

21st Century European Teachers

Policy Recommendations for a Co-Education Model
to Upskill Pre- and In-Service Teachers in New
Subject Areas

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Summary

The 21st Century European Teachers (XXI-EU-TEACH) policy recommendations report provides a framework for innovating teacher education to address complex societal shifts, such as climate change and digital transformation. It focuses on bridging the “theory-practice gap” through a horizontal partnership model between pre-service and in-service teachers.

The report organises its recommendations around four core emerging subject areas:

technological empowerment, sustainable learning, entrepreneurship and playful learning.

A core strength of the project is its co-education model, which moves beyond the traditional mentor–mentee hierarchy to establish an equal partnership among teachers. Within this model, educators jointly design learning plans by integrating academic expertise with contextual knowledge, engage in co teaching to make collaborative practices visible, and critically reflect on their work through shared evaluation, framed as a process of collaborative discovery.

Key policy recommendations include:

- ▶ Establishing structural support: Policymakers should create formal partnerships between universities and schools, ensuring protected time and resources are allocated for collaboration within the academic calendar.
- ▶ Formal recognition: Co-education and various forms of teacher mobility, including international, local, and virtual exchanges, should be officially recognised as continuous professional development and career advancement.
- ▶ Transforming mentorship: National guidelines should be developed to shift the role of in-service mentors from “judging” observers to collaborative partners.
- ▶ Centralised logistics: To reduce the administrative burden on schools, the logistics for mobility and exchange programmes should be managed centrally by regional or national agencies ensuring equity, efficiency and scalability.

The report concludes that these innovations are necessary to align training systems with the “lifelong ecology of learning” required for 21st century education.

Introduction

The policy recommendations address how to innovate teacher education and training to mainstream practices that meet the needs and priorities of teachers in the 21st century.

The overall objective of the [21st Century European Teachers](#) project is to gain insight into how European teachers can approach and develop teaching in emerging subject matter areas that arise as a result of large complex upheavals affecting society, e.g., climate change and the ubiquitous digital development.

The policy recommendations were derived from all project deliverables and activities such as:

- ▶ The initial [Research Report](#) that explores the five teacher competencies of the project. The report combines desk research with survey data and participatory observation during the first round of study visits.
- ▶ [eBook - Case studies of the teacher educations in the five partner countries](#), and study visits reports – There were five study visits where project partners observed the implementation of learning activities developed through the project’s co-teaching model. Every study visit focused on one of the four 21st century competencies identified by the project.
- ▶ **National dialogue labs and European workshop** for policymakers and education stakeholders to identify system-level recommendations organised during 2025 and 2026 with diverse stakeholders in all five participating countries (Italy, Denmark, Romania, Spain and Finland) and on European level.
- ▶ [Report on regulatory frameworks and challenges/priorities of teacher education & training across Europe](#) maps the frameworks, priorities, and challenges in both initial teacher education (ITE) and continuous professional development (CPD) across Europe. It highlights European shared goals, such as pedagogical innovation, digital competence, and sustainable learning, while also revealing persistent challenges. Country-specific insights reveal diverse approaches and underscore the value of cross-national collaboration. The findings provide guidance for policies and reforms to strengthen teachers’ capacity in 21st-century classrooms
- ▶ [Recommendations for the 21st Teacher Competencies](#) presents actionable recommendations to help teachers develop the key competencies needed for 21st

century education. Building on the outcome of the 21st Century European Teachers project, it focuses on how teachers can better support inclusive, innovative, and future-ready learning environments. It highlights essential skills such as critical thinking, creativity, digital literacy, and collaboration, and shows how these can be integrated into teaching through four thematic areas: technology, sustainability, entrepreneurship, and playful learning.

- ▶ [Research paper on the co-education model](#) and the 21st Century European teachers' co-education model explore how a co-education model based on co-teaching can support the professional development of both pre-service and in-service teachers. Those documents highlight how closer collaboration between teacher education institutions and schools can help bridge the gap between theory and classroom practice while fostering mutual learning, reflection, and innovation.
- ▶ [The MOOC series](#) are designed to help teachers develop new skills, experiment with innovative approaches, and connect with peers across Europe. Each MOOC focuses on a key theme, offering flexible, engaging, and hands-on learning experiences. Participants are encouraged to complete the 21st Century MOOC, exchanging practices with colleagues, participating in study visits, and adopting a playful mindset that sees ordinary spaces and objects as resources for learning.

Focus areas of the 21st Century European Teacher Academy

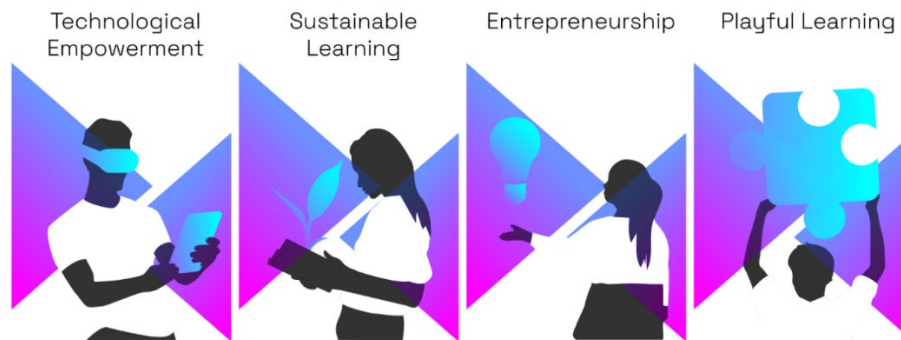


Figure 1 - The four emerging subject areas that the project addresses.

Technological Empowerment: Moving beyond the use of hardware as a “simple visual aid” (such as mere projectors) toward: (1) the sophisticated design of interactive learning experiences; and (2) reflecting on the impact of technology on students’ and teachers’ daily lives both inside and outside the school. This allows teachers to leverage technology as a collaborative tool that fosters critical thinking rather than just digitising traditional lectures.

Sustainable Learning: Prioritising the long-term professional well-being of the educator within a “sustainable working life.” By managing systemic stressors, we ensure high-quality instruction is maintained throughout a decades-long career, preventing the premature exit of talented professionals.

Entrepreneurship: Cultivating teachers as “social change agents” who can lead school-community projects. This empowers educators to bridge the gap between the schoolhouse and the community, applying innovative problem-solving to local societal challenges.

Playful Learning: Adopting an innovative mindset to explore “unfamiliar, strange situations” through role-play and experimentation. This form of pedagogical risk-taking supports the development of self-awareness, professional confidence and emotional resilience, equipping teachers to respond to the complex and unpredictable social dynamics of 21st-century classrooms.

While these priorities articulate a coherent and forward-looking vision for European education, their realisation requires confronting the constraints of existing systems. This strategic ambition must be reconciled with institutional resistance, administrative complexity, and everyday school realities across Europe to enable meaningful and lasting change.

The co-education model

The 21st Century European Teachers co-education model¹ is the strategic engine of this project, designed specifically to bridge the “theory-practice gap” identified across all five nations. It replaces the hierarchical “expert-observer” relationship with a horizontal partnership between pre-service and in-service teachers.

The model is structured around three interconnected stages:

Co-Create: Joint planning where both parties bring their strengths—the pre-service teacher brings the latest academic research, while the in-service teacher brings contextual, lived knowledge.

Co-Teach: Active classroom implementation where both educators are simultaneously engaged, sharing the lead and modelling collaborative behaviour for the students.

Co-Evaluate: Shared reflection that treats the classroom as a laboratory, moving away from “judgmental observation” toward “collaborative discovery.” The Benefit: For the pre-service teacher, this model removes the “guest status” and builds professional confidence by treating them as an equal colleague. For the in-service teacher, it provides “fresh eyes” on their practice, allowing them to modernize their methods without leaving their classroom.

To scale this model from a successful pilot into a systemic approach, targeted policy levers are required at the European level, including structural support, formal recognition, and alignment with teacher education and professional development frameworks.

¹ To learn more about the project’s co-education model, see the co-education model report: <http://www.eun.org/documents/411753/11975354/D3.1+-+A+21st+Century+European+Teachers+co-education+model.pdf/38c74ac5-b3a7-48e3-b1c0-bbb68598a921>

Policy recommendations

Technological Empowerment

Technological empowerment offers an expanded and forward-looking approach to digital literacy, shifting the focus from the mere use of tools to the critical and reflective engagement with technology. It equips students to examine the personal, social, and ethical implications of digital and AI enhanced technologies, an increasingly vital competence in contemporary society.

From a pedagogical perspective, it requires teachers to integrate technology purposefully and ethically, guided by a pedagogy-first mindset in which learning goals shape the choice and use of digital tools. In this approach, technology is used to deepen understanding, support active learning, and enhance educational outcomes, rather than driving instructional design or replacing sound pedagogical practice.

This involves starting with small, meaningful applications of technology that clearly support defined learning objectives, foster critical thinking, and encourage responsible use. By doing so, teachers help students develop the capacity to become informed, critical evaluators of technology, capable of navigating and shaping an AI-rich world rather than passively consuming it.

Shift from product to processes

In the context of ongoing digital transformation, education stakeholders need strengthened technological empowerment to move the focus from learning products to dynamic learning processes, particularly in light of AI's growing influence on learning design and assessment. This shift requires re conceptualising technology not as a passive visual aid, but as a collaborative pedagogical resource that supports reflection, interaction, and continuous learning—aligned with the realities of students deeply immersed in digital and virtual environments.

Education authorities should therefore embed compulsory, long term professional development pathways that extend beyond basic digital skills. These pathways should concentrate on pedagogical design, ethical judgment, and the critical understanding of digital and AI enhanced

technologies. In line with EU values of equity, inclusion, and human centred digitalisation, such policies should empower teachers to design interactive, process oriented learning experiences that promote critical thinking, creativity, and learner agency, ensuring that technology serves meaningful educational purposes rather than driving them.

Include technology assessment frameworks in the education

A key priority should be strengthening the **informed selection, understanding, and use of educational technologies**, alongside the development of appropriate technical and pedagogical competencies that support their effective integration in teaching and learning. Schools require greater systemic support to select education technologies and digital tools in a meaningful, pedagogically grounded way, rather than relying on ad-hoc or market-driven decisions. Policy makers can address this need by introducing **shared education technology evaluation frameworks** that are accessible and usable by all actors in the school community, including school leaders, teachers, students and support staff. Such frameworks should support evidence-based decision-making and ensure alignment with learning objectives, ethical standards, data protection, and inclusion.

Teachers should be encouraged and supported to **reflect critically on their digital practice**, participate in communities of practice, and design inclusive digital learning experiences. This includes actively addressing the digital divide by offering accessible alternatives and applying **Universal Design for Learning (UDL)** principles to ensure that technology enhances learning for all students.

Equally important, students must be supported to become **critical, independent and responsible users of technology**. National curricula could explicitly include age-appropriate frameworks or rubrics that help learners evaluate the benefits, limitations and risks of digital and AI-enhanced technologies. Developing these evaluative skills from an early age empowers students to make informed choices and supports a human-centred, reflective approach to technology use throughout their education.

Learning communities for technological empowerment

Policies should promote collaborative professional cultures, such as school-based learning communities and cross-school networks, which enable teachers and students to experiment, reflect, and co-create digitally enabled pedagogies. Teachers need protected time for

professional learning, and support from school leadership to manage change and experimentation.

To ensure these communities are effective and sustainable, teachers must be provided with protected time for professional learning, experimentation, and peer exchange. Strong and consistent support from school leadership is also essential to create safe conditions for pedagogical risk taking, manage change processes, and embed innovation into everyday practice. By fostering shared ownership, reflection, and collective capacity building, learning communities can play a central role in supporting teachers to integrate technology in purposeful, ethical, and pedagogically sound ways.

Sustainable Learning

The 21st Century European Teachers project adopts an integrated definition of **Sustainable Learning and Education (SLE)** that combines principles of sustainability with learning approaches designed for rapidly changing societal, economic, and environmental contexts. SLE emphasizes the development of learners' capacity to adapt, reflect, and continue learning throughout life, equipping them with the skills needed to navigate complexity and uncertainty.

This approach introduces key curriculum themes such as system thinking, managing change and innovation, action learning and action research, global citizenship, ecological awareness, and learner autonomy. By foregrounding these dimensions, SLE supports the development of critical thinking and lifelong learning skills, while fostering social and environmental responsibility and active civic engagement.

Sustainable learning further requires teachers to embed environmental, social, and economic principles coherently across the curriculum. Guided by the UN Sustainable Development Goals (SDGs) and Education for Sustainable Development (ESD) frameworks, this integrated approach positions sustainability not as a standalone topic, but as a core lens shaping teaching, learning, and educational purpose across disciplines.

Include outdoor learning in school activities

Outdoor learning takes students out of the classroom to harness their natural curiosity and experience learning with movement and an awareness of space, and it can happen in the schoolyard or as activities in natural areas. It can be linked to sustainable learning and active citizenship as students learn about the local habitats and landscapes and reflect on ways to

improve the local community. Sustainable learning prioritises relational and emotional competencies over mere curriculum completion to support student well-being.

Within a sustainable learning framework, outdoor education emphasises relational, emotional, and experiential competences, supporting student well-being alongside academic learning. Rather than prioritising curriculum coverage alone, it fosters curiosity, collaboration, and connection to the environment, all of which are essential for long term learning and responsible citizenship.

Curricula should therefore be updated to formally require a proportion of learning activities to take place outdoors, whether in the schoolyard or beyond. This not only underlines the educational value of outdoor learning, but also justifies investment in the creation, improvement, and maintenance of outdoor learning environments. Recognising outdoor learning as an integral component of education strengthens a culture of teaching about the surrounding world from within it, rather than only through classroom-based abstraction. It also opens opportunities to reimagine learning spaces and experiment with more playful, flexible, and interdisciplinary approaches to teaching.

Concerns with AI and digitalisation are common priorities of education systems and therefore, the importance of schoolyards can be overlooked. The co-created lessons in the project showed that teachers can implement many interdisciplinary sustainable education activities in the schoolyard. The opportunities for outdoor teaching vary from school to school, but schools offer various simple facilities that can be used in teaching. With relatively modest investments—such as increasing green spaces, adding sports areas, installing fire pits or sheds, and creating zones for raised planting beds—schoolyards can be transformed into versatile learning environments that support group work, hands-on activities, and environmental education. Such improvements also increase opportunities for **offscreen learning**, offering meaningful non-digital alternatives when schools seek to balance technology use with physical, social, and experiential forms of learning.

Build sustainable structures and whole school approach

Sustainable learning requires building “sustainable structures” for collaboration that address societal challenges and long-term professional growth. It involves aligning initial teacher education and continuing professional development with the realities of climate change and social transformation to support students’ and teachers’ well-being.

Equal emphasis should be placed on fostering a sustainable teaching career and working life to prevent burnout amidst global unrest, while strengthening teachers' language preparedness, and international mobility to help them thrive in diverse contexts.

Education stakeholders should promote systems thinking, ecological awareness, learner agency, and interdisciplinary approaches that help learners link global issues to local contexts. They should begin with small, authentic steps, such as connecting sustainability to everyday life and leveraging existing school initiatives and colleague expertise. Collaboration with families and local communities is essential to turn sustainability into shared action.

Education authorities can do further than introducing sustainable education as a stand-alone or transversal curriculum topic. Sustainable education could be embedded in the shared school vision. To facilitate this, education authorities should encourage schools to adopt governance frameworks that integrate sustainability into leadership and teaching practices. Schools should also be supported to engage with their local community in sustainability projects. In turn, schools can give more voice to students by making them do debates about local community issues, organise public demonstrations, or conduct surveys to explore the opinions of the local community.

Professional development should equip school leaders and teachers with the competence to translate sustainability principles into participatory pedagogies, interdisciplinary learning, and authentic problem-solving linked to real-world challenges. In alignment with the UN Sustainable Development Goals, policies should also promote partnerships with local authorities, civil society, and non-formal education providers to extend learning beyond the classroom and reinforce sustainability as a shared societal responsibility.

Link sustainability with entrepreneurship and problem solving

The co-created lessons developed within the 21st Century European Teacher project engaged students in sustainability-focused projects (e.g., paper production, textile upcycling) where they reflected on every step of production relying on reused materials, promoting their entrepreneurship, design thinking and problem-solving skills, all embedded in hands-on crafting activities.

In light of ongoing debates around student wellbeing across European education systems, policymakers should actively support the dissemination of similar practices that are low-cost,

scalable, and easy adaptable within diverse school contexts. Such activities offer meaningful learning experiences that combine creativity, agency, and collaboration, while reducing reliance on high stakes assessment and abstract instruction.

To maximise impact and uptake, practical examples and open educational resources (OER) should be widely shared and clearly linked to the UN Sustainable Development Goals (SDGs). This would support teachers in embedding sustainability education into everyday practice while simultaneously fostering entrepreneurial competences and real world problem solving skills aligned with European and global priorities.

Entrepreneurship

Entrepreneurship is a transversal competence, and entrepreneurial education aims to develop entrepreneurial attitudes including creativity, innovative mindset, risk-taking and the ability to plan and manage project to achieve objectives. Entrepreneurship in education focuses on developing transferable skills such as creativity, initiative, problem-solving, innovation, and resilience, rather than teaching business content. Teachers are encouraged to design authentic, real-world learning experiences that allow students to generate ideas, take initiative, and create social or economic value. Recommendations advise beginning with small, meaningful challenges connected to students' interests, gradually expanding to more complex projects. Sustained teacher training is considered crucial. Teachers should engage in co-creation labs, use project-based learning, collaborate with community partners and local businesses, and guide students through brainstorming, planning, and implementation. Through these practices, entrepreneurship becomes a powerful pedagogical approach that strengthens learner agency and equips students with skills relevant for uncertain and rapidly changing societal contexts.

Support schools in establishing extracurricular clubs for entrepreneurship

Extracurricular clubs offer a powerful space for students to engage in long-term, **student-driven** projects and to practise entrepreneurship and problem-solving skills beyond the constraints of the formal curriculum. Education systems should support and invest in schools to establish **entrepreneurship** clubs, **innovation hubs** and makerspaces where students can experiment, prototype ideas, and explore creative solutions to real-world challenges.

Within these settings, students can work through **design thinking processes**, develop and test prototypes, and reflect on the practical, organisational, and ethical dimensions of transforming

ideas into social or economic value. Collaboration with other schools, local businesses, community organisations, and civic actors can further enrich these experiences and help students ground their projects in authentic contexts.

Teachers play a central role in this process by acting as **agents of social change** and facilitators of learning rather than content deliverers. Through engagement with complex, real-world cases and community partnerships, teachers can build *decision-making capital* while guiding students in navigating uncertainty, trade-offs, and collective responsibility. Adopting **project-based and experiential learning approaches** within extracurricular clubs helps students develop essential life skills such as resilience, critical thinking, collaboration, and reflective judgement—core competences for entrepreneurship and active citizenship in the 21st century.

Emphasise ‘creating value for others’ in place of ‘starting businesses’

The 21st Century European Teacher project was influenced by the Lackeus model in their approach to entrepreneurial education. In his [OECD report](#), Lackeus places value creation for others at the heart of entrepreneurial education. Rather than focusing solely on starting businesses, this model proposes that students learn best by creating real value for real people—through projects that have personal meaning and social relevance. Entrepreneurship should be fostered through two-way dialogue with local businesses and NGOs, developed through “soft skills” like relationship building and active listening.

Policy recommendations emphasise starting with small, manageable challenges closely connected to students’ interests and everyday experiences, gradually scaling up to more complex, interdisciplinary projects. To support this shift, sustained, high-quality teacher training is crucial. Teachers should be supported to participate in co-creation labs, implement project-based learning approaches, collaborate with community partners, and guide students through iterative processes of ideation, planning, implementation, and reflection.

Promote student voice

The development of entrepreneurial competences is strengthened in learning environments that actively promote student voice and experimentation. Students need safe spaces where they can express ideas, test solutions, and reflect on setbacks as part of the learning process, rather than viewing mistakes as failures.

Professional development for teachers and school leaders should therefore focus on fostering school cultures that value student participation and agency. This includes creating conditions in which students' opinions are meaningfully considered in school-wide decisions, risk taking is encouraged, and making mistakes is recognised as a natural and productive part of learning. Teachers should be supported to step back at key moments, allowing students time to explore problems, collaborate with peers, and make decisions independently rather than relying on direct teacher intervention.

By embedding student voice into everyday practice, schools can cultivate responsibility, confidence, and initiative—core foundations for entrepreneurship, democratic participation, and lifelong learning.

Playful Learning

Playful learning is a process of creative experimentation that unfolds without constraints or predetermined outcomes. Learners often work with objects and spaces that are unconventional in formal education, using them to create, build, and explore collaboratively. Through make-believe, roleplay and other forms of play, students engage in imaginative and non-linear approaches to problem solving, further developing their creativity and flexibility of thinking.

At the same time, playful learning is a purposeful pedagogical approach that promotes curiosity, creativity, well-being, and deep engagement. It intentionally integrates play, imagination, exploration, and socio-emotional learning into everyday teaching practice. Teachers are encouraged to design safe, inclusive environments where students feel confident to experiment and interact through guided play, storytelling, hands-on making, and collaborative challenges.

Encourage teacher training and education centres to experiment with playful methods

Playful learning benefits from unconventional, modifiable learning spaces. Future classroom labs and similar experimentation centres for teacher training and education are ideal as they allow people to modify the learning space and test ideas for playfulness before taking them to schools, where it might be necessary to invest in spaces and equipment that are not readily available.

These spaces enable teachers and teacher educators to test ideas, materials, and spatial arrangements that support playfulness before introducing them into schools, where time, space, or equipment constraints may limit experimentation. By using these centres as innovation hubs, teacher education providers can build confidence, share effective practices, and support the gradual and scalable integration of playful learning into everyday school contexts.

Introduce play as a method in initial teacher education programmes

Teachers can experience as much uncertainty around playfulness as their students. By being actively exposed to playful methodologies during their initial teacher education, future teachers can build confidence, openness, and practical competence in applying playful learning within their own classrooms. Early familiarity with play enables newly qualified teachers to connect playful approaches more readily to curriculum objectives once they enter the profession.

Playful learning is further strengthened by emphasising learning over teaching, supporting reflective, learner-centred pedagogies that value exploration, inquiry, and experimentation. Education authorities can introduce and promote practice oriented internships as valuable training pathways, as they allow student teachers to test playful and innovative methodologies in authentic classroom contexts. Through inquiry based, learner centred approaches, playful learning can move beyond theory and become an integral part of everyday teaching practice.

Play as a method in teacher professional development

Support teacher education and training providers in co-creating playful learning programmes within teacher continuous professional development. Playful Learning plays a key role in the design of interactive educational experiences that nurture critical thinking creativity, and engagement among both teachers and learners.

Professional development can begin with simple, low-preparation activities and gradually expand to include tactile materials, the school's surroundings, and appropriate digital tools. Teachers should be encouraged to observe group dynamics, support diverse learners, and apply playful assessment methods such as observation, performance tasks, and reflective dialogue. Gamification or game-based learning can serve as accessible entry points to playful learning, helping teachers design interactive lessons that effectively bridge the gap between pedagogical theory and everyday classroom practice.

Co-education model

In a co-education process, all parties contribute with their unique competencies and perspectives to achieve a common goal. In this project, teacher education and school practice have worked together to develop learning activities. Instead of having a traditional mentor/mentee relationship between in-service teachers and pre-service teachers, which involves an asymmetrical relationship, there was a non-hierarchical collaboration. For the pre-service teachers, the collaboration differed from traditional internships by being exam-free and by positioning the pre-service teachers as teachers on an equal footing with the experienced teachers. For the in-service teachers, the collaboration was valuable because it provided them with new perspectives on their daily practice. The participants jointly decided the academic theme for the teaching. The school contributed with local knowledge about the chosen content area, while the teacher education program contributed with the latest theory and research.

In the project, it was possible for the pre-service teachers to fully step into the profession and work with real-world issues. Both the pre- and in-service teachers experienced that the project contributed to the development of their professional identity through continuous exchange between education and practice. The pre-service and in-service teachers also co-delivered the activities that they co-developed. This co-delivery was used as an opportunity for an international teacher mobility activity as a form of professional development. Teachers (and school leaders) from the other countries participated in the project to observe the activities, learn new insights and give feedback to the implementing in- & pre- service teachers.

A successful co-education model should be built on **equal collaboration**, where pre-service and in-service teachers jointly engage in co-planning, co-teaching, and co-evaluation, ensuring that all knowledge forms, practical, experiential, and theoretical are valued and represented equally. To achieve this, programs must **define roles clearly**, establish shared goals, and avoid hierarchical patterns that reduce pre-service teachers to assistants rather than partners. Effective implementation requires strong facilitation by teacher educators, who help maintain symmetry, coordinate collaboration, and guide reflection across phases of the teaching process. **Structural support is essential:** institutions should provide protected time, resources, and coordinated scheduling to overcome common obstacles such as time constraints and misaligned institutional expectations. Co-education models should also incorporate

laboratory-style, open-ended pedagogical processes that allow pre- & in-service teachers to experiment, reflect, and translate theory into practice continuously. This approach is especially beneficial for emerging topics such as sustainability or technological literacy, where both pre- and in-service teachers are learning from a shared starting point. Overall, embedding these elements into a structured co-education framework fosters mutual professional growth, strengthens teacher identity, and enhances the quality of classroom practice for all participants.

Build structures that connect schools and universities

- ▶ Clearly communicate the **principles and purpose of the co-education model**, emphasising its benefits for teaching quality, student learning, and teacher identity.
- ▶ Form structured partnerships between universities, schools, and other institutions to jointly plan and evaluate co-teaching and innovation activities.
- ▶ Use joint **co-design sessions** to align activities with curriculum goals, student needs, and emerging societal challenges (digitalisation, sustainability, inclusion).
- ▶ Integrate co-education activities into the **academic year calendar**, ensuring protected time for planning, implementation, and reflection.
- ▶ Allocate resources –human, organisational, and financial– to support sustained collaboration and reduce workload barriers.
- ▶ Encourage **mobility and exchange programmes** to allow in & pre-service teachers to observe innovative practice across European contexts.

Together, these measures create the structural conditions needed to embed co-education as a systemic feature of teacher education and professional development, rather than a time limited initiative.

Recognise co-education as a form of professional learning

The study visits and dialogue labs showed that school leaders' support is crucial for teachers who need to make time for co-teaching. If laws and regulations on teacher professional development define co-education as a form of continuous professional development, and school leaders are required to provide the conditions for it, then in-service teachers will be incentivized and feel acknowledged when they do co-teaching. It is important to reduce the

workload for in-service teachers to ensure they have enough time to work together with pre-service teachers.

For both in-service and pre-service teachers to make the most of it, they should understand that it is based on an equal partnership. It should be formally recognised as a collaborative professional learning activity between in-service and pre-service teachers. This will officially acknowledge co-education as an equal partnership and will help participants to also approach it with this in mind.

In this context, mentoring roles require a clear redefinition. Policies should support a shift from traditional models of silent observation and evaluation toward facilitated collaboration. In-service teachers acting as mentors need targeted preparation and training to move away from judging practice and toward becoming reflective partners who can jointly interpret classroom dynamics, or “read the room” alongside their pre-service teachers.

By embedding these principles into professional development frameworks, education systems can better align teacher education and training with a lifelong ecology of learning, where professional growth is continuous, collaborative, and responsive to the evolving demands of 21st century education.

Develop national guidelines for a co-education programme

It is important to manage expectations. Pre-service teachers should not expect to take a passive role to learn classroom management, while in-service teachers should not expect to get new and state-of-the-art ideas.

A nationally endorsed co-education framework can help establish common ground rules, fostering trust and clarity by explicitly addressing roles, responsibilities, and expectations, while also acknowledging typical challenges such as time constraints, power dynamics, and institutional pressures. By doing so, guidelines can support participants in building constructive, non-hierarchical partnerships from the outset.

Finally, national guidelines can introduce a shared standard that enhances transparency and comparability across regions and institutions. This facilitates quality assurance, supports evaluation and scaling, and helps embed co-education as a recognised and coherent component of teacher education and professional development systems nationwide.

Incentivise co-education and mobility activities through direct and indirect benefits

Insights from the study visits and co-education activities show that one of their most significant benefits is exposure to diverse teaching perspectives across countries and contexts. For both in-service and pre-service teachers, this experience fostered openness, professional curiosity, and a stronger commitment to continuous learning. Educational authorities should therefore actively incentivise co-education and mobility initiatives to maximise their impact and sustainability.

Such incentives can take formal and informal forms. Formally, co-education projects and mobility activities should be recognised as accredited professional development and linked to career progression, promotion, or advancement pathways, as well as integrated into pre-service teachers' study programmes. Informally, participation could be rewarded through access to extended professional networks, priority involvement in innovation projects, or recognition within professional communities.

Crucially, professional collaboration must be embedded as a core, recognised component of the legal and paid working day or formal study programme, rather than treated as an additional or “extracurricular” obligation. Without appropriate compensation, time allocation, and institutional recognition, even well-designed co-education models risk collapsing under administrative burden and workload pressure. Sustainable incentives are therefore essential to ensure co-education and mobility become valued, supported, and enduring elements of teacher education and professional development systems.

Define diverse forms of teacher mobility

In- and pre-service teacher mobility does not have to be only international, which might be costly. Teachers can also visit schools and initial teacher education institutions in other regions in their country, and the duration of activities can also be as short as a day or week. Some mobility activities can also be online, in the form of virtual school visits. Exchange programmes and study visits should be integrated to the ITE programmes so that teachers develop professional networking skills from the start of their education and career. Such cost-effective initiatives will help scaling up mobility activities overall.

Organising study visits or any form of teacher mobility activity can be a time-consuming task for the already busy schedule of school staff. The logistical aspects of these mobility programmes could be more efficiently organised if done centrally by a local, regional or central department linked to the official agency responsible for coordinating professional development providers in the country.

Link teacher mobility and co-teaching to existing communities of practice

In 8 pre-service teachers who participated in the project's study visits and dialogue labs noted that it would be important to facilitate long-term collaboration with colleagues they met in co-teaching or mobility activities. Once the onsite activities are complete, teachers can stay connected as professional learning community through communities of practice or alumni groups. They could also be integrated into existing communities.

Policymakers and school authorities should therefore support mechanisms that link teacher mobility and co-education initiatives to communities of practice, ensuring continuity and collective learning. After completing onsite activities, teachers should be enabled to remain connected through structured professional learning communities, alumni networks, or thematic working groups. Where possible, participants should also be integrated into existing national or European communities of practice, rather than creating parallel or isolated networks.

Such connections help transform one off mobility experiences into sustained professional learning pathways, supporting peer exchange, reflective practice, and joint innovation. Linking mobility and co teaching to established communities of practice strengthens professional identity, promotes knowledge sharing across contexts, and enhances the long-term return on investment of co-education and mobility programmes for education systems as a whole.

Fund pilot studies to investigate success factors in co-education

While the co-education model demonstrated strong potential, teachers reported concrete challenges during its implementation. In particular, establishing relationships based on trust, equality and non-hierarchy proved difficult in the initial phases, despite these being core principles of the model. This highlights the need for deeper understanding of how co-education partnerships can be effectively initiated, facilitated, and sustained.

Policymakers and educational authorities should therefore fund targeted pilot studies at both national and European levels to systematically test and refine different elements of co-

education practice. Future initiatives should experiment with varied formats, timelines, facilitation approaches, and preparatory activities to identify the conditions and mechanisms that contribute to successful collaboration between pre-service and in service teachers.

Dedicated funding—through national programmes and European instruments such as Teacher Academies—is needed to support this iterative learning process. Evidence generated through well designed pilots can inform guidelines, training frameworks, and scalable models, ensuring that co-education moves beyond isolated projects toward robust, evidence based integration within teacher education and professional development systems.

Figure 2 Co-education; infographic is created with NotebookLM

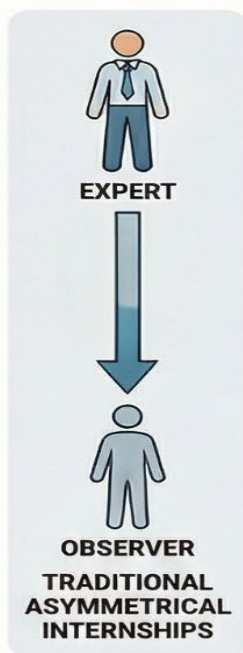
The Co-education Model: Bridging the Theory-Practice Gap

The Co-education Model, developed by the 21st Century European Teachers project, replaces the traditional "expert-observer" hierarchy with an equal partnership. By aligning academic research with classroom experience, it ensures teacher training is relevant to modern societal challenges.

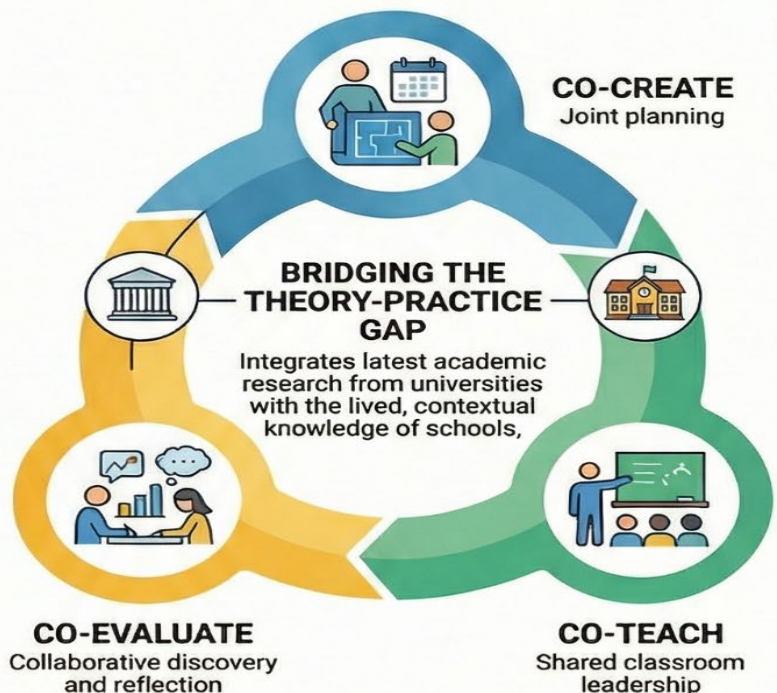


THE FRAMEWORK: A HORIZONTAL PARTNERSHIP

MOVING BEYOND THE "EXPERT-OBSERVER" HIERARCHY



THE THREE PILLARS OF COLLABORATION




(continued) Figure 2 Co-education; infographic is created with NotebookLM


IMPACT AND POLICY RECOMMENDATIONS

MUTUAL PROFESSIONAL BENEFITS

PRE-SERVICE TEACHER




gain professional confidence




Gains professional identity and equal status

IN-SERVICE TEACHER




modernise methods through fresh eyes



Modernises methods without leaving the classroom


SHIFTING THE MENTOR'S ROLE

Mentors must transition from 'silent observers' to facilitators who partner in the classroom



FORMAL RECOGNITION AND SUPPORT

Co-education should be recognised as formal professional development with protected time and resources



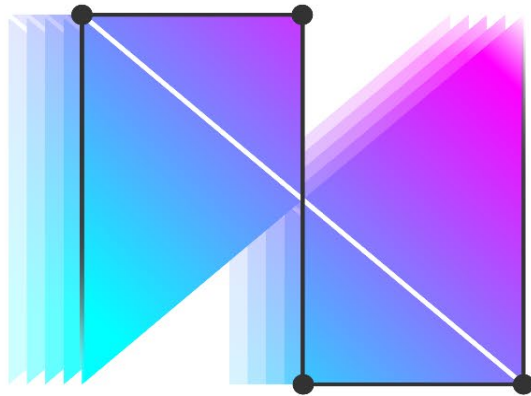
NotebookLM

Conclusion

The 21st Century European Teachers project has provided a comprehensive and nuanced overview of the current landscape of teacher education and training across Europe. Through extensive research and collaboration among partners from Denmark, Finland, Italy, Romania, and Spain, this report suggests recommendations how to innovate teacher education and training to reflect the needs and priorities of teachers in the 21st century.

The **21st Century European Teachers** project concludes that innovating teacher education is essential to address major societal shifts, such as **digital transformation** and **climate change**. By focusing on the four key areas of **technological empowerment, sustainable learning, entrepreneurship, and playful learning**, prepares educators to lead inclusive, innovative, and future-ready classrooms.

Central to this transformation is the **co-education model**, which bridges the “theory-practice gap” by replacing traditional hierarchies with **horizontal partnerships** between pre-service and in-service teachers. For these innovations to move from pilot projects to systemic realities, the report emphasizes that policymakers must provide **structural support**, formal recognition of collaborative learning, and integrated **teacher mobility** programmes. Ultimately, these recommendations aim to align training systems with a “**lifelong ecology of learning**” that supports the professional growth and well-being of teachers throughout their careers.



21st century European Teachers



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