



**FOSTERING EUROPEAN TEACHERS: AN ETWINNING LAB
FOR CITIZENSHIP, COMMUNICATION, COLLABORATION, AND DIGITAL
COMPETENCE IN INITIAL TEACHER EDUCATION**

Michela Giordano¹

Michela Pinna²

Isabel López Cirugeda³

Mélanie Cornet⁴

Nihada Delibegović Džanić⁵

Received/Geliş Tarihi 13.04.2026

Online Published/Elektronik Yayın: 25.05.2026

DOI: 10.48166/ejaes.1929704

ABSTRACT

This paper presents a reflective analysis of the International Teacher Education (ITE) eTwinning Lab 2025-26, a transnational collaborative project involving pre-service teachers at the University of Cagliari (Italy) in partnership with Aix-Marseille Université (France), the University of Castilla-La Mancha (Spain), and the University of Tuzla (Bosnia and Herzegovina). Framed by the eTwinning annual theme “*Citizenship education: celebrating what unites us*”, the 12-hour laboratory engaged pre-service primary teachers (Pinter, 2017) in designing and simulating transnational, project-based learning experiences using English as a Lingua Franca. Grounded in the principles of Content and Language Integrated Learning (CLIL) (Coyle, Hood, & Marsh, 2010) and digital pedagogy, the lab aimed to develop participants’ soft skills and transversal competences: digital literacy, intercultural communication, collaborative project design, pedagogical innovation, and professional discourse community building (Swales, 1990). Employing a mixed-methods approach, data were analyzed from post-project questionnaires (N=95 [Cagliari], N=10 [Tuzla], N=10 [Aix-Marseille], N=8 [Castilla-La Mancha]), ongoing formative assessments (through the usage of several tools as Mentimeter, AnswerGarden, and Padlet), and analysis of collaborative outputs (Canva projects). Findings reveal significant improvement in digital tool mastery, particularly with AI chatbots and collaborative platforms, and, most of all, enhanced intercultural awareness and learners’ self-confidence. It is argued here that

¹ Ass. Prof., University Language Centre Dept. of Humanities, Languages and Heritage University of Cagliari, Italy, mgiordano@unica.it, ORCID: 0000-0003-0600-0290

² Researcher, University of Cagliari, Italy, michelapinna13@hotmail.com

³ Prof. Dr., University of Castilla-La Mancha, Spain, Isabel.LCirugeda@uclm.es, ORCID: 0000-0003-0000-5437

⁴ Dr., Aix-Marseille University, INSPE Digne, France, melanie.cornet@univ-amu.fr

⁵ Prof. Dr., University of Tuzla, Faculty of Humanities and Social Sciences, Department of English Language and Literature, Tuzla / Bosnia and Herzegovina, e-mail: nihada.delibegovic@untz.ba, ORCID: 0000-0002-8241-6338

this experience, with both its products and processes, can contribute to the growing literature on online teacher education and can provide a replicable model for integrating eTwinning into university-based training programs across Europe.

Keywords: Etwinning, initial teacher education, digital competence, civics and citizenship education, CLIL.

AVRUPALI ÖĞRETMENLERİ GELİŞTİRMEK: ÖĞRETMEN YETİŞTİRME SÜRECİNDE VATANDAŞLIK, İLETİŞİM, İŞ BİRLİĞİ VE DİJİTAL YETERLİLİK İÇİN BİR ETWINNING LABORATUVARI

ÖZET

Bu makale, Uluslararası Öğretmen Eğitimi (UÖE) eTwinning Laboratuvarı 2025-26'nın yansıtıcı bir analizini sunmaktadır. Bu proje, Cagliari Üniversitesi'ndeki (İtalya) hizmet öncesi öğretmenleri kapsayan ve Aix-Marseille Üniversitesi (Fransa), Castilla-La Mancha Üniversitesi (İspanya) ve Tuzla Üniversitesi (Bosna-Hersek) ile ortaklaşa yürütülen ulusötesi bir iş birliği projesidir. eTwinning'in yıllık teması olan "Vatandaşlık eğitimi: bizi birleştiren şeyleri kutlamak" çerçevesinde şekillenen 12 saatlik laboratuvar, hizmet öncesi sınıf öğretmenlerini (Pinter, 2017), Ortak İletişim Dili Olarak İngilizceyi kullanarak ulusötesi, proje tabanlı öğrenme deneyimleri tasarlama ve simüle etme sürecine dahil etmiştir. İçerik ve Dil Entegre Öğrenimi (İDLE) (Coyle, Hood, & Marsh, 2010) ve dijital pedagoji ilkelerine dayanan laboratuvar, katılımcıların yumuşak becerilerini ve dijital okuryazarlık, kültürlerarası iletişim, iş birliği proje tasarımı, pedagojik yenilik ve mesleki söylem topluluğu oluşturma (Swales, 1990) gibi yatay becerilerini geliştirmeyi hedeflemiştir. Karma yöntem yaklaşımı kullanılarak, veriler proje sonrası anketlerden (Cagliari'den N=95, Tuzla'dan N=10, Aix-Marseille'den N=10, Castilla-La Mancha'dan N=8), devam eden biçimlendirici değerlendirmelerden (Mentimeter, AnswerGarden ve Padlet gibi çeşitli araçların kullanımı yoluyla) ve iş birliği ürünlerin (Canva projeleri) analizinden elde edilmiştir. Bulgular, özellikle yapay zekâ sohbet robotları ve iş birliği platformlarda olmak üzere dijital araçlara hâkimiyette önemli bir iyileşme ve her şeyden önce gelişmiş kültürlerarası farkındalık ile öğrencilerin öz güveninde artış olduğunu ortaya koymaktadır. Bu deneyimin, hem ürünleri hem de süreçleriyle, çevrimiçi öğretmen eğitimi üzerine büyüyen literatüre katkıda bulunabileceği ve eTwinning'in Avrupa genelindeki üniversite temelli eğitim programlarına entegre edilmesi için tekrarlanabilir bir model sunabileceği ileri sürülmektedir.

Anahtar Kelimeler: Etwinning, hizmet öncesi öğretmen eğitimi, dijital yeterlik, vatandaşlık eğitimi, CLIL.

1. INTRODUCTION

The current educational landscape is characterized by globalization and digital transformation and, consequently, teacher training must necessarily equip future educators with more than just subject-specific knowledge. As the Council of the European Union (2018, 2019) has shown many times and in several contexts, competences in digital literacy, intercultural communication, collaborative project design, and foreign language teaching effectiveness have become paramount worldwide. The European Union has constantly emphasized the need to develop these transversal competences and skills for educators, positioning them as essential and principal agents endowed with the power to foster active citizenship and lifelong learning.

The eTwinning approach emerges as a robust pedagogical method addressing these needs, breaking geographical barriers and promoting authentic, technology-enhanced learning experiences. It represents an organized form of international education by merging classroom-based learning with

virtual mobility, enabling students from different cultural backgrounds, with different experiences and trained in different educational circumstances, to collaborate on shared learning objectives through digital platforms. This approach has gained significant importance in higher education and universities since institutions require cost-effective yet impactful internationalization practices and processes. The eTwinning platform, a leading initiative of the European Commission's Erasmus+ programme, provides a structured and safe environment for virtual collaboration, with the aim to promote innovation, pedagogical exchange, and the development of a European dimension in education (European Commission, 2022).

Established in 2005, eTwinning has developed to become the largest community of schools and teachers in Europe, able to facilitate and assist thousands of collaborative projects every year. Originally, the platform was designed with a focus on K-12 education, but it has later been extended in order to include "eTwinning for Future Teachers": in this way, preparing pre-service educators to utilize virtual collaboration in their future professional practice has become preeminent.

Within this context, the Initial Teacher Education (ITE) project at the University of Cagliari, Italy, started in the academic year (A.Y.) 2015-2016 with small groups of students on a voluntary basis. Since the A.Y. 2022-2023 (in partnership with the University of Verona, Italy), the project has become a compulsory part of the "Laboratory of English and Language Teaching Methodologies" for 75 students in the fifth year of the Primary Education faculty. The following A.Y. the partnership with Uniwersytet Gdański, Polska - Wydział Filologiczny involved 80 Italian students and 20 Polish ones. For the A.Y. 2024-2025 the project was run in partnership with PPH Augustinum, Graz (Austria), University of Tuzla (Bosnia and Herzegovina), and University of Banja Luka (Bosnia and Herzegovina) and involved 90 Italian students and 100 from Austria and Bosnia and Herzegovina. During the 2025-2026 A.Y., in partnership with Aix-Marseille Université (France), the University of Castilla-La Mancha (Spain), and the University of Tuzla (Bosnia and Herzegovina), the project involved approximately 95 Italian pre-service teachers along with their European peers in the partner universities. This year eTwinning annual theme was "Citizenship education: celebrating what unites us"; therefore, the project under investigation here aimed to move beyond traditional language learning, positioning English as a lingua franca for co-designing educational schemes on civic themes relevant to primary school contexts.

The project design responded to multiple pedagogical requirements. First, 2025-2026 project addressed the need acknowledged in Italian National Guidelines for Primary Education to develop multilingual and multicultural competences through communicative and meaningful language use, with authentic texts, rather than decontextualized grammar training and drilling tasks (MIUR, 2012). Second, it was based on the European frameworks emphasizing digital competence and collaborative learning as primary teacher competences (Redecker, 2017). Third, it provided authentic and real-world practice in project-based learning (PBL, Markham, 2011) design, a methodology increasingly appreciated in contemporary primary education but often underrepresented in traditional teacher training programs.

This paper lists and explains the project's design, its implementation, and the outcomes through comprehensive analysis drawing upon several data sources. The initiative was placed within relevant academic literature on TEFL in primary schools, focusing on eTwinning's impact on teacher training, and teachers' digital literacy development and achievements.

Starting from a systematic analysis of planning documents, theoretical groundwork, and post-project evaluation data and feedback from 95 Italian participants, 10 Bosnian, 10 French and 8 Spanish, this study evaluates the project's effectiveness in achieving its competence-based goals, while identifying strengths and weaknesses in its implementation. Finally, it derives evidence-based recommendations and advice for improving future initiatives in ITE programs.

Research Questions:

The main research questions guiding this study are:

1. To what extent did the eTwinning project develop pre-service teachers' digital, communicative, social, and planning competences?
2. What factors facilitated, or hindered, the achievement of project objectives and teaching and learning aims?
3. What recommendations and advice emerge for improving future implementations of eTwinning projects in Initial Teacher Education contexts?

Theoretical Framework

The project's design is rooted in four solid theoretical pillars:

- a) eTwinning as a pedagogical and collaborative ecosystem;
- b) the central role of eTwinning in Initial Teacher Education (ITE): a European perspective;
- c) the role of eTwinning in ITE: benefits and models;
- d) the interplay of eTwinning, digital literacy, and language education.

a. eTwinning as a pedagogical and collaborative ecosystem

The theoretical footing of this study is grounded in the established insight of eTwinning as a dynamic and powerful European community for educational effective collaboration. Initially, it was conceived as just a tool for teacher collaboration: nevertheless, eTwinning has now evolved to become a widespread and comprehensive ecosystem able to promote not only pedagogical innovation but also the development of professionalizing skills. As Paz-Albo and López-Cirugeda (2017) note: "Teachers' collaboration networks in fostering Innovation and Communication Technology (ICT) are essential to promote 21st century skills" (p. 1073). This positions eTwinning not simply as a platform, but as a vehicle for educational change, particularly within Initial Teacher Education (ITE). Additionally, the platform's function is defined by its promotion of project-based and collaborative learning, which are central to modern pedagogical approaches.

The educational philosophy of eTwinning is also conveyed through the lens of the European Higher Education Area (EHEA). Paz-Albo Prieto and Hervás Escobar (2017) emphasize that eTwinning "has the potential to restructure traditional models of education" (p. 8848), by aligning with the EHEA's

objectives for more dynamic, student-centred learning settings. This is supported by the Italian national context, where Tosi (2023) describe eTwinning ITE as an initiative that has developed and even intensified from an “experimentation to systemic initiative” (p.19) showing its institutional value.

b) The central role of eTwinning in Initial Teacher Education (ITE): A European perspective

A significant and highly recent contribution to this field is the 2025 publication *eTwinning for future teachers: Ideas for integrating eTwinning in initial teacher education*, edited by Nikolaos Mouratoglou for the European Union and European Commission. This volume represents the most current, practice-based synthesis of how, and to what extent, eTwinning is being currently introduced and embedded in university curricula across Europe. The foreword enunciates a clear vision, stating that the collected chapters detail “how eTwinning can be meaningfully embedded in university curricula, not as an add-on or one-off activity, but as an integrated pedagogical approach that shapes how future teachers learn, collaborate, and envision their role in the classroom” (bold in the original, Mouratoglou, 2025, p. 4). This perspective pushes the discussion further than simple functional use to a deep reimagining of teacher education.

This work represents a crucial connection between theory and practice, illustrating how eTwinning helps student teachers develop the professional competences which are not only advisable, but also essential to modern ITE: “digital literacy, intercultural awareness, collaborative learning, inclusive and creative pedagogy, and the ability to design purposeful learning with authentic audiences and partners beyond one’s own classroom walls” (Mouratoglou, 2025, p. 4). The volume’s structure, with 24 individual contributions from teacher educators across Europe, shows how the diversity of implementation models works perfectly. For instance, one chapter from the University of Thessaly details how student teachers “design and implement an ECE eTwinning project aligned with curriculum objectives” (Siatras *et al.*, 2025, p. 5). Another teacher from Istanbul University describes a project where pre-service teachers “critically examine how historical facts and narrative storytelling intersect” through collaborative digital products (Turan *et al.*, 2025, p. 64). These varied examples collectively highlight a shared commitment “to **prepare future teachers who can teach beyond borders,– linguistic, cultural, disciplinary, and geographic**” (bold in the original, Mouratoglou, 2025, p. 4).

c. The role of eTwinning in ITE: benefits and models

Early studies by Paz-Albo and López-Cirugeda (2017) identified “a number of beneficial effects on teacher training that facilitate constructive and successful collaborative learning” (p.1073), including greater motivation, enhanced academic accomplishment, and the improvement of lifelong skills. This is confirmed by Paz-Albo Prieto *et al.* (2017) who suggest that eTwinning “promotes collaboration and teamwork, stimulates students’ interest and improves critical thinking skills” (p. 8849). These initial benefits lay the foundations for more comprehensive analyses.

More recent research, as a matter of fact, such as the multiple case study by Ancillotti *et al.* (2023, pp. 92-98), looks deeper into the organisational and pedagogical integration of eTwinning. They identified three models of integration in Italian universities: an *informative model* (basic awareness), an *applicative model* (simulated project design), and a *collaborative model* (implementation with real schools). Their investigation revealed that the paramount advantages of ITE include the development of digital and teaching competences, the activation of action-research processes, and procedure, and last but not least, the sharing of best practices among teachers. This study provides a fundamental framework for understanding how eTwinning is actualised within higher education institutions.

The European perspective, as outlined by Gilleran and Baptista (2023, pp. 104, 108), confirms that eTwinning for Future Teachers offers opportunities for “project-based teaching and learning”, promotes “European openness and internationalisation”, and prepares student teachers for “collaborative work and career-long professional development”. This is similar to what is found in other European contexts. For instance, López-Cirugeda & Sánchez-Ruiz describe how Spanish universities have used the initiative to develop skills in “plurilingualism and interculturalism” and digital literacy. Similarly, Lembicz *et al.* (2023) underscore that participation in eTwinning projects in Poland has “broadened the range of skills students acquire” (p.143) and often motivates them to increasingly engage in international opportunities like Erasmus+.

d) The interplay of eTwinning, digital literacy and language education

A key area of investigation is the impact of eTwinning on the digital literacy of, most of all, pre-service language teachers. The study by Huertas-Abril and Palacios-Hidalgo (2023) specifically investigate this, finding a “generally positive perception of their use of ICT and educational technology, as well as of their digital competence” (p. 11) among participants from Spanish and Polish universities. The authors also noted that eTwinning projects can enhance positive attitudes and approaches towards digital skills, though they also emphasise the need for more specific training on digital competence frameworks. This finding shows the need for structured implementation already identified by Ancillotti *et al.* (2023).

The connection of eTwinning with Content and Language Integrated Learning (CLIL) methodology is another critical theoretical level, worth of investigation. Wolff and Virdia (2019) provide a comprehensive review of CLIL literature, noting that research in the field initially focused on language learning but has gradually turned to the influence it can have on content learning. Their study (Virdia, 2019) found that while CLIL students may initially show a minor drawback in content knowledge, they perform equally well in utilising and reasoning with that knowledge. This is significant for eTwinning, which often uses a foreign language (for example, English as a Lingua Franca) as the medium for collaboration, or as the medium for instruction (as in EMI). The practical application of CLIL within eTwinning is detailed in the C4C project’s guide (2018), which emphasises “principles for teaching to children in CLIL” (p. 19) and the importance of creating “rich learning environments” (p.

45) through digital tools and collaborative tasks. This guide can represent a practical bridge between the pedagogy of CLIL and the collaborative practices of eTwinning.

The study by Coonan and Ricci Garotti (2019, pp. 70-81) adds a qualitative dimension by observing and interviewing CLIL and non-CLIL teachers in a survey. Their findings suggest that while both groups use a combination of both traditional and innovative methods, CLIL teachers show a clearer understanding of the need for “radical changes in teaching practice” to achieve goals in a bilingual environment. They show a greater inclination towards “autonomy of the learner” and the use of “authentic sources” or materials and technology, which aligns perfectly with the principles of eTwinning.

The foundational definition by Coyle *et al.* (2010) identifying the ‘4Cs framework’ as the core pillar organising CLIL instruction continues to structure research on CLIL in primary education contexts (Dalton-Puffer *et al.*, 2018). A growing body of empirical work has demonstrated that CLIL instruction at primary level improves learners’ foreign language proficiency without disadvantaging content learning, particularly when tasks are meaningful and contextualised (Hughes & Madrid, 2020; Pérez-Cañado, 2012). More recent meta-analytic evidence confirms that project-based CLIL approaches, in which learners use the target language to complete authentic, content-rich tasks, are especially effective in developing both linguistic and cognitive competences (Nguyen *et al.*, 2025). These findings are directly relevant for the ITE context under investigation here: in fact, pre-service teachers who themselves experience CLIL through eTwinning, thus using English as a Lingua Franca to design citizenship education resources, gain not only content and language knowledge, but also the methodological awareness needed to replicate such approaches with primary pupils in their future classrooms.

Research further confirms that CLIL’s effectiveness for young learners is strongly mediated by the quality of the collaborative learning environment. When CLIL is embedded in project-based tasks with authentic communicative purposes, as is the case in the eTwinning lab described in this study, learners demonstrate greater motivation, more sustained engagement, and stronger development of intercultural awareness (Llinares & Morton, 2017). This is consistent with the finding that CLIL students show a greater orientation towards autonomous learning and authentic materials (Coonan *et al.*, 2019), which maps directly onto the skill set that eTwinning collaboration requires.

The intersection of CLIL methodology and eTwinning practice has emerged as a particularly productive area of inquiry in European educational research. CLIL resulted as inseparable from the creation of rich learning environments through digital collaboration, making eTwinning a natural methodological partner. Huertas-Abril and Palacios-Hidalgo (2023, 2024) have explored this intersection analytically in the context of pre-service language teacher education, demonstrating that eTwinning projects promote a generally positive perception of digital competence and ICT use among student teachers from Spain and Poland, and that participation in Collaborative Online International Learning (COIL) experiences, of which eTwinning can be considered an example, develops intercultural

communicative competence. Their 2024 study further confirms that such experiences improve pre-service teachers' ability to design inclusive, technology-mediated learning environments for diverse learners, a competence that is central to contemporary primary education.

In conclusion, this theoretical framework was developed to demonstrate that eTwinning is not just a functional technological tool but a comprehensive “all-inclusive” pedagogical approach that, when integrated into ITE, improves collaborative skills, boosts digital literacy, increases language competence, and promotes a shift towards more student-centred, while, at once, upsurges the need for innovative teaching practices. The evidence changes from establishing the general benefits of eTwinning to detailing specific ways of implementation and analysing its impact on the key competences, with the recent 2025 European publication providing the most current and comprehensive set of case studies that could represent an example to follow on how this integration is being successfully achieved across various educational contexts in Europe.

2. METHODOLOGY

This study employed a mixed-methods approach to investigate the development of pre-service teachers' transversal competences through an international eTwinning laboratory. The methodology is framed within a participatory action-research perspective (Ancillotti *et al.*, 2023), where the researchers acted as participant-observers and the students as co-constructors of the learning experience.

2.1. Research Model: Project Context and Curriculum Integration

The “International Teacher Education (ITE) eTwinning Lab” was integrated into the *Laboratory of English and Language Teaching Methodologies* for fifth-year students enrolled in the Primary Education program at the University of Cagliari, Italy. The 12-hour laboratory was designed to be a core component of the curriculum, aimed at bridging theoretical knowledge with practical, collaborative, and international teaching experiences (Mouratoglou, 2025). The course was developed to align with the Italian National Guidelines for Primary Education, which advocate for multilingual and multicultural competences through authentic language use (MIUR, 2012), and with the European frameworks for digital competence (Redecker, 2017).

The lab was structured into four synchronous online sessions, each lasting approximately 3 hours, held on 6th, 13th and 20th November, and 11th December, 2025. The sessions were divided into two parallel groups to accommodate the number of participants:

- Lab 1: Thursdays from 8:30 to 10:50 am CET.
- Lab 2: Thursdays from 11:00 am to 1:20 pm CET.

The lab involved a transnational partnership between:

- University of Cagliari, Italy (lead institution): 95 pre-service primary teachers.
- Aix-Marseille Université, France: 10 pre-service primary teachers.
- University of Castilla-La Mancha, Spain: 19 pre-service early childhood education teachers.
- University of Tuzla, Bosnia and Herzegovina: 15 pre-service English teachers.

The collaboration was structured in a cross-pairing format: Lab 1 (Italy) collaborated with partners in France and Bosnia and Herzegovina, while Lab 2 (Italy) collaborated with partners in Spain and Bosnia and Herzegovina.

The lab was grounded in the principles of Content and Language Integrated Learning (CLIL) (Coyle *et al.*, 2010) and project-based learning (PBL), using English as a Lingua Franca for all communication and collaborative tasks. The overarching theme was “*Citizenship education: celebrating what unites us*” the eTwinning annual theme for 2025-26. Each session had a specific focus and combined instructional input with hands-on collaborative activities. Table 1 below details the structure of each session, extracted from the project timetable.

Table 1. Sessions and Timetable

Session	Focus	Key Activities	Tools & Platforms
1 (Nov 6)	Intro & Platform Exploration	<ul style="list-style-type: none"> - Welcome and introduction to the project’s aims - Brainstorming on citizenship education - Guided exploration of the European School Education Platform (ESEP) and eTwinning TwinSpace - Demonstration of digital tools (Google Earth Maps, Avatars) -Task #1: Creation of individual “Breakout Room” (BR) groups and personal introductions 	Google Slides, Canva, ESEP, TwinSpace, Padlet, Google Earth, Avatar generators
2 (Nov13)	Webtools & Collaborative Design	<ul style="list-style-type: none"> - Demonstration of “traditional” webtools and AI tools (e.g., Suno for song creation) -Task #2: Group work to set up a project within the TwinSpace, exploring the “Webtools” and “Get Inspired” pages -Task #3 (in BRs): Groups began designing their collaborative eTwinning project on a chosen sub-topic 	Mentimeter, Answer Garden, Padlet, Suno (AI), Google Slides, TwinSpace
3 (Nov 20)	Project Development	<ul style="list-style-type: none"> - Exploration of additional tools (e.g., Wordart) -Task #4: Demonstration and explanation of the final task (setting up a project) - Task #5: Extended time for groups to work on their final project, creating presentations and developing their educational resources 	Wordart, Padlet, AI tools, Canva, TwinSpace
4 (Dec 11)	Presentations & Assessment	<ul style="list-style-type: none"> - Recap of the project and ongoing assessment - Peer assessment activity using the evaluation rubric -Task #6: Final presentations of the group projects A digital wheel was used to randomly select the order of presentations - Final evaluation: Students completed questionnaires on the TwinSpace 	Google Slides, Pickerwheel, Padlet, TwinSpace, Final evaluation form

All learning materials, including session presentations, links to tools, and collaborative spaces, were hosted on a shared TwinSpace. The main resources included:

- Synchronous Sessions: Conducted via the university’s videoconferencing platform (a Zoom or Teams link, based on the timetable).

- Collaborative Work: Students were divided into international Breakout Rooms (BRs) during sessions. They used a shared collaborative eBook template on Canva to document their project work.
- Assessment Tools: A shared assessment rubric was used for both formative and summative evaluation. Formative assessment was conducted continuously by instructors through observation in BRs and via interactive tools like Mentimeter and Answer Garden.

2.2. Participants

The primary participants for this study were the pre-service teachers. The Italian cohort (N=95) from the University of Cagliari provided the most comprehensive dataset. Of these, 47 students attended Lab 1 and 48 attended Lab 2. Their self-reported English proficiency upon enrollment was distributed as follows: A1 (10.5%), A2 (18.9%), B1 (20%), B2 (46.3%), C1 (4.2%), with no C2 level reported.

Data were also collected from the partner universities:

- University of Tuzla (Bosnia and Herzegovina): N=10 (preservice English teachers).
- Aix-Marseille Université (France): N=10 (preservice primary teachers).
- University of Castilla-La Mancha (Spain): N=8 (preservice teachers, from an initial group of 19 as the university policy determines questionnaires must be always done voluntarily and outside of scheduled hours).

2.3. Data Collection Tools

Data were collected from multiple sources to answer the research questions. A mixed-methods approach was used to triangulate findings and provide a comprehensive understanding of the project's impact. Two questionnaires were submitted:

The first one was the *Final Assessment Questionnaire on the Lab* and its efficacy and efficiency to synthesize the course content and apply it to the design of a transnational educational project on a citizenship-related theme (the results will be shown in the following sections).

The second questionnaire was the *Student Self-assessment Questionnaire*, which evaluated the students' communication skills, interaction in English, use of other languages, digital skills, collaboration, perceived difficulty of homework tasks, contribution to the implementation of the project, and perceived improvement in teaching, design, and methodological competencies. The Ethical Committee of the University of Tuzla, Bosnia and Herzegovina, approved the use of this questionnaire on 26th November, 2025. The study was conducted in accordance with the ethical standards outlined in the Declaration of Helsinki. This second questionnaire is included in the Appendix to this paper.

2.3.1. Instrument Design and Validation

Both data collection instruments used in this study—the Final Assessment Questionnaire on the Lab and the Student Self-Assessment Questionnaire—were designed through a collaborative, multi-stage process in order to ensure their content validity and cross-institutional relevance.

2.3.2. Design Process

The instruments were initially drafted by the research team at the University of Cagliari (Italy), which served as the lead institution for the project. The design process was informed by the research questions guiding the study and by the key competence dimensions identified in the European frameworks for digital and pedagogical competence (Redecker, 2017; Council of the European Union, 2018). Both questionnaires were structured to capture quantitative data (through a 5-point scale) and qualitative data (through open-ended questions), in line with the mixed-methods approach adopted for the study.

The Final Assessment Questionnaire was designed to evaluate participants' perception of the lab's overall effectiveness, addressing dimensions such as intercultural exchange, English language practice, digital tool usability, collaborative project design, and overall satisfaction. The Student Self-Assessment Questionnaire (included as an Appendix) was designed to elicit participants' self-evaluation of: (a) communicative and social skills (oral and written interaction in English, interpersonal skills); (b) digital skills (use of web tools, ESEP/TwinSpace platform usability, asynchronous task management); (c) collaboration and project implementation (group contribution, difficulties encountered, final presentation experience); and (d) educational outcomes (improvement in citizenship knowledge, design skills, and teaching and methodological competences). Section 6 of the Self-Assessment Questionnaire further included open-ended prompts to gather reflective feedback on preferred digital tools, best practices observed, critical issues encountered, and suggestions for improvement.

2.3.3. Validation process

Once drafted, both instruments were shared with the research teams at all partner universities, Aix-Marseille Université (France), the University of Castilla-La Mancha (Spain), and the University of Tuzla (Bosnia and Herzegovina), for review and feedback. The partner teams evaluated the instruments' relevance, clarity, and appropriateness for their respective national and linguistic contexts. Following their feedback, the questionnaires were revised and finalised and each partner institution subsequently translated the instruments into the relevant language(s) for local administration, while preserving the structure and the items of the original version to ensure cross-national comparability.

It should be noted that, given the exploratory and participatory action-research nature of this study (cf. Ancillotti *et al.*, 2023), the instruments prioritised validity and contextual relevance. The questionnaires were administered to all participants via the project's dedicated TwinSpace page at the end of the lab (Session 4, 11th December, 2025). The use of this shared European platform ensured that all participants, regardless of national context, accessed the same digital environment for data collection. As said earlier, the study was approved by the Ethical Committee of the University of Tuzla, Bosnia and Herzegovina (approval dated 26th November, 2025), and was conducted in accordance with the ethical principles of the Declaration of Helsinki.

2.4. Data Collection

A final evaluation questionnaire was administered to all participants at the end of the project via a dedicated page on the TwinSpace. The questionnaire was designed to capture both quantitative and qualitative data.

For the Italian cohort (N=95), the questionnaire collected:

1. Background Information: Surname, first name, matriculation number, tutor name, email, and lab group (Lab 1 or Lab 2).
2. Self-Assessed Communicative Competences: Students rated their competence in various areas.
3. Open-Ended Questions: Students were asked to provide their thoughts on the strengths, weaknesses, and suggestions for improvement regarding the lab experience.

For the partner universities, similar questionnaires were administered. The French questionnaire, for example, was designed to evaluate the experience thematically, focusing on interculturality, English practice, digital tools, and organizational aspects.

2.4.1. Collaborative Outputs

The final projects produced by the students were also a source of data for analysis. These projects were developed in Canva and were presented during the final session on 11th December, 2025. They represent the participants' ability to synthesize the course content and apply it to the design of a transnational educational project on a citizenship-related theme.

2.5. Data Analysis

The data analysis was conducted in several stages:

Quantitative Analysis: Descriptive statistics (frequencies, percentages) were calculated for the closed-ended questions in the questionnaires. This allowed for an overview of participants' self-perceived competence development and their overall satisfaction with the lab.

Qualitative Analysis: Thematic analysis (Braun & Clarke, 2006) was used to analyse the open-ended responses from the questionnaires. Responses were read and re-read to identify recurring patterns and themes. Thematic analysis is a qualitative method that allows researchers to make sense of large amounts of data by identifying recurring patterns of meaning, called themes, across participants' responses. Rather than reading each questionnaire answer in isolation, researchers read all the responses together, looking for ideas that come up repeatedly. In this study, instead of reporting every single comment, the data are grouped into broader themes such as digital competence, intercultural awareness, or collaborative learning. Each theme captures something meaningful that many participants experienced or expressed, even if they used different words to say it. This allows researchers to tell a coherent story about what pre-service teachers gained from the eTwinning lab, drawing on representative examples from the data to support each point. The method is particularly suited to this study because the questionnaire responses are rich and varied, coming from four different national contexts, and thematic analysis helps to identify what was shared across those differences. In short, it turns a large volume of individual voices into a structured, interpretable account of the lab's impact on

teacher education competences. The themes were then coded inductively and grouped into broader categories, such as “Strengths” (e.g., Interculturality, Digital Skills) and “Challenges” (e.g., Time Management, Uneven Participation). The qualitative data from the partner universities were analyzed separately to identify country-specific patterns.

Triangulation: Findings from the Italian cohorts’ questionnaires were compared and contrasted with those from the French, Spanish, and Bosnian cohorts to identify common themes and unique contextual differences.

All data collected for this study were anonymized. Personal identifiers such as names, surnames, and matriculation numbers were removed from the dataset used for analysis. Participants were informed of the purpose of the evaluation, and their responses were treated confidentially. The data were used exclusively for research and pedagogical improvement purposes, in accordance with the ethical guidelines of the participating universities.

3. FINDINGS AND RESULTS

The Tables below synthesize the qualitative data collected from participants. Responses were coded inductively and grouped into two overarching analytical categories—Positive Evaluations (Strengths) and Negative Evaluations (Critical Issues), each subdivided into thematic dimensions emerging from the corpus.

3.1. Findings and Results for Cagliari University (Italy)

Students strongly valued the idea of international exchange and saw the lab as a rare opportunity to work in multicultural teams.

Positive Evaluations (Strengths)	Negative Evaluations (Critical Issues)
<p>Interculturality and Exchange: Opportunity to interact, collaborate, and engage with students from other countries and foreign universities.</p>	<p>Foreign Participation: Little to no collaboration from international students (often absent or not very interested).</p>
<p>English Language Practice: A stimulating opportunity to test and improve language skills in authentic contexts.</p>	<p>Time Management: Timeframes that were too tight for carrying out activities during lab hours.</p>
<p>Webtools and New Methodologies: Learning and using multimedia tools and innovative platforms useful for the future teaching profession.</p>	<p>Extra-Lab Work: The need to carry out a large part of the project asynchronously, outside of scheduled hours.</p>

Positive Evaluations (Strengths)	Negative Evaluations (Critical Issues)
<p>Themes and Educational Ideas: The proposal of current, interesting, and stimulating topics for educational planning.</p>	<p>Platform and Connection: Difficulties in using the eTwinning portal (not very intuitive) and frequent technical connection problems.</p>
<p>Online Mode: The possibility of attending the lab remotely was appreciated for its flexibility and for removing barriers.</p>	<p>Organisation and Clarity: Instructions and tasks that were sometimes confusing, unclear, or inconsistent between the different universities involved.</p>
<p>Other (Strengths) Collaboration among Italian Colleagues: Strengthening cohesion and teamwork within the national group.</p>	<p>Other (Critical Issues) Excessive Theory: Too much time dedicated to lectures by instructors compared to the time actually left for practice and group work.</p>

Students strongly valued the idea of international exchange and saw the lab as a rare opportunity to work in multicultural teams. The use of English in authentic, project-based contexts was perceived as more motivating than traditional language exercises. Many also highlighted the practical value of learning digital tools (e.g., eTwinning’s TwinSpace, multimedia content creators) that they expect to use in their future teaching careers. The online format was appreciated for removing geographical barriers and allowing flexible participation, though this came with its own challenges. Interestingly, the positive item Collaboration among Italian colleagues emerged as a counterpoint: while international collaboration often faltered, the forced proximity with fellow Italian students strengthened local bonds and teamwork.

The “a synchronicity” of Collaboration was seen as the main problem: many students appreciated the idea of the international exchange but complained of the strong operational imbalance. Many report that, while the Italian group was active and present, students from other European universities did not respond to messages or did not participate in meetings. Frustration emerged related to the fact that the workload fell almost entirely on the Italian students to prevent the project from failing. They perceived a certain discrepancy in commitment. This issue was the most emotionally charged in the open-ended responses.

Students expressed feeling “abandoned” by their international teammates and noted that the unequal participation turned a collaborative experience into a burden. Some speculated that the foreign partners might have treated the lab as a lower-priority activity, possibly because it was elective or not equally integrated into their home curriculum.

Regarding Time Management and Workload, this is the most frequent technical criticism: the Italian students complained about insufficient classroom time: the lab hours were considered too few to complete the required tasks, thus the groups were forced to work a great deal, and often with difficulty, outside of class hours. The online mode offered flexibility, but the asynchronous workload became excessive, especially when combined with exam preparation.

Additionally, there were overlaps with exams: several students reported that the lab falls during an already very dense period of the academic year, making it difficult to manage a project that requires continuous coordination.

For what concerns the Platform Usability and Clarity, the official platform, ESEP/TwinSpace, was defined by many as “not very intuitive”, “cumbersome”, and “obsolete” from a user interface perspective. While the use of a European platform was seen as a valuable learning experience in itself, the technical friction undermined efficiency. Students reported losing time navigating the platform or struggling to find shared materials.

Furthermore, some students’ comments highlighted how the instructions provided by the different instructors (Italian and foreign) were not always aligned, sometimes they were fragmented, creating confusion about “what to do and when”. The lack of a single, clear, and consistently updated set of instructions, combined with differing messages from the multiple universities involved, led to repeated misunderstandings.

From an extensive and intensive reading of the final comments, students suggest: increasing the lab hours dedicated exclusively to group work (less theory/tool explanations and more practice; ensuring the participation of the other countries, perhaps by making the project mandatory or with stricter deadlines for all partners; improving initial communication, by providing a clearer guide on how to use the platform from the very first meeting.

Students were not asking for a reduction in content, rather they called for a structural redesign that aligns time allocation with the collaborative nature of the project. The request for “less theory” reflects a desire to use synchronous sessions primarily for teamwork, coordination, and problem-solving, leaving independent exploration of tools and readings to asynchronous time.

Regarding international participation, students proposed concrete measures such as formal agreements with partner universities to ensure the lab carries the same credit weight and attendance requirements for all participants; designated coordinators on each side who actively monitor group engagement early on; intermediate checkpoints to prevent passive participation.

For platform and communication, the suggestion was to offer a hands-on tutorial in the first session (not just a link to resources) and to create a single shared document (e.g., a collaborative FAQ or timeline) where all instructors post aligned instructions, reducing conflicting information.

The lab is seen as a valuable and stimulating opportunity, but its practical implementation generates stress due to organizational factors and the lack of responsiveness from international partners. Summarizing, the pedagogical core, which includes interculturality, digital skills, and authentic English

use, was highly appreciated and considered relevant for pre-service teachers. However, the operational shortcomings (uneven participation, tight scheduling, technical friction, and instructional fragmentation) significantly diminished the experience. Students' suggestions point towards a more structured, coordinated, and practice-oriented format that would allow the potential of the lab to be fully realized without the additional frustration.

3.2. Findings and Results for Aix-Marseille University (France)

Ten students from Aix-Marseille University participated in the lab. All of them are future primary school teachers in the final year of their studies.

Positive Evaluations (Strengths)	Negative Evaluations (Critical Issues)
Interculturality and Exchange: Participants emphasised the value of collaborating with peers from other countries, highlighting cultural openness, exposure to diverse pedagogical perspectives, and the motivational dimension of international teamwork.	Foreign Participation: Uneven engagement across countries was noted, particularly the limited contribution of some international partners and occasional use of native languages, which hindered mutual understanding.
English Language Practice: The Lab provided authentic opportunities to practice English orally and in writing, contributing to improved comprehension, fluency, and confidence.	Time Management: Participants frequently mentioned insufficient time to complete tasks, a fast pace during the initial sessions, and difficulties coordinating work outside synchronous meetings.
Webtools and New Methodologies: Students appreciated discovering and using digital tools (e.g., Padlet, Canva, Miro, La Digitale), as well as the clear guidance provided during videoconferences. These tools were perceived as transferable to future teaching practice.	Extra-Lab Work: Although not always explicitly stated, several comments suggested that the workload outside the Lab sessions was demanding or difficult to manage.
Themes and Educational Ideas: The project topics (e.g., well-being, children's rights, discrimination) were considered relevant, engaging, and pedagogically meaningful.	Platform and Connection: Students reported technical issues such as unstable internet connections, difficulties accessing TwinSpace/ESEP, and confusion navigating between multiple platforms (AMETICE, TwinSpace, ESEP).
Online Mode: The online format was valued for its flexibility, accessibility, and the ease of coordinating group work despite geographical distance.	Organisation and Clarity: Some participants experienced difficulties understanding oral instructions in English and expressed a need for clearer initial guidance and more explicit task explanations.
Other (Strengths) Additional strengths included strong group dynamics,	Other (Critical Issues) Other issues included language barriers, technical

mutual support, personal development (confidence, communication skills), and positive experiences with the final presentations.	limitations (e.g., breakout rooms not accessible on Apple devices), and occasional leadership imbalance within groups.
---------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------

The analysis of the final evaluation reveals a consistent pattern: participants overwhelmingly valued the intercultural, linguistic, and digital dimensions of the Lab, which align closely with the pedagogical objectives of eTwinning. The Lab appears to have fostered both professional growth (digital literacy, collaborative skills, pedagogical inspiration) and personal development (confidence, openness, communication). To summarize, the students' feedback closely mirrors the main themes identified in the larger Italian sample. Positively, French students strongly valued the *interculturality and exchange*, noting the motivational dimension of international teamwork and exposure to diverse pedagogical perspectives. They also reported significant gains in *English language practice* (oral fluency and confidence) and enthusiastically discovered a range of *digital tools* (Padlet, Canva, Miro) which they perceived as directly transferable to their future classrooms. The *online mode* was appreciated for its flexibility.

Conversely, the main challenges identified—time constraints, technical instability, linguistic barriers, and initial organizational complexity—are typical of international online collaborative projects. These findings suggest the need for clearer scaffolding at the beginning of the Lab, additional linguistic support (e.g., subtitles, written instructions), improved technical preparation, and more time allocated to collaborative tasks. In other words, the French participants echoed the dominant concern regarding *time management*, describing the pace as too fast and coordination outside meetings as difficult. They also experienced *technical instability* (internet connections, accessing TwinSpace) and noted *language barriers* (difficulty understanding oral instructions in English). A specific technical complaint emerged regarding *breakout rooms not being accessible on Apple devices*. Overall, the French data reinforce the central paradox of the project: the pedagogical core (intercultural, digital, linguistic) is highly valued, but its implementation is consistently undermined by tight scheduling, technical friction, and the need for clearer initial scaffolding and written instructions to support non-native English speakers. Thus, overall, the evaluation indicates that the Lab eTwinning experience was highly beneficial, with strong potential for transfer to future teaching practice.

3.3. Findings and Results for University of Castilla-La Mancha (Spain)

The sample from Spain consists of eight third-year pre-service teachers of the Degree in Early Childhood Education who were taking a placement at the time of coursing this unit. Their level of English was B2 in a 57,1%, B1 for 14,3%, and C1 for 28,6%. Their thoughts on the project are shown in the following table.

Positive Evaluations (Strengths)	Negative Evaluations (Critical Issues)
<p>Internationalisation: Students valued meeting international peers.</p>	<p>Group work: Students complained they had been systematically ignored in the synchronous sessions.</p>
<p>Effective communication: It was valued positively by 28,6% of the contestants, while the rest remained neutral.</p>	<p>Collaboration. Some students reported their opinion was not considered.</p>
<p>English Language Practice: 57,1% considered they have improved their language skills, 14,3% even considered they did very much, while 28,6% said they improved little.</p>	<p>Organisation of the sessions: Technical problems arose and groupwork was disorganised at times.</p>
<p>Webtools and New Methodologies: Some platforms were explored in the process.</p>	
<p>Collaboration: Students valued positively their degree of contribution to the group project.</p>	
<p>Development of interpersonal skills: Fostered by the different context and the nature of the tasks.</p>	
<p>Homework completion: Their own contribution was regarded as satisfactory.</p>	
<p>Overall impression: Internationalisation, academic development, inspiration, solidarity.</p>	
<p>Academic knowledge: Students learned about the assigned topics.</p>	
<p>Teaching and methodological skills: The project informed about methodologies and provided the scenario to apply existing knowledge.</p>	

Positive Evaluations (Strengths)

Negative Evaluations (Critical Issues)

Information and guidance:

The instructions were clear and well-valued.

Time management and workload:

This aspect was mostly considered adequate.

Usefulness:

Methodologies and activities can be successfully applied.

Internationalization. The perspective of having international peers was very positively valued and considered as a major strength of eTwinning. Students had the opportunity to share their views and enjoy good moments.

Language Use. On the whole, students valued positively the opportunity to talk in English for the tasks, even if the final appreciation is constrained by the limitations of the experience: “it did help us improve our skills (...) and learned new vocabulary”. Communication was reportedly improved during the process both because of the nature itself of the situation (“you have to expand your linguistic repertoire in order to communicate”), and because understanding happened while making progress on the tasks together (“by putting our communication skills into practice in real-life situations, we improved this competence”).

Use of platforms. The project made the students explore Google Classroom, and other apps suggested in the presentations. Their level of difficulty was rated from *difficult* (14.3%), to *neutral* (42.9%), *easy* (28.6%) and *very easy* (14.3%). Canva and Padlet were reported as the preferred webtools. The platform ESEP and the TwinSpace were ranked from *difficult* (x3) to *neutral* (x3) and *very easy*.

Collaboration. The degree of collaboration was ranked from *little* to *very much*. 57.1% self-evaluated their level contribution as *much*: “I think I organized and took part on a big part of the project, and helped my classmates when they needed it”, “I think we all collaborated equitably, got to agreements and divided the tasks without any problem”.

Interpersonal skills. Depending on the group experience, student teachers ranked the improvement of their interpersonal skills from *none* to *much* (x3) and *very much* (x3). The international nature of the project eased this development. Students named *patience* (x2) and some reported their groups had worked perfectly.

Homework completion. The comments on this matter are unanimously positive and point to active contribution, stating the parts they did.

Overall experience. Some students decided to rate it in quantitative terms: 4/5 and 8/10 (x2). Qualitative comments concentrate on communication and presentation skills, the internationalization at home dimension, the task of generating a thumbnail with AI, academic concept such as that of dissemination, the inclusion of inspirational references or the promotion of intergenerational cohesion.

Academic knowledge. Student teachers learned applied techniques of Preprimary concerning critical thinking, sustainability, or values such as equality or friendship, while they had a chance to apply existing knowledge. Some highlighted they had learned design skills to be applied in the creation of resources.

Teaching and methodological skills. 42.9% reported to have learned much in methodological terms within the project. At this point, international exchange was positively valued. It is remarkable that the project gave students the opportunity to apply existing knowledge.

Information and guidance. Students valued the guidance, and especially the presentations of the sessions.

Time management and workload. Considering this project was compulsory, students considered it was solved efficiently and without extra overload to the class final evaluation requirements, considering it was done in a short period of time and using the contents of the course unit.

Training. 62% of the sample valued the activities and methodologies as useful or very useful.

Communication. Much of the criticism revolved around the consequences of the unbalanced number of group members. Complaints insist on not having been considered in the process. Language difficulties were logically concentrated in oral interaction and were also reported in relation to poor WiFi connection and background noise, which made the conversation turn to chat. Some students asked that the level of English should be balanced.

Platform access. Some students reported difficulties regarding access to the required digital tools.

Collaboration. A section of the students complained the team spoke in their native language and made decisions without taking them into account.

Organisation of the sessions. Technical problems constituted an obstacle for team communication.

Students had the chance to see how transnational projects work without having to spend extra time and using the contents of their own syllabus. The schedule was overly optimistic. Students suggested the habitual structure of working at home and using the online sessions to put their work in common and make decisions. All in all, the overview is satisfactory and, as reported by one of the student teachers, the main strength “is the project itself (...) as it is innovative”.

3.4. Findings and Results for the University of Tuzla (Bosnia and Herzegovina)

Ten students from the University of Tuzla participated in the lab. All of them are preservice English teachers in the final year of their studies.

Positive Evaluations (Strengths)	Negative Evaluations (Critical Issues)
Intercultural Collaboration: Opportunity to connect and work with students from different countries.	Time Management: Difficulty balancing the lab with regular university classes and exams.
English Language Practice: Authentic use of English in communication, meetings, and collaborative work.	Scheduling Conflicts: Meetings clashing with other academic commitments.
Digital Tools and Platforms: Exposure to web tools useful for future teaching practice.	Uneven Participation: Some group members or international partners less active.
Professional Development: Experience relevant for becoming future teachers and working in international environments.	Language Barriers: Different English proficiency levels affecting communication.
Teamwork and Group Collaboration: Good communication and cooperation within groups.	Short Timeframes: Limited time for completing tasks and preparing deliverables.

In their answers, students consistently highlighted the intercultural dimension as the most valuable aspect of the lab. The opportunity to collaborate with peers from different countries was perceived as motivating and professionally relevant. Almost all participants emphasised that communicating in English during authentic collaborative tasks improved both confidence and fluency, particularly in oral interaction and teamwork contexts.

Another frequently mentioned strength was the use of digital tools. Bosnian students appreciated discovering platforms and web-based applications that they considered useful for their future teaching practice. These tools were seen not only as technical resources but also as enablers of innovative and interactive learning environments. The collaborative nature of the lab was also considered as a strong point. Several students reported positive group dynamics, good communication, and shared responsibility within teams. Even when international collaboration was challenging, local group cohesion remained strong. Students additionally noted personal and professional growth, including improved communication skills, increased confidence in using English, and better understanding of international educational practices. The experience was frequently described as engaging, interesting, and relevant for future teachers. Time Management and Scheduling Difficulties were the most frequent issues. Many students reported challenges related to timing and workload. They identified several challenges, including meetings that conflicted with regular university classes, difficulties in coordinating schedules across countries, limited time for completing collaborative tasks, and the need to work outside the planned sessions. Students often described the experience as valuable but demanding. The coordination of multiple partners across institutions required additional planning, which increased the

workload. The mismatch between project complexity and available time led many students to complete tasks asynchronously. This sometimes-created stress, particularly during the midterm period.

Uneven Participation and Collaboration Imbalance is another recurring issue: it concerned differences in engagement, with some students being more active than others, an unequal distribution of tasks within groups, and limited participation from certain international partners. As a matter of fact, while collaboration was generally appreciated, students occasionally reported frustration when group members contributed unevenly. In international teams, differences in commitment or availability sometimes slowed progress. This created additional responsibility for more active participants and reduced the effectiveness of intercultural exchange.

Regarding Language Barriers and Communication Challenges, some students also reported communication-related difficulties, including varying levels of English proficiency, hesitation to speak during meetings, and misunderstandings when coordinating tasks. Therefore, although English practice was viewed as a strength, it also represented a challenge. Some students felt less confident interacting with international peers, especially in spontaneous discussions. However, many noted that these difficulties gradually decreased during the project, indicating that the challenge also contributed to learning.

Some participants also pointed to organisational issues, noting that instructions were not always clear, deadlines and responsibilities were sometimes uncertain, and coordination between institutions was occasionally difficult. Students indicated that clearer guidance at the beginning of the project would improve efficiency. In some cases, unclear expectations required additional clarification within groups, which slowed collaboration.

Students suggested some improvements for the future, such as allocating more structured time for group collaboration, improving coordination of schedules across universities, providing clearer instructions and timelines at the start, ensuring more balanced participation within groups, offering additional support for communication in English, reducing overlap with midterm periods.

Students did not request reducing the intercultural component; instead, they emphasised better structural organisation. They suggested dedicating more synchronous time to teamwork and coordination, while leaving individual preparation for asynchronous work. To improve collaboration, students proposed: clearer role distribution within groups, intermediate checkpoints and stronger coordination between partner institutions. Regarding language challenges, some students suggested brief preparatory activities or communication guidelines to support participation in international meetings.

The eTwinning lab is perceived as a valuable intercultural and professional learning experience, particularly for improving English communication, developing digital competences, and collaborating in international teams. Bosnian students appreciated the opportunity to engage in authentic project-based work relevant to their future teaching careers. However, organisational challenges, especially time management, scheduling conflicts, uneven participation, and language barriers, affected the overall

experience. Students' feedback suggests that with clearer structure, improved coordination, and more dedicated collaboration time, the lab could fully realise its strong pedagogical potential.

4. DISCUSSION

The findings from this study, gathered across four distinct national contexts, converge on a central paradox: the pedagogical core of the eTwinning ITE Lab was widely recognized as valuable by participants, yet structural and organizational limitations significantly constrained its full realization. This section interprets the findings in dialogue with the theoretical framework and the wider literature on eTwinning, CLIL, digital literacy, and initial teacher education.

Across all four national cohorts, intercultural exchange emerged as the most consistently valued dimension of the lab experience. This finding strongly corroborates the established literature on eTwinning's impact on intercultural communicative competence (Huertas-Abril & Palacios-Hidalgo, 2024) and confirms the value of "internationalization at home" as an accessible, manageable, and inclusive alternative to physical mobility, particularly for students who cannot participate in Erasmus+ exchanges (Mouratoglou, 2025). The use of English as a Lingua Franca as the medium of instruction but also collaboration was perceived at once as a challenge and an opportunity, and this is a finding that mirrors the theoretical position adopted in the CLIL context, where the target language functions as both a cognitive tool and a vehicle for intercultural work and experience (Coyle *et al.*, 2010; Llinares & Morton, 2017). Participants with lower proficiency levels (A1 and B1) reported the most anxiety and concern but also the most noticeable and self-perceived improvement, suggesting that authentic and task-based language use within the eTwinning context helps generate communicative motivation that formal instruction alone may not produce (Pérez-Cañado, 2012).

The lab clearly expanded student teachers' digital repertoire and competences. Exposure to tools such as Canva, Padlet, Mentimeter, AI chatbots (e.g., Suno), and the eTwinning TwinSpace platform itself provided hands-on experience with the kind of multimodal, collaborative technologies that are increasingly central to contemporary primary school practice. These benefits align with the framework's areas of "teaching and learning" and "facilitating learners' digital competence" (Redecker, 2017). The finding that some participants initially struggled with tools before gaining confidence through practice signifies that structured project-based interaction with digital artefacts is more effective in building genuine digital agency than passive instruction or de-contextualized skill-training.

However, the consistent complaints about the usability of the ESEP/TwinSpace platform across all four national cohorts represent a more structural and operational finding. While the platform's official European status was appreciated in principle, its perceived lack of intuitiveness constitutes a real barrier for pre-service teachers who are expected to acquire and demonstrate digital fluency and confidence for their future pupils. This conflict between the established merit and the accessibility and user-friendliness of the platform has been already observed in the literature (Huertas-Abril & Palacios-Hidalgo, 2023) and deserves constant attention from platform creators and engineers and policymakers. At the same

time, some platform difficulties accidentally created authentic problem-solving scenarios, for example surfing a complex digital environment, or coordinating across institutions, and sometimes troubleshooting in real time: these problems represent important components of digital literacy for professional educators.

The most emotionally significant theme across the qualitative data was the frustration generated by unequal participation from international partners. Italian, Spanish, and Bosnian participants all reported, to varying degrees, that some partners were absent or unresponsive, generating an imbalance in workload that risked transforming a collaborative experience into an individual one. This finding has significant theoretical and practical implications. From a CLIL perspective, the loss of honest intercultural interlocutors undermines one of the central foundations for implanting ELF-mediated collaboration and teamwork in teacher training: without reliable partners, students are denied the very communicative and intercultural meetings that CLIL theory recognizes as the true mechanism of learning (Coyle *et al.*, 2010; Dalton-Puffer *et al.*, 2014).

A less frequently discussed but theoretically significant finding concerns the way in which participants, in particular Italian pre-service teachers, engaged with CLIL principles not simply as passive learners but as active curriculum designers. By using English as a Lingua Franca to co-design citizenship education projects for primary school pupils, they practiced the basics activity of CLIL teacher education by designing content-rich, language-mediated learning sequences for young learners. Other students across the cohorts explicitly mentioned that the experience would inform their future classroom practice, and the Spanish data in particular noted that the lab gave them the opportunity to apply existing methodological knowledge in an authentic design scenario. This confirms Ancillotti *et al.*'s (2023) finding that the “collaborative model” of eTwinning integration in ITE, where student teachers design and simulate real projects, produces the deepest competence development, in contrast to merely informative or applicative models.

Taken together, these findings argue for a more explicit and theoretically grounded articulation and delivery of the relationship between CLIL pedagogy and eTwinning practice in ITE programmers. The lab described in this study is an example of what might be called an “eTwinning-as-CLIL” model of teacher education: *i.e.* a model in which the collaborative, multi-lingual, multi-cultural and content architecture of eTwinning functions simultaneously as a vehicle for CLIL learning about pedagogy, and as a rehearsal space for CLIL teaching in future classrooms, involving digital literacy, collective design and intercultural communicative competence and awareness.

5. CONCLUSIONS

This study investigated the extent to which an international eTwinning laboratory endeavoured to develop pre-service teachers' digital, communicative, social, and planning competences. The final questionnaires tried to identify factors that facilitated or hindered its implementation. The findings from the four partner universities, University of Cagliari (Italy), Aix-Marseille Université (France), the

University of Castilla-La Mancha (Spain), and the University of Tuzla (Bosnia and Herzegovina), have provided robust evidence that the ITE eTwinning Lab 2025-26 was largely successful in achieving its pedagogical aims, though not without significant challenges and critiques on the part of some of the students who took part in it.

The most prominent positive outcome, that was consistent across all national cohorts, was the high value given to intercultural exchange and authentic English language practice. Participants awesomely reported that collaborating with international peers on meaningful, project-based tasks was motivating and professionally relevant, more challenging and stimulating than traditional and decontextualised exercises. The use of English as a Lingua Franca for co-designing educational resources on civic and citizenship education themes raised a sense of purpose and drastically improved participants' self-confidence in oral and written communication. Additionally, exposure to and active experience with digital tools (e.g., Canva, Padlet, AI chatbots) and the eTwinning platform itself was recognised as a valuable asset and advantage for future teaching practice, directly addressing the European frameworks for digital competence.

Nevertheless, the study also revealed some critical issues that impeded the project's full potential. Unfortunately, the most pervasive and widespread problem was the uneven and asynchronous collaboration from international partners. Italian, Spanish, and Bosnian students consistently reported that some peers, particularly from certain institutions, were frequently absent or unresponsive, turning a collaborative exercise into a burden that fell disproportionately, sometimes excessively, on the more active members. This was combined to severe time constraints, with students across all four countries stating that the 12-hour lab was insufficient and maybe inadequate for the required tasks, forcing extensive asynchronous work during an already dense exam period in the academic year. Technical difficulties with the ESEP/TwinSpace platform, described as "not intuitive" or "cumbersome," and occasional language barriers further eroded the experience. As a matter of fact, some of the students declared to possess an A1 or A2 level of the English language, not sufficient to work in an online international environment.

In conclusion, the eTwinning lab revealed to be a pedagogically powerful model for developing transversal competences and soft skills in initial teacher education. Its strengths lie in its ability to simulate authentic, intercultural, and technology-enhanced teaching scenarios, that can be surely replicated in a school context with primary school pupils.

Nevertheless, its effectiveness is conditioned by rigorous structural coordination. In light of these findings, the following evidence-based recommendations are offered for future implementations of eTwinning in Initial Teacher Education contexts:

(a) Formal inter-institutional agreements. Memoranda of understanding between all partner universities should be established prior to the start of the lab, specifying equivalent credit weight, mandatory attendance requirements, and minimum participation standards for all national cohorts.

Without this structural symmetry, the risk of uneven engagement, and the consequent unequal distribution of workload among the groups is systematically reproduced.

(b) Rebalancing of synchronous time. A greater proportion of synchronous lab hours should be dedicated to international collaborative work rather than input by the instructors and tool demonstrations. Individual exploration of digital tools and preparatory readings might be assigned as asynchronous tasks before sessions, leaving synchronous time for co-construction, problem-solving, and intercultural dialogue.

(c) Uniform and multilingual instructional scaffolding. A single, constant updated set of instructions, maybe accessible on the TwinSpace in all partner languages, should be developed and maintained jointly by all instructor teams. Conflicting guidance from different partner institutions was a recurring source of frustration and should be eliminated.

(d) Platform orientation should be a priority from the first session. A hands-on, guided tutorial for the ESEP/TwinSpace platform should be integrated into the very first session, rather than provided as a self-directed resource. Early scaffolding is essential to prevent technical problems.

(e) Language proficiency screening. A minimum English proficiency level of B1 (CEFR) should be established as a prerequisite for participation, and early diagnostic activities should identify students who may benefit from additional linguistic support. This is useful to ensure that all participants can engage meaningfully in the collaborative, linguistically demanding environment that the lab requires.

It is argued here that the ITE eTwinning Lab described in this study represents a pedagogically powerful and replicable model for integrating transnational, technological, and CLIL-informed collaboration into university-based teacher preparation curricula. Its ability to simultaneously develop digital literacy, intercultural competence, authentic language use, and collaborative project design in a single, 12-hour collaborations is an incredible aspect that few other pedagogical formats can achieve. The products generated by student teachers, such as multimodal citizenship education resources designed in international teams collaborating together and using English as a Lingua Franca, provide valuable evidence on that the pedagogical awareness, digital fluency, and intercultural orientation fostered by the eTwinning lab can translate into sustained innovation in primary school teaching.

REFERENCES

- Ancillotti, P., Giardi, D., & Tosi, A. (2023). eTwinning nella formazione iniziale degli insegnanti: Tre modelli a confronto. In A. Tosi (Ed.), *Empowering future teachers for a sustainable intercultural and inclusive education. The impact of eTwinning on Initial Teacher Education* (pp. 92-98). Carocci.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>

- Coonan, C. M., & Ricci Garotti, F. (2019). CLIL and non-CLIL teachers' practices: A survey. In D. Marsh & O. Meyer (Eds.), *Quality interfaces: Examining evidence and exploring solutions in CLIL* (pp. 70-81). Eichstaett: Akademische Verlagsgemeinschaft.
- Council of the European Union. (2018). *Council Recommendation on key competences for lifelong learning*. Official Journal of the European Union, C 189, 4.6.2018, 1-13.
- Council of the European Union. (2019). *Council Recommendation on a comprehensive approach to the teaching and learning of languages*. Official Journal of the European Union, C 189, 5.6.2019, 15-22.
- Coyle, D., Hood, P., & Marsh, D. (2010). *CLIL: Content and Language Integrated Learning*. Cambridge University Press.
- Dalton-Puffer, C., Llinares, A., Lorenzo, F., & Nikula, T. (Eds.). (2014). "You can stand under my umbrella": Immersion, CLIL and bilingual education. A response to Cenoz, Genesee & Gorter (2013). *Applied Linguistics*, 35(2), 213–218. <https://doi.org/10.1093/applin/amu010>
- European Commission. (2022). *eTwinning: Community overview 2022*. Central Support Service for eTwinning.
- Gillera, A., & Baptista, M. (2023). eTwinning for future teachers: A European perspective on benefits and models. In N. Mouratoglou (Ed.), *eTwinning for future teachers: Ideas for integrating eTwinning in initial teacher education* (pp. 104-108). Publications of the European Union.
- Huertas-Abril, C. A., & Palacios-Hidalgo, F. J. (2023). Digital competence and eTwinning in initial teacher education: Perceptions of Spanish and Polish students. *Technology, Pedagogy and Education*, 32(1), 1-15.
- Hughes, S., & Madrid, D. (2020). The effects of CLIL on content knowledge in monolingual contexts. *The Language Learning Journal*, 48(1), 48–59. <https://doi.org/10.1080/09571736.2017.1373064>
- Lembicz, J., & Maciejewska, M. (2023). The impact of eTwinning on student teachers' motivation and international engagement in Poland. In N. Mouratoglou (Ed.), *The impact of eTwinning on initial teacher education: Placing teacher educators and student teachers in the spotlight Full monitoring report 2023*, Publications Office of the European Union, 2023.
- Llinares, A., & Morton, T. (Eds.). (2017). *Applied linguistics perspectives on CLIL*. John Benjamins.
- López-Cirugeda, I. & Sánchez-Ruiz, R. (2023). eTwinning and ITE in Spain. A Testimony by Universidad de Castilla-La Mancha. In A. Tosi (Ed.), *Empowering Future Teachers for a Sustainable Intercultural and Inclusive Education*, Carocci Editore, pp. 145-150.
- Markham, T. (2011). Project based learning. *Teacher Librarian*, 39(2), 38-42.
- MIUR. (2012). *Indicazioni nazionali per il curricolo della scuola dell'infanzia e del primo ciclo d'istruzione*. Annali della Pubblica Istruzione. Le Monnier.
- Mouratoglou, N. (Ed.). (2025). *eTwinning for future teachers: Ideas for integrating eTwinning in initial teacher education*. Publications of the European Union.

- Nguyen, H.T.M., Nguyen H.T.T., Gilanyi, L., Hoang, T.H., Gao, X, (2025). Content Language Integrated Learning (CLIL): Teachers' metacognitive understanding of pedagogical translanguaging. *Language and Instruction*. 97 (2025) 102085. <https://doi.org/10.1016/j.learninstruc.2025.102085>
- Paz-Albo Prieto, J., & Hervás Escobar, A. (2017). The eTwinning experience: Beyond school classrooms. In *ICERI2017 Proceedings* (pp. 8848-8851). IATED. doi:10.21125/iceri.2017.2445
- Paz-Albo, J., & López, I. (2017). Higher education perspectives on eTwinning: The future of Initial Teacher Training learning. In L. Gómez, A. López, & I. Candel (Eds.), *INTED2017. Proceedings of the 11th international technology, education and development conference*, IATED, pp. 1073-1076
- Pérez-Cañado, M. L. (2012). CLIL research in Europe: Past, present, and future. *International Journal of Applied Linguistics*, 22(3), 315–341.
- Pinter, A. (2017). *Teaching Young Language Learners* (2nd ed.). Oxford University Press.
- Redecker, C. (2017). *European Framework for the Digital Competence of Educators: DigCompEdu*. Publications Office of the European Union.
- Siatras, A., Kalogirou, E., Ampatzidis, G., & Michalopoulou, A. (2025). Designing eTwinning projects for young learners. In N. Mouratoglou (Ed.), *eTwinning for future teachers: Ideas for integrating eTwinning in initial teacher education* (pp. 5-7). Publications of the European Union.
- Swales, J. (1990). The concept of discourse community. In *Genre Analysis: English in Academic and Research Settings* (pp. 21-32). Cambridge University Press.
- Tosi, A. (2023). *Empowering future teachers for a sustainable intercultural and inclusive education. The impact of eTwinning on Initial Teacher Education*. Carocci.
- Turan, I., Kilic, H., Barak, B., Gocen, A., Kervan, S., & Yali, S. (2025). PAST: (Pre)historical adventures in storytelling and teaching. In N. Mouratoglou (Ed.), *eTwinning for future teachers: Ideas for integrating eTwinning in initial teacher education* (pp. 64-68). Publications of the European Union.
- Virdia, S. (2019). CLIL and content learning: A review of the literature. In D. Marsh & O. Meyer (Eds.), *Quality interfaces: Examining evidence and exploring solutions in CLIL* (pp. 39-45). Eichstaett: Akademische Verlagsgemeinschaft.
- Wolff, D., & Virdia, S. (2019). CLIL: From language learning to content learning. In *C4C project guide: Principles for teaching children in CLIL* (pp. 11-19). European Commission.

APPENDIX

Student Self-Assessment Questionnaire - eTwinning Lab ITE 2025-26

Section 1: Background Information

1. Surname: _____
2. First name: _____
3. Matriculation number: _____
4. Tutor name: _____
5. Email: _____
6. Lab group: Lab 1 (Thurs 8:30-10:50) Lab 2 (Thurs 11:00-13:20)
7. Self-reported English proficiency (CEFR): A1 A2 B1 B2 C1 C2

Section 2: Communicative and Social Skills

(Please rate on a scale of 1 to 5)

Question	1 (Not at all)	2	3	4	5 (Very much)
Do you feel you communicated effectively in your work group?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you feel you have improved your communication skills?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you feel like your language skills (English) have improved after attending the workshop?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you feel you collaborated within your group?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you feel you have improved your interpersonal skills (e.g., patience, empathy, leadership)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 3: Digital Skills and Platform Usability

(Please rate on a scale of 1 to 5)

Question	1 (Very difficult)	2	3	4	5 (Very easy)
How would you rate the use of the proposed web tools (e.g., Canva, Padlet, Mentimeter)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question	1 (Very difficult)	2	3	4	5 (Very easy)
How would you rate using the ESEP platform and accessing the TwinSpace?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regarding homework completion (asynchronous tasks), how would you rate the difficulty?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 4: Collaboration and Project Implementation

11. How do you rate the collaboration with colleagues in your group?

(1: Very poor - 5: Excellent)

12. Have you encountered any difficulties during collaboration?

(e.g., unequal participation, language barriers, scheduling)

Please describe: _____

13. How did you contribute to the realisation of the final project?

(e.g., research, design, presentation, coordination): _____

14. How would you rate your personal experience with the final restitution (presentations)?

(1: Very negative - 5: Very positive)

Section 5: Educational Objectives and Outcomes

(Please rate on a scale of 1 to 5)

Question	1 (Not at all)	2	3	4	5 (Very much)
Do you feel you have improved your knowledge about the topic assigned to your group (Citizenship education)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you feel you have improved your design skills (planning a project)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you feel you have improved your teaching and methodological skills?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 6: Open-Ended Questions

18. Which web tools have you liked the most and which do you find most effective for future teaching practice? Why?
19. Of the best practices proposed (e.g., during meetings or reviewed independently), which project and/or which aspect most captured your attention and why?
20. Please illustrate any critical issues you encountered (e.g., platform, organisation, time management, technical problems).
21. What are the main strengths of this eTwinning Lab? What suggestions do you have for improvement?