

21st Century European Teachers

Deliverable 3.2 – A research paper
on the co-education model

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ABOUT THE RESEARCH PAPER

The paper is entitled: Supporting Mutual Professional Development of Pre-service and In-service Teachers through Innovative Co-teaching Approaches.

The paper will be published in: J. Kangas, H. Harju-Luukkainen, & N. B. Hanssen (red.), *Innovative Teacher Training: Practical Frameworks for Future Education* Routledge.

Link to the publication: <https://www.routledge.com/Innovative-Teacher-Training-Practical-Frameworks-for-Future-Education/Kangas-Harju-Luukkainen-Hanssen/p/book/9781032965468>

The book will be available for pre-order on March 24, 2026. Item will ship after April 14, 2026.

Extended abstract

The 21st Century European Teachers (XXI-TEACH-EU) initiative, funded by the Erasmus+ Teacher Academies programme, seeks to understand how European teachers can develop the competencies needed to teach in rapidly emerging subject areas—including technological empowerment, sustainable learning, entrepreneurship, and playful learning. These areas have gained urgency as schools across Europe face complex societal transformations such as climate change and accelerating digitalisation. Within this broader objective, the project partners from Denmark, Finland, Italy, Romania, and Spain collaborate to create innovative, research-informed models that strengthen teacher professionalism through cross-institutional and cross-border collaboration.

The development of models that genuinely support the professional learning of both pre-service and in-service teachers has become increasingly important in this changing landscape. While existing research extensively documents pedagogical innovations and instructional reforms, far less attention has been paid to approaches that intentionally integrate teacher education with school-based practice in ways that enable mutual professional development. Recent scholarship highlights that the traditional separation between university-based teacher education and the everyday realities of classroom practice often creates discontinuities in knowledge, expectations, and pedagogical approaches. As a result, pre-service teachers may experience a gap between theoretical preparation and the complexities of real classroom work, while in-service teachers may lack opportunities to engage with emerging pedagogical theories, new content areas, and evolving understandings of transversal competencies.

One of the central development strands of the XXI-TEACH-EU project is the co-education model, which aims to bring pre-service teachers, in-service teachers, and teacher educators into symmetrical, participatory learning processes. To ensure that this development work is grounded in robust evidence, Deliverable 3.2 presents a research paper that synthesises existing empirical knowledge on co-teaching as a model for mutual professional development. The piece of research titled: *Supporting Mutual Professional Development of Pre-service and In-service Teachers through Innovative Co-teaching Approaches* positions the project's co-education activities within a broader research landscape, clarifying what is already known, what challenges remain, and what opportunities co-teaching offers for building future-ready teacher competencies.

A growing body of research suggests that co-teaching, when conceptualized as an approach that encompasses co-planning, co-implementation, and co-reflection, can serve as a powerful framework for bridging these gaps. Originally rooted in collaborations between general and special education teachers, co-teaching has evolved into a broader model for shared instructional responsibility and collaborative professional learning. Contemporary accounts emphasize that co-teaching must extend beyond simple task-sharing during classroom lessons; it requires symmetrical participation across all phases of the pedagogical process, including intentional role negotiation, shared didactic decision-making, and joint reflection on teaching and learning. At its most effective, co-teaching provides a context in which diverse forms of expertise, such as practical, experiential, local, and theoretical, are activated simultaneously, enabling both pre- and in-service teachers to learn with and from one another.

The research by Kesler et al. (2026) offers a comprehensive examination of such models to date. Their semi-systematic literature review analysed 15 empirical studies published between 2004 and 2024, each involving collaborative arrangements between teacher education institutions and schools. These studies spanned multiple national contexts and included varied co-teaching constellations, such as partnerships that incorporated teacher educators, industry specialists, and other multiprofessional actors. Across the literature, the authors identified substantial variability in how co-teaching was defined, structured, and facilitated; however, only a small subset of studies described arrangements where participants genuinely worked as equals, engaging in continuous cycles of joint design, enactment, and inquiry.

To understand how co-teaching functions as a learning environment, Kesler et al. (2026) applied Engeström's activity-theoretical framework, distinguishing between didactic, professional, and structural

perspectives. From a didactic perspective, co-teaching creates opportunities for shared development of pedagogical content knowledge and fosters practice-based inquiry in areas where no single participant holds full expertise: For example, emerging thematic areas like sustainability education or socio-scientific issues. Professionally, co-teaching strengthens teacher identity by granting both pre- and in-service teachers' agency and responsibility in collaborative decision-making. It supports the integration of different knowledge forms and enhances transversal competencies such as critical thinking, collaboration, self-regulation, and ethical judgement. Structurally, successful co-teaching relies on supportive organisational arrangements, including timetabling, leadership engagement, and careful facilitation to avoid the re-establishment of hierarchical roles in which pre-service teachers become passive assistants rather than equal contributors.

The findings reveal that pre-service teachers are most often positioned as learners, even in models that claim mutuality. Only five of the reviewed studies reported arrangements in which both pre- and in-service teachers explicitly developed new competencies through reciprocal engagement. Nevertheless, across the broader literature, co-teaching consistently supported positive outcomes such as increased instructional differentiation, improved classroom management, richer professional dialogue, and stronger school–university relationships. Motivational benefits were also evident, with many participants reporting strengthened confidence, enthusiasm, and willingness to engage in future collaborative professional learning. At the same time, recurring obstacles such as including unequal role distribution, logistical constraints, lack of planning time, insufficient facilitation, and communication gaps, highlight that co-teaching is not inherently mutual; it requires deliberate design and sustained support.

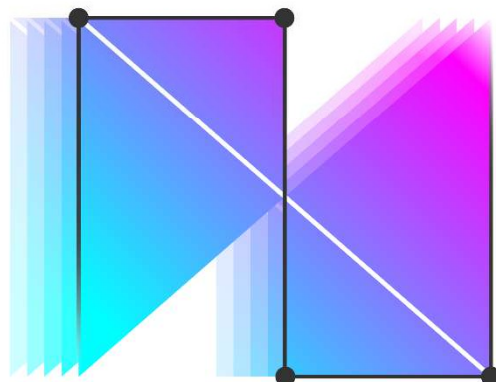
To illustrate how mutual professional development can be actively cultivated, the research paper presents an innovative co-teaching model developed in Denmark within the 21st Century European Teachers project. In this model, pre- and in-service teachers engaged in a full cycle of co-planning, co-teaching, and co-assessment, supported by teacher educators who acted as facilitators to maintain symmetry in roles and responsibilities. This design proved particularly effective for working with emerging subject areas - content areas not yet fully institutionalised in school curricula but requiring multidisciplinary thinking and collaborative pedagogical exploration. The Danish example demonstrates how structural support, intentional facilitation, and shared inquiry can create a genuinely reciprocal learning environment in which all participants deepen their pedagogical understanding and strengthen their professional identities.

Overall, the research underscores the potential of co-teaching as an innovation in teacher education (Kangas et al., 2026) that can cultivate transversal competencies, strengthening school–university partnerships, and offering a meaningful alternative to traditional practicum models. When implemented as a holistic pedagogical process rather than a classroom arrangement alone, co-teaching provides rich opportunities for mutual professional growth, enhanced pedagogical reflection, and the joint construction of knowledge. This deliverable builds upon the findings of Kesler et al. (2026) to articulate a co-education model that supports both continuity and innovation in teacher learning across educational contexts.

The Co-education model is also presented in the 21st Century European Teachers project’s deliverable 3.1: 21st Century European Teachers Report on the co-education model developed for joint pre- and in-service teacher training in novel subject matters (Basballe et. al., 2025)

References

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