



Beyond Disciplinary Knowledge: Outdoor Education and Experiential Learning in Teacher Faculty Development

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Abstract. The European Commission's *GreenComp* (2022) document highlights the urgent need for educational frameworks that integrate cross-curricular sustainability competencies across all disciplines. Through a critical analysis of two European policy documents guiding educational practice in the field of sustainability, this paper aims to reflect on the need to develop experiential teacher training programs focused on promoting environmental awareness, environmental education, and a connection with the non-human world. The analysis covers immersive nature experiences that enable teachers to reconnect with the natural world, rediscover their ecological identity, and reaffirm their role as environmental educators. Prior research has demonstrated that outdoor learning experiences motivate teachers to integrate sustainability principles into classroom practice. This paper examines how outdoor experiential learning strengthens teachers' environmental connectedness and its translation into everyday pedagogical practices. The analysis concludes that personal environmental connection is essential for rethinking pedagogical practices and cultivating authentic sustainability commitment. Experiential teacher training establishes foundations for transformative pedagogy resonating throughout school and academic communities. Moreover, by addressing sustainability integration across disciplines and reconnection with less anthropized environments, it establishes pathways for future educational initiatives. Ultimately, these training programs improve teachers' ability to integrate sustainability into curricula, promoting respect, dialogue, and a sense of coexistence between students and the environment in which they live.

Keywords: Experiential Learning; Teacher Training; Wild Pedagogies; GreenComp; Environmental Education; Sustainability; Professional Development.

1 Introduction

Pedagogical literature typically focuses teacher training discussions on student-teachers those in initial training for entering the profession. This article, however, focuses primarily on **in-service teachers** across all school levels and higher education contexts. This approach broadens the perspective to encompass both initial training and **continuous professional development (PD)** for all educators.

The integration of *Environmental Education (EE)* – understood here as the environmental dimension of *Education for Sustainable Development (ESD)* – into educational programs – still encounters considerable resistance and criticism¹. Goller and Rieckmann's (2022) systematic literature review found that some teachers view explicit ESD integration as unnecessary, presuming adequate sustainability awareness among students and educators. Yet this perception conflicts with widespread acknowledgment of insufficient ESD-specific competencies, effectively impeding implementation (Barth & Rieckmann, 2012; Scherak & Rieckmann, 2020).

A key limitation is educators' difficulty – often due to subject specialization – in adopting holistic, integrated approaches. This difficulty is exacerbated by the lack of adequate transdisciplinary training. Beyond epistemological barriers, structural constraints – lack of time, resources, and institutional support – are universally reported by teachers, trainers, and students (Nielsen et al., 2012; Goller, 2022). To overcome these constraints, the literature emphasizes the need for systematic interventions that include collaboration networks, support policies, and specific and targeted disciplinary training courses (Christie et al., 2015; Rieckmann, 2018) for both students and, even more importantly, teachers.

Orr (cited in Bardulla, 2006) argues that the crisis is primarily “spiritual”, and since building a sustainable, peaceful, just, and democratic world requires above all action on the human factor, unprecedented creativity, morality, foresight, and wisdom are needed to achieve it. Education, in fact, does not concern society but individuals, and it is therefore at this level that action must primarily be taken (ibid.).

In contemporary educational contexts, attention focuses on how educational and academic institutions can train individuals who attribute high personal and collective value to sustainability, approaching it critically, proactively, and responsibly across diverse social and environmental scenarios (Rohrich & Takahashi, 2019). Here, recognizing ESS's individual and ethical value – conceived not merely as content but as a transformative process of being – is essential.

However, pursuing a new educational paradigm obviously requires abandoning current practices if different results are expected: as Jensen et al. (2022, p. 5) state, “we need significant, indeed radical, change.”

In recent decades, the pedagogical debate has repeatedly highlighted the need for a profound change in traditional educational models. The ‘paradigm shift’ concept refers not only to methodological updates but to fundamental transformation in how teaching and learning are conceptualized. It is certainly not new, but there is still a huge gap between what we profess and what we practice. For example, talking about experiential learning without practicing it. We can build an entire 30-hour course on experiential learning without practicing it, or on outdoor education without leaving the classroom. It may be obvious, but it still needs to be reiterated.

¹ In this study, the term environmental education (EE) is used to refer specifically to the ecological dimension of Education for Sustainable Development (ESD). While ESD encompasses broader environmental/ecological, social, economic, and cultural dimensions, the focus here remains on EE.

The paradigm shift, therefore, extends beyond technical innovation to constitute a radical rethinking of education: from teacher-centered practice to co-constructed processes where experiential learning, reflexivity, and ethical responsibility assume central roles.

To advance education aligned with the Sustainable Development Goals (SDGs), operationalizing the skills and learning objectives associated with each SDG – as outlined by UNESCO (2017) – is essential. This requires redesigning curricula, teaching methodologies, and assessment systems to align with sustainability goals (Dias et al., 2022). Despite ‘we have had more than enough ecological knowledge for a long time on how to correct our behavior’ (Naess & Jickling, 2000, as cited in Jensen et al., 2022, p. 5), we still remain on a trajectory of domination and exploitation of all living things.

Orr (2004, as cited in Tomren, 2022) offers important critical reflection on these issues, denouncing traditional Western education as ‘education for powerlessness’. He identifies the *hidden curriculum* – the fragmentation of disciplines and separation of school from social reality – as a primary cause of the gap between theoretical knowledge and lived experience. According to Orr, this distance produces abstract and decontextualized knowledge that is incapable of responding to contemporary environmental and social challenges. This disconnect was also challenged by Fridays for Future activists who skipped school to engage in political discourse before the 2019 elections, demonstrating their desire to reconnect education with civic action (Tomren, 2022).

Several studies have highlighted how future teachers and educators can recognize their transformative potential as responsible citizens through daily choices, generating expectations for change in educational and social contexts (Bakker & Dagevos, 2012). In this sense, environmental and outdoor education must not be reduced to behavioral prescriptions (Ferreira & Pitarma, 2021) but recognized and practiced fostering processes of critical reflection and personal questioning that promote renewed awareness.

Jickling (2015) argues for a fundamental break with our ontological positioning. *Wild Pedagogies* (Jickling et al., 2018) offer valuable insights for integrating living beings into daily teaching practices, both theoretically and practically. The Crex Crex Collective’s work (Jickling et al., 2018; Jensen et al., 2022) emphasizes practicing before professing. What distinguishes curricular teaching from education for sustainable development – and the broader paradigm shift advocated by deep ecologists – is profound coherence between profession and practice. Since these issues are deeply connected to personal life choices and worldviews, teachers cannot effectively impact students without first practicing what they preach.

According to Carvalho et al. (2020), it is essential to consider who designs educational pathways, how they are planned, and what role students play in the process, distinguishing between passive and active learning. From this perspective, experimenting with educational practices that include flora and fauna as co-teachers becomes central. In this regard, Kopnina (2017) proposes moving beyond anthropocentric education toward “planetary citizenship” that recognizes the intrinsic value of all living beings and promotes interconnection between humans and non-human actors (Ameli, 2022).

2 European Policy Documents on Sustainability

Despite the highly rational approach to environmental issues, several European documents guide educational action on sustainability – Including Agenda 2030 and Green-Comp – whose structure, approach, and philosophy remain debatable. Yet, when read critically, they still contribute to pursuing education that embraces sustainability principles. Among Agenda 2030’s objectives, education plays a central role, particularly through objective 4, divided into ten sub-points. Point 4.7 emphasizes ensuring all learners acquire knowledge and skills needed to promote sustainable development by 2030 through education for sustainability, human rights, gender equality, global citizenship, and cultural diversity enhancement (UN, 2015). Meanwhile, point 4.c aims to significantly increase qualified teachers by 2030 (*ibid.*). These goals highlight the urgent need to improve teaching quality and innovate educational strategies, particularly through teacher training.

Publishing documents supporting professionals in promoting “green” skills represents a step forward, but much remains to be done – especially regarding how education professionals offer learners opportunities for growth, reflection, and co-construction of knowledge and identity.

The European Council Recommendations of May 22, 2018, also stress renewing learning methods in increasingly mobile, digital societies, calling for “exploring new ways of learning” (European Union, 2018, p. 2). Point 10 promotes adopting good practices to support teaching staff, improve their skills by updating tools and methodologies, and introduce innovative teaching and learning forms (*ibid.*).

Although Agenda 2030 claims to be an “action program for people, planet, and prosperity” – proposing to “heal and safeguard our planet” based on economic, social, and environmental pillars. In reality, it relegates environmental issues to merely nominal references, as Enver Bardulla (2021) lucidly observed.

This nominal treatment of the environment is evident in Agenda 2030’s numerous references to human rights protection while never mentioning rights realization and protection for the environment, animals, or plants. In the document’s Planet section (p. 2), we read:

We are determined to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations.

The choice of words such as ‘consumption’, ‘production’, and ‘management’ conveys the writers’ clear position on the planet to readers. Once again, the utilitarian purpose of natural resources emerges, perpetuating a posture of domination and control over them and the environment, confirming an anthropocentric, corporate presence that privileges social needs over ecological ones.

Stefano Righetti (cited in Iofrida, 2020) argues that sustainability continues to demonstrate its dependence on the principle of infinity underlying development. Righetti argues that sustainability often seeks reconciliation between global economic-

productive principles and associated resource consumption. However, true sustainability in resource consumption can only be defined relative to living organisms' biological rhythms and natural reproduction processes. Conversely, isolating biological system portions to impose mechanistic growth and development temporality proves unsustainable. This redefinition of the natural according to economic productivity logic compromises ecosystems' biological chain dynamic balance. This perspective represents an attempt to evade the problem by seeking illusory solutions in further technological advancement (*ibid.*).

The construction of knowledge and the educational communities in which this takes place are immersed and permeated by the dominant reference model, as education is a deeply cultural and socially connoted process. Indeed, examining Agenda 2030 – as Enver Bardulla also highlights (cited in Passaseo, 2021) – reveals that the education section reflects a purely transmissive conception favouring didactic approaches focused on the cognitive dimension to the detriment of affective and value dimensions. The performance dimension is also evident, with a focus mainly on products rather than educational processes.

3 Environmental Identity and Wild Pedagogies

What is fundamental to addressing environmental issues – and never emerges in the cited European documents – is constructing an environmental (Clayton, 2003) or ecological (Marković et al., 2024) identity, rather than strengthening skills that sometimes fail to permeate our encounters with the living world.

Susan Clayton (2003) argues that although the social dimension receives importance in identity structuring, the role of non-social – or at least non-human – objects in defining identity is often overlooked. Many individuals derive part of their sense of self from connections with specific natural elements: pets, trees, mountains, or geographical locations – a phenomenon also analysed as “place identity”. This aspect does not exclusively concern self-identified “environmentalists”; even individuals distant from ecological positions demonstrate, through behaviour or words, affection for natural elements. Susan Clayton proposes that

[environmental identity] is one part of the way in which people form their self-concept: a sense of connection to some part of the nonhuman natural environment, based on history, emotional attachment, and/or similarity, that affects the ways in which we perceive and act toward the world; a belief that the environment is important to us and an important part of who we are (2003, p. 45).

Environmental identity can therefore be described as a component of self-concept arising from a sense of connection with the non-human natural environment, constructed through experiences, perceived similarities, and emotional bonds. It influences how we interpret the world and guides our actions, based on the belief that the environment constitutes an integral part of who we are. Like other collective identities – such as ethnic or national identities – environmental identity provides a sense of belonging to

something larger and similarity with others, while varying in forms and subjective weight (ibid.).

In general, identity emerges not only from beliefs about oneself but also serves as a motivating force shaping relations with reality. In this sense, the natural environment constitutes a particularly significant source of identity-related beliefs, capable of guiding personal, social, and political behaviour.

In the special issue of the *Canadian Journal of Environmental Education*, the article “Experiences with Wild Pedagogies in Teacher Education in Botswana” by Kgosietsile Velepini and Mphemelang Joseph Ketlhoilwe demonstrates that exposing students to natural environments deepens their knowledge and understanding of their own ways of living. This shows that humans must experience the natural environment to recognize its importance, feeling themselves as integral parts of it rather than dominators exploiting its resources solely to satisfy their own needs.

Furthermore, while educational approaches have long cantered the learner and their needs as the driving force of design, Wild Pedagogies – translated into Italian as *Pedagogia della Selva* and understood as *Wilderness Awareness* – reposition wilderness (Selva) as the main protagonist (Cataldo, 2025). The wisdom of wilderness’s living community dictates learning cycles, timing, and possibilities in less anthropized contexts, returning us to a dimension where we serve the wilderness rather than vice versa. This practice weakens the anthropocentric position that coexists – more or less explicitly – with our paradigms of meaning and interpretation of facts.

4 Professional Development

Returning to the European references guiding educational action, numerous documents address key competences for lifelong learning, inviting education professionals to promote “multiple approaches and learning contexts” (European Union, 2018, p. 3). In line with these guidelines, the OECD identifies innovative teaching practices – embodied learning, multi/critical literacies, gamification, blended learning, experiential learning, and computational thinking (OECD, 2017) – for integration into teacher training. These strategies prove crucial for adult learning as well. As Knowles (1973) – a leading reference in the andragogical paradigm – observes, adults are motivated to learn when they experience needs and interests that learning can fulfil, with experience serving as the richest source of adult learning. This relationship between learning and experience has long been reflected upon, beginning with John Dewey, who in *Experience and Education* (1938) argues that learning emerges from lived experience.

Building on this approach, David A. Kolb developed Experiential Learning Theory (ELT), represented by the well-known four-stage cycle – concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb, 1984/2015; Kolb & Kolb, 2017). The theory was subsequently elaborated by authors such as Piergiorgio Reggio (2013) and Colin Beard (2023, 2026), contributing to redefining experience’s role in educational processes.

In this sense, experiential learning represents one way living beings – human and non-human – acquire knowledge, skills, and world understanding (Beard, 2026).

Therefore, connecting experiential learning with environmental identity development (Clayton, 2003) becomes essential, both theoretically and practically – especially given evidence (Prévot et al., 2018) showing that nature-contact experiences fundamentally integrate nature into personal identity, influencing life paths such as academic choices and subsequent professional careers.

There is a need to rethink teacher professional development by prioritizing experiential wilderness-based programs and informal outdoor settings, as these approaches demonstrate measurable impacts on educators' pedagogical confidence, beliefs, and classroom innovation. Recent studies highlight their effectiveness for early-career teachers: Lom and Sullenger (2010) advocate informal learning settings to foster professional growth during initial career stages, while UK research confirms their value in establishing pedagogical identity (Turner, 2006). Similarly, the North Carolina Outward Bound Educators Initiative revealed that participants experienced immediate, significant gains in confidence and intentions to implement experiential teaching methods immediately following wilderness immersion, although benefits showed some attenuation over time, underscoring the importance of sustained support for long-term transfer to classroom practice (Holland et al., 2022.). Complementary evidence from Finnish teacher trainees demonstrates that even brief, intensive forest-based professional development (3 hours) effectively builds innovation skills (Salmi et al., 2016), while wilderness programs combining immersion, peer debriefing, and reflection drive sustained pedagogical change (Scribner et al., 2020). These models enable teachers to experiment with hands-on methods – such as biodiversity audits and service-learning projects – that they can confidently transfer to classroom implementation with students (Widyantoro et al., 2025; Sims et al., 2020).

In this context, Wild Pedagogies are gaining increasing importance in environmental education. The study by Kgosietsile Velepini and Mphemelang Joseph Kethloilwe – based on student teachers' experiences – highlights how Wild Pedagogies promote experiential learning and enrich teaching and learning processes. These approaches enhance environmental education by enabling learning through direct experience, free from predetermined educational outcomes. The KyT project and Mokolodi Nature Reserve examples demonstrate how giving students space to observe, perceive, experiment, reflect, and freely connect with nature stimulates discovery processes, environmental reconnection, and independent opinion development.

Based on these findings, the authors strongly recommend integrating Wild Pedagogies into training programs for both future and in-service teachers, positioning them as central to disruptive pedagogical transformation. As Straker et al. (2017) note, exposure to diverse contexts and places challenges the status quo and redefines ontological positions. Adopting Wild Pedagogies – and/or informal contexts for teachers' professional development through experiential learning – can thus promote more effective learning forms and encourage attitude changes toward the environment. In this context, extended field experiences in natural settings such as forests or reserves offer unique opportunities for students and teachers to transfer these approaches into practice and develop experiential learning rooted in practical activities (Widyantoro et al., 2025; Sims et al., 2020). Indeed, students and teachers participating in experiential activities are expected

to show significant changes in environmental identity perception compared to peers not participating in such experiences².

5 Conclusion

Although this contribution is theoretical in nature, the analysis highlights the urgent need to invest in experiential training programs (both indoor and outdoor) primarily aimed at in-service teachers across schools and universities, as well as pre-service teachers.

International literature shows a positive correlation between participation in experiential courses and teachers' willingness to renew their educational practices (Barrable & Lakin, 2020). However, in the Italian context, such approaches remain marginal and undervalued, despite widespread recognition that learning in natural environments promotes deeper, more meaningful learning processes (Morse et al., 2021).

Including alternative spaces to traditional classrooms in teacher training and in-service programs represents a necessary step toward addressing the "spiritual" crisis Orr identified.

Teacher training should therefore be reoriented toward models that systematically integrate experiential and reflective dimensions with situated practices. This requires not merely adding activities but rethinking training as a process that values connection with the environment and "nature", fostering the rediscovery that we are part of it, just like an ant, a stone, or a sage plant.

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² This hypothesis is currently under empirical investigation through my doctoral research project, which examines participants in a master's-level training course on environmental education delivered through experiential learning methods in both indoor and outdoor settings, comparing attending students (treatment group) and non-attending students (control group).

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