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OUTCOME OF PROCEEDINGS

From:	General Secretariat of the Council
To:	Delegations
Subject:	Council conclusions on Science, Technology, Engineering and Mathematics (STEM) education and training

Delegations will find attached the abovementioned conclusions approved by the Council (Education, Youth, Culture and Sport) at its session on 19 November 2026.

ANNEX

Council conclusions on Science, Technology, Engineering and Mathematics (STEM) education and training

THE COUNCIL OF THE EUROPEAN UNION,

RECALLS the texts adopted within the Union on education and training, STEM and science for policy matters.

HIGHLIGHTS that, for the purposes of these conclusions, 'STEM education and training' is understood as learning opportunities and experiences in science, technology, engineering and mathematics across all levels and types of education and training, including interdisciplinary approaches.

UNDERLINES that

1. the European Education Area aims to support the development of more resilient and inclusive national and regional education and training systems, enabling learners to develop the knowledge, skills and competences needed to participate in society; its full achievement remains the overarching ambition of European cooperation in education and training;

2. the Council Resolution on the second cycle of the strategic framework for European cooperation in education and training towards the European Education Area (2026-2030) sets the way forward for this cooperation for the next five years identifying 'literacy, mathematics and science for all' as its first strategic priority and establishing EU-level targets as a basis for strengthening STEM education and training;

3. the European Pillar of Social Rights states that: 'Everyone has the right to quality and inclusive education, training and life-long learning in order to maintain and acquire skills that enable them to participate fully in society and manage successfully transitions in the labour market';

4. the Commission Communication on the Union of Skills highlights the importance of the development of skills and competences needed for success in learning, work and life, as well as for the Union's competitiveness, innovation, social cohesion and long-term prosperity and resilience;

5. recent strategic discussions on competitiveness, including the Letta[1] and Draghi[2] reports, highlight the importance of education and training, knowledge, skills and competences for the green and digital transitions, research and innovation and long-term economic resilience;

6. by developing the knowledge, skills and competences needed across a wide range of sectors, including those facing skills shortages, STEM education and training has the potential to address Member States' shared objectives and challenges.

RECOGNISES that

7. STEM is an important part of citizens' everyday lives and the innovations and research that emerge from STEM fields are continuing to shape people's engagement with the world, underpin economic development, and lead to the establishment of creative enterprises and rewarding careers;

8. high-quality STEM education and training contributes to personal development, empowerment, fulfilment and agency by integrating theory and real-life application; it develops curiosity, inquiry, problem-solving and critical thinking and other transversal skills, and encourages engagement with societal, technological, scientific and environmental developments;

[1] Much More than a Market (Letta, 2024).
[2] The Future of European Competitiveness (Draghi, 2024).

9. a lifelong learning approach to STEM across all levels and types of education and training from early childhood onwards is important to support continued engagement that allows learners to adapt to evolving challenges and emerging skills requirements;

10. many Member States have already taken positive steps to strengthen STEM education and training within their national and regional contexts;

11. a STEAM approach (science, technology, engineering, arts and mathematics) can support inclusive learning by integrating the arts, strengthening engagement with and widening interest in STEM, while also encouraging design thinking, communication, problem solving, exploration and creativity;

12. transnational cooperation, including through flagship initiatives such as the European Universities alliances, the Centres of Vocational Excellence, and the Erasmus+ Teacher Academies, is supporting innovation and exchange of good practice, including in STEM education and training across the EU;

13. shortages of qualified teachers, trainers and educators, as well as insufficient access to continuous professional development, can limit the provision of high-quality STEM education and training;

14. international evidence, including from the OECD, indicates that there is scope to improve learning outcomes in STEM across the Union;3

15. efforts are required to address regional and geographic barriers, including those affecting rural and remote areas, to accessing high-quality STEM education and training;

16. efforts are required to broaden participation and address dropout rates in STEM education and training among learners with diverse needs and among under-represented groups, in particular, girls, women and those experiencing socio-economic disadvantage.

[3] OECD. 2026. PISA 2025 Results; OECD. 2025. PIAAC 2023 Results.

WELCOMES the Commission's STEM Education Strategic Plan as a contribution to ongoing discussions at a Union level on strengthening STEM education and training.

AGREES that

17. the foundations of STEM learning begin in early childhood education and care through playful, exploratory and age-appropriate learning experiences;

18. school education builds foundational STEM knowledge, skills and competences by providing learners with ongoing opportunities in STEM;

19. both vocational education and training (VET) and higher education contribute to STEM learning by linking theoretical knowledge with practical application and supporting the development of knowledge, skills and competences relevant to a wide range of sectors, including those required for the green and digital transitions;

20. a range of pathways is required across VET and higher education to develop advanced STEM knowledge, skills and competences, including through specialised study and research-informed teaching;

21. adult learning supports lifelong engagement with STEM, enabling learners to update and develop their knowledge, skills and competences throughout their lives, including through a variety of approaches to upskilling and reskilling such as micro-credentials, in response to societal, technological, economic and environmental change;

22. non-formal and informal learning complements formal education and training by providing valuable, accessible and flexible opportunities for learners of all ages to develop skills and competences, as well as interest and confidence in STEM;

23. a positive attitude towards STEM can be shaped from an early age and can influence learning choices, participation and progression in STEM education and training;

24. providing a sufficient level of literacy, mathematics and science for all is the foundation for all further learning; this foundation enables learners to develop both wider and more specialised competences, such as in STEM;

25. STEM learning builds on existing digital skills and competences and allows the development of further digital skills and competences, including those necessary to understand, use and critically, ethically and responsibly engage with AI;

26. all levels and types of education and training play a part in promoting quality, equity, inclusion and success for all, including by reducing barriers to participation in STEM learning;

27. no learner should be left behind and STEM learning should be accessible to all, including girls and women, boys and men, people experiencing socio-economic disadvantage, learners with diverse needs, and those living in rural and remote areas;

28. STEM education and training can provide access to fulfilling career opportunities and contributes to the talent pipeline for STEM sectors.

ACKNOWLEDGES that

29. skills shortages and skills mismatches in STEM-related fields are reported across the Union;

30. the emergence of new and evolving sectors and professions, including those linked to the green and digital transitions, is increasing demand for STEM-related knowledge, skills and competences;

31. greater participation in STEM education and training across all stages of life contributes to more inclusive development of knowledge, skills and competences;

32. factors such as persistent gender stereotypes, conscious and unconscious bias, lower visibility of female role models in STEM fields, and misconceptions about STEM career pathways contribute to the gender gap in participation and that more needs to be done to support equal opportunities for girls and women to participate in STEM learning across all levels and types of education and training;

33. socio-economic disadvantage can strongly influence access to, participation in and outcomes of STEM education and training;

34. addressing these identified barriers requires sustained, multi-faceted action.

STRESSES that

35. clear, inclusive and flexible learning pathways that support progression and continuity in STEM learning enable and encourage learners to move between different levels and types of education and training;

36. access to high-quality lifelong guidance helps learners to understand career opportunities and progression in STEM, make informed education and training choices, can help to break down gender stereotypes, conscious and unconscious bias and misconceptions, and can promote more inclusive participation in STEM;

37. innovative and flexible learning programmes, including micro-credentials, can support inclusive participation in STEM learning;

38. the initial education and continuous professional development of teachers, trainers, educators and leaders are key to supporting high-quality STEM education and training, including interdisciplinary approaches, across all levels and types of education and training;

39. cooperation between education and training providers, employers, industry and research organisations can support the development of STEM talent, and of regional innovation ecosystems, and strengthen awareness of STEM pathways and career opportunities;

40. current Union programmes and instruments, including Erasmus+, have the potential to support learners, teachers, trainers, educators, leaders and institutions in strengthening STEM education and training.

INVITES THE MEMBER STATES to

41. promote increased engagement with STEM learning across all levels and types of education and training, including by promoting interest and encouraging positive attitudes and motivation among all learners from an early age, together with targeted awareness-raising and information-sharing activities and interdisciplinary approaches, so that all learners can access and thrive in STEM education and training;

42. consider developing or further strengthening a national or regional strategic plan or approach for STEM education and training;

43. provide accessible and inclusive high-quality STEM-related learning opportunities across all levels and types of education and training to ensure that all learners are prepared for success in a changing world;

44. strengthen efforts to increase participation by girls and women in STEM education and training by supporting equal opportunities for all from an early age, addressing issues such as gender bias, and raising awareness of female role models in STEM fields;

45. address barriers to participation in STEM education and training, particularly for people experiencing socio-economic disadvantage, learners with diverse needs and those living in rural and remote areas;

46. strengthen access to high-quality information and lifelong guidance about STEM careers and occupations as well as education and training opportunities and pathways;

47. take measures to address the shortages of qualified STEM teachers, trainers and educators, including by developing strategies to attract, retain and support them;

48. support STEM in the initial education and continuous professional development of teachers, trainers, educators and leaders including the advancement of evidence-informed, interdisciplinary and inclusive pedagogical approaches and access to appropriate teaching and learning resources and supports.

INVITES THE EUROPEAN COMMISSION, within its sphere of competence and in accordance with the principle of subsidiarity, to

49. work in collaboration with the Member States to shape and develop proposed initiatives and actions outlined in the STEM Education Strategic Plan;

50. further develop the evidence base for STEM across all levels and types of education and training, using existing data and avoiding additional administrative burden and facilitate exchanges of good practices and peer learning among the Member States, including in the working groups, as part of the strategic framework for the European Education Area;

51. strengthen efforts at Union level to promote and increase inclusive and equitable learning in STEM education and training, including for women and girls, learners with diverse needs, those who experience socio-economic disadvantage or those who live in rural and remote areas;

52. support Member States through research, sharing of good practices and policy exchange on the recruitment, retention and professional development of teachers, trainers, educators and leaders, including those teaching STEM subjects;

53. promote cooperation at Union level between education and training providers, research organisations, public authorities and industry to strengthen links between STEM education and training and emerging and evolving sectors;

54. continue its work towards the development of a STEM competence framework as a voluntary support for Member States in their development of learning programmes in STEM education and training;

55. strengthen STEM skills intelligence at Union level, including through the European Skills Intelligence Observatory, to support improved anticipation of future STEM skills needs;

56. strengthen the Union's cooperation and research on STEM education and training at an international level, including with the OECD, UNESCO and the Council of Europe.