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SUSTAINABLE LEARNING
BRIDGING THE GAPS

Bridging the Gap Between Formal, Informal and Non-Formal Learning

A New Learning Ecosystem for Young People

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Abstract

This article presents findings from the Erasmus+ project "Sustainable Learning" (2023–2026), a qualitative, paradigmatic single case study involving six partner organisations across three countries: the Netherlands, Italy and Norway. The project examined how formal, informal and non-formal learning can be integrated into a holistic, sustainable learning ecosystem for young people aged 15–25. The main research work was completed during the period April 2024 to February 2026.

The research draws on focus group interviews, individual interviews and surveys involving 123 participants, including young people, teachers, school leaders, youth workers and stakeholders from public and private sectors. Through thematic analysis, six macro indicators were identified as critical for designing inclusive and sustainable learning environments.

It is important to note at the outset that our broader research programme encompassed a wide range of materials and approaches, including learning settings entirely outside of school. However, in this article we have consciously chosen to focus on a learning system that can—where relevant—be connected to schools, as this is where our findings suggest the greatest potential for synergies and systemic impact.

Keywords: *Erasmus+, environmental and educational sustainability, authentic learning ecosystems, non-formal, informal and formal learning, macro indicators, micro assessment, sustainable/green knowledge development, as well as interaction, participation, inclusion and co-creation as elements of a learning ecosystem.*

1. Introduction

1.1 Background

In an increasingly polarised and complex world, young people must develop knowledge and competencies that are genuinely adapted to the contexts in which they live and learn. The traditional school system, shaped largely by industrial-era logic, has changed remarkably little over several centuries and now struggles to keep pace with the realities that young people face. For the most part, formal schooling continues to be characterised by deductive learning processes—moving from theory to application—while inductive and abductive approaches, which begin from experience and observation to generate new understanding, remain underused.

The Erasmus+ Programme, which funds this project, is built on the recognition that non-formal learning is not merely supplementary to formal education but is of equal educational value. Our broader research programme reflected this perspective: we developed a wide range of materials and conducted research across multiple learning settings, including those entirely outside of school. However, in this article we have made a conscious choice to focus on a learning system that can—where relevant—be connected to schools. This decision is based on our findings: we see the greatest potential for broad and systemic impact in approaches that engage with, and gradually transform, formal educational structures rather than bypassing them entirely.

The Erasmus+ programme for 2021–2027 aims to build a more inclusive, green, digital and democratic Europe by equipping young people with future-oriented skills, promoting active citizenship and reducing social barriers. Its systemic goals include reducing youth unemployment and preventing early school leaving through practical experience, international exchange and the professionalisation of youth work. The programme operates through four horizontal priorities:

- Inclusion and diversity: ensuring equal access for vulnerable and disadvantaged young people.

- Environment and sustainability: developing green skills and sustainable practices.
- Digital transformation: expanding digital competence and integrating digital tools in learning.
- Democratic participation: actively engaging young people in public debate and decision-making.

The “Sustainable Learning” project was designed to address as many of these objectives as possible by mapping, developing and testing a learning-ecological programme that bridges non-formal, informal and formal learning, organised around the themes of sustainability and green development.

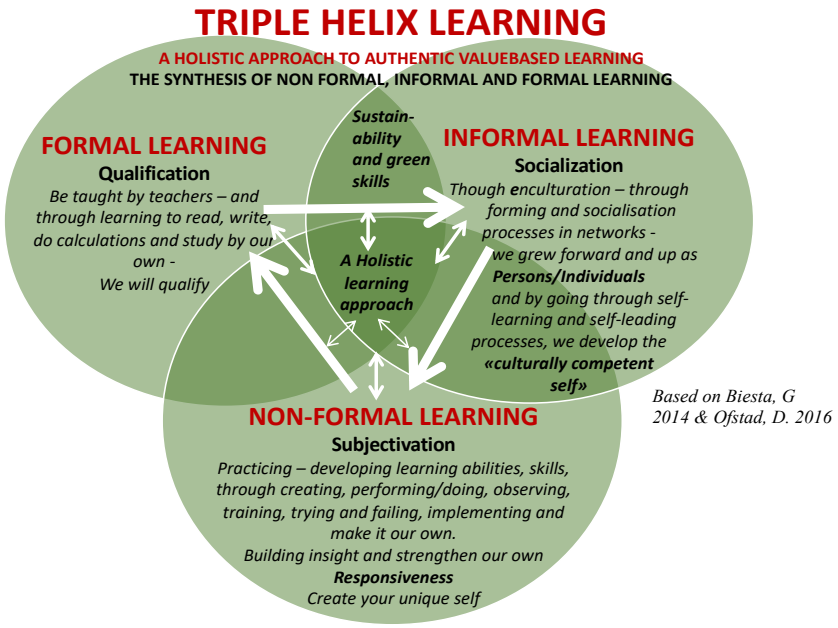
Our research confirms that European schooling is predominantly governed by deductive approaches, leaving limited space for inductive and abductive learning. When practice and experience are absent from education, knowledge transmission tends to favour those who are already skilled at translating theory into understanding—those who are, in a sense, “good listeners” in the classical schoolroom sense. This structural bias means that many learners experience what Aaron Antonovsky’s salutogenesis theory (1987) describes as a lack of coherence: the curriculum does not feel comprehensible, manageable or meaningful to them. The result is a kind of “learning vacuum”, from which many young people never fully recover.

To equip the next generation to navigate complexity, uncertainty and ecological challenges, schools must evolve into holistic learning ecosystems where authentic, experience-based learning drives knowledge development. It is this challenge that the “Sustainable Learning” project addresses.

The project is led by Bloom Foundation and ROC Mondriaan (Netherlands), Associazione KORA and CPF Como (Italy), and FREM Bodø AS and Dag Ofstad Kompetansemegleren (Norway).

1.2 The Core Challenge

The fundamental problem this project addresses can be described simply: schools systematically underestimate how different learners are from one another, and how diverse their learning needs actually are. Traditional schooling tends to operate on the implicit assumption that everyone learns best in the same way, in the same room, at the same time, through the same activities. Decades of research across EU and EFTA countries demonstrate that this assumption is both empirically false and pedagogically damaging.



***Aristoteles stated:** That theory and practice are not separate worlds, but that they mutually fertilize each other, where theory rests on a foundation of practice – (Brattgjerd, M 2025 - SUP)*

Figure 1: The Holistic Ecosystem — Why and What Purpose: Defines the overall philosophy of learning (Biesta + Aristotle). Shows how informal, formal, and non-formal learning merge into a whole.

Figure 1 illustrates a synthesis between classical and modern perspectives on knowledge and education. Aristotle's distinction between theoretical knowledge (Episteme), practical skill (Techne) and moral wisdom (Phronesis) is echoed in the educational philosopher Gert Biesta's three purposes of education: qualification, socialisation and subjectification (Biesta, 2010, 2014). For learning to be genuinely sustainable, these three dimensions must work together: learners must not only know what is right but have the skills to act on it and the moral clarity to make good choices—every day.

This holistic ecosystem answers the WHY and WHAT and defines the overall learning philosophy. It shows how the three forms of learning merge into a whole. It is the theoretical and value-based foundation the project partners set out to develop a Sustainable Learning Model (SLM): a subject-specific curriculum framework that treats sustainability not as a fixed body of content but as an entrepreneurial educational journey for students (Ofstad, 2016, p. 198). By linking classical forms of knowledge to contemporary sustainability goals, the SLM framework aims to fill the space between theory and practice, supporting young people in becoming responsible and competent social actors.

The statistics on young people who are not in education, employment or training (NEET) illustrate the urgency of this challenge. In Norway, approximately 111,000 young people aged 15–29 (6.8%) are in the NEET category (Eurostat/NAV, 2024). In the Netherlands the figure is 155,000 (4.9%), and in Italy it reaches 1.3 million young people (Eurostat, 2024). These numbers represent not only individual loss but significant social and economic costs.

Central research question:

> *"What learning measures can be implemented to create a holistic and sustainable learning and development environment that accommodates formal, informal and non-formal learning for young people aged 15–25 who do not find their place in the traditional education system?*

1.3 Theoretical Framework

The theoretical foundation of this project spans from antiquity to the present, drawing on a tradition of thought that consistently prioritises experience, practice and social interaction as the foundations of real knowledge.

Aristotle's empiricism—his insistence that knowledge begins with observation of the real world, not with abstract reasoning alone—remains the starting point. His virtue ethics and his defence of moderate democracy as an ideal form of governance provide an important philosophical backdrop for the project's commitment to inclusion and democratic participation.

Lev Vygotsky's sociocultural learning theory (1896–1934) is equally central. Vygotsky argued that learning is most powerful in social settings characterised by interaction, support and meaningful activity. Within what he called the "zone of proximal development," learners are supported in activities that lie just beyond what they can manage alone. Our research consistently confirms that many young people—particularly those who struggle with formal schooling—learn best in social, practical and supported settings.

John Dewey's philosophy of learning by doing, Jean Piaget's constructivism, Michael Polanyi's tacit knowledge and Albert Bandura's work on self-efficacy (1997) round out the project's classical theoretical foundation. Bandura's emphasis on building self-mastery through experience, through positive expectation and through trial, failure and evaluation is particularly relevant to the populations this project works with.

More recent contributors include Martin Seligman's positive psychology, John Hattie's research on visible learning, and Carol Dweck's work on fixed versus growth mindsets. Gert Biesta's three educational purposes—qualification, socialisation and subjectification—provide the clearest modern articulation of what holistic education should achieve.

Finally, the project is explicitly aligned with the EU Commission's strategic response to what it describes as a multidimensional skills crisis. The "Union of Skills" initiative (2025) identifies four key pillars: building basic skills, upskilling and reskilling for the digital and green transitions, spreading skills to strengthen competitiveness, and attracting and retaining talent. Our framework speaks directly to each of these.

This range of perspectives is brought together in what we call the "knowledge paradigm of authenticity": an educational space where theory, practice and moral wisdom reinforce one another, and where learning is understood as an irreducibly social and experiential process.

This leads us into a theoretical intersection between knowledge innovation and holistic education, which constitutes the core analytical framework of this study. Within the context of the Triple Helix model, knowledge innovation is conceptualised as the systemic disruption of traditional, fragmented knowledge hierarchies. This innovation is operationalised through holistic education, which functions as the pedagogical vehicle for change. An educational framework becomes truly holistic only when it establishes epistemic parity—bridging the scholastic divide by granting equal ontological status to formal theory (episteme), non-formal practice (techne), and informal, experience-based reflection (phronesis). Thus, holistic education is not merely an alternative instructional method, but the very infrastructure required to generate sustainable knowledge innovation and foster individual responsiveness.

2. Method

2.1 Related Research

There is a substantial European and international knowledge base concerning young people aged 15–25, non-formal learning and inclusion. The most important strategic framework is the EU Youth Strategy (2019–2027), which addresses youth unemployment, broad competence development, prevention of social exclusion, and

democratic engagement. The strategy rests on three core components: ensuring inclusion regardless of background; promoting a holistic approach to learning that bridges formal, informal and non-formal learning; and strengthening young people's democratic understanding and engagement.

The European Youth Guarantee commits to ensuring that all young people under 25 receive an individually tailored offer of work or education within four months of becoming unemployed or leaving school. The Youth Strategy's 11 European Youth Goals, developed through a dialogue involving over 50,000 young people across Europe, serve as the compass for this work.

Cedefop's European Inventory of Validation of Non-Formal and Informal Learning (most recently updated in 2023) documents how formal education, working life and the voluntary sector can be linked across all EU/EEA countries, and identifies three key priorities for 2023–2030: personalised learning, breadth-based learning across all life domains, and digital transformation to expand access to educational resources.

The OECD's "Future of Education and Skills 2030" framework draws attention to "student agency"—the need for learners to act sustainably in a complex world—and proposes that learning should take place through an "Anticipation–Action–Reflection" cycle. This aligns closely with our inductive and practice-based approach.

Norwegian research institutions including FAFO and NIFU have contributed important empirical evidence on alternative learning arenas, the trajectories of young people who leave school and the outcomes of various non-formal learning initiatives. Across these studies, four findings consistently emerge: formal learning alone does not reach all students; non-formal and informal learning create motivation, mastery and relevance; integrated models deliver the best results; and validation of prior experience strengthens inclusion and completion.

2.2 Research Design

Current education is deficient because it fails to grant parity of esteem to non-formal and informal learning dimensions. The system fails to equalise the status of tacit, experience-based, practical knowledge with formal theory.

The study covers three countries—Italy (EU), the Netherlands (EU) and Norway (EEA)—and is situated within the Erasmus+ programme (2023–2026). To ensure a holistic approach to the learning ecosystem, the research design is built around a partnership that represents the three pillars of the Triple Helix model: the education sector, civil society and non-governmental organisations, and the world of work.

The six partner organisations were deliberately selected to reflect this breadth:

- Bloom Foundation (Netherlands) represents civil society and non-formal learning, focusing on recognition of non-formal learning for vulnerable young people, particularly NEETs.
- ROC Mondriaan (Netherlands) represents the formal education system as one of the largest vocational education institutions in the Hague area, with over 21,000 students.
- Associazione KORA (Italy) is a training and education farm promoting sustainable lifestyles and social inclusion through non-formal experiential learning.
- CPF Como (Italy) is a formal vocational training agency in the hospitality, catering and personal care sectors, serving as a gateway to recognised qualifications.
- FREM Bodø AS (Norway) is a work inclusion company facilitating tailored employment and training for people who face barriers to entering the labour market.
- Dag Ofstad Kompetansemegleren (Norway) supports organisations with projects in education, knowledge development and social innovation.

Together, these six partners form a Triple Helix cluster representing civil society (Bloom and KORA), the formal education sector (ROC Mondriaan and CPF Como) and the world of work and innovation (FREM and DOK). This composition is not coincidental: it reflects the project's theoretical framework and creates a unique breadth of perspective.

The non-formal pillar, represented primarily by Bloom Foundation and Associazione KORA, functions as the project's "innovation labouratory". It is in this space—between the traditional school and real life—that methods for inclusion and learner agency are developed in close collabouration with young people. The value-based informal and non-formal learning arenas embody what could be called a modern Aristotelian spirit: Phronesis and Techne (moral and practical wisdom) are given space to develop before being connected to the formal system's domain of Episteme.

2.3 Study Design

The study is designed as a qualitative, experience-based, paradigmatic single case study with an embedded design (Yin, 2003). The aim is to investigate the possibilities for education as a whole by examining how different forms of knowledge—formal and propositional knowledge expressed in language and text, and informal and non-formal non-propositional knowledge grounded in experience and practice—can be integrated into a coherent learning system.

The case study is held together by an internal logic that connects research questions, phenomena, data collection, analysis and generalisation. Following Bent Flyvbjerg (2006), we treat the case as "the concrete": the focus is on the specific, on individual cases in their actual contexts. The paradigmatic case does not seek to confirm existing theory but to develop a prototype or model example that can serve as a reference point for the field.

Data were collected using focus group interviews (Brinkmann & Tanggaard, 2010), semi-structured individual interviews and questionnaires. The research also drew on document studies of relevant public reports, policy documents and completed projects. In the course of the project, we have adopted what might be described as a bricolage approach (Denzin & Lincoln, 1994): assembling a range of perspectives and data types, all of which illuminate practical knowledge grounded in concrete professional experience.

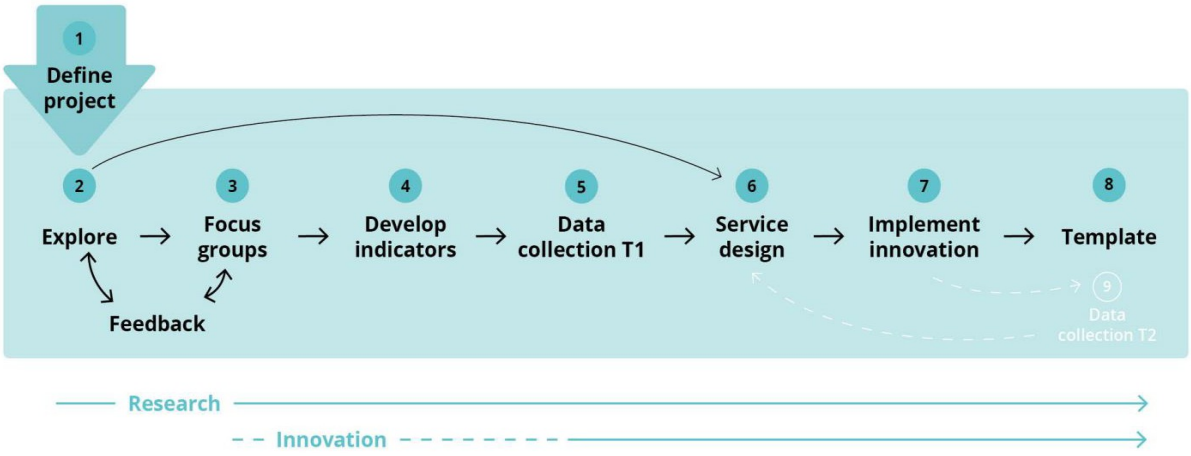


Figure 2: Research and Innovation Cycle Reference: Eide, A. H, Ofstad, D, Støylen, M, Hansen, E, Høiseth, M (2022)

2.4 Participants

A total of 123 people participated in the data collection across the three countries. Participants included young people in education and training, young people in work training schemes, teachers, counsellors, youth workers, school leaders, and stakeholders from business, the public sector and the voluntary sector. All

participants signed consent forms prior to the interviews. Data collection took place between April/May and mid-October 2024.

Countries	Partner	Focus groups	Individual interviews	Questionnaires	Good practice examples
Italy	AOL — Agenzia per la Formazione, l'Orientamento e il Lavoro della Provincia di Como	1 (9 informants)	3	17	8
Italy	KORA — Associazione di Promozione Sociale KORA, Passignano sul Trasimeno	1 (7 informants)	1	0	5
Netherlands	Stichting Bloom / ROC Mondriaan	3 (24 informants)	5	6	13
Norway	Dag Ofstad Kompetansemegleren / FREM Bodø AS	3 (approx. 15 informants)	6	13	19
Total		8 (55 informants)	15	53	60

Figure 3: Overview of data collection by country, partner and method

The data collection table (Figure 3) shows the distribution across the six partners: 8 focus group interviews (with approximately 55 participants in total), 15 individual interviews and 53 questionnaires were conducted, along with the collection of 60 best practice examples from across the partner countries and beyond.

2.5 The Research Process

The methodological process was iterative, consisting of repeated cycles of development, testing and reflection that allowed us to adjust our approach continuously based on experiences from practice. The project proceeded through three phases.

In Phase 1, we conducted an extensive research survey, approaching the problem field from macro to micro: beginning with the overarching structural and policy landscape and working toward the level of individual learning experience. Surveys and interviews were conducted broadly with partners, partner networks, young people, teachers, school leaders, cultural and youth workers and stakeholders from the public, voluntary and business sectors.

Phase 2 was the analysis and documentation phase. The full interview material was collected, reviewed, operationalised and made available for knowledge sharing across partners. It was during this phase that the six macro indicators and their associated variables emerged from the data. The analysis followed a thematic approach (Braun & Clarke, 2006): becoming familiar with the data, generating and clustering codes into themes, critically reviewing and refining themes, and naming them.

Phase 3 was the pilot phase. Here, alternative training concepts were tested in practice, giving participants the opportunity to experience and contextualise learning through ongoing work processes that engaged all three forms of learning simultaneously. Hybrid courses were conducted for young people, teachers and supervisors. A total of 43 young people completed pilot programmes, which included practical tasks followed by joint evaluation using micro-assessment methods. Upon completion, participants received assessment points that highlighted newly acquired competencies in more differentiated ways than traditional grading allows.

The implementation of the study was shaped by limited project resources, which required a distributed model of digital collabouration between partners. This approach presented methodological challenges, particularly in interpreting contextual nuance in material collected by others. These challenges were

addressed through systematic review processes and methodological perseverance, and they have usefully illuminated the practical barriers and possibilities of international digital research collabouration under resource constraints.

3. Results and Model Development

This chapter presents the results of the analysis and explores how a holistic education model can leverage the dynamics between formal, non-formal and informal learning. The results are more than a summary of data: they offer an ‘X-ray’ of an education system caught between traditional knowledge transmission and future demands for sustainable autonomy.

3.1 Analytical Framework: Macro Indicators and Thematic Clusters

The analysis of the qualitative material identified six macro indicators that represent the most critical strategic dimensions for creating an inclusive, authentic learning ecosystem. These indicators are not passive categories but active signals of ongoing learning quality and progress. They were identified at the first level of analysis. Subsequently, 28 variables were derived from these indicators, from which specific measures were in turn developed. The use of the term “indicator” rather than “category” is deliberate: indicators capture trends and movements in development over time. Figure 4 provides a pictorial overview of the six macro indicators and their relationships.

Figur 4.

THE RESEACH ANALYSING CATEGORIES SUSTAINABLE LEARNING (ERASMUS +)

NFL = Non-Formal learning
IFL = Informal learning
FL – Formal Lerning

Figure 4: The six macro indicators of the Sustainable Learning Model

The table below (Figure 5) illustrates how specific quotations from the research material were coded into thematic clusters and assigned to macro indicators. This Analyse Grid demonstrates the translation from raw empirical data to conceptual structure.

Quote	Thematic Clusters	Macro Indicators	Person, age, nationality
"I dare to conclude that education is not inclusive for everyone – no one is excluded voluntarily." "Why do we need to learn everything in the classroom?" "Teachers should have more freedom to innovate and adapt teaching to pupils." "Learning is forced on the learners."	b. Individual learning paths d. Increase motivation and ownership c. Work with challenges related to personal talents or interests a. Offers various learning settings and activities	Autonomy and choice for young people	Male 40+ (NL) Youth 16+ (NO) Female 30+ (NL) Female 50+ (I)
"The more differences we encounter, including conflicting ideas, the better." "I have many weak students and must teach practically because they learn better by doing."	c. System for validating what has been learned a. Good facilitation of training route with clear objectives	Planning and design	Male 50+ (NL) Male 40 (I)

Quote	Thematic Clusters	Macro Indicators	Person, age, nationality
"The research focuses on which important elements of non-formal learning are useful in developing young people's skills." "There is no room for thinking outside the box."	c. Interactive and practical d. Supervisor/coach for reflection and support	Learning requirements	Female 50+ (NL) Woman 40 (I)

Figure 5a: Analyse Grid — example of citation analysis (Macro Indicators 1–3)

Quote	Variable	Macro Indicator	Person, age, nationality
"There are initiatives, but they remain fragmented – often a lack of time, place and money." "Regulations and standardisation can inhibit innovation and inclusion."	a. Place and time for teachers b. Sustainability a priority at all levels	Management support	Woman 40 (NL) Male 50+ (NL)
"Which important learning elements in non-formal learning can be linked to the theme of sustainability and green skills?" "Sustainability is very important and I hope to get more room for it in education."	a. Methods b. Topics c. Set of green skills	Sustainability	Male 50+ (NO) Female 30+ (NL) Male 40+ (NO)
"We lack validation systems for non-formal learning." "We need good holistic curricula for sustainability and green skills bound together in projects with non-formal, informal and formal task structures."	a. Validation systems — non-formal learning b. Set of green skills f. What do we need to take into account?	Validation	Male 50+ (NO) Male 40+ (I) Male 50+ (NO)

Figure 5b: Analyse Grid — example of citation analysis (Macro Indicators 4–6)

3.2 Findings: The Six Macro Indicators

The six macro indicators that emerged from the analysis are presented below, each with its associated thematic clusters and concrete design-based interventions. This approach draws on Design-Based Research (DBR) methodology, in which empirical insights are actively translated into formative design principles and practical pedagogical interventions.

Macro Indicator 1: Autonomy and Choice for Young People

The research consistently showed that young people—particularly those who have become disengaged from formal learning—thrive when they have genuine agency over their learning. The four thematic clusters associated with this indicator are:

- Offering diverse learning environments and activities: moving away from "one size fits all" by creating physical and digital spaces that allow for deep concentration, practical work and social interaction simultaneously.
- Individual learning paths: implementing flexible curricula where progression is measured by demonstrated mastery rather than time spent.
- Working on challenges linked to personal talents or interests: using project-based learning where problems are drawn from the learner's own everyday life or passions.
- Increasing motivation and ownership: involving young people in the actual design of their learning, not just its execution.

Macro Indicator 2: Planning and Design

Effective holistic learning does not happen spontaneously: it requires careful, forward-looking planning by experienced and well-prepared educators. The thematic clusters here include well-structured course plans that define specific learning goals (including green skills) from the outset; competence networks that enable experienced teachers to act as mentors for newer colleagues; integrated digital logbooks for ongoing competence documentation; peer learning activities; interdisciplinary collabouration with external partners on real sustainability challenges; and the use of digital tools for co-creation rather than mere information delivery.

Macro Indicator 3: Learning Requirements

The research confirmed what learning science has long established: many learners need to experience knowledge concretely before they can engage with it theoretically. Key design interventions include moving teaching out of the classroom into workshops, labouratory settings or outdoor environments; regular "reflection stops" after practical sessions; activities requiring active participation and physical engagement; trained mentors and coaches who ask open-ended questions rather than providing ready-made answers; and a deliberately cultivated "culture of failure" where experimentation is valued over flawless performance.

Macro Indicator 4: Management Support

Sustainable change in education requires active support from leadership at all levels. Without institutional support, innovative approaches remain fragile and isolated. The thematic clusters here include dedicated time and space for teachers to plan and collabourate across disciplines; the integration of the UN Sustainable Development Goals into institutional business plans; formal partnership agreements with external actors; and the recognition of active citizenship as part of the assessment framework, on equal footing with academic achievement.

Macro Indicator 5: Sustainability

Sustainability is not merely a topic in this learning model: it is the organising principle that gives the entire framework coherence and relevance. Learning methods should follow circular principles that trace the full life cycle of a challenge or product. Themes should be locally rooted and meaningful to the learner. Specific green competencies should be drawn from established frameworks such as GreenComp, encompassing systems thinking, ethical reflection and practical ecological literacy.

Macro Indicator 6: Validation

For young people whose competencies have developed outside formal educational pathways, recognition and validation are not peripheral concerns but conditions for continued engagement and progress. The thematic clusters here include digital open badges and competency certificates; a "skills bank" where learners collect evidence of completed tasks; formal dialogue with the education system to seek recognition of non-formal project participation; self-assessment and peer review as integral tools; portfolio and multimedia documentation; and validation processes that are fair, inclusive and recognised by both educational institutions and future employers.

3.3 The Sustainable Learning Model: A Learning Eco-Structure

The six macro indicators and their associated variables and measures together form the foundation of what we call the "Sustainable Learning Model" (SLM). Figure 6 presents a visual overview of this model as a learning ecosystem: a dynamic network of learners, educators, mentors, communities and resources that interact in an intentionally designed environment to create, share and develop knowledge.

The model is built on the Triple Helix principle: three pillars—the formal education system, civil society and non-formal learning organisations, and the world of work—interact continuously, each enriching and challenging the others. Sustainability and green skills are embedded as cross-cutting themes throughout. The

model is designed to be adaptable to different national and institutional contexts while maintaining its core structural logic.

The eco-structure formulates the practical operationalisation of this philosophy, establishing a concrete structural architecture for sustainable learning. By incorporating John Dewey's classic framework of action-oriented learning ("learning by doing"), the model aligns human action with the action-research character of the Sustainable Learning Model. This operationalisation is explicitly linked to the organisational structure through strategic forums, incubators, knowledge tanks, and project-oriented work, designed to stimulate goal- and action-oriented agency among young people.

3.4 Synthesis: Fostering Responsiveness through Epistemic Parity

The six macro indicators presented above do not merely function as isolated pedagogical interventions; rather, they form an interconnected ecosystem that directly addresses the foundational goal of learning: building the individual's ability to respond, or responsiveness (Lindseth, 2015). As demonstrated through the empirical data, current formalised education systems suffer from a significant deficit because they fail to equalise the status of informal and non-formal knowledge dimensions. By over-prioritising theoretical reproduction (episteme), traditional schooling risks passive alienation among learners, stifling their agency and holistic development.

Through the lens of Aristotelian philosophy, the macro indicators operationalise a shift toward epistemic parity. Macro Indicator 1 (Autonomy and Choice) and Macro Indicator 3 (Learning Requirements) explicitly reject a "one size fits all" paradigm, demanding that experiential, action-based knowledge (techne) and situational wisdom (phronesis) are granted equal value to formal theory. When young people experience that their learning environment addresses real-world, localised challenges through practical testing and structured "reflection stops", they are no longer just absorbing information—they are actively practising their responsiveness.

The high degree of convergence across our qualitative surveys and triangulated interviews confirms that true responsiveness cannot be cultivated in a vacuum. It requires a safe yet authentic space where formal curriculum, non-formal community practices, and informal tacit experiences melt together. Consequently, the paradigmatic case examined in this study serves as a critical blueprint for knowledge innovation, proving that establishing parity between all three forms of learning is a necessity for equipping young people to respond meaningfully to the complexities of tomorrow.

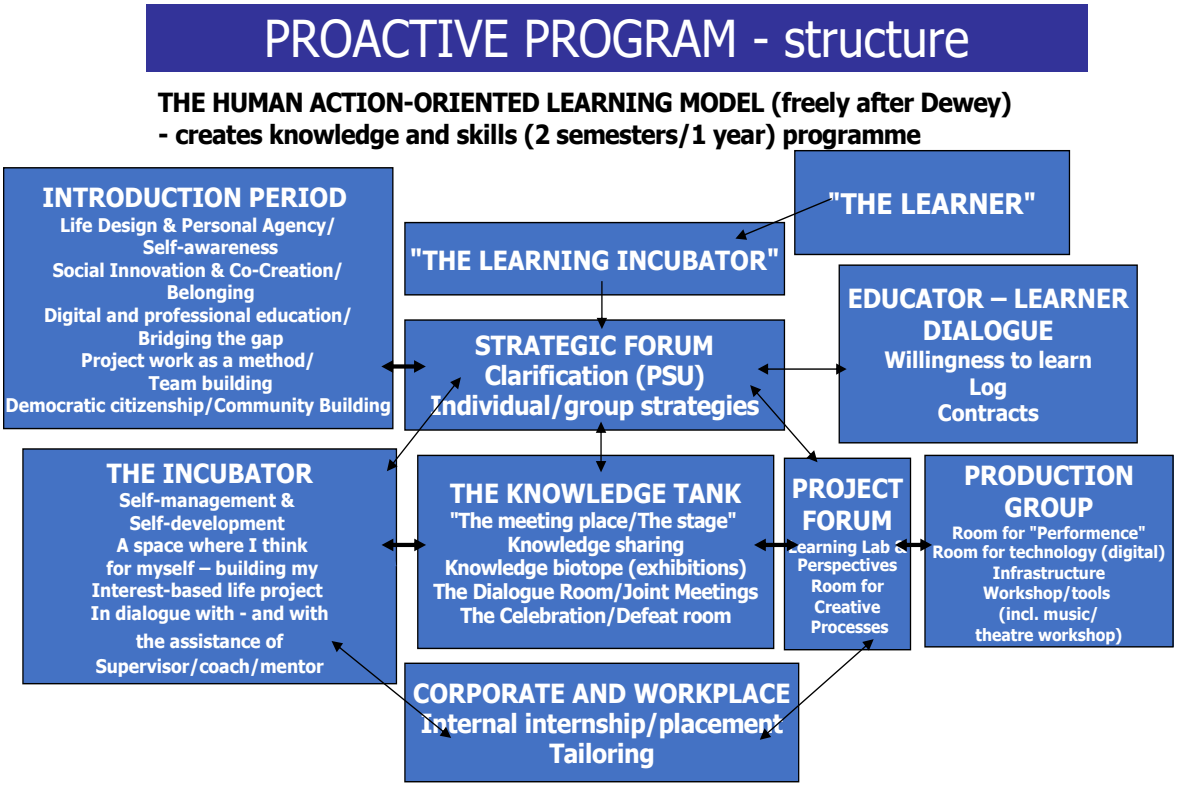


Figure 6: The Sustainable Learning Model — a holistic learning ecosystem integrating formal, informal and non-formal learning

3.5 The Proactive Programme (PAP): A Prospective Design Concept

Note to readers: The following section describes an idea that emerged during the research and writing process, rather than a formally agreed output of the project group. It is presented here as a potential future direction rather than as a core project outcome.

The Proactive Programme (PAP) is a concept for a human-action-oriented learning environment designed for young people who have left the linear education system and not yet found stable anchoring in working life. The goal is to support these young people in becoming autonomous actors who can actively shape their own futures and contribute to their communities.

In its proposed form, PAP would accommodate approximately 20 participants, organised into four teams of five. Each team would be supported by one teacher or facilitator. The programme would run over two semesters (one year) and would be structured around five thematic areas:

- Life design and personal empowerment / Self-awareness
- Social innovation and co-creation / Belonging
- Digital and professional education / Bridging the gap
- Project work as a method / Team building
- Democratic citizenship / Community building

The programme would operate through four interconnected learning spaces: the Strategic Forum, the Incubator, the Knowledge Tank, and the Project Forum and Production Group. Company and workplace placements would form the final pillar, giving participants experience in real professional contexts.

> *"For example, I had students who wanted to make their workplace out of a car. They went to a scrap dealer, bought a car, and learned a lot formally and non-formally along the way. They faced challenges, frustrations and technical issues, all of which contributed to their learning. This type of experiential learning is very powerful.*
> — Male, 40+, Netherlands

Each participant would develop a Personal Strategic Development Plan (PSU), which would serve as the main tool in the learning process: a living document where new experiences and knowledge are continuously logged. We offer this concept as a direction worth pursuing, grounded in the empirical findings of the project and consistent with the SLM framework, but explicitly requiring further development, piloting and evaluation before it could be considered a validated model.

4. Discussion

The title of this article points to a fundamental tension in contemporary education: a system that was designed for a different era, still largely operating on its original logic, confronted by a world that has changed beyond recognition. At the heart of this tension lies an epistemological question: what counts as valid learning?

The traditional school is built on industrial logic that can be traced to the early nineteenth century. The needs of industrial society at that time shaped an educational system characterised by standardisation, discipline, uniformity and obedience—a school whose purpose was to produce a predictable, compliant workforce. Many of these structural features persist today. The physical space of the classroom itself has changed remarkably little, and continues to constrain the flexibility, flow and collabouration that learning increasingly requires.

> *"I want to defend the teaching profession a bit here. Most teachers I meet actually prefer to go outside—but somehow, caught up in the daily routine, they stay in their classrooms because the next class is coming soon. I think most teachers genuinely prefer to organise their teaching in informal ways as well.*
> — Teacher, long experience

This observation captures something important: the problem is not primarily one of teacher motivation or competence. It is structural. Teachers are embedded in a system that makes it difficult to do what they know would be better for their students.

The feedback from our research participants is clear and consistent. Especially following the enforced shift to fully digital and asynchronous learning during the COVID-19 period, the need for established frameworks that support experiential knowledge sharing, socialisation through co-creation and activities that engage tacit knowledge became starkly visible.

> *"A classroom with very, very different problems and personal profiles. With one teacher. If you have to teach 20 to 25 people, very different from each other, often with several different difficulties—you have to adapt, but you can't adapt when you're alone with 20 to 25 students.*
> — Female, 50+

This description leads us to the core theoretical argument of this article. We suggest that contemporary education operates with two largely separate paradigms of knowledge. The first is the scholastic paradigm: the domain of formal, propositional knowledge expressed in language, text and theory. Bourdieu explains

the scholastic paradigm as a phenomenon where schools take for granted a freedom from practical necessities, treating the world as an intellectual object rather than a practical reality. The second is the non-scholastic paradigm: the domain of informal and non-formal learning, of socialisation and subjectification, of tacit knowledge and practical wisdom acquired through lived experience.

Our proposal, emerging from the research, is the Triple Helix Learning Model: an overarching paradigm that encapsulates and integrates both existing paradigms in a dynamic, mutually enriching relationship. The model is built on three premises:

- The problem: contemporary society operates with two separate knowledge paradigms—the scholastic and the non-scholastic—that do not communicate sufficiently with each other.
- The consequence: exclusive reliance on either paradigm produces incomplete learners: theorists who cannot act, or practitioners who lack theoretical foundation.
- The solution: a Triple Helix Learning Model that encapsulates and integrates both, ensuring that education fulfils all three of Biesta's purposes—qualification, socialisation and subjectification—in a dynamic, ongoing process.

Sustainability and green skills are placed at the intersection of these paradigms. The school of the future needs to move from being an isolated institution to becoming an open learning network. Forms of documentation such as podcasts, videos and team presentations should be recognised as genuine evidence of competence. Entrepreneurial projects, workplace practice, volunteering and community development should be recognised elements of the educational pathway.

5. Conclusions

The "Sustainable Learning" project has demonstrated that it is possible to repair what might be called a "broken willingness to learn." By bringing together formal, non-formal and informal learning within a coherent ecosystem organised around sustainability, the project has shown how young people who have been disengaged from education can rediscover motivation, develop genuine competencies and find their place as responsible social actors.

Our central finding is that school dropout is not primarily a problem of individual young people. It is a systemic error in a theory-heavy school that does not accommodate the full diversity of human learning. When learning becomes contextual, meaningful and organised around dynamic teams working on real challenges, the structural conditions for exclusion disappear.

Concretely, this project has produced six macro indicators and 28 associated variables that together constitute a strategic planning tool for inclusive, sustainable education. These indicators—autonomy and choice for young people; planning and design; learning requirements; management support; sustainability; and validation—can be used at both system and institutional level as a checklist of what works.

If European education systems succeed in implementing these principles, the following outcomes become achievable:

- More young people will find their place in hybrid educational positions—both within and beyond the school's formal learning context.
- More young people will be able to develop their abilities and talents in ways that formal schooling cannot offer.
- Comprehensive education can promote a more holistic learning environment, where the local community and its resources become a natural extension of the educational framework.

- Holistic education creates greater diversity of learning experiences for both young people and teachers, generating new perspectives and innovative solutions to genuine social challenges.
- The holistic approach contributes to building the sustainable, green skills that our global community urgently needs in order to meet the UN Sustainable Development Goals.

The scale of the challenge should not be underestimated. In the EU, approximately 8 million young people aged 15–29 are currently in the NEET category—a number roughly equivalent to the population of London. The estimated lifetime social cost associated with this group is approximately 12 billion euros.

> *"Sustainable learning is not just an educational project for a few, but a necessary paradigm shift for a sustainable society where no talent is allowed to go to waste.*
> — Male, 70+

This is the direction we are pointing. The task now is to build the path.

Final Words

Having completed this research journey, we are left with a question that Martha Nussbaum posed with characteristic directness in Not for Profit: Why Democracy Needs the Humanities (2010):

> *"Thirsty for national profit, nations and their education systems are mercilessly discarding the skills needed to keep democracies alive. If this trend continues, nations around the world will soon produce generations of useful machines, rather than citizens who can think for themselves, critique tradition, and understand the significance of the suffering and achievements of others. The future of the world's democracies is at stake.*
> — Martha Nussbaum

This is the wider context in which the work of "Sustainable Learning" takes place. Education is not merely a technical or economic challenge. It is a democratic and moral one. The question of who gets to learn, in what ways, and with what recognition is ultimately a question about the kind of society we want to live in. The case for investment in inclusive, holistic learning is not only educational and ethical: it is profoundly economic, as it transforms vulnerable youth from passive statistics into resilient social actors equipped with the ability to respond to the societal challenges of tomorrow.

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