

ENHANCING FUTURE TEACHERS' SKILLS THROUGH SERVICE-LEARNING WITHIN THE COMPLEXITY PARADIGM

SVILUPPARE LE COMPETENZE DEI FUTURI INSEGNANTI ATTRAVERSO IL SERVICE-LEARNING NEL PARADIGMA DELLA COMPLESSITÀ



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ABSTRACT

The public nature of education demands a renewed community-based pact. Building an educational ecosystem engaging diverse social actors fosters shared methodologies and co-responsibility. Teachers are key to weaving networks between schools and communities and to developing students' skills for complexity. Service-Learning (SL) offers an effective approach, requiring specific competencies. This paper explores SL's role in pre-service teacher education.

La natura pubblica dell'educazione richiede un rinnovato patto fondato sul coinvolgimento della comunità. Costruire un ecosistema educativo che coinvolga una pluralità di attori sociali favorisce metodologie condivise e corresponsabilità. I docenti svolgono un ruolo chiave nel tessere reti tra scuola e comunità e nello sviluppo delle competenze degli studenti per affrontare la complessità. Il Service-Learning (SL) rappresenta un approccio efficace che richiede competenze specifiche. Questo articolo esplora il ruolo dello SL nella formazione iniziale degli insegnanti.

KEYWORDS

Educating community; Service-Learning; Teaching competencies; Active Learning Method; pre-service teacher training. Comunità educante; Service-Learning; competenze didattiche; innovazione educativa; formazione iniziale docente.

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Introduction

Since the adoption of the Bologna Declaration in 1999, the European Higher Education Area has recognized the need for teachers to receive training in specialized competencies (Álvarez Castillo et al., 2017). The training of future teachers today faces unprecedented challenges in a world marked by rapid changes, global interconnections, and complex problems. Edgar Morin's paradigm of complexity calls for overcoming the fragmentation of knowledge and cultivating a mode of thinking capable of connecting parts to the whole (Morin, 2001).

The UNESCO Report *Reimagining our futures together: A new social contract for education* (2021) marks a milestone in this debate, issuing a global call to governments, institutions, and citizens to collectively forge what is termed a 'new social contract for education'. The goal is ambitious: to address past injustices and transform the future by building peaceful, just, and sustainable societies for all.

This new educational pact must be firmly rooted in fundamental human rights and in the principles of non-discrimination, social justice, respect for life, the valorization of cultural diversity, while incorporating an ethic of care, reciprocity, and solidarity. UNESCO (2021) identifies two foundational pillars for this renewal: first, an expanded vision of the right to education, extending across the entire lifespan; and second, the strengthening of education as a "public endeavour" and a "common good". The latter concept, further explored by Locatelli (2023), marks a significant shift: moving beyond the notion of education as a purely individual socio-economic investment or a simple public service (guaranteed by the state but individually consumed), toward a relational and participatory understanding. Thus, the conceptual transition from "public good" to "common good" is not merely terminological but reflects a deeper paradigmatic change: from a state-centered to a networked, cooperative model.

Within this context, the idea of an "educational ecosystem" gains particular relevance, as exemplified by the R.E.T.I. Project (*Educational Research for an Inclusive Territory*), described by Culcasi et al. (2025): this ecosystem represents the concrete manifestation of the governance of the common good applied to education; it is conceived as a dynamic environment promoting active collaboration and co-responsibility among a plurality of social actors – schools, families, local authorities, sports and cultural associations, the third sector, and individual citizens. Furthermore, through shared and innovative methodologies, such as Service-Learning (SL), the educational ecosystem seeks to repair the social fabric, counter educational poverty (understood as the deprivation of learning and

development opportunities), and build Community Educational Pacts, where all actors recognize themselves as co-responsible and interdependent (Culcasi, 2023a). The adoption of this paradigm necessarily implies that educational innovation can no longer be confined within school walls but must emerge from co-design processes with and within the community. This requires intrinsically open and collaborative methodologies capable of linking formal learning with civic engagement.

Building on these premises, this article analyzes the concept of complex thinking and its implications for contemporary education, focusing in particular on the role of the teacher as a facilitator of connections between school and community through Service-Learning. The contribution aims to explore how this pedagogical approach, which integrates curricular learning with community service (Fiorin, 2016a, 2016b), can serve as a strategic lever for realizing the vision of the educating community and the new social contract. Special attention will be devoted to the specific competencies that teachers must possess to implement SL effectively, preparing students to navigate complexity and act as proactive agents of social change.

1. The complexity paradigm: educational implications and teaching training toward an effective professionalism

The contemporary world is defined by uncertainty, accelerated transformations, and dense global interconnections. Complexity – a core concept in Edgar Morin's thought (2007) – represents the prevailing condition of our time, characterized by disorder, ambiguity, non-linearity, interdependence, and unpredictability. Addressing complexity requires the ability to connect disparate phenomena and to cultivate a form of thinking capable of discerning the intricate web underpinning reality (Ceruti, 2018). As Ceruti (2025) observes: complexity is not chaos, but the art of connecting, of weaving threads of meaning among diverse and multiple elements. Morin (2001) opposes the traditional paradigm of simplification and disjunction, which tends to fragment knowledge, proposing instead a "multi-ocular" approach capable of integrating the physical, biological, spiritual, cultural, sociological, and historical dimensions of human experience. Knowledge, from this perspective, is no longer conceived as isolated disciplines but as a dynamic, interconnected system.

Acknowledging this paradigm of complexity compels a fundamental rethinking of educational systems, both in terms of content and pedagogical approaches.

Overcoming disciplinary fragmentation is essential, favoring interdisciplinary approaches that foster curiosity, critical reflection, and the construction of complex knowledge. Indeed, in the UNESCO Report (2021) – which looks beyond 2050 to explore how education can contribute to shaping our shared future – curricula are envisioned not as a mere list of school subjects, but as dynamic processes aimed at building sustainable, equitable, and peaceful futures. Emphasis is placed on participation, conceived as a key element that strengthens education as a common good and as a form of shared well-being achieved collectively.

In this regard, Morin (2000) advocates for a “curriculum of questioning” that, from primary school onwards, engages students with fundamental anthropological questions – *Who are we? Where do we come from? Where are we going?* – thus promoting a holistic understanding of the human condition in its biological, psychological (individual), and social dimensions. Such a vision demands a profound rethinking of *what is learned, how it is learned, and where learning takes place*, opening education to diverse practices and fostering an awareness of the individual’s impact within both local and global contexts.

Within this framework, the professional role of the teacher becomes strategically central; according to Morin (2000, p. 106) teachers are agents of “public health”, responsible for preparing conscious citizens capable of engaging with the complexities of contemporary society. According to UNESCO (2021) teachers are recognized as specialized actors within the school context, fostering new knowledge to drive educational and social transformation; in particular, teachers are expected to identify new areas of inquiry and innovation, formulate research questions, and generate new pedagogical practices. They are called to establish an ongoing dialogue between theory and practice, consolidated through processes of personal and collective reflection, supported by an ever-expanding repertoire of educational experiences. Furthermore, teachers are tasked with coordinating educational ecosystems and networks of learning spaces, supported by specific training and adequate resources.

The perspective of continuous professional development – or lifelong learning – as individual and collective learning, is regarded as an essential condition to foster the acquisition of both specialized and transversal competences. A study conducted within the Primary Education degree program at the University of Bicocca in Milan, Italy (Teruggi and Zuccoli, 2015), investigated how the teacher training curriculum and the Italian National Guidelines for the First Cycle of Education (Indicazioni Nazionali per la Scuola del Primo Ciclo, 2012) address the development of 21st-century skills for future teachers, taking into account the key competencies

essential for lifelong learning, as defined by the European Parliament and the European Council (2006) – today replaced by those of 2018. The research identified the key competencies required for 21st-century teachers in the following categories: 1) critical thinking and problem-solving; 2) collaboration through networks and leadership through influence; 3) assessing and analysis of information; 4) effective oral and written communication; 5) agility and adaptability; 6) initiative and entrepreneurship; 7) curiosity and imagination. These categories specifically address personal, interpersonal, and intercultural skills, highlighting behaviors that enable individuals to participate effectively and constructively in both social and professional life, particularly in increasingly diverse societies.

Particular attention must be given to the development of meta-cognitive skills and the ability to learn how to learn, so that teachers are prepared to continuously update their practices in response to emerging social, technological, and cultural needs. By integrating theoretical knowledge with fieldwork experiences, teacher education should promote an inquiry-based approach, where practice and reflection are intertwined in a dynamic process of professional growth (Schön, 2006).

According to Fiorin (2012) professionals working in educational institutions are required to have a multidimensional profile.

In his influential work *Ten New Competencies for Teaching* (1999), Perrenoud outlines ten essential competencies that define the role of a modern teacher. These competencies go beyond content knowledge, highlighting the complexity of teaching as a reflective and strategic profession. Teachers must know how to organize effective learning situations and manage the progression of learning over time. They are also called to design and adapt differentiated instruction, addressing the diverse needs of students. Central to Perrenoud's vision is the teacher's ability to engage students in their own learning, foster collaboration within teaching teams, and participate actively in school governance. Additionally, teachers must learn to communicate with families, integrate new technologies, and navigate ethical challenges in their profession. A critical final point is the capacity for ongoing self-directed professional development.

Meirieu (2015) describes teaching as a profession undergoing deep transformation. He points to the need for reflective practice and professionalization, indicating that teaching must be based not only on vocation but on recognized expertise and ethical responsibility. Meirieu stresses the importance of collaborative and project-based work, and the growing requirement for autonomy and increased

responsibility among educators. His vision includes differentiated pedagogies, assigning centrality to learning tools and environments, and promoting sensitivity to both knowledge and legislation. These elements, taken together, define a new teaching identity, one that responds dynamically to evolving democratic and educational needs. Meirieu's teacher is a critically engaged professional, aware of their societal role and capable of innovating within constraints.

Triadó Ivern et al. (2014) present an interesting framework that identifies six key competencies for teacher development: 1) interpersonal competence, which includes the teacher's attitude toward students, their ability to elicit student response, and the promotion of values; 2) methodological competence, which covers teaching strategies, the use of technologies, and the promotion of responsibility and participation; 3) communicative competence, referring to encouraging participation, the characteristics of the message, and those of the communicator; 4) competence in teaching planning and management, which includes content planning and assessment, designing activities at various levels of competence, and curriculum-level planning; 5) teamwork competence, involving the roles of team members, coordinators, and evaluators; 6) innovation competence, which includes defining innovation goals and areas, analyzing the impact of innovation in the educational context, and implementing and evaluating innovative practices.

Margiotta (2010), drawing also on the European Union's reference frameworks, identifies several key dimensions within which to develop the competencies necessary for 21st-century teachers: 1) the cultural dimension; 2) the psycho-pedagogical dimension; 3) the methodological-didactic dimension; 4) the organizational and design dimension; the participatory dimension; 5) and the reflective dimension. Through the integration of these dimensions, it becomes possible to foster the development of an expert, balanced, and forward-looking teaching professionalism – one that is not merely capable of mastering teaching and learning processes but, more critically, able to guide the development, discipline, and personalization of learning. In other words, it concerns the ability to support the fundamental processes of understanding and willing that constitute the self-formation of students' talents.

In this framework, initial teacher education must be conceived as a transformative experience that not only provides future educators with disciplinary knowledge, but also equips them with the transversal competencies necessary to operate in increasingly complex and diverse educational environments (Smith, 2008). Training programs should, therefore, be designed to foster critical reflection, creativity, and

adaptive thinking, encouraging prospective teachers to become active agents of change within their communities (students, parents, school staff and other stakeholders), (Teruggi and Bettinelli, 2010).

Thus, investing in high-quality, research-informed teacher education programs is essential to prepare future educators who are not only transmitters of knowledge, but also facilitators of learning processes, designers of inclusive learning environments, and critical thinkers capable of contributing to a sustainable and equitable future.

Fiorin (2016a) presents a broader, leadership-oriented interpretation of teaching. Rather than focusing solely on skills or domains of competence, Fiorin frames teaching as an act of transformational leadership. In this view, the teacher embodies responsibility for student growth and institutional values, cultivates a vision that guides his/her pedagogical choices, and drives innovation in both content and method. Fiorin's teacher is not simply an executor of curricular duties, but a change agent who helps shape educational culture. This leadership includes moral and intellectual dimensions, calling on teachers to act with foresight, courage, and integrity in an increasingly complex world. As Resch and Schrittmesser (2021) highlight, Service-Learning has the potential to push in-service teachers beyond their comfort zones, broadening their perspectives on the world and on diverse social realities. Within teacher education, SL acts as a catalyst for rethinking traditional teaching models (Iyer et al., 2018), offering "a transformative experience that supports the development of self-efficacy in the form of empowerment and belonging, and promotes inclusivity, diversity, and critical reflective practices" (Boston et al., 2018, p. 421).

2. Service-Learning: a pedagogical proposal for the education of the future

Service-Learning integrates community engagement with academic learning in a unified pedagogical approach that enables future teachers to address authentic needs within their educational or local communities, with the goal of promoting meaningful and sustainable improvements in both practice and context. As Puig-Rovira and Rodríguez (2006, p. 62) point out, SL is "an innovative proposal that, at the same time, is rooted in well-known and long-standing elements"; what makes it distinctive is not the novelty of its individual components, but rather "the strong connection between these two elements within a single, structured, coordinated, and coherent activity" (Puig-Rovira and Rodríguez, 2006, p. 62).

Tapia (2009), founder of the *Centro Latinoamericano de Aprendizaje y Servicio Solidario* (CLAYSS), outlines several quality standards for SL, including: meaningful and effective service that addresses genuine and locally perceived needs, carried out *with* rather than merely *for* the community; active student engagement throughout all phases, from initial planning to final evaluation; deliberate integration with curricular objectives; and structured reflection processes aimed at fostering metacognitive awareness of the competencies developed.

From an educational perspective, SL supports the integral development of the individual, placing particular emphasis on fostering both personal emancipation and community empowerment. It encourages learners to engage meaningfully with their environment, positioning experiential and transformative learning at the core of the educational process (Orefice, 2006).

Furthermore, through SL, education is conceived as an immersive process within real-world contexts (De Marco, 2018). At the core of this model lies the concept of “transforming” reality through the active participation of individuals, who are positioned as central agents in the educational process (Culcasi et al., 2023b). In this approach, knowledge and skills are cultivated through direct interaction with the surrounding environment.

Within this framework, the teacher takes on the role of a learning facilitator, encouraging the development of “learning how to learn” skills and fostering collaboration and shared responsibility in the design, implementation, and evaluation of service activities conducted with the community (Bochicchio & Viaggiano, 2012). Establishing a symmetrical relationship between educational institutions and external stakeholders is crucial for fostering more inclusive and integrated educational processes (Iori, 2019; Giunti and Orlandini, 2019). In this view, the territory is conceptualized as a context for lifelong learning, structured through the relationships between the various actors involved (Simonetti, 2016). Some studies (e.g. Lotti and Orlandini, 2023) highlight the strategic role of this alliance, specifically examining how the transformative value of Service-Learning is reflected within the professional interaction between school staff and the Third Sector, enhancing the reciprocity between the parties. Indeed, according to the authors, this alliance facilitates both personal and community development, promoting collaborative educational experiences, the creation of communities of practice based on dialogue and sharing, and the opening of schools to the territory as a learning community.

Ultimately, Service-Learning – as a transformative, multi-level approach (Cadei & Serrelli, 2023) – when applied to initial teacher education, not only enhances the

professional development of future educators, but also contributes to the creation of a more aware, inclusive, and community-oriented school environment. As noted by Álvarez Castillo et al. (2017), in recent years, SL has gained increasing prominence as one of the most influential active methodologies in both educational research and teacher training practices.

3. Transforming teacher training through Service-Learning: key Competencies for Effective Implementation

3.1 Integration of Service-Learning in Initial and In-Service Teacher Education

In recent years, Service-Learning has gained increasing recognition as a valuable methodology within teacher education, both at the initial and in-service levels. As illustrated in the first paragraph, the growing complexity of teaching in today's world, marked by social challenges and global interdependence, demands that educators be equipped not only with technical and didactic skills but also with the capacity to foster civic engagement, critical thinking, and ethical responsibility.

Service-Learning is increasingly recognized as a transformative pedagogical approach in teacher education, bridging theory and practice through experiential and civic-oriented learning. It engages pre-service teachers in organized community service projects combined with structured reflection, allowing them to apply academic knowledge in real-world contexts while addressing authentic social needs (Anderson et al., 2001; Capella-Peris et al., 2021). This process enhances their understanding of social justice and diversity, cultivates empathy, and strengthens critical thinking and problem-solving capacities (Daniels et al., 2022). As teacher educators respond to global challenges – such as inequality, interdependence, and the need for democratic participation – SL emerges as a powerful strategy for developing 21st-century competencies like collaboration, intercultural awareness, civic engagement, and ethical responsibility (UNESCO, 2024; OECD, 2018).

Given the complexity and specificity of the competencies required to implement Service-Learning effectively, it is essential to embed this methodology across both initial teacher preparation and continuing professional development. Research highlights that educators are unlikely to adopt SL meaningfully unless they have experienced it firsthand during their training (Mazzoni and Ubbiali, 2015). To this end, SL can be integrated through dedicated modules or infused across various disciplines, such as general pedagogy, psychology, and sociology of education (Furco, 2002). Practicum placements offer particularly fertile ground for SL,

enabling pre-service teachers to engage in authentic, community-based learning while cultivating reflection, civic awareness, and pedagogical adaptability.

Despite these opportunities, the integration of SL within teacher education curricula remains uneven. It appears in a range of formats, including stand-alone courses, cross-disciplinary modules, faculty development workshops, and teaching labs. However, as noted by Álvarez Castillo et al. (2017), many training programs emphasize theoretical and methodological dimensions of SL without incorporating real service activities or active community partnerships. This gap significantly limits the experiential and transformative potential of SL, underscoring the need for more robust and practice-oriented implementation strategies (Álvarez Castillo et al., 2017, p. 208).

3.2 Key Competencies for Implementing Service-Learning

To implement Service-Learning effectively, educators must possess key competencies that enable them to design, facilitate, and assess meaningful community-engaged learning experiences. Curriculum design and integration skills are required to align service activities with learning objectives and academic content (COPIL, 2021). Educators also need expertise in community partnership building, fostering reciprocal relationships with community organizations and co-creating projects that address genuine needs (COPIL, 2021). Strong facilitation and reflective practice competencies are critical: teachers must guide students in critical reflection on their service experiences to connect them with course concepts and civic learning outcomes (Daniels et al., 2022). Culturally responsive teaching and a civic-minded disposition, including empathy, respect for diversity, and ethical awareness, are equally important for engaging with communities in respectful, inclusive ways (Capella-Peris et al., 2021). Finally, educators should have assessment and evaluation skills to measure student learning, social impact, and to iteratively improve the SL experience (COPIL, 2021).

Competency	Description
Curriculum Design & Integration	Aligning community service projects with curriculum goals and academic standards to ensure relevant learning outcomes.
Community Partnership Building	Establishing and maintaining reciprocal, respectful collaborations with community partners to co-design service activities.

Facilitation & Reflective Practice	Guiding student engagement and reflection throughout the service-learning process, helping students draw connections between experience and theory.
Cultural Competence & Civic Mindset	Demonstrating empathy, inclusivity, and ethical awareness when working with diverse communities, and instilling these values in students.
Assessment & Evaluation	Measuring and evaluating student learning and community impact, and using feedback to enhance the effectiveness of service-learning initiatives.

Table 1. Key Competencies for Implementing Service-Learning (Source: Authors' of different sources: COPIL, 2021; Daniels et al., 2022; Capella-Peris et al., 2021.)

4. Innovative Teacher Training Models: Integrating Service-Learning Practices

Given the aforementioned premises, it is particularly relevant to examine selected teacher training models that integrate Service-Learning. Indeed, this section focuses on three illustrative cases: the “LeCoSe” Lab at the University of Verona, the Service-Learning Lab developed by the EIS-Postgraduate School of the LUMSA University of Rome, and the U.S.-based “Citizen Scholars” model.

4.1 LeCoSe Lab

Since 2014, the University of Verona has hosted the “Le CoSe Laboratory – Learning Community Service,” a programme specifically designed for pre-service teacher training (Mortari et al., 2020). Initially launched as an experimental initiative, the project has since been institutionalised within the teacher internship pathway and is inspired by the principles of community-based Service-Learning. According to this model, students and teachers are engaged in a “continuous co-construction, deconstruction, and reorganisation of the learning experience, based on the principle of usefulness, both for students and for in-service teachers” (Baldwin et al., 2007, p. 317). This SL Lab is aimed at fourth- and fifth-year students enrolled in the Teacher Training programme, allowing them to create projects within local schools. Developed in collaboration with the Verona Provincial School Office and

partner schools in the region, Le CoSe seeks to establish SL as a shared project. Indeed, on the one hand, pre-service teachers work alongside in-service teachers by responding to their expressed needs; on the other, in-service teachers engage in meaningful collaboration with future teachers, moving beyond mere hosting roles during the internship (Mortari et al., 2017).

From an organisational perspective, LeCoSe is structured into three main phases: 1) identifying a need emerging from the community; 2) designing and implementing a targeted intervention; and 3) conducting research on the implemented intervention (Mortari et al., 2020). Pre-service teachers are guided in the design, implementation, and dissemination of an empirical educational research project, following a service research approach aimed at putting “research at the service of educational contexts” (Mortari et al., 2017, p. 197).

To date, the SL projects carried out within the Lab have been differentiated according to the needs expressed by the teachers, resulting in two main types of initiatives: those independently designed by teachers, and those co-designed in collaboration with the university team and the students. In the autonomous projects, the service was either operational – providing practical support to teaching activities – or indirect, involving the critical documentation of educational practices. In the co-designed projects, a strategic-planning dimension also emerged, where students and teachers jointly developed educational strategies to tackle complex challenges (Mortari et al., 2017).

As evidenced by the University of Verona’s experience, SL represents, on the one hand, an opportunity to reframe the professional development of future teachers through a collaborative approach that fosters meaningful connections with in-service teachers. On the other hand, it promotes the valorisation of the pedagogical knowledge developed by in-service teachers (Mortari et al., 2017). Furthermore, the LeCoSe Lab offers pre-service teachers the opportunity to contribute to schools as young researchers, supporting the documentation of didactic knowledge. Indeed, this experience has fostered the profile of the teacher as an experiential researcher, using SL as a vehicle to introduce them to educational research practices (Mortari et al., 2017).

Ultimately, the University of Verona’s decision to adopt Service-Learning responds to three major challenges facing contemporary pre-service teacher training: 1) “the need to orient students’ training processes by preparing them to engage with the real complexities of school life; 2) the clear call for support from schools, which are facing unprecedented challenges; and 3) the desire to rethink the role of the

university as a community actor capable of serving the local territory” (Mortari et al., 2017, p. 191).

4.2 EIS-based Service-Learning Lab

LUMSA University hosts the Postgraduate School *Educare all’Incontro e alla Solidarietà* (EIS), whose mission is to promote the development and dissemination of the Service-Learning approach both within the university and in broader educational contexts, including schools and other higher education institutions. Officially established in 2014 under the leadership of its founding director, Professor Italo Fiorin after years of experimentation, the EIS School is currently directed by Professor Maria Cinque. Its scientific board includes both Italian academics – representing various national universities – and international members affiliated with institutions from five continents: Europe, Africa, Asia, the Americas, and Australia.

The School’s team plays a leadership role in several national and international networks and working groups, including the Ministry of Education’s Task Force for promoting Service-Learning in Italian schools, the Italian University Association for Service-Learning (UNiSL), the European Association of Service-Learning in Higher Education (EASLHE), the Service-Learning in European Schools and Organizations Network (SLEsoN), and the Global Network on Solidarity Service-Learning in Catholic Higher Education (UNISERVITATE).

A key achievement of the EIS Postgraduate School has been the institutionalization of a permanent Service-Learning Lab at LUMSA, that is part of the curricular offer of the University (with ECTS) and open to all the students of the Human Sciences Department.

The Lab is structured within a course designed to introduce students to the theoretical foundations of Service-Learning, as well as to practical tools for the design and implementation of high-impact social interventions. The course has a dual objective: on one hand, to promote an intentional connection between students’ academic disciplines and the development of soft skills through active engagement in interdisciplinary projects; on the other hand, to foster critical awareness among students of their roles as responsible citizens and agents of social change. Moreover, the course is framed around the Sustainable Development Goals (SDGs) of the 2030 Agenda, which serve as a reference for SL project design. The SDGs are not only used as a lens through which students can analyze complex local realities and identify social needs in their interdependence, but also as a

pedagogical opportunity to translate the Goals and their associated targets into concrete, actionable practices.

Students participating in the course are introduced to the key elements of the SL approach – such as social impact, empowerment, participatory design, solidarity-based service, curricular connection, and meaningful and transformative learning – as well as to various implementation models, including top-down, bottom-up, and mixed approach. Specifically, the “bottom-up” approach – favoured within the SL Lab – is employed to promote student agency. In this model, students are responsible for identifying the social need they wish to address, designing interventions that align with their academic pathways, and building collaborations with local stakeholders. Each student engages in a project with a minimum commitment of 20 hours. Conversely, in the top-down model, it is the teacher who designs a SL project in collaboration with a community partner; students are then invited to take part in the initiative and are guided through service activities that are already aligned with the curricular content of the degree programs for which the project is open.

As highlighted by Culcasi et al. (2021), students participating in the Service-Learning Lab benefit from several key educational outcomes: 1) the consolidation of disciplinary knowledge through the integration of theory and practice, which fosters meaningful learning; 2) the development of soft skills across multiple domains like social (e.g., communication), personal (e.g., self-assessment), methodological (e.g., analytical thinking), and digital (e.g., data management and digital problem-solving); 3) the promotion of a sense of active citizenship through the recognition of one’s role in advancing sustainable development and community well-being.

In recent years, participation in the Service-Learning Lab has increasingly involved students from the degree programs in Education Sciences and Primary Education. This has enabled collaborations with organizations engaged in addressing educational poverty and promoting well-being from early childhood through adolescence – such as Scholas Occurrentes and Save the Children Italia – as well as with institutions focused on social inclusion and the promotion of intergenerational relationships, including La Lampada dei Desideri and the Social Promotion Center Le Quattro Colonne. In this regard, the SL Lab at LUMSA University represents a high-impact educational experience, capable of integrating theoretical knowledge, practical skills, and civic values, in alignment with the most advanced pedagogical perspectives of contemporary education.

4.3 Citizen Scholars model

Within an international framework, it is relevant to mention the Citizen Scholars (CS) model, which was developed with the aim of promoting an educational approach that does not merely focus on the acquisition of information or the generation of knowledge, but rather seeks to root knowledge in the reality of one's own context. The ultimate goal is to apply the knowledge in ways that contribute to the betterment of society (Arvanitakis & Hornsby, 2016).

Thus, Citizen Scholars is a type of programme that provides local youth with the life skills, knowledge, and character development needed to become contributing citizens. It is structured around three interrelated pillars: the first is civic engagement, which encompasses an awareness of oneself as part of a broader social fabric, the willingness to use one's skills in service of others, and active involvement in matters of public concern; the second is emotional intelligence, referring to self-awareness, emotional regulation, empathy, and the capacity to evaluate one's strengths and areas for growth, among others; the third pillar is intellectual vitality, which includes creativity, the ability to make interdisciplinary connections, the skills to formulate arguments and pose critical questions etc.

It is possible to participate in these programmes also before accessing university in order to arrive with not only academic training but also experience of community engagement. An example of this model can be found in New Jersey, USA, where the Institute for Citizens & Scholars is based. The Institute is dedicated to preparing engaged citizens by fostering a training system that cultivates talent, ideas, and networks (Gallos et al., 2023). Through the use of a civic measurement framework, the Institute has demonstrated that participants in its training programs develop civic knowledge, civic skills – such as collaborative problem-solving – and civic dispositions, including shared civic values, a sense of agency, community building, and inclusivity (Gallos et al., 2023).

There are long-standing Citizen Scholars programmes, such as the Institute for Citizens & Scholars in Princeton, USA, founded in 1945, which has since been dedicated to preparing new generations with strong civic competencies and the capacity to become effective and engaged leaders.

Another notable example is the Citizen Scholars Program at Michigan State University, which is structured around several interconnected components

- 1) CS Core Course: this introductory course familiarizes students with the program's values, goals, and requirements. As stated by the university, "Students begin to explore who they are in relation to others, where their

passions lie, and what motivates them to contribute to social change. This core course helps students to chart their path through the university” (Michigan State University, n.d.);

- 2) CS Immersive Experiences: these are intensive learning experiences in which students regularly document their personal and academic development. Financial support is available to help students participate in these opportunities;
- 3) Co-Curricular Activities: these activities allow students to remain engaged with the Citizen Scholars community throughout their academic journey. They range from social events and public lectures to collaborative CS projects.
- 4) CS Student Projects: students are encouraged to delve deeply into an issue or question that is particularly meaningful to them. Through the creation of a “discovery project,” they receive mentorship from faculty and community leaders as they explore avenues for social transformation and address concrete community needs.

As Reiff and Keene (2012) have shown, the Citizen Scholars model, when integrated with a Service-Learning programme, significantly enhances students’ sense of community awareness. This is accompanied by a sense of empowerment, the ability to collaborate within diverse community contexts, and enhanced dialogue and reflection skills, along with a greater commitment to civic engagement. As highlighted in the introductory section of this article, these competencies have become essential for teachers, both in their pedagogical engagement with students and academic content within the classroom, and in their interactions with local stakeholders and the broader community, where they are expected to foster dialogue, navigate diverse perspectives, and help build meaningful experiences connected to the school context.

Although differing in structure and context, these 3 cases have demonstrated effectiveness in fostering the professional development of teachers as facilitators of learning, within educational environments that emphasize community involvement and the active participation of all stakeholders. These models, in addition to fostering a shift in educational methodologies, support the development of both practical and theoretical competences that are essential to addressing contemporary educational challenges, particularly within the context of teacher education.

Conclusion

This article has explored the potential of Service-Learning as a transformative pedagogical approach within teacher education, particularly in relation to the paradigm of complexity and the broader call for a new social contract for education envisioned by UNESCO (2021). By integrating academic learning with community engagement, SL positions future teachers as agents of social change, fostering critical reflection, civic awareness, and a participatory approach to knowledge.

Grounded in a robust theoretical framework – including the paradigm of complexity (Morin, 2001; Ceruti, 2025), the vision of education as a common good (Locatelli, 2023), and the recognition of teachers as facilitators and agents of change (Fiorin, 2016b; Meirieu, 2015) – this article has identified five core competencies for the effective implementation of SL (Table 1): curriculum design and integration, community partnership building, facilitation and reflective practice, cultural competence and civic-mindedness, and evaluation. These competencies, which combine disciplinary knowledge and transversal skills, are increasingly viewed as essential for preparing teachers to navigate pluralistic, ethically engaged, and socially relevant educational settings.

The three case studies examined illustrate how this theoretical framework can be translated into effective training practices. These experiences confirm that Service-Learning can not only innovate pedagogical methodologies but also significantly shape the professional identity of future educators by supporting their development as reflective, committed, and socially conscious teachers.

However, while the examples and theoretical framework presented demonstrate the high educational value of SL, it is equally important to acknowledge the challenges and limitations that still hinder its full integration into teacher education. Among these, the fragmented implementation of SL within university curricula stands out: often relegated to isolated modules or extra-curricular experiences, SL struggles to become an organic component of initial teacher education pathways. Moreover, resistance from faculty members, lack of adequate training, and insufficient time allocation within rigid academic schedules may compromise the quality and depth of the experience.

Another critical issue concerns the systematization of SL at the institutional level. Despite growing interest, many universities lack clear policies, dedicated resources, and evaluation tools to support the long-term sustainability of SL practices. The role of universities should therefore evolve from that of individual promoters to institutional enablers of SL, embedding it within strategic plans, staff development programs, and partnerships with communities. Only in this way can SL move

beyond the experimental phase and become a structural component of teacher education.

Looking ahead, further research is needed to deepen our understanding of SL's long-term impact, especially in the Italian context. While existing studies often focus on short-term outcomes such as the development of soft skills or civic attitudes, longitudinal studies could shed light on how SL influences professional identity, teaching practices, and retention in the profession over time. Moreover, comparative research between initial and in-service teacher education could offer insights into how SL can support lifelong learning and ongoing professional development.

In conclusion, Service-Learning should be viewed not only as an innovative teaching methodology but as a paradigmatic shift that challenges traditional educational models. Its full potential can only be realized through institutional commitment, critical reflection on its limitations, and evidence-based practices that document its transformative effects. In a time marked by uncertainty and complexity, preparing teachers to work in and with communities is not a pedagogical luxury, but an educational necessity.

Author contributions

Sections §§ Introduction, 4, 4.1 and 4.3 are attributed to Author 1; sections §§ 1, 2, 4.2 Conclusions to Author 2; and sections §§ 3, 3.1, 3.2 to Author 3.

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