strategic areas such as AI, quantum, semiconductors, data or cybersecurity.

Behind the scenes: opportunities for a STEAM approach

STEM labour gap

STEM skills gap

Transversal skills gap

Funding opportunities

- Erasmus+
- Recovery and Resilience Facility
- European Social Fund+
- InvestEU (Advisory Hub and Fund)

Conclusions

STEAM as a key approach for integrated STEM education

STEAM is indispensable for the **STEM Education Strategic Plan**

There is a future for a STEAM approach, including funding opportunities

Thank you