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**Working Group on Schools, Sub-group on
Learning for Sustainability**

Learning for sustainability and digital education in schools
Key messages



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1. Learning for sustainability and digital education

Addressing climate change, biodiversity, and other sustainability challenges requires a shift in socio-economic priorities and everyday practices. Both the green and the digital agendas call for changes in how we live, learn and work and how we consider the future. The green and digital agendas are both complex, multi-faceted and interconnected. An environmentally sustainable, circular and climate-neutral economy, for example, cannot be attained without harnessing new technologies. Education and training can further the goals of the green and digital 'twin' transitions, but this will require policy frameworks and measures which support learning for change.

There are three main ways to relate the digital agenda in education to sustainability:

- digital as a tool **to enhance teaching, learning and assessment**;
- digital as a **driver of change and transformation** in education and training, and society more broadly;
- digital in terms of **building digital and other competences of learners**, including sustainability and STEM competences.

All three dimensions can help advance learning for sustainability in formal, non-formal and informal education. Combined, they can support changes that increase student engagement in sustainability issues and improve overall learner competences.

2. Synergies between sustainability and digital education

Synergies between green and digital can be leveraged to shape a society and economy equipped for the future. By connecting these agendas, we can create an educational environment that prepares individuals to thrive in an increasingly interconnected and sustainable world.

- **Sustainability and digital competences** are essential for navigating the complexities of modern life. Both the green and digital agendas emphasise lifelong learning and a values-driven approach. These initiatives share key elements such as fostering critical thinking and promoting active citizenship. For instance, critical digital literacy is necessary to identify greenwashing and fake and misleading information related to climate change and the environment online.
- Both agendas emphasise **innovative pedagogies and transformative learning experiences**. Digital technologies, such as online learning and video conferencing, and emerging technologies, such as Artificial Intelligence can offer new possibilities for teachers and learners. Additionally, digital learning methodologies, including virtual reality experiences and digital storytelling can enhance learners' participation and engagement. Immersive experiences can place learners at the centre of sustainability challenges, helping them understand complexities and imagine alternative futures.
- **Improving infrastructure** is pivotal for both agendas. Greening school buildings and grounds and ensuring digital connectivity and access to flexible learning spaces is key. Greener and more digital infrastructure can result in better learning environments, therefore, both agendas can reinforce each other for such improvement.

Digitalisation and sustainability in schools both require investments and ongoing support in terms of resources, material, time for teachers to collaborate and ongoing professional learning support. Levels of support for each area differs considerably within and between countries. Investments in digital infrastructure also need to take environmental and sustainability considerations on board. This could include investing in energy-efficient devices, opting for cloud

services powered by renewable energy and promoting awareness of staff and students of the environmental impact of technologies.

3. Challenges with twinning sustainability and digital

While there are many potential areas for **synergies and overlaps** between learning for sustainability and digital education, **some tensions** add a layer of complexity to the twinning efforts:

- **The two agendas are not always equals**, making it challenging to bring them together in practice. In some Member States, for instance, more policy focus is paid to digitalisation than learning about climate change, sustainability and Education for Sustainable Development. In other countries, the reverse is true and digitalisation is perceived as more contentious than sustainability, for example recent discussions on limiting exposure to digital technologies at schools.
- Having dedicated policies and strategies on digital education, at national and European levels, means that **progress in this area could be more advanced than in sustainability**. This could then widen gaps between these two interlinked policy areas.
- From an economic perspective, the **digital transition can be portrayed as an “opportunity”, whilst the green transition can be seen as “burdensome”**, especially as regards structural investments. This difference in perception could also have an impact on how sustainability is treated in school education.
- The **environmental impact of digital technologies** can be a point of tension between the two agendas. Guidelines for schools on the sustainable use of digital technologies have been issued, for example, in Flanders, Belgium.
- Green and digital education are considered by some as opposing forces, where **“screen time” is seen as competing with time outdoors and in nature**. Technology is seen by some as a distraction and can diminish the experience of learning outdoors by placing a barrier between the learner and the natural world.
- There can also be a **misconception that to build digital competences, “screen time” is required**. This is not the case as non-digital methodologies and resources can be used (eg unplugged activities to teach younger students about algorithms). It is important therefore to reflect on the ways digital competences are developed and ensure the methods used are suitable and age-appropriate.
- **Not all teachers feel confident and ready** to take on sustainability as an issue and/or bridge it with digital education. Sustainability can be perceived as complex and content-heavy, making it more difficult for teachers to include it in their practice. Some teachers also struggle with using digital tools, but might find it easier to integrate these into their practice once they are supported with understanding and using digital technologies. For example, some indications in schools and teacher education settings show a rise in pedagogical activity and confidence in using digital technologies post-COVID, though the need for ongoing training is crucial.
- **Often, digital education is understood solely as the use of digital tools to support learning about sustainability**. There is a need to understand digital education more broadly as a means of nurturing areas of green competences – such as embracing complexity, envisioning sustainable futures, and acting for sustainability – and highlighting the **educational innovation opportunities** that arise from such use. Like

sustainability, digital education requires learners to engage critically with political challenges (e.g., fake news, privacy issues and the power of large companies).

- **Technological developments advance quickly, including most recently advancements in generative AI.** This brings concerns about digital inequalities – particularly regarding equal access and opportunities to engage with and through technology, as was seen during the Covid pandemic. This requires inclusive policies that ensure that every learner can benefit from digital tools and education and can develop basic digital competences. Teachers need to re-skill and keep up to date with the developments. It also requires learners to build digital competences that will make them resilient against the potential adverse effects of frequent usage of digital devices and social media.
- An post-COVID **pushback on “overuse” of technology in schools** seems to be emerging. This may limit students' opportunities for engaging, hands-on and outdoor experiences where technology is used creatively. If not addressed through policy, this could undermine innovative approaches such as augmented and virtual reality or data-driven projects such as Citizen Science. These initiatives are valuable for deepening students' understanding of environmental and climate issues.
- Additionally, there is a pressing need for policy action to establish and promote guidelines for the **sustainable use of technology in schools to mitigate their environmental impact.**

4. Ways forward to leverage synergies

4.1. Common policy frameworks

- There is a need for **common policy frameworks** and guidance documents in the Member States (e.g., **curricula frameworks and teaching standards**) that are grounded in a shared and well-articulated vision for transition. This vision should explain how sustainability and digital education complement each other and can be integrated together across the curriculum and school experiences.
- These documents should clarify and pay attention to the shared **values** of the two agendas. They could usefully focus on **transformative pedagogies, innovative learning spaces, and whole-school approaches**, as these are promising approaches for breaking siloes and linking sustainability and digitalisation.
- Creating these frameworks through a **participatory and inclusive process** is essential. This approach should involve stakeholders from various levels of governance, particularly in decentralised education systems, while **respecting local autonomy**. Engaging a broad range of education and training institutions and stakeholders will provide valuable insights from multiple perspectives.
- Additionally, it is important to find **whole-of-government ways** to connect green and digital agendas at the policy level, as typically these agendas are handled by separate teams in ministries. Exploring connections with European level groups, in particular the European Education Area's Digital Education Learning, Teaching and Assessment Working Group could facilitate this integration.
- In summary, **policy guidance and support** at both the governmental and school levels are needed to effectively link the two agendas. A coordinated and holistic approach provides opportunities for comprehensive school planning that addresses the needs of digital innovation and environmental stewardship.

4.2. Connecting policy, research and education

- **Fostering collaboration and building networks** among stakeholders is crucial for advancing the goals of the green and digital transitions. Bringing together leading experts in digital education and sustainability to share best practices and develop integrated educational materials can speed up the adoption and scaling of effective approaches.
- In particular, it could be helpful to support exchange and collaboration between **non-formal learning stakeholders** in digital and sustainability. This is important as both communities have active non-formal learning stakeholders. Linking these communities could generate innovative ideas and partnerships for the twinning of the two agendas.
- There is a need for **meetings and platforms** where educators working on digital and sustainability can connect and engage. Such interaction can help address challenges and explore opportunities to further integrate these agendas in practice.
- Further **research, funded at EU and national level, is needed on the theory and evidence** to support the twinning of digital and sustainability in schools. Building better understanding of how digital tools and technologies can support learning about climate and sustainability may be particularly useful here. These inquiries could also foster closer connections between policymakers, researchers and educators.

4.3. Strengthening initial and continuous education for teachers and all education personnel

- Strengthening **initial and continuous teacher education and quality frameworks** is vital to foster teacher readiness and boost teachers' sustainability and digital literacy.
- **Learning opportunities are needed for all education personnel**, including teachers, teacher educators and **school management teams**.
- It is crucial to **empower and support school leaders** so they can effectively implement digital and sustainability initiatives. School leaders should be equipped to align these initiatives with the school's values, goals, and learning outcomes, and to lead by example in integrating these agendas into the school culture.
- **Staff mobility** can lead to increased flexibility, adaptability and a practical mindset when implementing the twin agendas in education. Therefore, staff mobility should be integral to teachers' and schools' learning. Erasmus + could play a role in supporting staff mobility for the twin transition. Providing opportunities for educators to spend a period in another region, country or context can support networking and peer learning.
- Projects and programmes linking the digital and green transitions are funded under Erasmus+, including the **Erasmus+ Teacher Academies**. Similarly, there are growing numbers of local, regional, European and global initiatives that leverage digital platforms for teacher education on sustainability. Learning from and building on networks and initiatives such as these at the European and Member State level could be a powerful force in supporting the twin transitions.

4.1. Support and guidance for schools

- To support change in schools, digital education and learning for sustainability should be included through a **whole-institution approach** covering all aspects of operations and learning. It is important to include teachers, leaders and the wider community including parents and learners and local stakeholders, in this dialogue.
- **Connecting strategies at schools** could be a powerful catalyst for more effective action at the school and community level. Oftentimes, schools may operate **separate and unconnected strategies** (eg digital learning strategy, eco-school plan) reflecting disparities in how they view the challenge of teaching towards the green and digital transition.
- **Connecting staff** working on digital and sustainability in schools is important. There may be digital and sustainability leads and small teams (eg ICT coordinator, teacher in charge of sustainability issues, digital learning team, eco teams) at schools that do not have opportunities to collaborate. Bringing them and their students together for joint initiatives and discussions could be an effective way to bridge the digital and sustainability agendas in schools.
- Schools need **support and guidance** for redesigning and developing **digital and green infrastructure and buildings** (e.g., financial incentives, guidelines on how to build sustainable and digital learning environments, classrooms, and training for school management). Guidelines and information material from existing initiatives would be helpful here to see practical examples and cases.
- Schools may benefit from **collaborating with local partners** who are already using digital technologies and gamification to enhance learning (eg environmental centres, science museums, research centres, higher education institutions, non-formal learning providers)

5. Good practice

5.1. Digistainable teacher initiative, Slovenia

The Slovenian government initiative seeks a digital, sustainable, and financial transformation in education by offering a training programme for teachers and education leaders. E-learning communities and a digital platform will provide continuous professional development opportunities at national and school level. The initiative involves a broad range of stakeholders, with planned regional e-learning communities facilitating continuous exchange. Challenges include coordinating activities and maintaining institutional commitment. Future plans entail further development, piloting and implementation over the coming years.

5.2. BELEXPO, Belgium

A good practice example of collaboration between schools and external partners is [BELEXPO](#) in Brussels. BELEXPO is an educational exhibition and learning experience, designed and run by the region's environmental office, which focuses on caring for the city and the climate. Equipped with a digital wristband, groups of learners (c. 10-16 years) carry out tasks that can improve the quality of life and reduce carbon emissions in the city, experiencing and taking part in concrete solutions. The BELEXPO website has a dedicated section for teachers, with additional suggestions for learning materials and activity sheets to use following the visit.

5.3. Kinsale Community School, Ireland

Kinsale Community School, Co. Cork, Ireland aims to cultivate sustainability and digital competences among students through the integration of green infrastructure, mindful use of digital technologies, collaborative spaces, community involvement, regular teacher training and student participation. Key enablers for the implementation of a whole school approach in this secondary school include active leadership support, time and resources, professional development opportunities, national and international exchanges and a student-centred approach.

5.4. ÖKOLOG, Austria

The ÖKOLOG programme in Austria supports the development of a culture of sustainability in schools. The programme employs a comprehensive strategy, integrating sustainability at various levels through collaborative learning, projects, discussions and extracurricular activities. The 'Digitalisation and media' component encourages schools to address sustainability and digitalisation together. Key challenges include motivating school teams, managing limited time and financial resources and preventing the initiative from becoming just one among many projects. Success relies on strong regional support, ongoing school participation and synergies with other networks, highlighting the pivotal role of school leadership.

6. Suggested further readings

[Towards a Green and Digital Future. Key Requirements for Successful Twin Transitions in the European Union](#)

[The Digital Education Action Plan 2021-2027: Resetting Education and Training for the Digital Age](#)

[The Twin Transitions: Digital and Sustainability Learning in Schools Working Group on Schools: Learning for Sustainability Input paper](#)

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