Council Recommendations on "Improving the provision of digital skills in education and training" and "Key enabling factors for successful digital education and training

14 November 2023

KEY MESSAGES

1 The attainment of basic, transversal and advanced digital skills across different learning pathways, starting with school level education through to lifelong learning, up-skilling and re-skilling is essential. In particular, it is necessary to foster the motivation of older workers as well as the low to medium skilled in digital skills attainment. Employers particularly highlight the need for people with STEM skills as the specific digital skills sets, such as coding, cyber skills, data analysts, and risk management.

2 In fostering the attainment of digital skills, it is essential to utilise new technologies and possibilities for remote and distance learning in combination with a blended learning approach. In this respect, further emphasis should be put on the development of digital learning content, including via massive open online courses (MOOCs), short cycle degrees, modular learning and micro-credentials and better use of part-time and distance learning study options.

3 In addition to having the necessary infrastructure that enables digital and remote learning possibilities, it is essential that teachers and trainers have a sufficient level of competence to design, deliver and assess digital education and training courses and curriculum. This includes facilitating more industry exposure for teachers and trainers, so that they have a better understanding of the skills and qualifications required by employers.

WHAT DOES BUSINESSEUROPE AIM FOR?

- The better alignment of education and training systems with labour market needs, including through the more timely and effective updating of education and training curriculum, taking into account the rapid pace of digitalisation as well as the interlinked process of the adaptation of labour markets to the green transition. It is necessary that EU and national actions to update training curriculum are well coordinated including through mutual learning opportunities at EU level.

Introduction

1. On 18 April, the European Commission published proposals for two Council Recommendations on "Improving the provision of digital skills in education and training" and "Key enabling factors for successful digital education and training". This position constitutes BusinessEurope's response to these proposals.
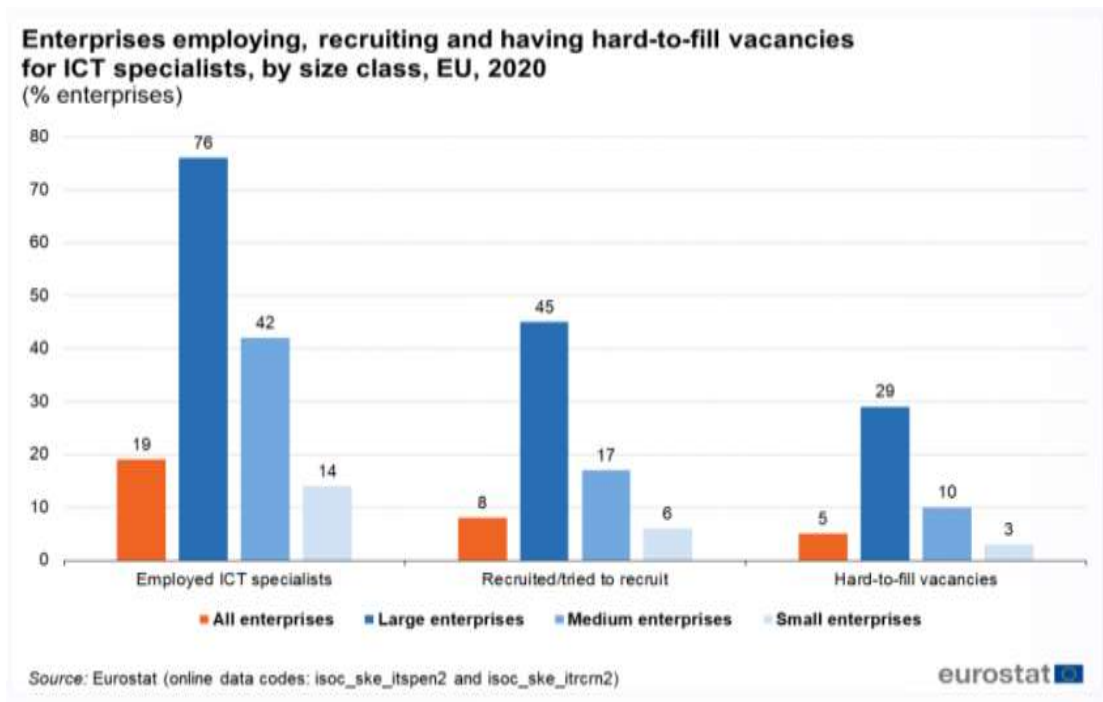
General comments

2. Companies of all sizes are facing significant labour and skills shortages across a broad range of sectors and occupations. Unaddressed, these shortages will only become worse in view of projected changed to the demographic situation in which the EU working age population is expected to shrink over the next years and decades, with the loss of an additional 35 million people by 2050.

3. To help address these shortages, BusinessEurope is calling for an EU Action Plan[1]. The scale of the shortages that are currently being experienced demonstrate that it is not only a shortage of ICT workers, as pronounced as this is, but a shortage of people with a variety of skills, including digital and STEM skills and at all skill levels. Better equipping people with digital skills, from basic through to advanced skills is, therefore, vital. This is also an essential element of the successful adaptation of our labour markets and workplaces to the green transition.

4. Member States in partnership with social partners and employers need to develop effective skills strategies that are based on quality research on skills forecasts, skills adaptation and skills development with the support of relevant research and education and training institutions. In the context of these recommendations, particular emphasis should be put on digital skills at all levels, from basic to advanced. Among the basic skills should be cybersecurity skills, which are important for developing the risk-free use of digital technologies from an early stage.

5. BusinessEurope considers that governments (national/local); social partners and companies should be encouraged to make the best possible use of new technologies in education and training. This entails the digital transformation of the learning process (eg modern infrastructure/equipment allowing for digital /distant / interactive / intuitive learning methods); enhancing teachers' proficiency in using new means of learning; and improving learning outcomes, focusing on training and ICT certifications that delivers the skills that are in high demand on our labour markets, notably digital skills (eg coding, cyber skills, data analysts, risk management and other advanced ICT skills sets), skills for the green transition, as well as transversal/social/linguistic skills.

6. In particular, insufficient access to digital skills is a key bottleneck for Europe's economies to grow to their potential. According to the latest Digital Economy and Society Index, only 54% of Europeans aged between 16 -74 have at least basic digital skills. This risks people being left behind in the digital transition.

7. Recruitment difficulties for ICT professionals were already significant before the Covid crisis. According to a Eurostat survey conducted in 2021, 55% of companies experienced difficulties in recruiting ICT specialists in 2019[2]. Indeed, across Member States, enterprises are facing difficulties in recruiting ICT specialists[3]

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[1] https://www.businesseurope.eu/sites/buseur/files/media/position_papers/social/2023-06-27_statement_eu_action_plan_labour_skills_shortages.pdf

[2] Source: https://digital-skills-jobs.europa.eu/en/latest/news/ict-specialists-skills-gap-hinders-growth-eu-countries

[3] ICT specialists - statistics on hard-to-fill vacancies in enterprises - Statistics Explained (europa.eu)

as labour and skills shortages have become a growing concern during the recovery. This is hindering Europe's ambitions for the transition to a green and digital economy. The following graph shows how companies of different sizes are weathering this ICT professionals' shortage.

Enterprises employing, recruiting and having hard-to-fill vacancies for ICT specialists, by size class, EU, 2020
(% enterprises)

Source: Eurostat (online data codes: isoc_ske_itspen2 and isoc_ske_itrcrn2)

eurostat

8. Digital forms of learning can be a cost-effective and time efficient way of learning and targeted investments, on a cost-sharing basis, can help to support workers to acquire the skills.

9. In their implementation these recommendations on digital skills and digital education should look to reduce the digital skills gap, support innovation, increase the pool of digitally-competent teachers and trainers, enhance digital learning infrastructure, including the further development of dual apprenticeship systems and e-apprenticeships, and improve cooperation between education and training institutions and employers, reinforcing public-private partnerships.

10. It is important that the two Council recommendations recognise the role of social partners as well as the importance for the Member States to work together with their social partners at national level to ensure synergies between Member States and social partners actions.

11. As regards social partners actions, the 2020 EU autonomous framework agreement on digitalisation[4], which is currently being implemented by national social partners across Europe, identified that a key challenge social partners face is to determine which digital skills and change of processes are necessary to be introduced and, in consequence, to organise adequate training measures. This agreement also foresees that where an employer requests to a worker to participate in a job-related training that is directly linked to the digital transformation of the enterprise, the training is paid by the employer or in line with the collective agreement or national practice.

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[4] https://www.businesseurope.eu/sites/buseur/files/media/reports_and_studies/2020-06-22_agreement_on_digitalisation_-_with_signatures.pdf

Specific comments

I.   **Recommendation on improving the provision of digital skills in education and training**

<u>Fostering digital skills attainment</u>

12. By 2025, 90% of all jobs are projected to require some level of digital skills. At the same time, around 37% of workers currently lack basic digital skills (CEDEFOP). A recent survey of BusinessEurope's member federations and companies showed that digital skills and the wider set of STEM skills are the most in demand skills sets that employers look for according to 46% of respondents.

13. Consequently, there is an urgent need to improve the attainment of basic, transversal and advanced digital skills, both in the context of initial and continuous education and training and across general and vocational education and training pathways and at all levels. This is further underlined by recent research conducted by the Adecco Group[5], which found that 61% of tech workers consider that their skills are transferable to other industries. This suggests that a good grounding in technical skills can help to provide a solid basis for pathways into different industries and occupations.

14. Fostering participation in training is a shared interest and a shared responsibility for governments, employers and workers. An important issue to further reflect in the draft recommendation as concerns the attainment of digital skills in a lifelong learning context is the motivation of adult workers to take part in further training, knowing that it is often harder to engage older workers as well as the low and medium skilled. One element that could contribute to this is the availability of short training courses and micro-credentials as well as training courses with flexible timetables to enable workers to undertake training at a time that is convenient for then. The provision of online and distance learning is also important in this respect.

15. Furthermore, the cross-curricular provision of digital skills across subject areas, as proposed in the draft recommendation is a welcome approach and one that needs to be developed by education and training providers.

16. The notion of digital skills as one of the basic skills sets that is to be developed in the early stages of compulsory education along with reading writing and arithmetic has been advocated for several years. Further building on this, the proposal in the draft recommendation to ensure cross-curricular assessment of digital skills, with means comparable to those applied to other basic skills at least at the end of each cycle for primary, secondary and VET (summative assessment) is a good suggestion and one that should not only help to develop digital skills attainment, but also to monitor progress in this regard. This would also be a useful tool for employers in terms of knowing the degree of digital skills competence that a new labour market entrant has.

17. The draft recommendation proposes that member States, together with stakeholders, pilot and roll out a **European digital skills certificate** aimed at enhancing the trust in and acceptance of digital skills certification across governments and industries. The pilot would aim to identify and test minimum quality requirements that any certificate and certification process on digital skills should have. The European digital skills

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[5] https://www.adeccogroup.com/global-workforce-of-the-future-research-2023/

certificate would then enable European citizens to indicate in a reliable and transparent manner their level of digital skills corresponding to the DigComp framework[6].

18. BusinessEurope's reflections are that the extent to which such a certificate may be of added value is likely to depend on the existing practices and approaches within Member States. While some members consider that there could be added value in such an approach in terms of fostering a common understanding of digital competence, making individuals' skills more visible, and worker mobility, there is hesitation among others about whether such a certificate would enhance trust and acceptance of digital skills certification and if it would keep up to date and would be recognised and valued by companies.

19. The more pertinent points identified by several BusinessEurope members are the need to foster the uptake of digital skills training offers and making individuals and workers more aware of the crucial importance of digital skills. Concerns have also been raised about the potential costs and benefits of such a European level approach to the certification of digital skills with there being the need for a thorough analysis of these aspects.

20. The proposal that schools provide core aspects of informatics (computer science) as part of compulsory education would also be an important component of enhancing pupils' overall digital skills competence. Mutual learning possibilities and EU guidelines for developing informatics curriculum could be a useful support aide, but whether informatics is taught as a separate subject or integrated into other subjects is a matter for national authorities and schools to consider.

21. Recognising the need to develop digital skills attainment BusinessEurope considers that it would be appropriate to look at developing benchmarks on the readiness of education and training systems to provide digital skills to complement the proposed target that 70% of adults (16-74) have at least basic digital skills by 2025.

22. As part of the response to labour and skills shortages, BusinessEurope is calling for an EU initiative to support Member States in their reforms aiming to speed up the process of updating curricula and qualifications in light of the new and changing jobs, notably in the context of the twin digital and green transitions. This initiative for the more timely and effective updating of curriculum is well aligned with the proposal in the draft recommendation to foster EU level cooperation on curriculum development, delivery and assessment in the area of digital skills.

23. It is particularly important to make progress when it comes to the timely updating of university programmes in response to new and emerging skills needs, including in the context of digitalisation. This should be part of a broader objective of opening up university education to a lifelong learning perspective, including through short cycle courses and micro-credentials.

24. Facilitating exchanges between employers, industry and higher education institutions for developing interdisciplinary courses and further embedding advanced and specialist courses on digital skills across degree programmes should also be further pursued, as proposed in the draft recommendation, as part of the approach to curriculum updating.

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[6] https://publications.jrc.ec.europa.eu/repository/handle/JRC128415

25. An important prerequisite for improving digital skills attainment, including informatics, among learners is the development of digital knowledge and competence in teachers and trainers. Therefore, dedicated and specialised training opportunities should be available to teachers and trainers, both as part of their initial and continuous training. It is equally important to foster the culture of schools as learning communities where everyone can share their knowledge and skills & learn from each other.

Bridging the STEM gap at all levels of education

26. STEM skills are often thought of as being acquired at upper secondary and tertiary levels of education. However, these skills can be acquired at all levels of education and training, including at primary and secondary school, and through general or vocational education.

27. STEM-related skills foster systemic thinking in a number of areas and are not confined to four subjects alone. The earlier people acquire these skills the better the prospects they will have for continuing their education and training and in their future career.

28. Therefore, as part of digital skills attainment, it is also essential to improve the attainment of the wider set of STEM skills in close cooperation with each other at all levels of education and training. BusinessEurope advocates that 25% of all tertiary graduates study STEM-related subject areas by 2030 (it is currently around 21%).

29. There continues to be a perception problem within Europe when it comes to attracting people to study STEM subjects. For example, in the EU there are twice as many male graduates in maths, science and technology as there are female. Consequently, in order to reach the 25% target, it is important to increase female participation in tertiary level STEM subjects. Improvements to gender equality would generate up to 10.5 million additional jobs by 2050[7]. Examples of initiatives to support female participation in STEM education can be founded in a desiccated BusinessEurope paper on "The role and importance of STEM skills"[8]

30. In this respect, it is important that the digital skills recommendation is implemented in close coordination with the new EU Skills Agenda and the ongoing work to develop an up-scaled EU STEM coalition, as per the Commission Communication of 2019 on a Renewed EU Agenda for Higher Education and efforts to increase the number of women studying STEM subjects, as per the European Strategy on Universities of 2021. It is also important to put more emphasis on the role of vocational education and training in teaching STEM skills, as part of providing diverse pathways to skills acquisition.

Skills anticipation

31. Steps need to be made to improve the anticipation and identification of digital skills needs. Successful approaches in the anticipation and identification of skills needs combine high quality labour market data; data from research and development activities and investments (that anticipate which technologies are on the radar but not yet in in the labour market) with social dialogue. To achieve a comprehensive anticipation and identification of skills needs, sectoral and regional approaches are needed.

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[7] [Economic case for gender equality in the EU](#)
[8] [Position paper - en (businesseurope.eu)](#)

32. As part of this, the sector skills blueprints initiative provides the opportunity for continued cooperation and expanded to new sectors. The importance of the sectoral level for identifying and addressing digital skills needs, including through the role played by sectoral social partners needs to be further recognised and promoted as part of the holistic approach advocated in the draft recommendation.

33. Once information on digital skills needs is available this can also be used to help update curricula, especially in VET and higher education, in a timely and effective way. This will, in turn, help to foster better skills matching and reduce labour and skills shortages. The involvement of employers, at all levels, will also be important as part of the development of national digital strategies in view of the 2030 policy programme "Path to the Digital Decade[9]"

34. It would also be important to find synergies with the 2020 Council Recommendation on Reinforcing the Youth Guarantee as concerns efforts to assess the digital skills of people not in education, employment or training and who register with the Youth Guarantee scheme.

35. As outlined in the Reinforced Youth Guarantee Recommendation, using the European Digital Competence Framework to assess these peoples' digital skills to help identify digital training needs, which can then be addressed through dedicated training courses is an important step. This can help to facilitate young peoples' successful integration into work or participation in further education and training.

Attracting digitally skilled third country nationals

36. It is welcome that the proposed recommendation recognises that highly qualified workers from third countries can play a crucial role in strengthening the EU's competitiveness. Third country migration should be viewed as a complementary tool to addressing employers' labour and skills needs, in combination with fostering the labour market participation of Member State nationals. The revised Blue Card Directive is a positive step towards facilitating the recruitment of skilled third country nationals in the EU, including in ICT related roles through the facilitated skills equivalence procedure that is provided for in the directive.

37. At the same time and given the extent of labour and skills shortages and the projected decline in Europe's workforce as a result of demographic change, it is important to take a broader approach to attracting third country nationals of all skills levels to the EU. The Commission initiatives around Talent Partnerships and, in particular, the upcoming proposal for an EU Talent Pool can play an important role in attracting third country nationals with digital skills as well as other skills sets that employers require.

II.   Recommendation on key enabling factors for successful digital education and training

The role of social partners in defining and delivering digital education and training

38. There is a role for national social partners to strengthen their cooperation, as appropriate, to ensure that digital skills strategies are based on and delivered through effective social dialogue, taking into account national industrial relations systems and practices. In parallel, social partners should also develop their cooperation with education and training providers in order to facilitate the process of updating

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[9] https://www.europarl.europa.eu/meetdocs/2014_2019/plmrep/COMMITTEES/ITRE/AG/2022/09-01/1261156EN.pdf

occupational profiles in a timely and effective way relative to identified needs. This is especially important in the case of digital skills, given the rapid pace of digitalisation and constant technological advancement. An example of a social partner-led initiative is the "CléA Numérique", which was developed by the French social partners in 2019 as a means for assessing digital competence. The certificate derives its legitimacy from the social partners and the number of certificates being issued is growing each year.

39. Social partners need to be involved in skills intelligence (e.g. on skills forecasting, update of occupational profiles, etc) in order to link labour market needs with education and training curricula and qualifications and to enable workers and enterprises to anticipate and support changes and innovation related to the interlinked digital and green transitions. This will support enterprises to be more innovative and productive.

40. Among the findings of a recent project by the European social partners on the topic of skills, innovation and training[10] it was identified that digitalisation and automation can generate new business opportunities through the development of new production processes, new products and new markets. This may drive the demand for new skills in the workplace, which in turn leads to changes in education systems which may have to adapt to technological changes in order to provide students with up-to-date training and education that meets the requirements of prospective employers. Considering the issue of the skills for innovation, it is possible to state that ICT and STEM skills are particularly important for innovation in an increasingly digital economy.

41. A report by the European social partners about promoting social partnership in employee training[11] further observed that digitalisation and ICT skills play a role through the whole educational system and are correspondingly gaining importance in employee training. To adapt and invent training measures for digital skills, it is necessary to support employers and employees in defining which digital skills are needed. In addition, non-formal training measures can be developed which respond to these needs.

Distance and remote learning

42. The rapid pace of digitalisation and changes in technology are creating skills gaps in many workplaces as well as a particular need for constant skills updating. This calls for further efforts to enhance digital skills provision in an initial and lifelong learning context. This can include the use of massive open online courses (MOOCs), short cycle degrees, modular learning, micro-credentials and better use of part-time and distance learning study options. It is important to promote different pathways to acquire digital skills, which also helps to increase and diversify the talent pool. The role of EU financial support, such as the European Social Fund+, in helping to develop online learning options should also be further developed.

43. Distance and online learning is already widely used in certain areas of education, most notably in higher education. Covid has helped to accelerate and broaden the use of digital forms of learning in schools and VET institutions.

44. Building on the learnings gathered from the education and training response during the pandemic, it is important that regardless of the educational pathway or form of

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[10] https://www.businesseurope.eu/sites/buseur/files/media/reports_and_studies/2021-11-30_final_report_skills_innovation_project.pdf
[11] https://www.businesseurope.eu/sites/buseur/files/media/reports_and_studies/2018-06-18_employee_training_final_report_v2.pdf

education, be it initial or continuous education and training, including employee training in the workplace, there needs to be the wider provision of, and access to, digital and online learning content in conjunction with facilitated access to remote and distance learning.

45. In parallel, teachers and trainers need to have a sufficient level of competence to design, deliver and assess digital education & training courses and curricula. To help develop the skills and competencies of teachers and trainers in this regard, it is important to increase their industry exposure, both as part of their initial and continuous training, so that they have a better understanding of the qualifications and skills required by employers in the workplace.

46. In this respect, BusinessEurope welcomes the proposal in the draft recommendation that support is provided to teachers and teaching staff in using digital technologies for teaching, learning and assessment. While this should become a standard feature of initial teacher training, it will also be important to engage teachers and trainers in up-skilling activities in this respect, something that short courses and micro-credentials could play a particularly useful role in facilitating.

Digital education infrastructure

47. Improving the provision of distance and remote learning needs to be accompanied by more investment in digital infrastructure. In this respect, it is important to have a coherent approach to investments in digital skills and digital forms of education provision across different EU initiatives. This includes the European Social Fund+, the European Regional Development Fund, the Erasmus Programme, Horizon Europe and national reforms that are carried out as part of the European semester process. In addtion, EU funding schemes should continue to support existing programmes on digital upskilling or reskilling in order that they can be scaled-up.

48. Some examples of initiatives to foster digital education and skills include the following:

- Through its online learning platform "Miríadax[12]", **Telefonica** provides certified training courses in fields, such as innovation, languages, programming, management, cybersecurity.

- **SiTecSkills Academy[13]** from **Siemens** provides a focused qualification program to support the workforce transformation with main emphasis on technical and digital learning of employees and external companies' staff. It also includes train-to-hire of external talents in cooperation with local "Agentur für Arbeit".

- In France, some Certifications such as **ICDL (international leader in digital certification[14]) and TOSA certificate[15]** are used by companies and many companies create campuses or academies to train their employees in the digital technologies that they deploy, due to lack or unsuitability of initial training in this field given the rapid evolution of technologies and related skills.

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[12] https://miriadax.net/miriadax_empresas/
[13] https://www.siemens.com/global/en/company/jobs/sitecskills-academy.html
[14] https://icdl.org/
[15] https://www.tosa.org/EN/index

- In Germany, the **Digital Skill Licence**[16] ("DiFü") is a nationwide standardised and free further training and certification offer to acquire skills and confidence in various topics of basic digital knowledge – mainly in the area of cybersecurity. The online learning offer is open to all age groups and funded by the Federal Ministry of the Interior and Home Affairs (BMI). The final certificate shows the level of individual digital competence and makes it comprehensible for third parties (such as employers).

- **Network 42**[17] is an innovative European approach to digital skills training and with a specific focus on computer programming. The teaching methods are based on peer learning, no teachers, no lectures and fully hands on practical experience with students helping to guide each other through competence-based tasks.

- Through the **Akkodis Academy**[18], the **Adecco Group** is aiming to train 55,000 IT specialists and engineers each year by 2025. Re-skilling and up-skilling programmes are created in a variety of formats to fit specific needs and goals, including self-paced learning paths and study groups to instructor-led online and campus sessions. Courses are offered on a part-time or full-time basis.

- **Coursera**[19] is an online platform and provider of MOOCs through partnerships with universities and companies, such as Google and IBM. The courses aim to prepare job seekers for entering the labour market as well as to up-skill and re-skill them according to evolving labour market needs.

- An example is the **Google Career Certificates**[20], which are flexible, online training programmes designed to help people learn job-ready skills in areas such as Cybersecurity, Data Analytics, Digital Marketing & E-commerce, IT Support, Project Management.

- **IBM SkillsBuild**[21] is a free education programme focused on underrepresented communities in technology that helps adult learners and secondary and university students develop valuable new skills, obtain digital credentials, and access career opportunities by making them job ready. The programme includes an online platform that is complemented by customised practical learning experiences delivered collaboratively with local partners.

- **Microsoft Dream Space**[22] is a dedicated innovation and education hub that engages students across primary and post-primary education in digital skills experiences. This initiative has so far led to over 130,000 students participating in initiatives to develop their STEM skills.

- **ISACA**[23] is an organisation to empower students and professionals active or interested in Information Systems and Information Technology to grow their skills and knowledge in audit, cybersecurity, emerging tech, etc. There are 20,000 ISACA

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[16] https://difue.de/

[17] https://www.42network.org/

[18] https://www.akkodis.com/en/careers/academy

[19] https://about.coursera.org/how-coursera-works/

[20] Professional Google Career Certificates - Google (grow.google)

[21] https://skillsbuild.org/

[22] https://www.microsoft.com/en-US/dreamspace/

[23] https://www.isaca.org/about-us

free memberships available to students in Europe, who can access ISACA training, credentials and professional networks.

Blended learning

49. At the same time, a realistic approach to digital education is needed to preserve in-person education and training components wherever necessary or important to achieve the best possible learning outcomes.

50. The implementation of the Recommendation should build on recent experiences across Europe of blended learning, i.e. teaching that integrates technology and digital media with traditional instructor-led classroom activities, giving students more flexibility to customise their learning experiences.

Governance

51. BusinessEurope notes the intention to create a High-Level Group on Digital Education and Skills in parallel to the continued work of the High-level Group set up for Structured Dialogue on digital skills with Member States. Whereas these high-level groups can undertake useful analytical work and contribute to the potential orientation of future policy initiatives, it is important not to lose sight of the fact that it is at Member State level where concrete actions are needed to develop digital skills and the necessary infrastructure. The idea of creating a technical subgroup as part of the structured dialogue could be useful in certain areas, notably curriculum development. BusinessEurope advocates for mutual learning opportunities between Member States as concerns national and sectoral approaches to the more timely and effective updating of curriculum. It would also be relevant to reflect the views of employers and social partners into this work and which we call on the Commission to facilitate.

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