EXPERTISENETWORK
SYSTEMIC CO-DESIGN

Lenny van Onselen
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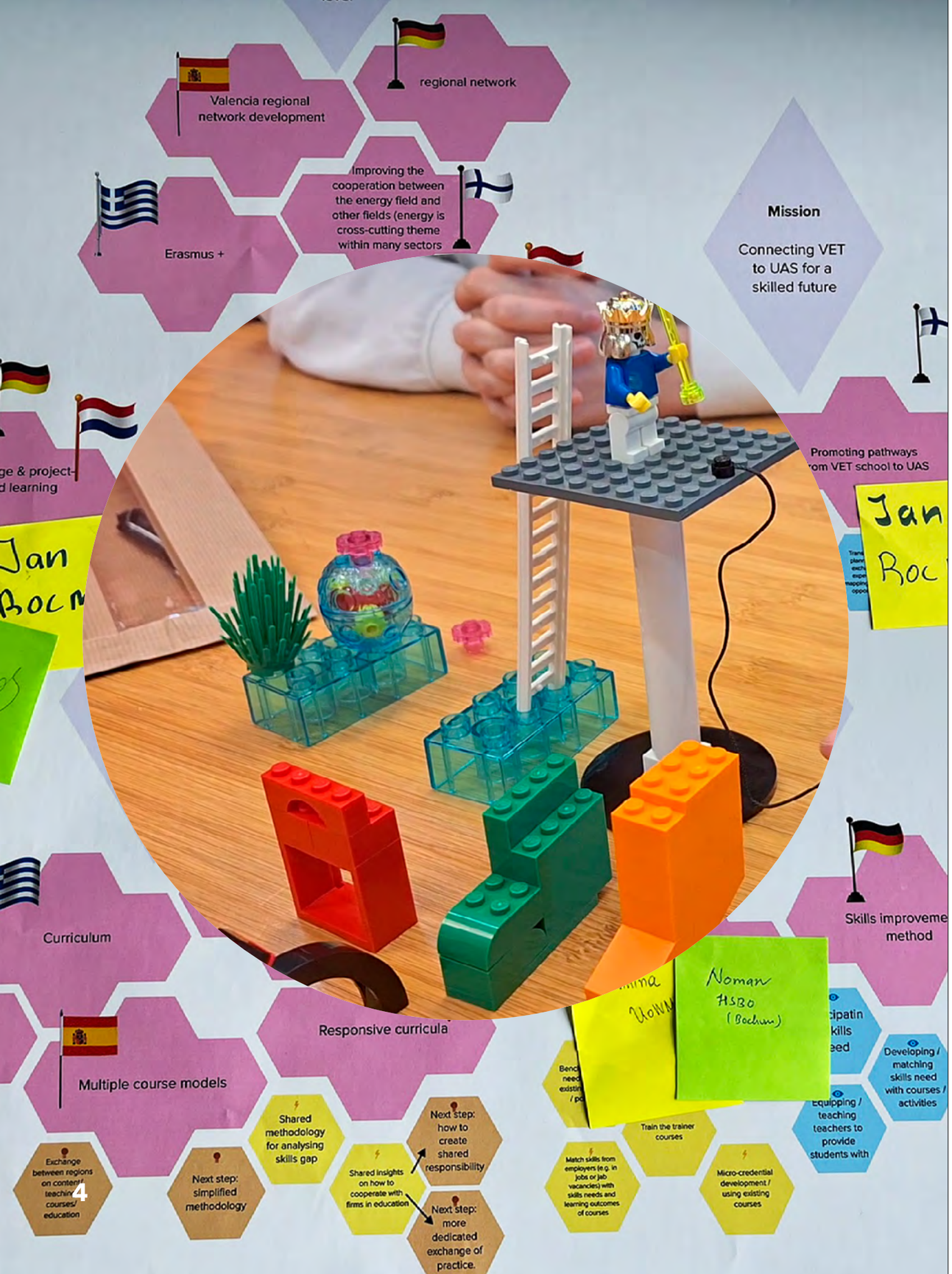
ESCuela

ESC & Education

Design in Education for Learning in Transitions


Enquete Werknemers en studenten
Enquete Bewoners
Nieuwe Ontwikkelperspectieven
Jane's Walk Hoefkwartier
Sociale inventarisatiekaarten
Metabolisme van de wijk
Uitnodigend Stationsgebied
Luisteren naar Morgen I
Sociaal Netwerk in Kaart
Wijkanalyse; Ruimtelijk & Proces
Hoefbatterij
Gelukbevorderend Straatmeubilair
Participatiespel: Future Vocals
Moestuinkwartier
Energiesysteem voor de wijk
Onderzoek Buurtbatterij
Gezonde materialen voor gebiedswelzijn
Rekentool Buurtbatterij
MaaS app
Participatiespel: Voice of Nature
Community Garden: Nature's voice
MaaS mini-hub Network



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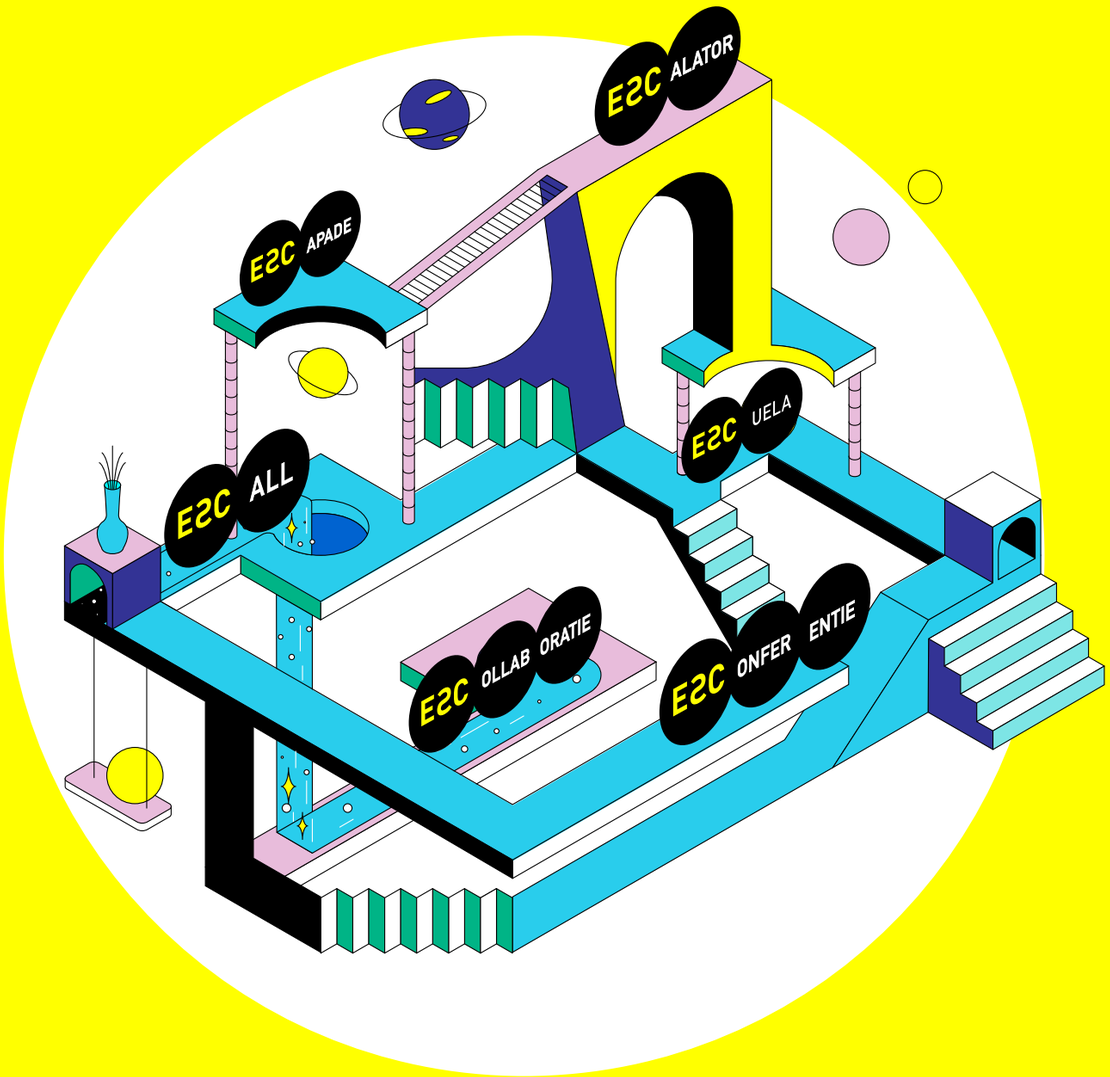

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Foreword

Congratulations, you found your way to ESCuela!

This volume offers practical insights into designing education that prepares students to navigate transitions in their professional futures by learning the basics of *Systemic Co-Design*. It also exemplifies how *Systemic Co-Design* can be an innovative approach to designing future-proof education with diverse stakeholders.

Systemic Co-Design moves beyond making action plans for change and designing with others by taking the dynamics and reciprocal relationships among actors within a larger system into account.

This approach is innovative as it embraces uncertainty and complexity through experimenting and probing to gain an understanding of the workings and dynamics of systemic change. It also enables to quickly direct attention to making connections and forming networks with shared goals that steer actors' efforts to collective learning and innovation.

Figure 0.0:
Mieke Koeslag-Kreunen at the ESConference in May 2025 (by Leroy Beesemer)

This ESCuela volume offers case examples and practical methods for how to do so, which help build the repertoire of systemic educational innovators.

In today's turbulent times, embracing uncertainty, diversity and complexity is inevitable for educators and (future) professionals. How else can essential transitions be faced and lead? We need each other's diverse inputs, ideas, expertise and courage to respond to highly complex challenges as climate change, health care access, inclusive education, and responsible use of artificial intelligence in work and life.

This ESCuela volume's inspiring examples of *Systemic Co-Design* in and for education illustrate how learning of people is embedded in context and is social-culturally constructed via a diversity of interactions. It also shows how educational innovations, where routines are disrupted, and outcomes are unpredictable, can be developed sustainably.

Therefore, I congratulate you as a reader of this volume. Yet, I also conclude with a note of caution. As ESCuela and the practice of *Systemic Co-Design* in education develop further, be aware that the very system dynamics that make educational innovation difficult also apply to ESCuela itself.

So, for ESCuela to grow beyond small-scale experiments, systemic educational innovators will face counterforces of system dynamics. The good news is that if anybody has the repertoire to deal with such opposing influences, it is you. Thus, be brave and stay confident. And remember: you are not alone in this. We are all learners.

Mieke Koeslag- Kreunen
Director of the Research Centre for Learning and Innovation and Professor of the Research Group Working in Education, at HU University of Applied Sciences, the Netherlands

List of Abbreviations:

ACED – Attitude-Centred Educational Design toolkit
BoKS – Body of Knowledge and Skills CoVE / CoVEs – Centre(s) of Vocational Excellence
DLA – Dynamic Learning Agenda
ENoLL – European Network of Living Labs
ESC – Expertisenetwork Systemic Co-Design
ESCuela – School for collective learning
HU – HU University of Applied Sciences Utrecht
IDG – Inner Development Goals
Inholland - Inholland University of Applied Sciences
ISLE - Innovating Systems with Local Experiments
MST - Master Sustainability Transitions
OECD – Organisation for Economic Co-operation and Development
RUAS – Rotterdam University of Applied Sciences
SaP – Students as Partners (appears throughout
SCD - Systemic Co-Design
SEED – Sustainable Energy Education (Erasmus+ project)
SKAV model – Skills, Knowledge, Attitudes, and Values
THUAS – The Hague University of Applied Sciences
UAS - University of Applied Sciences
VET – Vocational Education and Training
VR – Virtual Reality
ZHIA – South Holland Impact Alliance

Introduction of ESCuela: A School for Collective Learning

Escuela means school, and schools are, of course, associated with learning. An online search for images with the keyword "school," overwhelmingly returns images of classrooms in which children sit facing a teacher - the familiar stereotype of traditional education. These images depict the archetypal teacher-student relationship, one grounded in the transfer of knowledge from *Knower* to *Learner*.

In some cases, the Knower will adapt their language or use images or examples to make the subject comprehensible to learners. This kind of education has long been a common practice all over the world. It is the tradition, but it offers a limited view of what learning is and how knowledge is created and transferred.

To explain the limitations, let's start with something you undoubtedly will recognise. Imagine yourself explaining something to someone when you get a sudden insight. Perhaps someone asks a question that surprises you, and you have to reconsider the explanation you just gave. Or maybe others behave in such a way after you answer the question that it becomes clear they interpreted your message very differently from what you intended. In these moments, you learn as much as the people you are intending to teach. This new knowledge emerged during the interaction in an unexpected way.

As you can see, in these instances, the knowledge is not transferred or translated in the traditional sense. Instead, it is transformed as the exchange goes back and forth between you and the others in the room. During such transformations, everyone learns.

In co-design, knowledge transformation is omni present because the goal of co-design is to create something that nobody can invent on their own. In co-design, insights and new ideas arise as people interact, sketch, make models, or act out ideas. During all these activities, they are transforming what they know. Seeing knowledge as something that is created and transformed continuously challenges the classic *Knower-Learner* relationship. Learning no longer concerns transferring or translating knowledge to others; it is seen as a collective capability to co-create new knowledge through transforming what is known beforehand.

The capability of collective learning is larger than the sum of all individual learning. Just observe how members of teams learn to align and coordinate individual activities into a meaningful whole as they try to accomplish a difficult task. For instance, when an alarm goes off next to a patient, nurses and doctors know what to do without someone telling them. They are all intelligently responding to the situation and to each other. There are routines, patterns, and a structure so that everybody "knows" what to do when, even without communicating. They learned this on the job, gaining experience and developing routines and patterns together.

Intelligence is hidden in these invisible patterns, and nobody is fully aware of them. Similarly, systems and organisations learn and know how to conduct business smoothly and effectively, thanks to these patterns. There is no overseeing director, yet millions of decisions are made inside these systems and organisations that are meaningfully connected and crystallised into intelligently integrated products, software, services, buildings, policies, activities, and so on. As you can see from these examples, collective learning is an ongoing process through which people

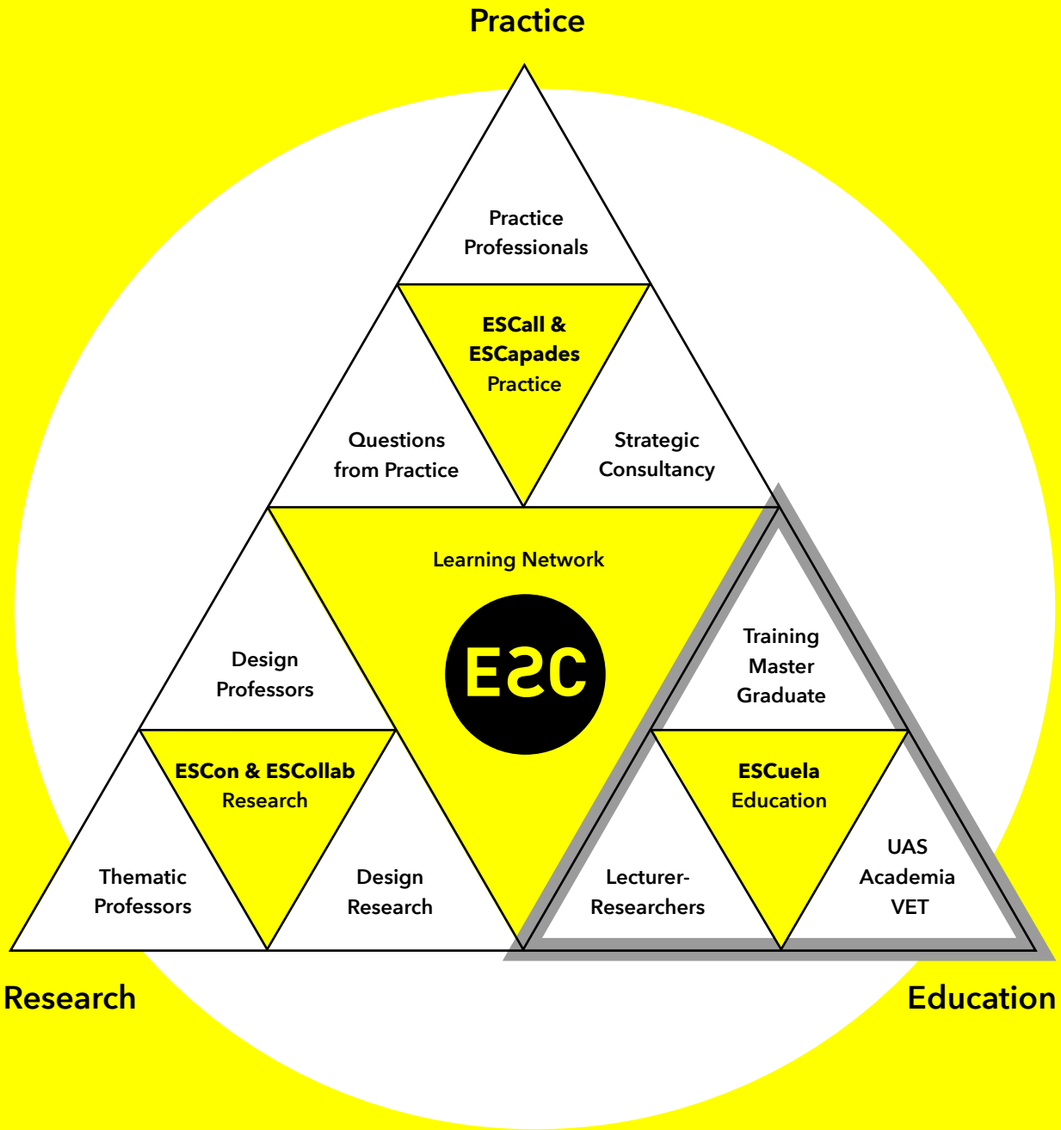


Figure 0.1:
ESC operates across three dimensions of the knowledge triangle: education, research, and practice

ESC: Origins and Mission

The Expertisenetwork Systemic Co-Design (ESC) was founded in 2022 as a SPRONG group, supported by Regieorgaan SIA, the Dutch Taskforce for Applied Research. This national initiative aims to strengthen connections and foster long-term collaboration between universities of applied sciences in the Netherlands. ESC unites four such universities and their design professorships: Inholland (lead partner), The Hague, Rotterdam, and Utrecht.

ESC is an interdisciplinary network that works closely with a broad spectrum of practice partners, including design studios, public institutions, academia, and national platforms such as PONT (Public Design Practice), BNO (Association of Dutch Designers) and the Dutch Design Foundation. Together, we address pressing societal challenges while continuously learning from diverse disciplinary perspectives and applying *Systemic Co-Design* as our shared lens and methodology. As ESC, we have established a robust inter-institutional infrastructure for practice-based design research focused on societal transitions. By connecting research groups across institutions, ESC transcends individual agendas and generates a rich knowledge base for informing regional and national valorisation routes.

Though still early in its journey, ESC represents a growing and maturing movement-one that is actively learning to engage with complexity, systemic change, and collaborative cross-institutional research. We deeply value the relationships that have been built and continue to expand along the way.

learn and interrelate their actions with those of others to achieve shared and individual goals. This can only be understood as part of the practices we engage in. The central focus of this book is collective learning. We chose the term "ESCuela" because it combines the ESC acronym (Expertisenetwork Systemic Co-Design) with the Spanish word for school, *escuela*. This is meant to evoke a new kind of school that revolves around collective learning.

We, the partners of ESC, aim to construct a meaningful learning environment that uses *Systemic Co-Design* (SCD) to enable collective learning, transcending the conventional *Knower-Learner* relation. This learning environment is designed to enhance collective learning within the network of ESC partners and to involve everyone interested in SCD.

Transitions and Systemic Co-Design

There is a need for collective learning and SCD. There are many pressing social and ecological issues in the Netherlands, such as climate, housing, and migration. We are in the midst of several transitions with unknown outcomes, and many people need to contribute to achieve favourable results. Unfortunately, transitions include uncertainty and ambiguity. It is unclear what to do, and many disagree on how to interpret "facts." No one can predict the future, let alone explain how to make the desired outcome happen. Instead, we need to co-create change on the go, learning collectively what to do when, while ensuring that no one has a monopoly on the "truth." We believe there is an urgent need for enhancing collective learning, and SCD is a path forward.

SCD is a relatively new field at the intersection of three robust areas of knowledge:

- *Design* concerns devising plans of action to change an existing situation into a more preferred one. When old plans and ideas are no longer effective, design can bring creative ideas that might move the course of events into a more favourable direction.
- *Co-design* shifts the focus from design for others to designing with others, from expert designers to collective designing together. Each member contributes according to their specific expertise and experiences.
- *Systemic Co-Design* takes a systemic perspective on design by looking at the interwovenness of issues, the reciprocal and interconnected relations between actors, and the dynamics within a larger system.

In SCD, fresh ideas, concepts, products, and activities emerge from a creative, inherently messy yet goal-oriented process that involves many participants. You can frame SCD in different ways.

It can be a kind of problem-solving, focusing on outcomes that address issues. You can also see SCD as a kind of problem-making that unveils underlying causes and problems. And, you can see SCD as a kind of collective learning, since both individuals and the collective learn in the process of co-design, beyond the factual outcomes. It questions conventional epistemologies on how knowledge is created, shared, and embodied, but we believe SCD has the potential to facilitate change and empower collective learning in systems.

SCD and Education

ESC wants to contribute to the educational system for two reasons. First, we believe we need to prepare many students to navigate uncertainty and learn the basics of SCD so they are equipped to address the pressing social and ecological problems of our time. These students will become professionals, and some of them will face these issues. They will have to learn

how to deal with these challenges. To this end, we do not limit ourselves to educating design students. We want to make an impact in many schools and universities. For example, healthcare students will need to address complex challenges in medicine, and changes in the tourism sector can best be initiated by those who are training to work within that industry.

Second, we believe that for society to change, educational systems also need to change. However, education is a microcosm of the larger society. Academic institutions are just other complexity-ridden systems in which many societal challenges manifest. Rather than empowering some experts to design a new school, curriculum, or educational programme for others, we need an approach in which these schools, curricula, and programmes are co-designed with others. In other words, designing the solution will involve lecturers, students, staff, and experts all collaborating. Collectively, they have the best available expertise to co-create future-proof education using SCD.

Learning in Educational Practice

Since the start of ESC in 2022, the four partnering universities and their partners have sought to bridge education by reaching out to lecturers within their own institutions. Bridging should not be seen as trying to persuade others to do something, or teaching them what SCD is, hoping they will adopt it. Instead (and entirely in line with our view on learning as a collective capacity), our research is based on co-design and collaborating "in the mud" of educational institutions.

An implicit message that emerges in previous ESC books is that SCD needs to be learned through exploration, reflection, and dialogue, and by simultaneously focusing on the self, others, and systems. Rather than positioning ourselves as "objective" researchers who simply observe like flies on the wall, we engage and actively intervene with the subject matter as action researchers. This deep engagement is essential to our SCD approach and learning. But our engagement is no guarantee for success. To ensure we continue to learn from both successes and failures, we reflect in this book on what happened and what can be learned alongside the *Dynamic Learning Agenda* of ESC, which will be introduced below.

We invited contributors to share their findings and selected 10 of those contributions because they enable us to reflect across cases. We divided the chapters into two sections. However, please note that some chapters would fit both sections.

Section 1: Rethinking Learning

The first section explores how learning transforms to enable *Systemic Co-Design* in education. The focus is on integrating SCD theories, methods, and tools into educational programmes, courses, and curricula. For example, one chapter discusses a new master's degree programme that already runs at one University of Applied Sciences and will start at others in the future. Also, a minor is presented at the HU, as is the introduction of "off-the-shelf" tools that can be used in existing courses. Interestingly, some of these programmes are co-created with ESC partners who are not part of a university. Next to the successes of these new programmes, it also becomes clear that introducing SCD in conventional educational programmes can be demanding and bring new challenges.

Section 2: Rethinking Educational Systems

In this section, the focus is on transforming educational systems using SCD. Cases are presented in which lecturers, students, staff, and researchers function as active partners in co-design processes aimed at creating change and spanning complex boundaries.

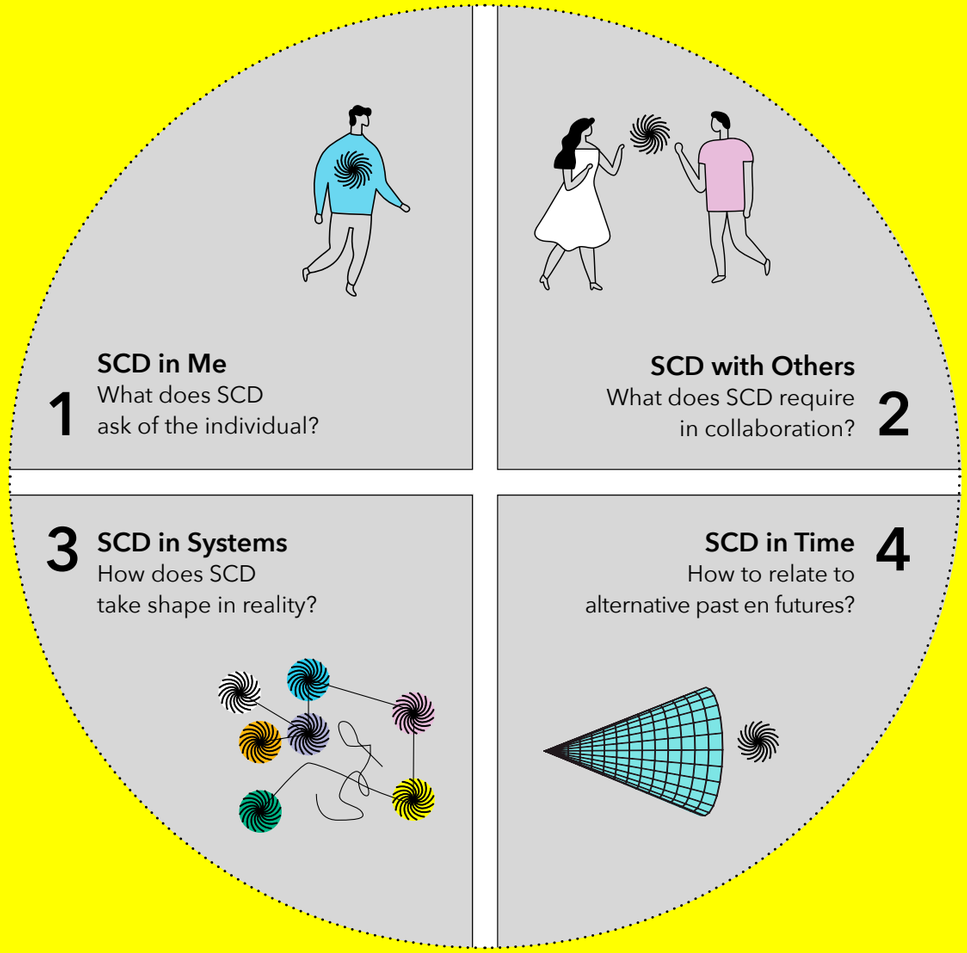


Figure 0.2:
Systemic Co-Design
Dynamic Learning
Agenda

For example, one chapter portrays the redesign of an extensive programme involving many stakeholders. The section includes a look at a students-as-partners programme and an exploration of how SCD methods were eagerly adopted across institutional boundaries (and even internationally).

ESC Dynamic Learning Agenda

In general, a *Dynamic Learning Agenda* (DLA) is a flexible instrument designed to guide ongoing cycles of reflection, learning, and adaptation within complex change contexts. It is built around continuously evolving "learning questions," which are revised and reprioritised as new insights, challenges, and opportunities emerge. By embedding iterative cycles of action, observation, reflection, and adjustment, a DLA fosters participatory learning, reflexivity, and collaboration. Unlike static plans, it enables a transition network to remain responsive to shifting conditions while maintaining focus on long-term transformation goals, which aligns with ESC objectives.

At ESC, the DLA serves as a compass, ensuring coherence across projects, programme lines, and publications. In each chapter of this book, the involved researchers reflect by means of the DLA of ESC as a backbone for cross-comparisons. Currently, it is organised around four core questions that reflect the primary knowledge needs of ESC projects:

1. SCD in me: How can you, as an individual, utilise the lenses that SCD offers? What does it require from you? These questions explore the personal dimension of SCD, including the role of intuition, embodied experience, self-motivation, and agency.

2. SCD with others: How can stakeholders collaborate effectively in SCD processes? What does this ask of relationships and of languages? This question explores the collective dimension, such as building trust, fostering dialogue, joint learning, and cultivating a shared purpose.

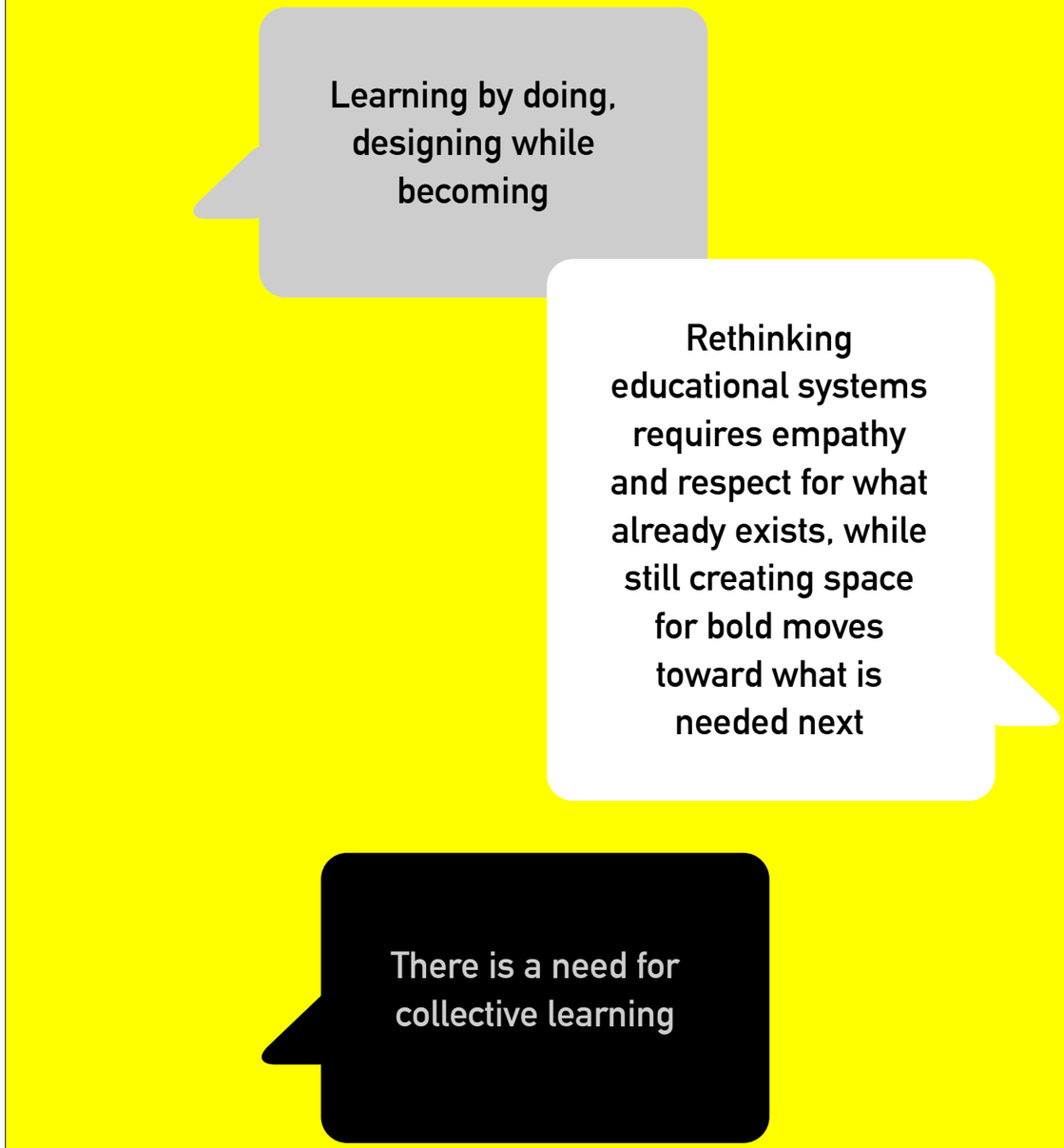
3. SCD in systems: How can SCD operate within real-life contexts, or "in the mud?" This question explores working with and navigating systemic barriers, tensions, frictions, and opportunities encountered in practice. It emphasises navigating interdependencies, entanglements, constraints, and uncertainties inherent in systemic interventions in the real world.

4. SCD in time: What is the role of time in SCD: across pasts, present, and futures? This question explores engaging with uncertainty in temporal and embodied terms, considering multiple, embodied, and emergent perspectives. It includes imagining and exploring alternative pasts and futures, as well as the temporal investment required for systemic change (Figure 0.2).

The ESC Book Trilogy

This *ESCuela: ESC & Education* book is the third volume in a trilogy reflecting on our collective learning within ESC over the past four years (2022–2025). The first volume, *ESCall: ESC & Practice*, focuses on design practice and collaborations with design partners. The second volume, *ESCollab: ESC & Research*, highlights research projects, methods and emerging insights.

This third volume focuses on building bridges with education. Together, the trilogy offers a layered perspective on the application and evolution of *Systemic Co-Design* (SCD) across various contexts. ESC operated actively across all three dimensions/sides of the knowledge triangle: education, research, and practice, which we view as inherently interconnected and mutually reinforcing (Figure 0.1).



Section

Rethinking Learning

1. Designing for Uncertainty: Systemic Co-Design in the Master Sustainability Transitions

Liliya Terzieva and Celina Whitehead

Educational institutions: The Hague University of Applied Sciences, Rotterdam University of Applied Sciences, Inholland University of Applied Sciences
Research institution: THUAS: Designing Value Networks Research Group
Boundaries crossed: cross-universities, cross-faculties
Students involved: ca. 40
Educators involved: ca. 50
Timeframe: January 2024 – June 2025

1. Introduction

Building a master's degree programme for the transition era is much like constructing a ship while already at sea. The blueprint is drawn collectively, the crew learns by sailing, and the destination shifts with the tides.

This metaphor captures the essence of the *Master Sustainability Transitions* (MST) — a new, cross-sector master's degree developed by seven universities of applied sciences in the Netherlands. In this era of accelerated change, the world urgently needs professionals who can navigate uncertainty, connect disciplines, and lead the transition toward a sustainable future. The MST programme addresses an urgent question in higher education: *How do we equip professionals to navigate and lead complex transitions toward sustainable futures?*

The MST is a part-time, one-year programme designed for professionals who want to create meaningful change within their own organisations and across wider systems. Using real-world projects drawn from students' professional environments, the MST develops the ability to think critically, work interdisciplinarily, and act systemically. Learners explore societal issues from multiple perspectives, recognising the roles of power, values, and conflicting interests in shaping transitions. By combining academic insight with hands-on experimentation, the programme equips graduates to lead and facilitate sustainability transitions in complex, multi-stakeholder contexts.

The MST is a national collaboration that unites higher education, practice, and research to educate transition-oriented professionals. Among the seven participating universities, three are founding members of ESC: The Hague University of Applied Sciences (THUAS), Rotterdam University of Applied Sciences (RUAS), and Inholland University of Applied Sciences (Inholland). These partners bring years of experience in *Systemic Co-Design* (SCD) approaches, creating a common groundwork for an education that closely studies the very complexities that are inherent in every major transition.

In 2025, THUAS was the first university to launch an MST programme, making it the pilot site for implementation. This chapter explores how *Systemic Co-Design* has been employed in three closely related dimensions:

- The **design** of the Master's programme itself;
- The **delivery** of its learning processes;
- The **guidance and assessmen**t of students as reflective, systemic practitioners.

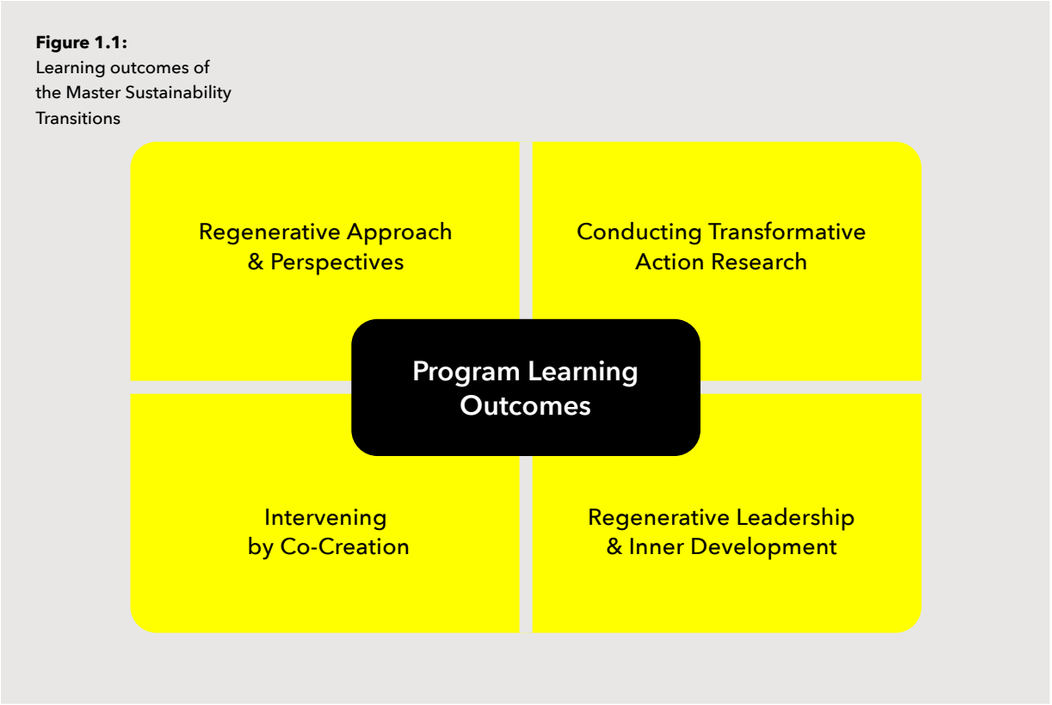


Figure 1.1:
Learning outcomes of the Master Sustainability Transitions

The MST also explores key questions from the ESC learning agenda regarding change within systems, in relationships, and within oneself. Through this exploration, the MST serves as an example of *Systemic Co-Design* — an educational ecosystem that continuously learns, adapts, and grows.

2. Approach and Findings: Applying Systemic Co-Design

Designing the Programme at The Hague University of Applied Sciences: A Collective Journey

Rather than starting with a fixed curriculum, the MST programme at THUAS began by asking: *What kind of professional is needed to guide sustainability transitions?* This query became the basis for a co-creation process involving educators, researchers, professionals, and students from partner universities.

Through iterative design labs, system mappings, and reflective dialogues, the group identified leverage points for rethinking education itself.

Using a systems-oriented design method called gigamapping, stakeholders visualised how sustainability challenges intersect with multi-layered learning needs, governance, and institutional systems. Through these detailed visual canvases and curriculum maps, participants from diverse backgrounds could find a common language. For example, a gigamap created at THUAS revealed connections between ecological, economic, and social systems (as demonstrated by the Dutch agrifood sector example in Figure 1.2). The understanding of these relationships guided the creation of integrated learning modules.

The MST curriculum design evolved through prototyping cycles. The process began with early experiments testing education models such as *transition studios* and *reflective dialogues*, which blended theory and practice. These sessions were iterated based on feedback from educators and professionals. Embodying the principle of *designing the bridge while walking across it*, these cycles integrated emergence and co-learning as essential to innovation.

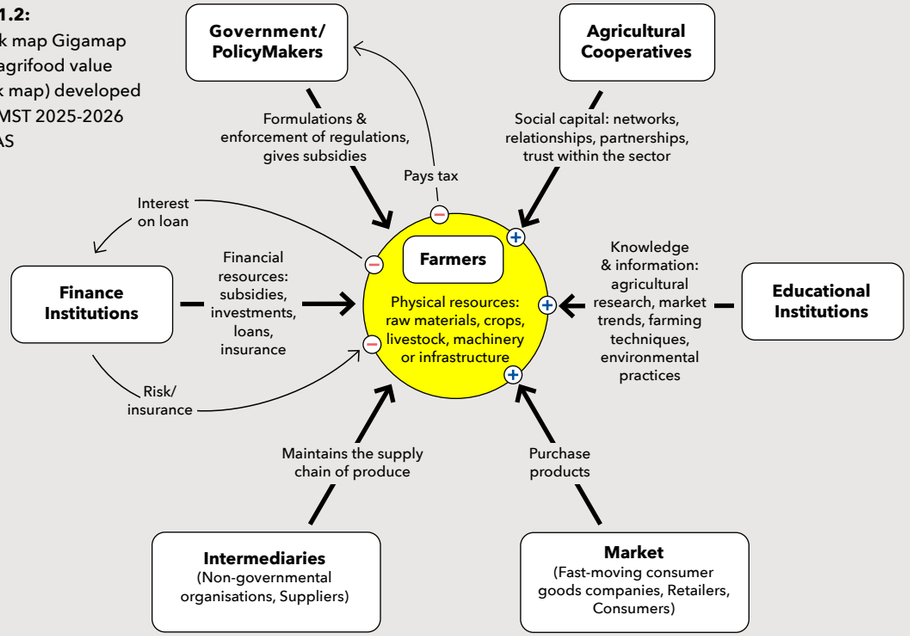


Figure 1.2:
Network map Gigamap (Dutch agrifood value network map) developed during MST 2025-2026 at THUAS

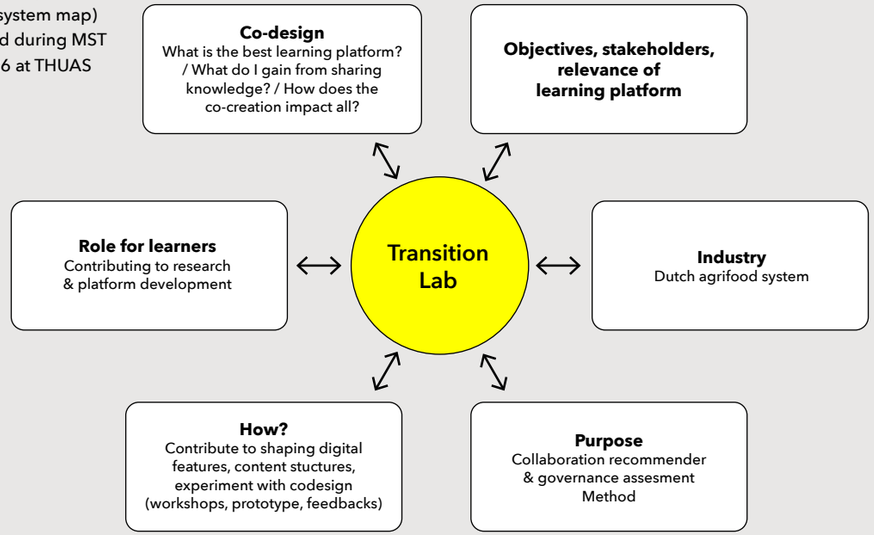


Figure 1.3:
Transition lab (Dutch agrifood system map) developed during MST 2025-2026 at THUAS

Delivery: Learning as a Systemic Practice

At its core, the MST framework was organised around Transition Labs – real-world learning environments where students collaborated directly with public, private, and community partners. Each lab functioned as a systemic intervention site where learning and change unfolded together (Figure 1.3). In the Circular City Lab, for instance, students and municipal policymakers used system maps to reimagine urban waste flows. Meanwhile, in the Energy Commons Lab, community groups co-designed governance models for renewable energy cooperatives. These labs embodied co-design in action by embracing shared exploration, reflexivity, and real-world societal engagement.

Reflecting a co-designed rhythm that balances structure with emergence, teaching teams operated as transdisciplinary collectives of lecturers, researchers, and professionals. Dissolving traditional faculty boundaries allowed these educators to co-facilitate collaborative models within the curriculum.

The first semester, focused on *Exploration*, introduced students to systems thinking, transition theory, and co-design methods through iterative challenges. For example, in a *Transition Mapping Week*, students mapped local sustainability challenges using gigamapping and stakeholder interviews. The resulting visualisations became shared artefacts for sensemaking across teams and institutions.

The second semester, centred on *Intervention and Reflection*, immersed students in real-world transition projects. One team collaborated with the municipality of The Hague on mobility transitions, while another worked with social enterprises to prototype regenerative business models. Learning followed a path through experimentation, reflection, and dialogue, guided by coaches who acted as critical companions rather than content experts.

The programme embraced the idea that reflection is an integral part of the learning rhythm. Weekly *sensemaking circles* allowed students to pause, share insights, and question assumptions. Educators also participated, modelling reflective practice. These collective rituals fostered a culture of openness and mutual learning, aligning with the SCD ethos that transformation begins with dialogue.

Guidance and Assessment: Reflective and Relational

With *Systemic Co-Design* at the heart of the programme's framework, the MST employed a portfolio-based assessment system, replacing exams with continuous reflection and evidence of transformation. Each student curated a digital portfolio documenting growth across cognitive, relational, and systemic dimensions – from system maps and experiments to self-assessments and peer feedback.

Assessment took the form of learning dialogues, where students presented their learning journeys to peers and mentors in collective reflection circles (Figure 1.4). The guiding principle of the assessments shifted from "What do you know?" to "What are you becoming?" *The Transition Dialogue format*, for example, invited students to narrate how their understanding of transitions evolved, supported by artefacts and reflections. In other words, these sessions made assessment a co-creative act of meaning-making.

Guidance also happened through *collective reflection circles*, where students and coaches co-analysed dilemmas from the Transition Labs. One student described these as "the heartbeat of the Master's programme" - spaces where learning became relational and systemic. Educators likewise took part in coaching sessions to reflect on their facilitation and co-design practices, reinforcing the idea that both teachers and learners are in transition.

Unlearnings and Cultural Shifts

With the development of the MST curriculum and the integration of SCD in its framework and assessment, the educators observed that the programme required a profound cultural shift. Moving from traditional disciplinary assessments to reflective and relational assessments meant that educators had to simultaneously move from control to trust and from content creation to co-creation. Additional early planning meetings revealed a natural tendency to specify and narrowly define learning questions and outcomes. Through successive iterations, the curriculum gradually reframed these as open outcomes (an ongoing process). One lecturer explained, *"We had to become comfortable not knowing the answer before we started."* These initial reflections and shifts in teaching slowly shaped a philosophy of learning by doing and designing while becoming.

3. ESCollaboration

The ESC used both scaffolding and productive tension as learning catalysts, co-shaping MST's learning and evaluation framework in the process. It offered the network, knowledge, and reflective culture needed to experiment responsibly with new educational models for complex societal challenges. The programme nurtured collaboration by bringing together professors, researchers, and lecturer-researchers from across THUAS's six Centres of Expertise. With the diverse input, the MST design process bridged curriculum design, transition research, and systemic practice, ensuring that its learning laboratories were continuously informed by ESC's research findings and co-design methodologies.

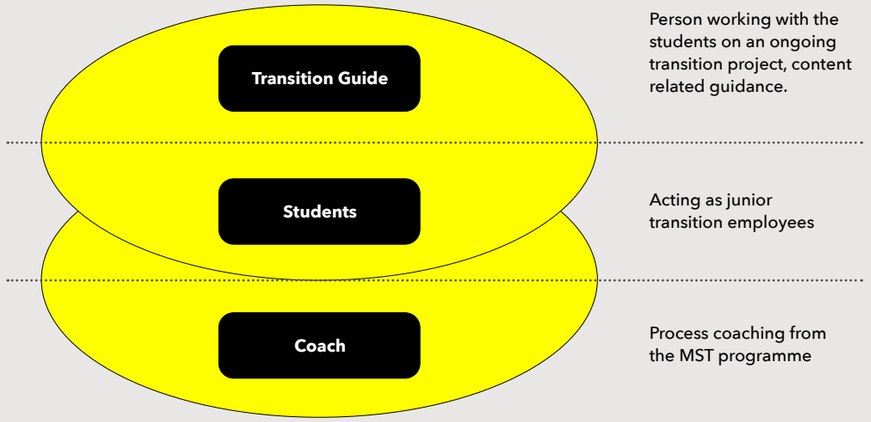
ESC's open knowledge base and method repository played a relevant role in shaping the MST's philosophy for learning. Tools such as the *Students as Partners* instrument suite, *Co-design Canvases*, and the white paper *Systemic Co-Design: Navigating Complex Issues* inspired the structuring of the MST's Transition Labs, reflection sessions, and portfolio-based assessments. The availability of these shared methods across institutions enabled THUAS educators to connect with a growing body of ESC knowledge while adapting it to their local context. This reflected the essence of *Systemic Co-Design*: building on shared foundations while maintaining local diversity.

A variety of tools and knowledge products developed within the ESCall (ESC & Practice) have proven particularly relevant for the MST. These products supported small-scale, practice-based research initiatives in which designers and educators prototype tangible objects for systemic learning. A striking example is the *4D Mechanical Systemic Model* developed by Jochem Galama in collaboration with Professor Liliya Terzieva (THUAS). This tool was used to make interdependencies and feedback loops in complex systems visible, which enabled precisely the kind of systemic literacy the MST aims to cultivate. Integrating such knowledge products and tools into the MST's Transition Labs allows students to engage with systemic relationships not just conceptually, but experientially.

Collaboration between the MST and ESC also occurred through joint research and regional development projects. These shared projects explored how education, research, and practice can collectively shape transitions in regional ecosystems – directly aligning with the MST's philosophy of learning through participation in real-world systems.

Beyond research, ESC's community of practice offered an ongoing arena for professional and pedagogical reflection. Through ESC's workshops, learning events, and annual gatherings, MST lecturers can participate in exchanges with colleagues from Inholland, Rotterdam, and Utrecht. These moments are not merely networking events but shared sensemaking spaces – places where educators can compare practices, reflect on dilemmas, and co-create new approaches to teaching systemic design. For example, sessions on *Deep Democracy and Systemic Storytelling* have provided MST educators with new facilitation tools to address diverse student perspectives and team dynamics in Transition Labs.

Figure 1.4:
Collective reflection circles – evaluation and assessment framework at MST at THUAS



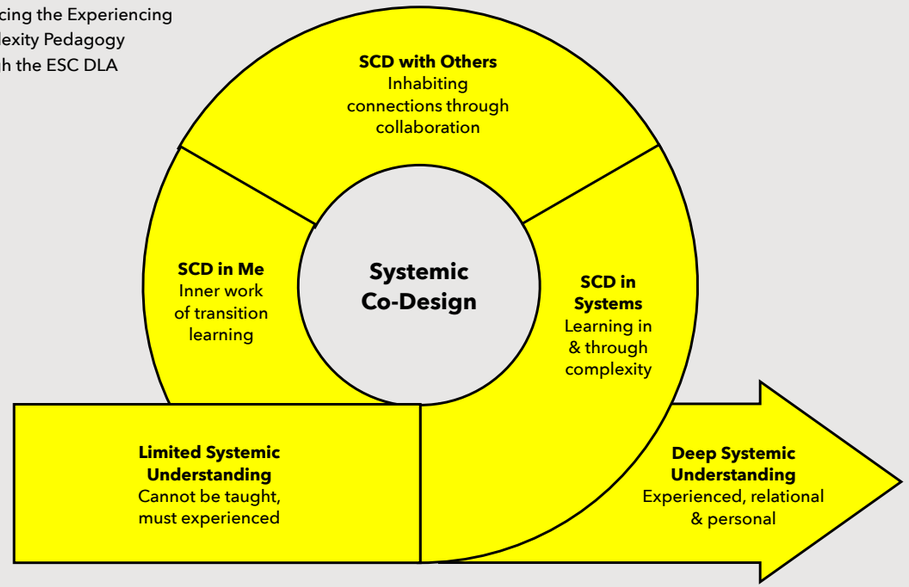
Looking ahead, deeper integration between MST and ESC holds transformative potential: hosting guest facilitators from ESC projects, such as tool-makers or researchers developing new methodologies and tools; student-project co-supervised by ESC scholars, creating continuity between educational practice and applied research. The MST could also pilot "mini-ESCall" calls within its curriculum, encouraging students and lecturers to co-design knowledge products, such as maps, games, or frameworks. These could later feed back into ESC's shared platforms. Furthermore, cross-institutional labs connecting MST cohorts from THUAS, Inholland, and RUAS could be established, creating an inter-university classroom that embodies *Systemic Co-Design* in practice.

In this way, the MST can become both a seedbed and a contributor to ESC's *Dynamic Learning Agenda*. The relationship can be reciprocal: ESC provides the knowledge ecology, and MST extends it into the lived practice of transition education. Together, they enrich the network's collective efforts to embed SCD in higher education and to evolve education in response to the complexities of our time.

4. Dynamic Learning Agenda and Unexpected Developments

The *Dynamic Learning Agenda* of the ESC acts as both a mirror and a compass for the further development of the MST programme. Three of its lenses – systems, others, and self – surface most strongly in how the MST works and learns. Not neat categories, but lived tensions within the programme, its network, and its participants. The MST assumes that *systemic capability is not acquired through theory but through immersion in complexity*. Students do not merely analyse transitions – they are placed inside them. This produces deep learning, but also disorientation, frustration, and uneven confidence. Many begin by searching for

Figure 1.5:
Enhancing the Experiencing Complexity Pedagogy through the ESC DLA



clear tools or correct answers; they gradually learn to sit with ambiguity, map interdependencies, and act with caution and curiosity. The work is demanding and occasionally emotional. The payoff is a shift from problem-solving to sensemaking.

This principle also shapes the programme's structure: seven universities co-creating one degree. The strength lies in diversity of contexts and expertise; the challenge lies in coherence, shared standards, and the constant effort required to hold alignment without flattening local identity. Coordination is not an administrative task but a continuous systemic practice – inspiring, messy, and occasionally exhausting. Collaboration is treated not as a competency but as the ground for learning. Students encounter differences in language, professional background, and values – and must learn to navigate disagreement without collapsing into consensus or conflict avoidance. Reflection circles, coaching, and check-ins support this, though not all students embrace or value the vulnerability required. Similarly, educators operate as learners, which models humility but can blur authority and create uncertainty about expectations.

Personal development is not an add-on; it is central to the programme. Students must repeatedly confront their assumptions, motivations, and behaviours. Many early programme participants reported increased self-awareness and agency, but some struggled with the introspective intensity and lack of traditional academic markers. The MST insists that inner development is part of transition work. However, universities are still learning how to hold this space responsibly, without drifting into therapeutic territory or over relying on student self-management.

To summarise, the MST embodies its systemic principles in real practice. At times, this works brilliantly, but in some instances it is imperfect. As a result, the MST is as much a transition experiment as a degree programme. It is ambitious, relational, context-dependent, and in constant construction, and it allows learners and facilitators to experience continuous complexity as part of the pedagogy of the programme (Figure 1.5). Its greatest strength – learning through complexity – is also its greatest challenge.

Unexpected Developments
Working systemically means being open to surprise. One unanticipated insight was how deeply the MST's relational and reflective practices affected institutional conversations in the design phase. The programme continuously inspired discussions across THUAS and partner universities about assessment reframing, cross-faculty collaboration, and the need for slower, deeper forms of learning.

Another development came from the students themselves. Their portfolios revealed a profound engagement with sustainability topics and with whom they were becoming as change agents. Many discussed the process of "learning to unlearn," recognising that transitions are as much about inner shifts as external interventions.

5. Conclusion
The MST at The Hague University of Applied Sciences represents a *living manifestation of SCD in education*. From its co-creative inception to its reflexive delivery, the MST redefines learning as a collective and adaptive process. By embedding SCD principles in design, facilitation, and assessment, the programme nurtures professionals capable of acting with systemic awareness and collaborative agency. It demonstrates that designing for sustainability transitions means transforming not only *what* we teach but *how* we organise and learn together. The MST contributes to a shared enquiry into how education itself can be a driver of societal transformation. It shows that systemic change begins in how we relate to each other, to our institutions, and to the world. Perhaps the most valuable insight so far is this: *education for transitions is itself a transition*. It requires courage to embrace uncertainty, commitment to collective learning, and imagination to see education as a living system – one that continuously redesigns itself for the futures it helps bring to life.

CHAPTER CONTRIBUTIONS

Dynamic Learning Agenda
- SCD in Me
- SCD with others
- SCD in systems

Transferable SCD-knowledge
- SCD in the design of the Master's programme itself
- SCD in the delivery of its learning processes
- SCD in the guidance and assessment of students as reflective, systemic practitioners

SCD-repertoire
- *Co-Design Canvas* principles; Learning dialogues; Transition Labs: tools implemented including *Students as Partners instrument suite, Co-design Canvases*, and the white paper *Systemic Co-Design: Navigating Complex Issues*
- *Co-Design Canvas*; Navigating through complexity Gigamapping
- *ISLE model* (Innovating Systems with Local Experiments)
- *Mountain View tool,*
- *Lab Talks*
- *LEGO® SERIOUS PLAY®*

SCD-outcomes
- Increase in ownership, reflexivity and accountability in MST students
- Contribution to the ESC DLA
- SCD lens shaping the programme's structure and curriculum
- Education for transitions as a transition itself

2. Creating Common Understanding in the Co-Design Studio

Kim van Veldhuijzen, Jens Gijbels and Remko van der Lugt

Educational institutions: University of Applied Sciences Utrecht, Fundamentals Academy
Research institution: HU, Research Group Co-Design
Boundaries crossed: cross-spheres (public-private), cross-disciplines, cross-roles
Students involved: ca. 450
Coaches involved: ca. 100 (over the years, both from Fundamentals, HU teachers and researchers from Co-Design)
Timeframe: September 2009 – now

1. Introduction

How can we prepare students from different disciplines to work together on complex societal challenges?
This question lies at the heart of the Minor in *Co-Design Studio* degree programme. During this programme, students are placed inside real-world design environments where they explore urgent issues, navigate uncertainty, and collaborate across professional boundaries. They not only learn about *Systemic Co-Design* (SCD), but they also learn through it.

As societal problems grow more complex, we can no longer solve them with separate, stand-alone solutions. We need approaches that consider how everything is connected and constantly changing. Today's professionals must navigate uncertainty, collaborate across disciplines, and make sense of constantly changing systems.

Preparing students for such environments requires thinking outside the box of traditional education. It calls for learning design in a way that builds systemic literacy and the capacity to reflect and adapt. The minor programme responds to this need by offering an immersive learning ecosystem where students work with real clients, communities, and coaches to design meaningful interventions.

This chapter explores how shared understanding develops in interdisciplinary teams, how students learn to work with rather than against uncertainty, and which design principles help turn complexity into a catalyst for personal and professional growth.

Context: The Co-Design Studio

The *Co-Design Studio* is a partnership between HU and Fundamentals Academy. From the start, the programme has intentionally operated outside the university campus, embedding student learning within professional networks, civic labs, and innovation hubs. This hybrid positioning reflects broader developments in higher education, where experiential, authentic, and networked learning environments are increasingly recognised as essential. Since they work in a professional design setting rather than a classroom, students have the opportunity to interact with real clients and experienced coaches. The projects they take on address urgent societal issues, ranging from sustainability to healthcare reform to social innovation, all of which are prime examples of areas in which systemic design approaches are becoming increasingly essential. Also, students enter the studio programme from a diverse array of backgrounds, including design, health, ICT, social sciences,

Figure 2.1:
Final expo presentation "Build a bike" with a presentation box, design reflections on the wall, and a prototype

and business. The range of expertise allows them to form interdisciplinary teams and work on complex challenges that require them to look beyond the boundaries of their own discipline. For many, this is the first time they experience design as a collaborative, iterative, and systemic process rather than a linear assignment.

2. Experiences with Systemic Co-Design Education

During the programme, students co-create their environment and take responsibility for shaping both their project and their team culture. As a result, the studio feels less like a course and more like a living design practice. Within this environment, it is a challenge to develop mutual understanding among students from different disciplines. This aligns with the common assertion that the first step in any interdisciplinary collaboration is to establish common ground.

Systemic Approaches in the Co-Design Studio

Systemic approaches form a part of the methodological and pedagogical approach of the minor programme. Students learn to focus on concrete experiences while also embracing a big-picture view that helps them understand the broader systems in which those experiences are shaped (Sanders & Stappers, 2012). They explore relationships between stakeholders, processes, and conditions at different scales, and they learn to design interventions that influence these systems constructively.

Fluid Roles

Throughout the minor, students move fluidly between these roles:

- Maker – creating prototypes, visuals, maps, and concepts
- Researcher – exploring contexts, identifying patterns, reframing challenges
- Facilitator – guiding workshops, conversations, and co-design sessions

This dynamic mirrors systemic design practice, where sensemaking, creativity, and facilitation are intertwined (Sevaldson, 2019). Students quickly learn that no single role is sufficient; instead, progress emerges through iterative movement between them.

Figure 2.2:
Close-up of a presentation box with detailed explanations for the client

Embracing discomfort
This is not always easy. Complexity often increases midway through the programme, which can lead to dips in energy and occasional frustration within teams. These moments are intentional: the programme is designed to embrace discomfort. By guiding students through these challenges, we prepare them for the realities of professional practice, where projects do not always run smoothly. Stakeholders may respond unpredictably, ideas may need to be adapted, and setbacks are inevitable. Students learn to navigate these situations with flexibility and resilience.

In short, the *Co-Design Studio* does more than introduce systemic work—it provides hands-on experience that prepares students for their future careers. The uniqueness of this programme extends beyond the student experience. Over the years, it has evolved into a distinctive public-private partnership between HU University of Applied Sciences Utrecht and Fundamentals Academy. This collaboration allows the programme to operate beyond the traditional boundaries of the university, actively connecting with the professional field, users, and stakeholders.

Systemic Co-Design
The *Co-Design Studio* combines systems thinking with co-design practices. Students design interventions with stakeholders, exploring structures, values, and lived experiences together. This approach makes complexities easier to define and creates conditions for shared exploration of future possibilities. It prepares students to collaborate within living systems, where meanings evolve, and interventions are never fully fixed.

Learning Conditions that Enable Collaboration
Professional and personal development both play a role in the *Co-Design Studio*. Technical skills – such as research, prototyping, and facilitation – are addressed explicitly, while others are embedded implicitly, like learning to handle critical feedback and celebrating successes. These important "soft skills" include navigating team dynamics, managing expectations, communicating across disciplines, and reflecting on one's own assumptions.

Students co-create their studio environment from day one. As the minor officially begins, they spend a full week transforming an empty space into a functioning design studio. This includes designing the layout, organising materials, creating working zones, and establishing shared agreements. This process builds ownership and teaches students how to create a professional environment with minimal resources.

Teams are encouraged to take responsibility for their project planning, stakeholder engagement, knowledge sharing, and internal communication. Coaches support them but deliberately avoid taking over. The goal of this hands-off approach is to build autonomy, resilience, and a sense of shared responsibility, all of which are qualities needed in professional "systemic" design environments (Carvalho & Goodyear, 2014).

Working Together with a Team and with Stakeholders
A central part of the *Co-Design Studio* is collaboration with stakeholders. Clients, partners, citizens, and professionals contribute at different moments in the process. For students, it can be challenging when stakeholders dip in and out of the project. However, this is a normal part of the design process. Through this real-world experience, students learn how to bring others back into the story, how to communicate progress, and how to protect the exploratory nature of the process.

One recurring lesson is that different disciplines use the same words differently. The notion of a concept, for example, varies widely between product design,

social design, and architecture. Becoming aware of such differences prevents misalignment. With an understanding of such terms, students can build a shared language while keeping space for different perspectives.

The Studio as Shared Memory

One of the Studio's most transformative elements is the physical workspace that functions as a shared memory. During the programme studio design, students create a visual landscape using sketches, maps, insights, quotes, photos, prototypes, and emerging ideas. The studio space makes information tangible and accessible, supporting collective sensemaking.

As the project evolves, the space becomes a visual narrative of the team's understanding: brown-papered walls, clustered insights, system maps, early concepts, quotes, and photos from stakeholder sessions. This evolving landscape helps everyone visualise emerging patterns and opportunities.

The shared memory is especially valuable for students without a design background or for those who find working in English challenging; pointing, clustering, and connecting ideas visually reduces cognitive load and increases clarity. For more experienced design students, the visual setup encourages deeper reflection and helps them avoid settling too quickly on a single direction. The shared memory is not a static documentation tool. It evolves daily as new insights appear, reflecting the unfolding story of the team's learning and strengthening their collective understanding.

Personal Development as Part of Systemic Growth

Personal development is deeply embedded in the programme. Students naturally bring their life histories, expectations, and challenges into the project. The *Co-Design Studio* acknowledges this human dimension and integrates reflective practices that help students understand their own patterns, motivations, and roles within collaboration, as well as the systems they are part of—systems that, consciously or unconsciously, influence how they collaborate.

Each student is paired with a life coach who supports well-being, identity development, and personal goals. Themes like loss, health, safety, or vulnerability can resonate personally, especially when projects touch on sensitive topics.

A pivotal moment is *War Room Week*, in which students map their life stories using principles of gigamapping. During this process, they visualise events, relationships, turning points, and values across large surfaces. The mapping is handled with great care. Students often describe it as transformative; they begin to see themselves in relation to broader systems and gain empathy, self-awareness, and clarity about how they collaborate.

3. Dynamic Learning Agenda Reflections

Challenges: What Makes this Hard (and Why That's a Good Thing)

Working systemically means working with uncertainty. Students must navigate ambiguity, negotiate conflicting opinions, and remain open to emerging paths. Strong personalities, cultural differences, and uncertainty about project expectations can cause friction. These instances of friction are natural in interdisciplinary collaboration and can be used as opportunities to develop collaborative resilience (Van Onselen, 2022).

Another challenge arises when clients unintentionally steer the process towards predetermined outcomes. Fear of choosing the "wrong" direction can heighten tensions, especially when students feel accountable to clients. While understandable, this can limit exploration. The *Co-Design Studio* asks clients to adopt a

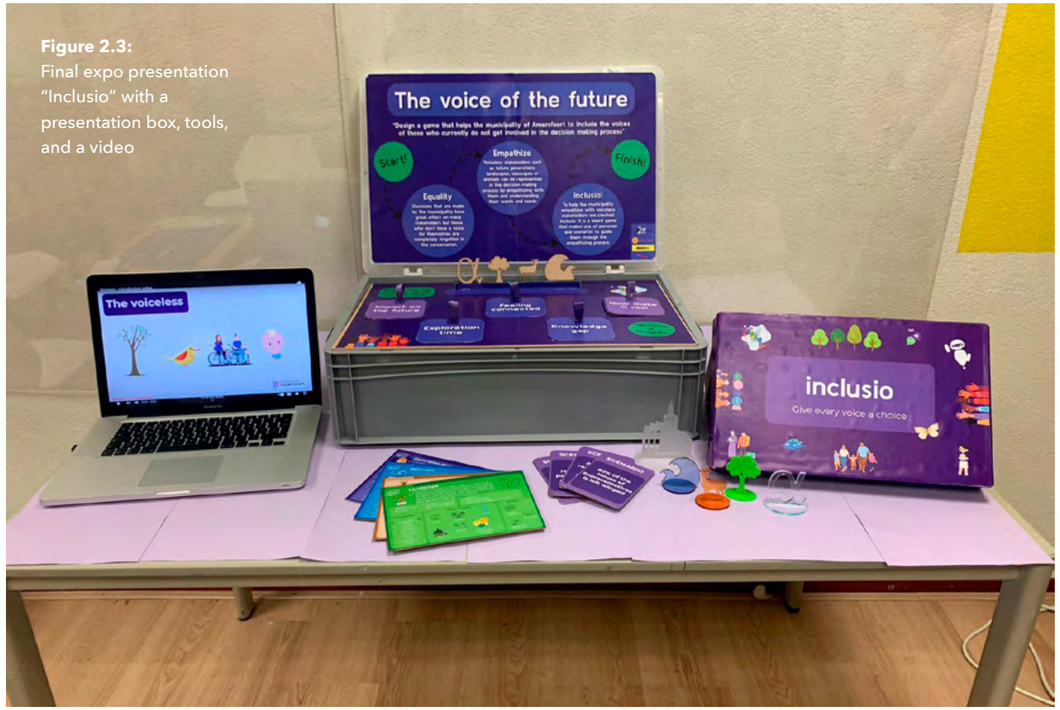


Figure 2.3:
Final expo presentation "Inclusio" with a presentation box, tools, and a video

Figure 2.4:
The *Co-Design Studio* as shared memory

co-design mindset based on curiosity rather than control. The *Co-Design Studio* itself is not immune to constraints. Students face challenges like fluctuating availability of partners, institutional limitations, and temporary studio spaces. These vulnerabilities mirror the very conditions we ask students to navigate, making the *Co-Design Studio* a living example of systemic practice.

Impact: Growth at Multiple Levels
Embedding systemic work in education is not easy. It requires flexible coaching, supportive spaces, and the capacity to embrace unpredictable learning processes.

The lack of set studio spaces teaches students how to set up meaningful learning environments quickly and adaptively. Through the partnership with Fundamentals Academy, practical needs, workspaces, materials, and connectivity are arranged efficiently.

The shared memory is not a static documentation tool – it evolves daily as new insights appear

Impact often becomes visible over time. Insights from the *Co-Design Studio* may take months or years to mature. This delayed effect aligns with experiential learning theory, where reflection and later integration are crucial phases (Kolb, 1984). Alumni often share that lessons "clicked" long after the programme, often when they encountered real-world complexity.

We observe impact at four interconnected levels:
- SCD in me – students develop systemic awareness, reflective capacity, and a sense of agency.
- SCD together – teams learn to navigate complexity collectively and co-create meaning.
- SCD in systems – institutions learn how to support systemic work through flexible coaching, appropriate spaces, and hybrid partnerships.
- SCD in time – learning expands as alumni carry systemic approaches into their professional practice.

These levels illustrate how systemic design capacities develop not only during the minor but also long after it ends.

4. ESCollaboration
The *Co-Design Studio* sprouted from a partnership between HU and Fundamentals Academy. This collaboration continues to evolve nationally through ESC and internationally.

The Future: How the Studio Continues to Evolve
The *Co-Design Studio* continues to evolve. It actively experiments with formats, methods, and collaborations, learning from European partners such as Turku University of Applied Sciences (TUAS) in Finland and Moholy-Nagy University of Art and Design (MOME) in Hungary.

Experience has shown that the most meaningful learning occurs when students work physically together in a shared environment; online collaboration cannot fully replicate the embodied and spatial nature of systemic design.

The *Co-Design Studio* minor has the ambition to serve as a blueprint for other programmes exploring how to prepare students for complexity. As societal challenges intensify, we aim to strengthen participation, collaboration, and inclusivity not only within education but across systems as well.

5. Conclusion: What Shared Understanding Looks Like in Practice
Shared understanding is not a fixed outcome but something that grows through collaboration. Teams build this understanding through shared actions, artefacts, and collective sensemaking. In the *Co-Design Studio*, this process is guided but also allowed to unfold naturally.

It develops when students tackle complex issues together, when stakeholders see their input reflected, and when ideas emerge from the group rather than from individuals. You can see it in how teams map systems, create shared language, make prototypes, work with stakeholders, and make space for different perspectives.

These practices are core to co-design and systemic design. Shared understanding does not come from one method but from the interplay of systemic approaches, shared visual memory, relational work, stakeholder engagement, and a studio culture that supports reflection and experimentation.

Acknowledgement
We are grateful to Queenie Scholtes for her invaluable contribution in refining and shaping our words. Her fresh perspective on this project helped us clarify our thoughts and learnings.

CHAPTER CONTRIBUTIONS

Dynamic Learning Agenda
- SCD in me
- SCD with others
- SCD in systems
- SCD in time

Transferable SCD-knowledge
- Within professional development for SCD, personal growth is central
- Understand that systemic learning matures over time and often "clicks" later in professional practice
- Collaboration in transdisciplinary settings - friction and unpredictability as opportunities for learning
- Design learning environments that reflect systemic vulnerabilities (e.g., fluctuating resources, institutional constraints)

SCD-repertoire
- Create a studio culture that values iterative learning and experimentation, and design using a visual memory on the wall
- A guide to a co-design mindset for all, including coaches, clients, and stakeholders
- Treat the repertoire as dynamic, experiment with new formats, partnerships, and methods
- *Mission mapping, Gigamapping, Sociona's, Probing the Future*

SCD-outcomes
- *Co-Design Studio* Blueprint
- Education outside the walls of the university
- Public-private partnership

3. The Co-Design Canvas: Transferring Expertise and Building Educator Confidence

Sybe Stuij, Claudia Mayer, Hans Rood, Frank Berkers and Wina Smeenk

Educational institution: Rotterdam University of Applied Sciences: Business Administration programme
Research institutions: Inholland University of Applied Sciences: Societal Impact Design Research Group, RUAS: Collective Business for Transition research group, Expertise Centre for Social Innovation (EMI), Department of Youth and Family at Erasmus School of Social and Behavioural Sciences
Boundaries crossed: cross-universites, cross-professions, cross-spheres (university-social partners-community)
Students involved: ca. 300
Educators involved: ca. 20
Timeframe: March – June 2025

1. Introduction

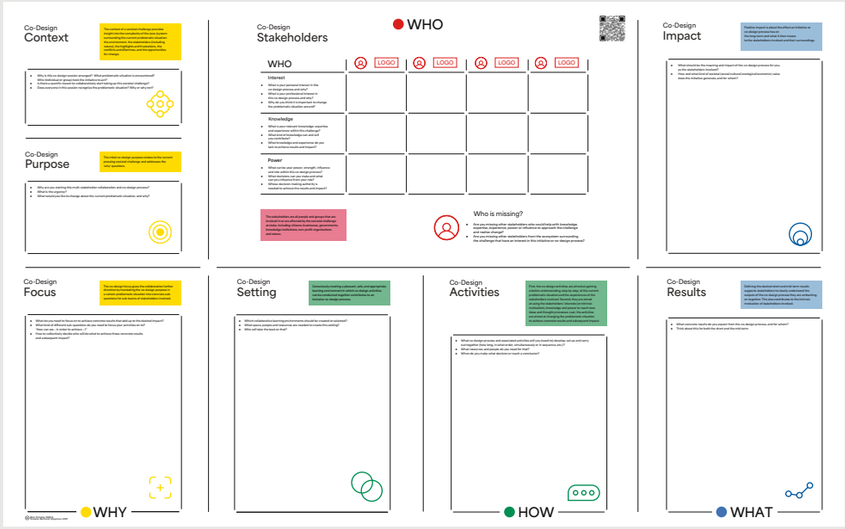
Societal challenges are often complex, systemic, and characterised by interdependencies between actors, institutions, and contexts. Students can only learn to address these challenges if they are trained to understand multiple perspectives and develop empathy toward stakeholders (Smeenk, 2021). Because roles, boundaries, and responsibilities are frequently ambiguous in such contexts, the learning process itself is shaped collectively by the actors involved. Addressing these real-world issues isn't possible without a collaborative and systemic approach that embraces both the experience and practice of stakeholders and designers. In such environments, roles and obligations are often ambiguous.

Co-Design offers a suitable approach to working in these complex environments. Why? It brings stakeholders from diverse disciplines who contribute their own expertise and lived experiences to both the design process and its outcomes. Also, it harnesses collective creativity and is based on the understanding of stakeholders' individual and collective interests, values, desires, experiences, knowledge, and influences (Lee et al., 2018). Inholland professor Wina Smeenk co-developed the *Co-Design Canvas* together with citizens and municipality partners (Smeenk et al., 2021, 2023a, 2023b).

The *Co-Design Canvas* is a knowledge product that is particularly suitable for experiential learning environments where students work on real-world assignments involving multiple stakeholders. The canvas features four core categories (Why, Who, How, What) as depicted in Figure 3.1 and is complemented by eight co-design decision cards (co-design context, purpose of change, focus, stakeholders, impact, results, activities, and settings).

As a teaching framework, the *Co-Design Canvas* supports teamwork and the development of empathy. The accompanying book provides detailed explanations and practical guidance on how to facilitate co-design conversations and processes using the knowledge product. The Societal Impact Design (SID) Research Group at Inholland has accumulated several years of experience applying the *Co-Design Canvas* in higher education. During this period, the didactical approach has been iteratively refined (Mayer & Smeenk, 2023). This experience, sustained reflection, and development have allowed the SID Research Group to develop and facilitate *Co-Design* interventions across various contexts, including train-the-trainer programmes for the Inholland Health, Sport, and Well-being domain (spring 2024), the Learning and Innovation Master programme for the Inholland Education and Innovation domain (since autumn 2024), and an international VR-based co-design pilot involving students in collaboration with Australian partners (Inholland, 2025).

Figure 3.1:
The Eight Co-Design Decision Cards of the Co-Design Canvas (by Wina Smeenk)



Case Study

Building on our ESCollaboration between researchers from Inholland and Rotterdam, established through a long-term transdisciplinary research project on business succession in the agricultural sector, the opportunity arose to apply the *Co-Design Canvas* to a new business education programme. From this context, the following exploratory question emerged:

How can we transfer expertise and experience to a team of educators so they feel confident facilitating a new course that teaches students to address societal challenges in local neighbourhoods?

Earlier work with teaching the *Co-Design Canvas* in Inholland Living Labs showed that it fosters deep learning through active, experiential, and participatory engagement. Addressing real-world societal challenges requires students and educators to operate at higher cognitive levels consistent with the revised *Bloom's Taxonomy* (Anderson & Kratwohl, 2001). When these complex learning processes are paired with activating prior knowledge and aligned with learning goals, they enhance the didactical comprehension and effectiveness in Living Lab contexts.

Rotterdam and Inholland collaborated with the shared goal of preparing students to co-design in collaboration with stakeholders rather than for them. This change in dynamic is a shift from solution-oriented thinking towards collaborative, relational, and participatory practices.

Collaboration Process

The *Co-Design Canvas* was utilised as a pedagogical method to train 20 educators involved in the new second-year course *"Draagvlak Creëren" (building stake-*

holder support), which is part of the Bachelor of Business Administration at RUAS.

In this course, students are provided with strategies for recognising and addressing resistance. They are also equipped with new skills to initiate change through constructive cooperation with stakeholders. The primary aim is to teach students how to create support for interventions among stakeholders who have an interest in the societal challenge at hand.

Between April and May 2025, approximately 300 second-year students applied the *Co-Design Canvas* to 15 real-world neighbourhood challenges provided by the Municipality of Rotterdam. The 10-week course was worth 10 ECs and was assessed through a written report demonstrating evidence of neighbourhood interventions and a role-play exam.

This course used a different approach than traditional business administration or stakeholder management methods. Educators guided students in co-designing interventions with communities. They worked directly with residents and other stakeholders. While some educators were familiar with design and co-design approaches, most students had little or no prior knowledge of these methods.

The approach aligned with Rotterdam's renewed educational vision, which centres on context-rich learning and focuses on transition challenges in the areas of circularity, digitalisation, and the meaningful economy.

2. Approach

To prepare the faculty for this shift in methods, Claudia Mayer, a researcher from the Societal Impact Design Research Group at Inholland, facilitated a half-day train-the-trainer session for 20 Business Administration lecturers in April 2025. This interactive session introduced the core principles of co-design and invited faculty members to apply these approaches to one of the municipality's real-life challenges.

The session followed an experiential co-design learning format. It began with a visual agenda and a think–pair–share warm-up using a floor-sized *Co-Design Canvas* to activate prior knowledge about collaboration. A spinning wheel was used to randomly select a neighbourhood challenge, after which participants formed groups of three or four based on their professional experience and familiarity with co-design or collaborative work. They then engaged in a sequence of learning activities mirroring the weekly rhythm of the forthcoming student course.

- Phase 1: Each participant conducted brief desktop research, followed by a mapping exercise that defined the purpose ("why") and relevant stakeholders ("who") using Post-its.
- Phase 2: Participants worked in pairs to conduct a mock stakeholder interview, focusing on interest, knowledge, and power relations. They documented key findings directly on the canvas.
- Phase 3: Groups reflected on their canvases, discussing collaboration structures and potential co-design activities.
- Phase 4: Each group presented a narrative of their process using the *Co-Design Canvas* and role-playing. Peer groups evaluated these presentations using printed rubrics, followed by a period of plenary reflection.

One week later, the course started. Students were introduced to the *Co-Design Canvas* knowledge product in an initial lecture and immediately applied it in the assigned neighbourhoods. The course was delivered collaboratively by the teaching team in partnership with the neighbourhood managers, the SID Research Group at Inholland, the Expertise Centre for Social Innovation (EMI) at RUAS, and the Department of Youth and Family at Erasmus School of Social and Behavioural Sciences.

This collaboration resulted in the development of practical, context-appropriate learning materials that students could directly apply within the neighbourhoods.

3. Findings: Applying Systemic Co-Design

By observing the students and teachers, we found that the *Co-Design Canvas* supported the processes of experiencing complexity, suspending judgment, and deepening research and understanding.

Via the canvas, students were compelled to consider the broader context of use. The format made them think more comprehensively about stakeholders, the underlying causes of the issues, and what results and impact they wanted to achieve with their interventions. With these insights, initial ideas for interventions quickly started to take shape.

During neighbourhood visits, students discovered that the situation was far more disordered than they had anticipated. Using the district hubs of the Municipality of Rotterdam as a base, they engaged in both planned and unplanned conversations with stakeholders. New insights allowed their *Co-Design Canvas* to evolve. For instance, new stakeholder interests emerged, while previously important elements disappeared. During this iterative research process, students approached *Systemic Co-Design* intuitively.

The *Co-Design Canvas* turned out to be a practical conversation starter between students, students and stakeholders, and students and teachers. Students took their canvas to appointments and could explain their work by showing the canvas. They also learned to look at the bigger picture, recognising that issues are often more complex than they initially expected. The canvas's design stimulated out-of-the-box thinking that led to surprising insights. The teachers observed that students were increasingly able to suspend judgment, remain curious, and empathise with others. These skills helped them create support for ideas.

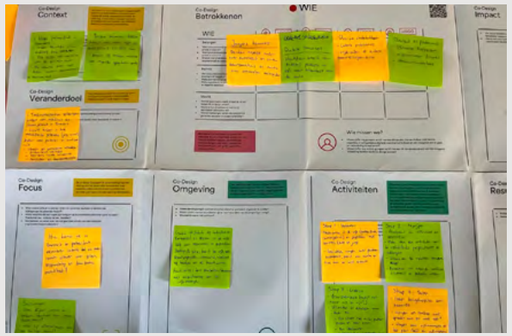
We observed that each student group benefited from the *Co-Design Canvas* in different ways. Some found it cumbersome to bring the A1-canvas on-site and preferred working without it during neighbourhood visits. Other groups felt overwhelmed, especially at the start of the programme. In these cases, teachers were able to provide tailored support to get the group on track.

Over six weeks, students regularly refined their *Co-Design Canvas*. They photographed it each week so the evaluators could track the evolution of their insights. While some students struggled to let go of past insights, they learned that doing so was essential for the quality of the work. The strongest student groups excelled in both divergent and convergent thinking.

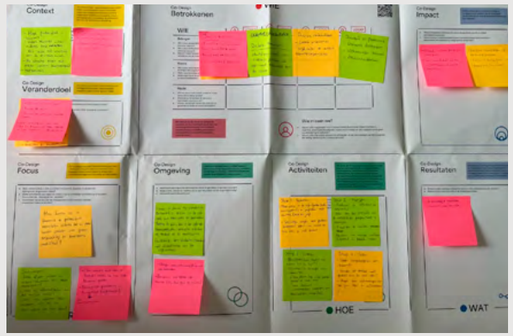
Exemplary Student Group

One student group focused on the lack of parking in a Rotterdam neighbourhood. Many older residents felt that every household was entitled to a parking space, leading to an increase in the "concretisation" of scarce public space. The solution was also not aligned with sustainability ambitions.

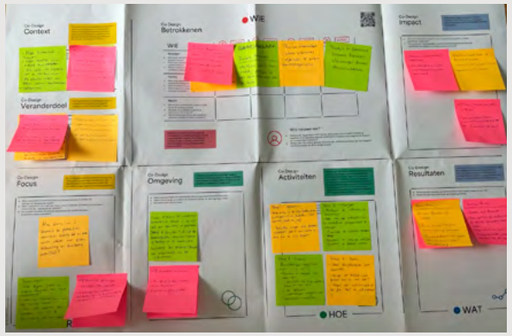
The municipality wondered how younger residents perceived this issue. Would they still want to own a car in the future? And if the value placed on parking spaces decreases, how would residents like to see the concrete parking spaces repurposed?



Co-Design Canvas 1
Initially, the students explored the context of the challenge, clarifying what to expect and how they intended to approach the issue. Their research was guided by exploratory questions, such as: How do residents experience the current situation? Are there differences in interests between younger and older residents?



Co-Design Canvas 2
The students surveyed and interviewed residents in the neighbourhood to gain a deeper understanding of the challenge. They found that the parking issue was experienced primarily by older residents living in apartment buildings, while younger residents placed greater value on green public spaces. This led to new questions, such as: What has already been attempted? How significant is the problem? Which solutions are possible?



Co-Design Canvas 3
An interview with the district manager offered new insights, particularly regarding potential solutions such as shared transportation. She highlighted that there are often sufficient parking spaces and suggested that the issue may not be as severe as some residents perceive it.

Co-Design Canvas 4
Finally, the students returned to the neighbourhood to present their proposed solutions to residents of different ages, gathering valuable feedback from these key stakeholders. They then analysed the insights and refined their solutions, which included shared transport hubs and designated parking spaces for residents aged 70 and above.

← **Figure 3.2:**
Co-Design Canvas

4. Dynamic Learning Agenda and Unexpected Developments
After completion of the Rotterdam course, we revisited our exploratory question:

How can we transfer expertise and experience to a team of educators so they feel confident facilitating a new course that teaches students to address societal challenges in local neighbourhoods?
We conclude that the value of the *Co-Design Canvas* for higher education emerges on multiple levels of the ESC *Dynamic Learning Agenda*. We will discuss them below.

SCD in Me
Educator perspective
During the canvas train-the-trainer session led by Claudia, educators learned to identify and challenge their own assumptions while gaining awareness of the systems in which they operate. This prompted reflection on their role and circle of influence within larger educational structures. The session also provided experiential knowledge, equipping educators to transfer these insights to their students. The timing (one week before the course began) was ideal for maximising retention and readiness among course educators.

Student perspective
From the students' perspective, this reflective approach had a direct impact on the learning process. By engaging with the *Co-Design Canvas*, students became more aware of their own assumptions about neighbourhood challenges and stakeholder perspectives. They recognised how their actions fit into broader social and systemic contexts, which encouraged them to reflect on the consequences of their interventions and the interconnections between different stakeholders. This process helped students build confidence in exploring complex problems and taking ownership of solutions. Openness to new stakeholder perspectives invited and encouraged students to embrace vulnerability and confront personal biases and prejudices. Using the *Co-Design Canvas*, students structured their insights, iterated solutions, and developed confidence in tackling complex, real-world problems.

SCD with Others
Educator perspective
Co-Design requires collaboration and a strong awareness of one's role within a larger system. For educators, guiding students through this process involves facilitating reflection, encouraging curiosity, and supporting risk-taking. By observing and coaching students during the course, teachers gained insight into how group dynamics, stakeholder engagement, and iterative problem-solving unfold in practice. This approach also helped educators recognise the importance of fostering safe learning environments where students can experiment, make mistakes, and learn from them.

Student perspective
Some second-year business administration students were initially hesitant to apply co-design in practice, as they typically gain confidence only in their later years of study. Remarkably, the process challenged them enough to step out of their comfort zones. Introverted students, for example, took their first steps in approaching and interviewing people they had not yet met. Students also demonstrated creativity in developing interventions: one group organised a "neighbourhood quiz" to strengthen connections among residents, while another designed a ready-made concept for a volleyball tournament to attract visitors year-round. Both projects were developed in close collaboration with residents and local entrepreneurs.

Throughout the process, students practised active listening, expanded both problem and solution spaces, and engaged with mutual respect – enabling authentic and honest conversations with stakeholders.

SCD in Systems

Educator perspective

Introducing new methods into a curriculum can be challenging. At first, business students did not always recognise co-design as relevant to their field and sometimes struggled to apply it. The surrounding degree programme remained strongly rooted in traditional, established models and theories, making the shift even more challenging.

Course teachers played a crucial role in guiding students through the complexity of neighbourhood challenges. By facilitating reflections within a safe educational environment, they helped students navigate interconnected issues, manage cognitive overload, and critically evaluate information. Educators supported students in embracing iterative learning and encouraged them to confront personal biases while maintaining accountability for their co-designed solutions. While introducing co-design into a traditional curriculum was initially challenging, several enthusiastic educators championed the method, leading to its integration in other minors, such as Happy@Work and Future Business Models for Positive Impact.

Student perspective

Students gained first-hand experience of both formal and informal power structures within neighbourhood systems. They became increasingly critical of received information, actively checking the validity of their assumptions – a behaviour that course developers had not anticipated. The Co-Design Canvas was instrumental in supporting this process, helping students structure their approach, communicate insights, and iterate solution directions within complex systems.

This process fostered a strong sense of ownership and accountability towards their solutions. Openness to stakeholder perspectives encouraged students to embrace vulnerability, confront personal biases, and engage collaboratively in complex, real-world problem solving. The *Co-Design Canvas* provided a practical framework for structuring their insights, communicating ideas, and refining solutions in response to feedback from multiple stakeholders.

Lessons: SCD in Education

A key lesson from our case study was that the decision-making process within this course was genuinely bottom-up. The educational vision of RUAS and the educational profile of the Business Administration programme provided the overarching framework, but within that framework, the course holders had a lot of freedom. They wanted the students to use the chosen methods and saw them as essential tools in the students' academic toolbox. Their early conviction helped them communicate the added value to colleagues, build support within the teaching team, and foster acceptance and enthusiasm among students.
Below, we summarise the main success criteria and potential risks and encourage educators to integrate *Systemic Co-Design* (SCD) methods into their curriculum:

- **Strategic embedding:** SCD in higher education requires intentional alignment with the course structure and broader curriculum. Without constructive alignment with other teaching activities, assessments, and learning outcomes, SCD risks being perceived as merely a "fun workshop" without meaningful impact on learning.

- **Iterative and inquisitive learning culture:** *Systemic Co-Design* requires educators to adopt an iterative, explorative mindset. It is an active process that thrives on coaching, continuous reflection, and

Figure 3.3:
Train-the-trainer, Co-Design Canvas

Figure 3.4:
Students visiting a community center

Figure 3.5:
The audience is reading the Co-Design Canvas instructions at the inaugural lecture of Wina Smeenk

Figure 3.6:
The Co-Design Canvas on the floor at the inaugural lecture of Wina Smeenk

feed-forward feedback. Because students take part in shaping both the process and the solution direction, outcomes evolve over time and cannot be fully predicted or prescribed beforehand. A fixed tunnel-vision approach undermines the efforts of SCD and can reinforce existing biases that favour known approaches.

- **Relevant and shared challenges:** *Systemic Co-Design* is most successful when assignments cultivate shared ownership around a joint theme, vision, or solution direction that matters to multiple stakeholders. It struggles when limited to a narrow shared interest in tackling it. In contrast, it cannot succeed with narrowly predefined objectives aligned with only one organisation's agenda.

5. ESCollaboration

The collaboration between RUAS (course holder Sybe Stuij, Hans Rood, and professor Frank Berkers) and Inholland (researcher Claudia Mayer and professor Wina Smeenk) exemplified the principles of SCD in practice. By combining complementary expertise, we were able to support each other, exchange knowledge, and co-design the partnership itself – thereby modelling for teachers the very processes students were expected to apply in their projects.

This collaborative approach not only strengthened our own work but also allowed students to witness and learn from a real-world example of iterative, stakeholder-driven design. The success of this collaboration demonstrates the importance of embodying the principles of *Systemic Co-Design*: reflection, iteration, and shared ownership in both teaching and practice. We believe the success of this collaboration is grounded in one key principle: practice what you preach.

CHAPTER CONTRIBUTIONS

Dynamic Learning Agenda
- SCD in me
- SCD with others
- SCD in systems

Transferable SCD-knowledge
- *Co-Design Canvas* training for educators
- Case study: How to co-design with local communities
- Case study: How to use the *Co-Design Canvas* as a conversation starter for students with limited design background

SCD-repertoire
- Co-Design principles for teachers of other disciplines
- *Co-Design Canvas* as an embedded method in the course, including assessment (constructive alignment)

SCD-outcomes
- Students:
  Increase in ownership and accountability
- Programme:
  SCD methods initially embedded within business education
- Organisation:
  Trained teachers adopted it in other business courses (ripple effect)

4. ESC IDG-hub: The Difficult Transfer of Systemic Co-Design Methods into Education

Lenny van Onselen, Heleen Geerts, Philippa Collin, and Guido Stompff

Educational institutions: Inholland University of Applied Sciences, HU University of Applied Sciences Utrecht, The Hague University of Applied Sciences
Research institution: Inholland, Authetic Leadership Research Group
Boundaries crossed: cross-universities, cross-disciplines
Students involved: ca.150
Educators involved: ca. 110
Timeframe: March – October 2025

1. Introduction

How do we educate students to navigate uncertainty and apply the basics of sustainability, regardless of whether they are in an associate degree, bachelor's, or master's programme? To maximise impact, ESC creates knowledge products to transfer co-design expertise and help adopt them in education, especially within the four partner Universities of Applied Sciences (UAS). The aim of these products is for students to grasp the fundamentals of *Systemic Co-Design* (SCD) and recognise its value in addressing complex, interconnected issues involving multiple stakeholders. This ambition brings a challenge for ESC: other chapters (e.g. chapter 3 and 6) in this book illustrate an approach that allows SCD researchers, teachers, and practitioners to co-create education. To broaden SCD's influence and boost societal impact, it is necessary to inspire more educators and researchers adopt this collaborative approach. We need to reach faculty members who are currently unaware of *Systemic Co-Design* but may want to adopt it once they understand it. In this chapter, we focus on the question: *How can we inspire more lecturers, faculty, and curriculum developers to adopt the concept of SCD and integrate it into their lessons and programmes?* The verb "to adopt" is chosen deliberately. Adoption is about love and responsibility, and adopting SCD requires that lecturers love the concept and feel responsible for integrating it.

We will discuss a case study of an SCD knowledge product specifically developed to span boundaries, how it affected three UAS institutions, and the challenges involved in getting faculty to embrace the product and SCD in their curriculum.

Developing Inner Development Goals for Transitions

Philippa Collin, a recently retired lecturer at Inholland, wanted to contribute to the *Sustainable Development Goals* (SDGs). She started her quest with the question: how can education prepare individuals to harness their own strengths so they can contribute to societal transitions and sustainability challenges? She is not alone in asking this question. Many students and lecturers feel the urgency to engage with complex issues such as climate change, social inequality, and the transition towards a sustainable society Wamsler (2020). At the same time, they often feel overwhelmed by the scale and complexity of these topics.

Collin was focused on the personal motivation and development of students because she considered intrinsic motivation a prerequisite for any change. She used the *Inner Development Goals* (IDGs) to provide a suitable framework for her queries (Figure 4.1).

Figure 4.1:
Inner Development Goals framework (by IDG Foundation)

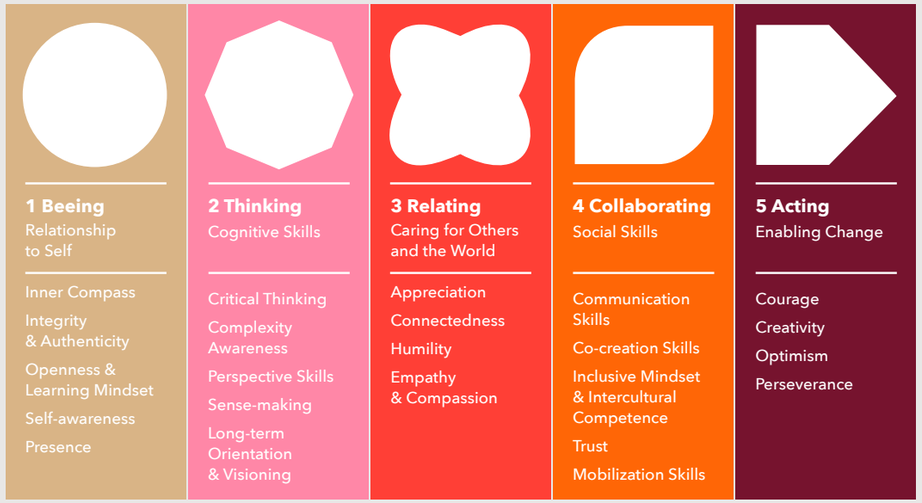


Figure 4.2:
Lemniscate model (by Philippa Collin)

It offered a focus on sustainability issues arising from humans' disconnection from each other and the greater ecosystem on which we all depend. She quickly discovered that the IDGs, consisting of 25 skills across five dimensions, were too static for education. She wanted "to create something that was more hands-on for students from Universities of Applied Sciences."

Collin became a lecturer-researcher of the Authentic Leadership Research Group, affiliated with the ESC. It offered her time to explore these concepts, and she developed a model that offered a continuous dynamic approach: from being to relating to acting and then back to being. This infinite loop, which Collin called the *IDG Lemniscate mode*l, is at the heart of the philosophy (Figure 4.2).

She explains, "With the *lemniscate approach,* you can do things effectively within a short time and still be powerful."

Collin used this idea to develop an educational method that integrated artistry, active listening, writing from the heart, and seeking a more profound connection. She tested and honed the method with students in relevant minors and living labs of Inholland. Also, it was presented for feedback at the ESConference and other conferences.

Establishing an IDG-hub within ESC

Collin became the driving force behind the *ESC IDG-hub*, launching an effort to share the IDG philosophy with other UAS institutions within ESC. This effort was time-sensitive; she was about to retire and wanted to cement her intellectual legacy. Her outreach revealed a "radical ring," which was a small group of individuals who liked the IDG philosophy and Collin method. These people were willing to transfer it to their institutions.

The idea they embraced revolved around the ESC IDG-hub, which integrated the development of individual skills and capacities with *Systemic Co-Design*. Its aim was to delve into the knowledge and practices that support a systemic approach and foster creation, partnership, and a creative, art-based approach to design. The hub provided a safe space for regular experiments and community meetings. These efforts had three key objectives:

- **Building awareness** among students and lecturers of the relevance of IDG for societal transitions
- **Building a community** of students and lecturers to exchange experiences, practices, and tools
- **Integration into education** by providing practical guidance for embedding the IDGs into curricula and projects within higher education

2. Approach and Findings

Collin developed an interactive *IDG-Expo* (Figure 4.3) that let visitors add Post-its with remarks, respond to stimulating questions, have dialogue, or reflect on their own behaviour. She also developed inspiration sessions on the IDGs for lecturers and researchers. Two lecturer-researchers in the network, Lenny van Onselen of the HU and Heleen Geerts of THUAS, arranged to have the expo and workshops at their institutions. What was the impact?

Diffusing IDGs within Inholland

The *IDG-Expo* was first presented at Inholland, and it remained at the exposition space in Amsterdam for several weeks. She held several sessions attended by a mixed audience of lecturers, researchers, staff, and students. Some lecturers expressed interest in integrating the ideas into their courses in some form. However, adopting Collin's approach is proving to be more difficult than expected. As of this writing, IDGs are not an explicit part of any programme yet.

Figure 4.3:
IDG-hub Expo
(by Leroy Beesemer)

Figure 4.4:
IDG-hub Expo inspiration session with Philippa Collin
(by Leroy Beesemer)

Figure 4.5:
IDG-hub
at THUAS

Figure 4.6:
IDG-hub at HU

One illustrative example of these challenges involved a group of lecturers, students, and partners of two large companies who visited the *IDG-Expo*. Collin recalled that the students were quick to embrace the ideas. "Their enthusiasm made the IDGs become real, even for the partners."

The lecturers became IDG ambassadors and wanted to integrate it into their facilities management minor degree programme. However, months later, they returned to explain that they found it challenging to adopt. The main problem was that the exercises and the expo were not a ready-made method. One lecturer explained, "Students need working methods to become deeply aware of their inner motivations. I did not have the time to develop these methods or to adapt Philippa's methods."

Second, the lecturers were aware of how difficult it is to change a minor. "You can't add inner development on the side. It must be woven into the minor, but then we need to change the assessment and the OER [the Education and Examination Regulations]. And you know how much time that takes!" At Inholland, was decided to introduce the IDGs as part of a new programme, called *Blended Intensive Programme*.

Diffusing IDGs within HU University of Applied Sciences Utrecht

Van Onselen, senior researcher at Research Group Co-Design and expert at the Teaching and Learning Network of the HU arranged for the IDG-Expo to be officially launched with an inspiration session by Collin at the HU. Collin delivered an inspiring presentation and shared conversation cards developed by students. She then invited participants to reflect on skills such as resilience, empathy, and self-reflection – essential for anyone seeking to contribute to a sustainable future.

The expo went on a tour within the HU and was presented at four different places:

- The "living room" of the Teaching and Learning Network, where HU teachers are trained and trainers organise meetings. This helped us reach teachers interested in new educational approaches.
- The Research Centre for Healthy and Sustainable Living, which consists of 12 research groups focused on a healthy and sustainable life for all individuals, including vulnerable groups.
- The Green Office, the platform for sustainability in education and research at the HU. They also raise awareness among students and staff about the SDGs by hosting events.
- The HU Climate Exam event, which featured a market where the IDG-Expo was shown. The goal of the event was to access and expand climate knowledge. It was organised by the Ministry for the Future and partners like KNMI, Utrecht University, and the Young Climate Movement.

The IDGs became well known to many in the HU. In the first inspiration session, around 15 teachers, course coordinators, and staff members showed interest in IDGs. Another two dozen teachers, students, researchers, and staff members got acquainted with the IDGs via other ways. The interest in IDGs initially arose when people interacted at the expo, but this only happened through explicit facilitation. Most people got inspired at the start of the tour, when Collin presented the expo and gave an inspirational session.

Interested teachers and course coordinators said that they intended to adopt the educational approach and integrate it into their courses. However, six months after the presentation and expo, the impact on education seems limited.

Even with a general lack of results, there have been some successes. Brian Kragtwijk, a Business Studies teacher, attempted to improve the *IDG-zine*. In an evaluation, it became clear that few are lingering questions about how to integrate IDGs. Responses to integration efforts included:

"I will take it along in a future project proposal on transformative education."

"I was inspired and have the booklet on my desk to remind me."

Others already let go of the IDGs: "Unfortunately, I had to get along with the course of nations within my school."

We see outreach as a missed opportunity for the HU. A stronger connection of the *IDG-Expo* with student activities could possibly have had a greater impact. It seems that conducting inspiration sessions, sharing working methods, and having exhibitions are insufficient to start a movement that initiates change.

Diffusing IDGs with The Hague University of Applied Sciences

Heleen Geerts, a lecturer-researcher within the Designing Value Networks Research Group at the Centre of Expertise Mission Zero, ensured that the expo took place at THUAS. The university's Green Office was interested in having the expo at the national Groene Peper event to raise awareness of the IDGs among students, lecturers, researchers, and change-makers. Green Office is a student-led platform that initiates projects to increase sustainability awareness and support peers and staff. Globally, many universities have established Green Offices, recognising the potential of educational institutions to generate a positive impact on the environment. The Green Office at THUAS actively supports curriculum transformation and is involved in sustainability-related research. It also seeks to foster awareness and behavioural change through events and experiential activities. They recognised the value of adding the IDG-Expo for the Groene Peper event. During the week-long event, hundreds of visitors came to the IDG-Expo. Dozens of them actively engaged with the interactive expo, and their contributions were systematically recorded, leading to a rich understanding of the experiences, values, norms, fears, and thoughts of students and lecturers.

The response at Green Office led to three inspiration sessions for lecturers and students held in the months afterwards. The Circular Entrepreneurship programme at the university decided to integrate a dedicated IDG workshop for students. The aim was to coach students to develop entrepreneurial skills that combine making money and working on societal challenges. Also, two international master's and two bachelor's programmes expressed an interest in integrating IDG into their curricula.

Lecturers reported that the interactive *IDG-Expo* could inspire students to reflect on personal development goals. The lack of a strict step-by-step method enabled them to use it as a tool next to the regular curriculum, as part of the "transition toolbox." A lecturer developed additional working forms to make students aware of their "inner purpose" as responsible entrepreneurs. Ultimately, it helped them form a compass for decision-making, based on values and not just profits.

However, they also report that the IDGs are an additional task on top of an already full programme. Skills like openness, compassion, and humility are considered "soft" and "vague" by students and lecturers in the business domain. On top of that, there were concerns that discussing societal issues could cause tensions among students with different political opinions.

Ultimately, lecturers were not confident in their abilities to lead discussions on sensitive topics without risking escalations.

First Findings: Cultivating IDGs in Education

The *ESC IDG-hub* aims to synthesise personal development and collaborative design processes and to engage with issues like climate change, social inequality, and the transition to a circular economy. The expo and the accompanying workshops are knowledge products intentionally developed for higher education, offering an empowering tool for students and lecturers to reflect on inner development. The journey of the *IDG-Expo* demonstrates the challenge of using IDGs in education.

The *IDG-Expo* found acceptance in specific groups of lecturers, students, and staff, such as the Authentic Leadership Research Group at Inholland, the Rich Learning Environments community at the HU, or the Green Office at THUAS. However, there was a lack of follow-up with some groups after they attended inspirational sessions.

Interestingly, the knowledge product received a better reception and seemed to have a greater impact at existing events. For example, the large-scale Groene Peper event proved to be an excellent opportunity to position the IDGs in relation to sustainability transitions, raising awareness and inspiring action among current and future change-makers. The Climate Exam offered similarly fertile ground for generating interest. Students served as another catalyst for adoption. As Collin reflected, it was the students' enthusiasm that made lecturers and partners embrace the IDGs. At THUAS, the student-led Green Office embraced and displayed the expo.

Lecturers were initially interested, with many saying they intended to use IDGs in their courses. However, most did not follow through with their plans. They were, perhaps, bogged down in practicalities. They needed to develop dedicated working forms and then incorporate them within existing programmes and curricula. They also needed to adapt the assessment criteria and align them with other lecturers.

Those lecturers who integrated it into their lessons were genuine IDG ambassadors. They are prepared to invest time in developing working forms, adapting them to current curricula, finding ways to squeeze them into an already overloaded programme, and negotiating with exam boards.

On top of that, these lecturers feel they have the agency to do all this, even when no one gave them the assignment. The efforts of these ambassadors demonstrate that the IDG framework, with its emphasis on moving *from being to acting* and back, provides a valuable lens to understand how new tools, theories, and methods can positively impact education.

3. Dynamic Learning Agenda Reflections

The question posed in this chapter is not just about IDGs but also about *Systemic Co-Design*:

How can we inspire more lecturers, faculty, and curriculum developers to adopt the concept of SCD and integrate it into their lessons and programmes?

In essence, this concerns spanning the boundary between those who study and practise SCD and educators who are unaware of the concept. The case study demonstrates that the *IDG-Expo* and the workshops work as a bridge between SCD and students and lecturers who aren't familiar with the concept. Even so, the IDG-Expo's impact was lower than expected for actually changing curricula. An interactive and accessible knowledge product was not enough to overcome the gap.

SCD in Me
The IDGs focus on personal development, equipping learners with the skills, resilience, and motivation to engage meaningfully with societal challenges. It was built on the assumption that any change starts with internal motivation. Working with the lemniscate model is not complex; Collin's exercises are playful, light-hearted, and easy to adopt. While some participants in the inspiration sessions initially expressed scepticism, many changed their minds quickly and acknowledged the method's effectiveness. As one participant said, "It's because you can go very deep with tiny things."

ESC lecturer-researchers at institutions unfamiliar with the IDGs immediately recognised their relevance. Without hesitation, they initiated efforts to bring the expo to their campuses, mobilised colleagues, and scheduled inspiration sessions. They "fell in love" with the IDGs and took considerable steps to inspire others. They felt the responsibility to act and had adequate agency.

Even so, only a few lecturers who engaged in workshops or with the expo embedded any part of the IDGs in their programmes. As mentioned at the beginning of the chapter, adoption requires love and responsibility. Responsibility implies turning intentions into action and being accountable for the consequences.

However, embedding IDGs in their programmes required significant time and effort. Many lecturers, once they realised this was not an off-the-shelf method, did not find the time and energy to bring it into their programmes. Possibly, they did not feel they had the agency to change the programmes they are involved with.

SCD with Others
Disconnection – from ourselves and the world around us – is increasingly recognised as a root cause of the current ecological and societal crises. The IDGs offer a pathway to reconnection, and Collin's framework guides individuals from being to acting and back in a continuous loop. The *IDG-Expo* provided a platform for lecturers and students to engage in meaningful conversations outside the classroom. As one lecturer reflected, "I've never had such conversations with my students before."

But these interactions needed facilitation. The expo in itself did not seem to inspire such meaningful and rich interactions. The "magic" happened when students, lecturers, and partners were facilitated. In other words, the expo is a knowledge product that spans boundaries among students, lecturers, and partners, but it requires external facilitation. The exercises Collin used during the workshop were practical but difficult to replicate.

The key to increasing the impact of SCD methods on education is in rethinking what kind of knowledge product is needed. Even though the value of such methods is apparent through workshops, enabling lecturers to adopt them in academia requires additional boundary objects.

What are these objects? Star and Griesemer defined them as *"objects which are both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites*." These objects need to be malleable enough to fit in different educational programmes and meet the needs of other lecturers and students. Or they need to be flexible enough that lecturers can make adaptations and additions themselves.

To accomplish this, these objects cannot be fully designed beforehand. They need to have a framework that invites others to co-create and adapt it to local needs.

Future efforts to embed IDGs or SCD methods in curricula should focus on co-creation through well-designed workshops and objects that enable lecturers to adapt methods to their needs and local constraints.

SCD in Systems and SCD in Time
Even when individual lecturers want to adopt a method within education, it is difficult to do so. Lecturers from the three institutions in this case study reported that practical challenges, like assessment and curriculum policies, made adopting new tools difficult. Having a delightful workshop with students at an expo is one thing; integrating a method within an actual credit-earning course is another. Like any large organisation, institutions resist change, and it requires perseverance to alter routines, rules, regulations, and policies.

These are geared towards efficiency and meeting quality standards and are artefacts of previous educational culture and negotiations. SCD methods often challenge these standards, and adapting policies to include SCD will take years rather than weeks.

4. ESCollaboration
Collin's efforts to adapt the academic IDGs for higher education into an actionable lemniscate model, and the development of the *IDG-Expo* that toured across various ESC partner institutions, were only possible with the aid of ESC. It yielded valuable insights into the relationship between inner motivations, personal growth, and systemic change and how SCD can serve as a catalyst for meaningful change.

CHAPTER CONTRIBUTIONS

Dynamic Learning Agenda
- SCD in me
- SCD with others
- SCD in systems
- SCD in time

Transferable SCD-knowledge
- Lemniscate model (based on IDG framework)
- SCD methods and knowledge products need flexibility in their design for adaptation in other learning contexts

SCD-repertoire
- *IDG-hub* and *IDG-Expo* as a means to transfer IDG inspiration and reflections to students and teachers of UAS'
- IDG principles for teachers of all disciplines
- IDGs embedded in UAS teaching materials

SCD-outcomes
- IDG teaching methods adopted by teachers

5. Design-based Professional Development in Engineering Education

Ivo Vrouwe

Educational institutions: Rotterdam University of Applied Sciences, Rotterdam Mainport Institute, Institute for Engineering and Applied Sciences
Research institution: Research Centre Talent-ontwikkeling (KCTO) & Centrum of Expertise HRTech
Boundaries crossed: cross-disciplines (education - engineering - design)
Students involved: ca. 40
Educators involved: ca. 50
Timeframe: January 2025 – December 2025

1. Introduction

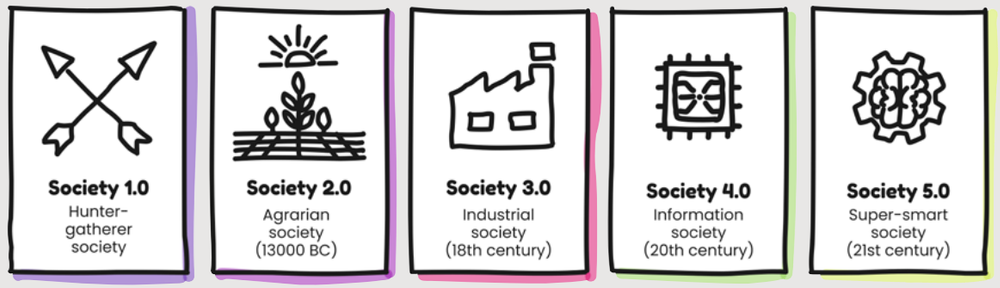
Engineering education is increasingly pressured to evolve in response to global shifts in sustainability, digitalisation, and ethical responsibility. These new norms call for new professional roles and innovative learning approaches. Traditional learning approaches, often anchored in curriculum-centred education and disciplinary silos, struggle to address these complexities, creating a need for educational innovation that is both systemic and participatory.

This chapter responds to that need by introducing a design-based professional development approach that combines conceptual frameworks with practical instruments. Knowledge products such as the *Attitude-Centred Educational Design* (ACED) Toolkit, the *Learning Journey Canvas*, and the *Societal Challenges Game* enable educators and students to co-create learning experiences that make attitudes and values explicit, bridging the gap between abstract principles and concrete practice.

Building on these tools, this chapter outlines iterative and collaborative practices, such as design thinking, serious play, and gamestorming, that foster shared ownership and openness to experimentation. Together, these strategies aim to expand pedagogical repertoires and support sustainable transformation in engineering education by embedding systemic design principles into everyday teaching and learning.
Cyberspace and physical space are integrating more and more each day. Transitioning from Society 1.0 to 5.0 (Figure 5.1) reflects a shift in societal value from physical labour, manual craft, and skill to cognitive and communicative capacities, now increasingly supported by GenAI, drones, and robotics. As traditional roles become increasingly automated, educators are tasked with responding by skilling and reskilling learners for a data-driven and interconnected world. In the Netherlands, this includes fostering digital literacy, ethical awareness, and system-level thinking. Design and engineering education evolve in parallel, moving from artefact creation (Design 1.0) to transdisciplinary and transformative practices (Design 4.0) (Jones & Ael, 2023). This change means education must align with societal trends and prepare students to co-design solutions within complex, technology-infused ecosystems.

Educational design has evolved alongside these major societal shifts, from early industrial models to today's interconnected world. Rapid technological progress and globalisation have accelerated change, creating complexity and uncertainty. From Society 4.0 onward, innovation was driven by the ethos of "move fast and break things." The focus was on speed and disruption rather than long-term consequences. In education,

Figure 5.1:
Society 1.0–5.0



this translated into curriculum models that emphasised technical skills and knowledge to meet industrial efficiency (Biesta, 2022; Walker, 1985). While early adopters adapted quickly to new technologies, ethical considerations and broader societal implications were often not prioritised.

Over time, the limitations of this approach became clear. The Great Acceleration highlighted the risks of short-term thinking, with rising consumption and ecological challenges exposing the need for deeper foresight. As a response, value-centred design emerged, emphasising sustainability, justice, and responsibility (Friedman & Hendry, 2019). Today, higher education increasingly integrates attitudes and values into curricula, addressing issues like climate change, inequality, and digital ethics. This shift aims to prepare learners not only with technical expertise but also with ethical reasoning and global awareness to navigate uncertainty with confidence. The OECD's Learning Compass 2030 formalises this development through the *SKAV model* (Skills, Knowledge, Attitudes, and Values) as interdependent foundations of transformative competencies. In curriculum-centred education, skills and knowledge were emphasised to support the paradigm of acceleration, efficiency, and measurability.

The widely used *Body of Knowledge and Skills* (BoKS) framework in curriculum and course design highlights knowledge and skills explicitly. It mentions attitudes and values as implicit or tacit elements of educational design. In contrast, world-centred education recognises that attitudes and values are essential for shaping agency, ethical judgment, and societal well-being. As a result, the *SKAV model* reflects a holistic understanding of learning in which learning outcomes are not merely technical but require the mobilisation of cognitive, emotional, and ethical capacities. For example, engineering and design are no longer just about solving problems efficiently; engineers and designers need to become sensitive to socially and culturally appropriate, empathetic, and sustainable aspects of design. In this way, the *SKAV framework* bridges innovation-centred and value-centred paradigms, offering a compass for education that prepares learners not only to adapt but also to act responsibly and shape sustainable futures.

Figure 5.2:
Iterative, participatory, holistic, and impact-oriented practices

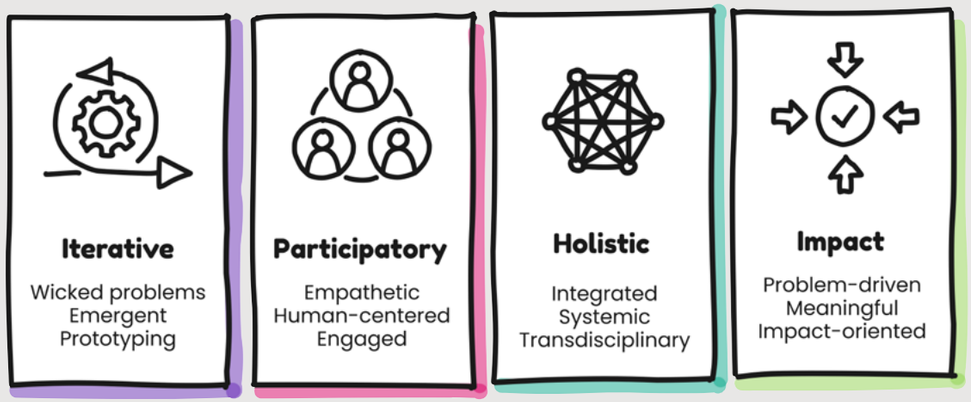


Figure 5.3:
Attitude-Centred Educational Design Toolkit

To address the complexity, acceleration, and unpredictability of contemporary societal challenges, this study explores educational design through a systemic and impact-oriented practice that integrates iterative, participatory, and transdisciplinary approaches (Figure 5.2). In the interaction with complex and unpredictable problems, innovation flourishes through an iterative process that embraces ambiguity and safe-to-fail experimentation as essential to learning (Brown & Katz, 2009; Snowden, 2022). By expanding this view into multi-stakeholder co-creation, design becomes a collaborative inquiry that accounts for the complexity of today's challenges.

This participatory ethos aligns with *Value Sensitive Design*, which calls for the integration of human values, moral imagination, and ethical reflection throughout the design and learning processes. Together, these perspectives support an educational paradigm that not just cultivates skills and knowledge; it also fosters attitudes and values that empower learners to act responsibly and creatively in shaping a responsible and sustainable future.

Despite growing societal demands for engineers who can navigate complexity, uncertainty, and sustainability challenges, as envisioned in paradigms like Society 5.0, engineering education struggles to keep pace. As Eidenskog et al. showed in 2023, traditional curricula remain anchored in disciplinary silos and technical mastery, often marginalising the integration of societal, ethical, and environmental dimensions.

Attempts to introduce sustainability and social responsibility into engineering programmes frequently encounter resistance, both structurally and culturally. This leads to tensions between core and soft subjects. Moreover, while active learning methods and innovative environments are promising pathways (Joore et al., 2025), their implementation is often inconsistent, under-supported, and poorly aligned with systemic transformation.
On the one hand, teachers often lack the training to act as instructional designers. Also, these learning environments compete with engineering values like responsibility, reliability, and measurability. Because these courses carry significant responsibility for structural integrity, dealing with loads, spans, and pressures, introducing experimentation and playful approaches to uncertain futures can understandably feel counterintuitive.

On the other hand, students often need time to adjust to the autonomy and complexity these methods require. Coming from a procedural educational tradition, they face a significant shift in roles to make these approaches successful (Sukackė et al., 2022). Therefore, this chapter introduces a set of tools and strategies to support iterative, participatory, systemic, and impact-oriented working, aimed at empowering educators and learners to co-create engineering education that is technically robust, socially responsive, and future-ready.

2. Educational tools and practices

This section introduces various interconnected tools that support the iterative and participatory development of attitude-centred education. Building on a systemic toolkit, which places professional attitudes at the heart of lesson design, each supporting tool contributes to an impact-oriented approach to curriculum innovation. Together, these tools form a cohesive design tool that bridges values and practice, supports co-creation, and enables educators and students to prototype, test, and refine meaningful learning experiences.

Iterative design: Attitude-Centred Educational Design

Firstly, the *Attitude-Centred Educational Design* (ACED) Toolkit is a systemic and participatory curric-

ulum design tool that places attitudes at the heart of lesson planning. Rather than starting from content or learning outcomes alone, ACED begins with the desired attitudes as required for a successful lesson or course (e.g., resilience, curiosity, or empathy) and uses backward design to align knowledge, skills, and learning activities accordingly. Centred around a tablecloth design and a curated set of attitudes and learning activity cards (Figure 5.3), educators, educational advisors, researchers, and students collaboratively prototype lessons in an informal, non-classroom setting that fosters openness, co-creation, and play. This approach supports systemic change by making attitudes explicit, observable, and actionable within the learning design, bridging the gap between abstract values and concrete educational practice.

The ACED process is iterative and impact-oriented, inviting educators and students to co-design learning experiences that promote both the mastery of subject content and personal growth. By integrating attitude cards, grounded in labour-market relevance, with learning activity cards, teams construct learning flows that resonate with attitudes, values, knowledge, and skills. The result is a lesson or course design that can be tested, evaluated, and reworked, embedding attitude development as a core educational outcome.

Participatory Design: Student Journey

The *Learning Journey Canvas* is a participatory design tool that centres around students' daily experiences as a foundation for educational innovation. By mapping a challenging day, which is defined as a day when study, work, travel, and personal life compete, students visualise their time allocation, emotional highs and lows, and thoughts. The canvas is structured into four horizontal layers: location, activity, feeling, and thinking, segmented by hourly time blocks (Figure 5.4). This retrospective reflection enables students to articulate where and when learning is energised or obstructed, offering educators a rich, student-centred perspective to inform curriculum design. Administered in an informal, non-classroom setting, the process fosters openness, trust, and authentic dialogue.

In line with systemic and impact-oriented educational design, the *Learning Journey Canvas* fosters co-creation while amplifying student voice and agency. Insights derived from the canvas can be clustered and analysed to uncover recurring patterns, structural barriers, and opportunities for pedagogical alignment. The findings provide essential input for instruments such as the ACED Toolkit, ensuring that lesson and curriculum design respond to students' lived realities rather than abstract and distant assumptions. By embedding student perspectives into the design process, it promotes dialogue with students rather than about them, cultivating a culture of learning both with and from one another.

In addition to the *Learning Journey Canvas, LEGO® SERIOUS PLAY®* is used to help students express tacit experiences and aspirations through metaphor and play (Kristiansen & Rasmussen, 2014). By building models of their current and desired educational experiences, students externalise complex emotions and ideas in a tangible, visual form. The playful nature of *LEGO®* fosters intrinsic motivation and emotional safety, while the use of metaphor allows students to articulate visually what is often difficult to express in words. Short, filmed presentations of these *LEGO®* scenarios become powerful starting points for educational redesign, offering educators authentic, student-driven insights that support participatory and systemic change (Figure 5.5).

Systemic Design: Societal Challenges Game

The *Maatschappelijke Opgavespel* (Societal Challenges Game) is a serious game designed to foster systemic thinking and transdisciplinary collaboration

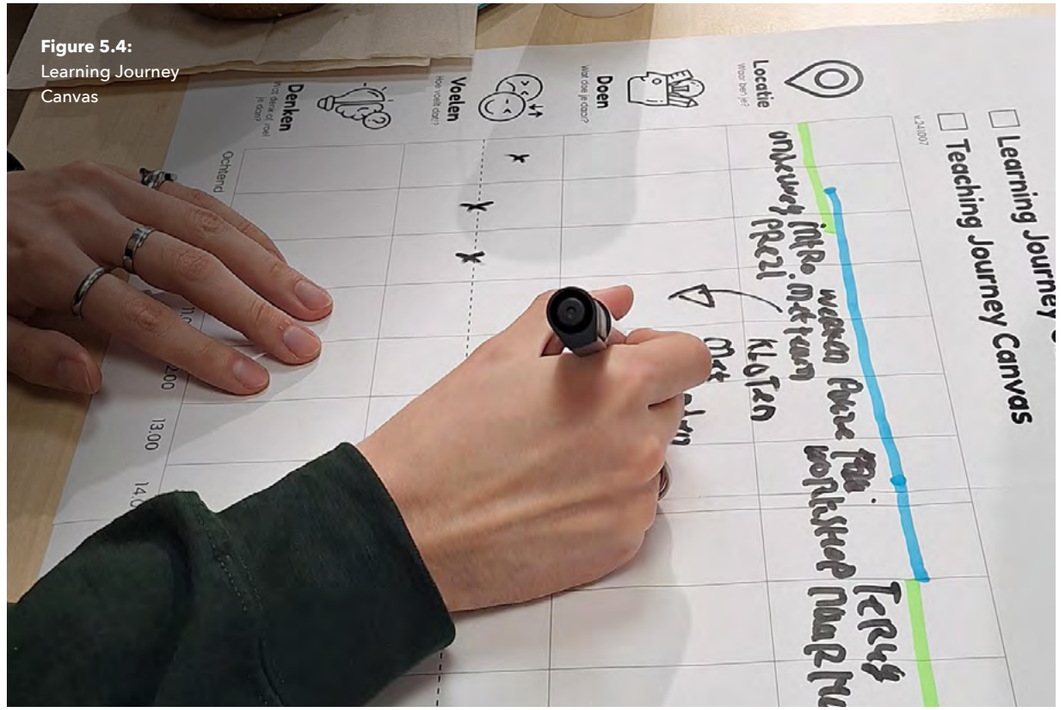


Figure 5.4:
Learning Journey Canvas

Figure 5.5:
Student voice and Serious Play

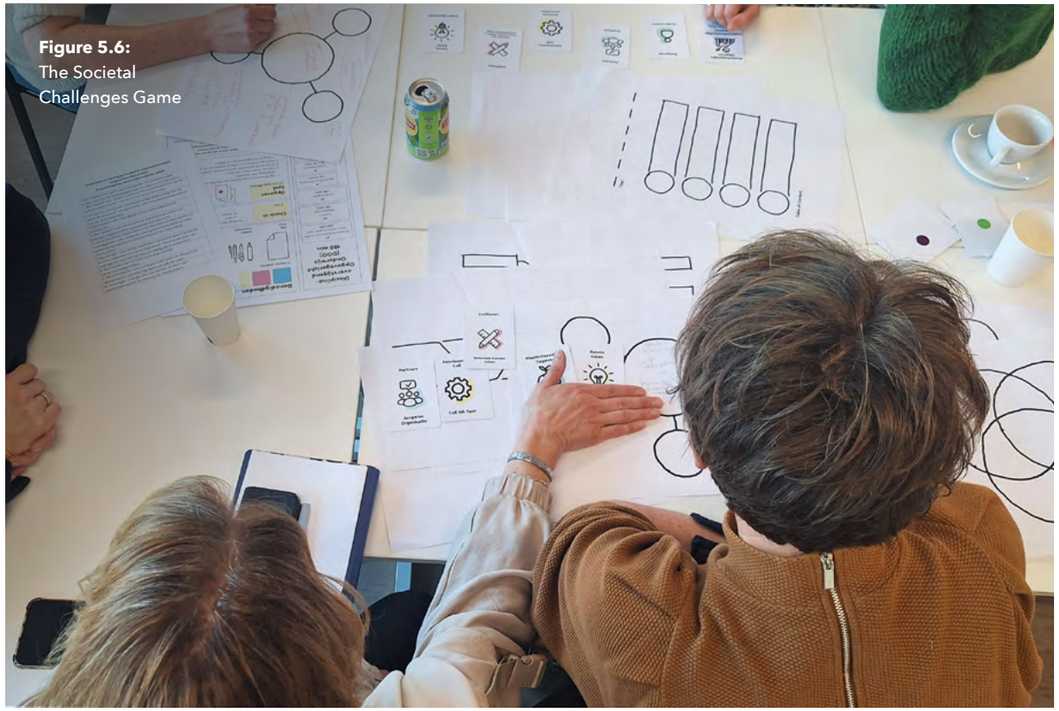


Figure 5.6:
The Societal
Challenges Game

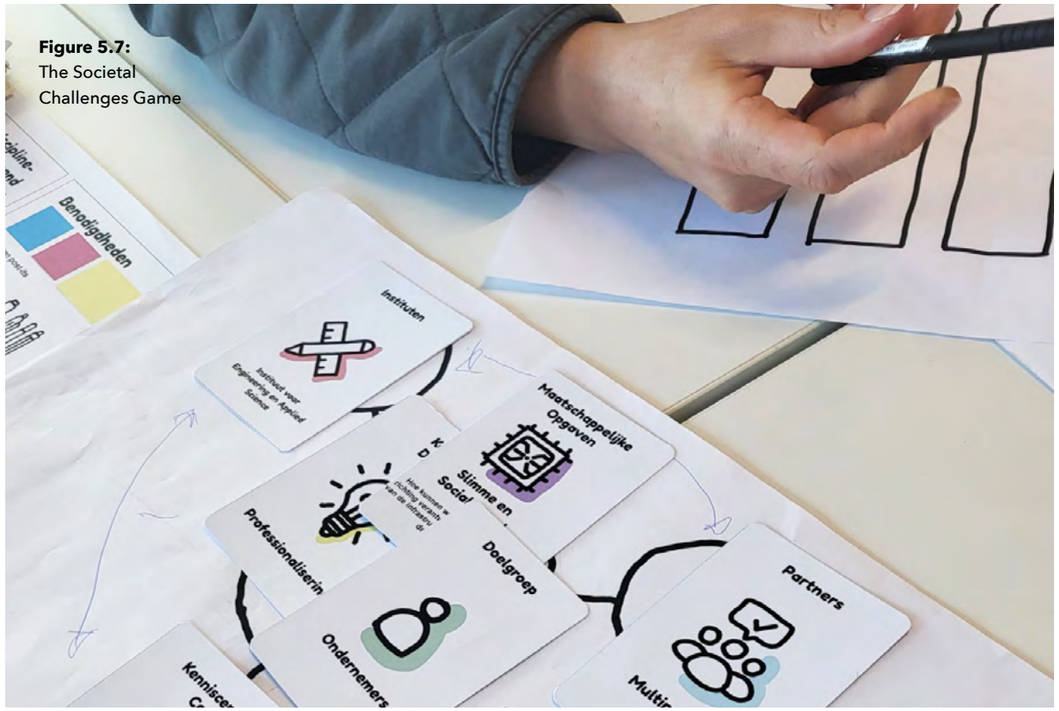


Figure 5.7:
The Societal
Challenges Game

in research and education. Rooted in the urgency of complex societal challenges – such as climate change, digitalisation, and inequality – the game invites educators, students, and researchers to co-create educational responses that transcend disciplinary boundaries. Through structured play, participants engage with curated card sets representing knowledge domains, societal issues, stakeholders, and institutional contexts. This format encourages creative association, reframing, and the exploration of new coalitions, aligning with the principles of world-centred and challenge-based education.

More than a game, the experience functions as a design intervention that surfaces tensions, assumptions, and blind spots in collaborative processes. Simulating the messiness of real-world problem-solving helps participants experience the discomfort and potential of systemic design. The game concludes with the creation of a "Table of Contents" for a knowledge product or educational concept, making abstract ideas tangible and actionable. In this way, the game not only supports curriculum development but also builds capacity for navigating complexity, fostering agency, and designing for societal impact.

Impact-Oriented Practice: Evaluation Pack

The *Evaluation Pack* is a practical toolkit designed to make impact-oriented evaluation accessible, intuitive, and actionable for educators and researchers engaged in educational innovation. Rather than relying on standardised instruments or complex research protocols, the *Evaluation Pack* empowers educators to select and adapt evaluation methods that fit their unique context.

Built on principles of jargon-free language, low entry barriers, and time efficiency, the toolkit includes a dialogue-conducive card set that guides participants through selecting appropriate evaluation strategies, ranging from quick feedback loops to more structured reflection formats. This approach aligns with the ethos of design-based research and evidence-informed practice, emphasising iterative learning and continuous improvement without overwhelming the practitioner.

By embedding evaluation into the design cycle, the *Evaluation Pack* transforms assessment from a bureaucratic afterthought into a creative and empowering process. Educators are encouraged to ask, "How will I know if this worked?" not as a compliance question, but as a catalyst for meaningful dialogue and refinement.

The toolkit supports micro-evaluations that can be conducted in minutes, such as student think-aloud, photo-voice collages, or peer feedback sessions. Each of these offers rich insights into learning and research experiences. In doing so, the *Evaluation Pack* fosters a culture of reflective practice and shared ownership, enabling educators and researchers to make informed decisions, enhance student engagement, and increase the societal relevance of their educational innovations.

3. Unexpected Developments in Practices

This section presents the iterative development of a professional development track for engineering education. It aims not only to expand educators' pedagogical repertoire but also to support a deeper transformation of professional roles, shifting from isolated content expertise towards collaborative, adaptive roles that enable systemic educational change. Through three design iterations, the track evolved in response to the specific needs and challenges of the engineering faculty.

Each phase revealed critical insights into how design thinking and serious play can support professional development in a context often dominated by technical expertise and traditional teaching methods. By integrating tools such as student journeys and serious

Figure 5.8:
A series of Gamestorms

play, as introduced in the previous section, the track enabled educators to engage with pedagogical innovation in a way that was both reflective and actionable. This ultimately contributed to a more adaptive and future-oriented engineering education.

In the first iteration of the professional development track for engineering educators, the *Double Diamond* model was used to structure the process. This design-centred approach linked tools such as the *Learning Journey Canvas* for problem identification and the ACED Toolkit for course development. While the model provided a clear framework for successive divergent and convergent thinking, many participants experienced the sessions more as inspirational workshops than as catalysts for sustainable role development and educational transformation.

A key challenge was that some educators did not perceive pressing problems in their own classrooms, undermining the *Discover* phase of the model. Additionally, discomfort with active pedagogical methods, particularly among faculty with strong disciplinary identities, limited deeper engagement. These insights underscored the need to move beyond mere tool application and towards cultivating a mindset open to reflection, experimentation, and systemic change in engineering education.

In the second iteration, the track was reframed using the *Systemic Design Framework*, which better addressed the complexity of professional role development within the university's strategic agenda. The orientation and vision-setting phase helped align participants around shared values and long-term goals, while the framework's emphasis on zooming in and out enabled connections between personal motivations, institutional priorities, and broader societal challenges.

Leadership and storytelling emerged as key levers for change, allowing educators to share practices and inspire colleagues. This iteration marked a shift from isolated innovation to a connected movement for change, reinforcing the systemic nature of educational transformation in engineering contexts.

As the second track progressed, it became clear that the *Systemic Design Framework*, though conceptually robust, did not align well with the intended flow of the sessions, creating friction in the learning process. The abrupt transitions between divergence and convergence in the *Double Diamond* model created friction in the learning flow. To address this, the third iteration translated the framework into a *Gamestorming* model (Figure 5.8), which offered a more intuitive and participatory structure.

The track was redesigned into three classroom sessions and two individual test sessions, each following a rhythm of divergence, exploration, and convergence. Five *Gamestorms* were sequenced to scaffold the learning journey.

The first session focused on discovery and problem analysis, using visual and improvisational techniques to surface tacit knowledge and contextual challenges. The second session centred on educational creation and design, employing sketching, prototyping, and affinity mapping to co-develop actionable concepts. The third session emphasised catalysation, continuing the journey, and sharing insights — drawing on storytelling and reflection to consolidate learning and inspire peer exchange. This translation not only improved engagement but also aligned with the principles of systemic design by fostering inclusive spaces, iterative learning, and leadership through narrative.

4. Dynamic Learning Agenda Reflections

Reflecting on this study, the dominant theme of the *Dynamic Learning Agenda* is SCD in Systems. It examines how design-based professional development operates within the complex realities of engineering pedagogical cultures. The initiative confronted systemic frictions, such as disciplinary silos, institutional inertia, and cultural norms that prioritise technical mastery over pedagogical innovation. By introducing iterative and participatory tools like the ACED Toolkit, *Learning Journey Canvas*, and *Gamestorming*, the project created spaces for educators to navigate these constraints and experiment with new practices. These interventions were not merely technical adjustments but systemic responses, aiming to shift established structures and mindsets towards more adaptive, value-centred approaches. In doing so, the study illustrates how systemic design principles can be translated into actionable strategies within the mud of complex and uncertain real-world educational contexts.

While systemic challenges dominate this study, the chapter touched on SCD in Me when educators reconsidered their professional roles as they shifted from content experts to facilitators of learning. This personal dimension was evident in moments of discomfort and openness during co-creation sessions, signalling the importance of agency and self-awareness in educational change.

Similarly, SCD with Others emerged through collaborative practices that amplified student voice and fostered trust, dialogue, and shared ownership of learning design. Finally, SCD in Time is present in the iterative nature of the track and its ambition to sustain and scale innovation beyond the initial intervention. By embedding cycles of experimentation and reflection, the study acknowledges that systemic transformation is a temporal process requiring patience, continuity, and long-term commitment.

5. Evaluation and Outcomes

The evaluation of the professional development track was conducted through a structured focus group session, which yielded both concrete and relational outcomes. Participants reflected on their experiences across the track, providing insights into the effectiveness of the interventions, the clarity of the objectives, and the sustainability of the practices introduced.

Concrete outcomes included the successful implementation and testing of new educational activities, such as the use of guest speakers, interactive tools like Mentimeter, and prototype lesson plans. These interventions were seen to enhance engagement, particularly when the rationale behind their use was made explicit. Relational outcomes emerged in the form of increased openness between educators and students. When teachers acknowledged trying something new, students responded with empathy and collaboration, fostering a culture of mutual learning.

The track had a notable impact on participating educators, who reported increased awareness of their educational repertoire and a shift towards more student- and world-centred approaches. Although the project was initially designed as a bounded intervention, several practices have continued beyond its formal end. For example, the use of the Evaluation Packs and the integration of student feedback into lesson design have become embedded in various ongoing teaching practices.

The project is currently in a transitional phase, moving from implementation towards consolidation and scaling. The focus group revealed moments of reflexivity among educators, particularly in relation to their own professional identity. Some expressed discomfort with abstract pedagogical language, preferring concrete terminology and tools. Others acknowledged a disconnect between their own disciplinary background and the evolving needs of students. These reflections underscore the importance of positionality in educational change: the willingness to see oneself not only as a content expert but also as a learning facilitator.

Acknowledgements
This work is carried out in close collaboration with a talented and dedicated research group, including Niek van den Bogert, Leendert Dorst, Ipek Yesil, Bianca Luijpen, Judith Vennix, Stefan Tax, Marije Brom, Ingeborg Heezen, and Malou Weber. Their diverse expertise and shared commitment to innovation, education, and professional development make this research both meaningful and impactful, and, above all, a true joy to be part of.

CHAPTER CONTRIBUTIONS

Dynamic Learning Agenda
- SCD in Systems

Transferable SCD-knowledge
- Professional development for human-centered educational design

SCD-repertoire
- Iterative, participatory and holistic educational design
- Tools and processes for human-centered educational design

SCD-outcomes
- Sustainable role development in engineering education

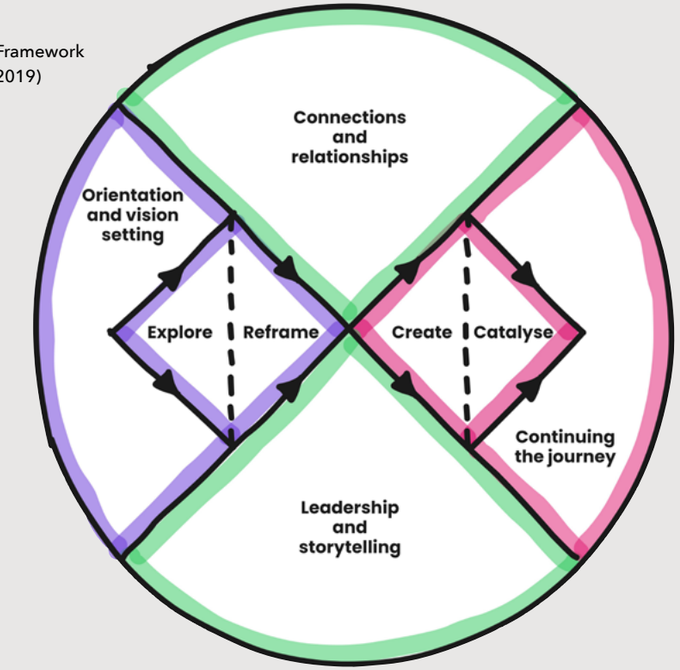


Figure 5.9:
Systemic Design Framework
(Design Council, 2019)

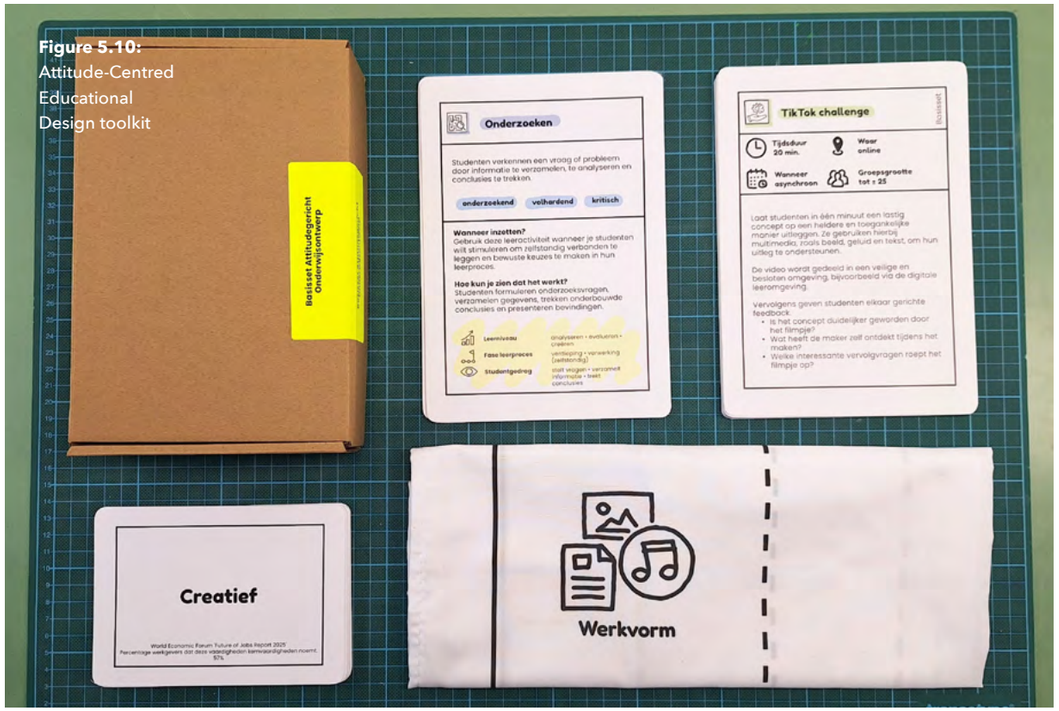


Figure 5.10:
Attitude-Centred
Educational
Design toolkit

Reflection Section 1: Rethinking Learning

The first section explores how learning transforms to enable *Systemic Co-Design* in education. Learning in transitions requires educators to position themselves as learners. As roles shift and new capabilities emerge, new challenges emerge for students, teachers, and stakeholders. This process requires a transformation for all those involved in the learning ecosystem. SCD approaches in education can support this rethinking of the learning process. The cases in this section illustrate how designing in and for education is effective in enabling learning in transitions.

Designing for Uncertainty: Systemic Co-Design in the Master Sustainability Transitions highlights how systemic learning needs educators to dissolve traditional faculty. Learning is systemic in reflective spaces where both teachers and learners are in transition. Educators are no longer assessing students on disciplinary knowledge and skills but on reflective and relational systemic capabilities. Systemic capability is not developed through the study of theory; it is only acquired through immersion in complexity. *Creating Common Understanding in the Co-Design Studio* transforms learning into an adaptive, collaborative process. For students, it means developing resilience, systemic awareness, and the ability to navigate ambiguity through immersion in real-world complexity. For teachers and partners, it calls for flexible coaching, shared sensemaking, and creating spaces where curiosity and experimentation thrive. In this way, learning becomes a collective journey extending beyond the classroom into professional practice and institutional change.

The Co-Design Canvas: Transferring Expertise and Building Educator Confidence shows the potential of teachers adopting SCD methods in education. In this case, teachers embedded the SCD method as an integral process in their course, assessment, and learning outcomes. In doing so, SCD evolved from a one-off workshop into a cyclical, exploratory learning process that reshaped teachers' roles.

The Difficult Transfer of Systemic Co-Design Methods into Education addresses the challenges of embedding SCD approaches in existing educational practices. While many educators are enthusiastic about SCD, they often experience the adoption of these methods as an additional burden on top of their existing responsibilities. Although in the case of a knowledge product like the IDG-Expo, the transfer needs to be designed for adaptation to current learning activities. As educators willing to adopt SCD methods in learning, we need to develop empathy for this burden and make changes to the educational system that enable teachers to adopt SCD methods for learning in transitions.

Design-Based Professional Development in Engineering Education showcases learning for societal transitions, preparing learners not only to adapt but to act responsibly and shape sustainable futures. Teachers co-create learning with students in open, authentic dialogue, gaining insights and knowledge with and from one another. The classic design approach did not resonate, primarily because of a perceived lack of urgency. In response to this, a more intuitive and participatory approach was adopted. After several rounds of diverging, exploring, converging, using prototyping, and testing, new forms of learning emerged.

Across the cases, it becomes clear that rethinking learning goes far beyond incorporating SCD methods into existing learning activities. It requires all of the involved parties to engage as learners. This new approach brought challenges for educators. They had to express humility but also risk blurred authority and unclear expectations. They were encouraged to embrace a different pedagogical approach, not as experts delivering knowledge but as facilitators of emergent learning processes. However, when teachers felt overwhelmed by this shift, SCD practices were unlikely to become part of the learning culture. This illustrates the importance of personal development as a central condition for enabling such pedagogical change. Whether through reflection circles, coaching, or SCD methods, each case emphasises the cultivation of a reflective, self-aware learning mindset. Ultimately, the shift is one from "teaching as experts" to "guiding learning as co-learners." •

Section

Rethinking Educational Systems

6. It Takes a Crowd to Build a New Education

Manon Joosten, Nanda Deen and Guido Stompff

Educational institution: Educational institution Inholland University of Applied Sciences (Inholland)
Research institution: Inholland: Research Group Design Thinking
Boundaries crossed: cross-spheres (UAS-practice-student), cross-roles, cross-programmes, cross-thematic
Students involved: ca. 50 in co-design, 2,500 students of the new programme
Educators involved: > 200
Timeframe: 2021-2025

Learnings of a Four-Year Expedition with 1,500 Contributors to Co-create a New Teacher Training Institute

1. Introduction: What is the Travel Itinerary?
Over 200 people embarked on a journey to develop a major educational innovation in Inholland's Teacher Training Institute (In Dutch: Pedagogische Academie voor het Basisonderwijs: Pabo). These staff members left their own comfortable workplaces for an expedition with an unknown route and destination. They also did not know the exact nature of their task. It was a journey full of risks - over mountains, through valleys, with the chance of getting lost. A journey where you depend on others along the way and even have to build the bridges yourself.

Why do these professionals take risks and set out on an unfamiliar path without a clear destination?
Because we had to.

Here is why:
Primary schools are in great need of more teachers, and Inholland's Teacher Training Institute, with over 2,500 students spread across five locations, was unable to help meet this need completely. The overloaded curriculum, with an excessive number of specialisation tracks, resulted in high dropout rates, limited student satisfaction, and insufficient alignment with professional practice. Combined with the introduction of new legislation, it was clear that maintaining the status quo in the face of the teacher shortage was not an option.

The management's directive was clear: Get everyone moving. The goal of the "journey" was to reform the curriculum into a flexible, practice-driven programme where student development takes place in and with professional practice. This required more than just revising the curriculum; it also involved changing the organisational culture, processes, professional skills, and digital systems. In other words, it was a comprehensive renewal of the entire programme.

Teacher Training Institute could have opted for a traditional, project-based approach, with the curriculum designed by a small group of experts—sometimes on the back of a napkin—and then rolled out according to a strict schedule. This time, however, that was not an option. Executing a transition of this magnitude, with such significant changes, would not work with a conventional plan-driven method. A traditional approach would overlook the critically important sense of ownership required from those involved and would almost guarantee failure.

Moreover, it would undervalue the knowledge and experience of passionate lecturers, seasoned primary school teachers, and students with insights from relevant lived experiences. A wealth of expertise would remain untapped, and these people with valuable insights would be denied the opportunity to contribute to a new educational system.

In addition, it was impossible to outline the approach in detail beforehand because the "final destination" was largely undefined. The appropriate innovation strategy was clear: an expedition—an innovation strategy that is required when the outcome and itinerary are unknown (Williams & Parr, 2004, in: Coppoolse, 2018). It resulted in a curriculum so radically different that lecturers, after the first year of implementation, said that it felt like a completely new job. But how can you redesign a curriculum with the input of so many lecturers, students, partners, managers, and staff? More broadly, the main question of this project was:

How do we engage many stakeholders in a process of Systemic Co-Design to innovate education, without an all-overseeing director?

In this chapter, we examine the Teacher Training Institute case study as an example of the art of collaborative effort.

2. Approach: Power to the People
The expedition began with the question: *How do we want this new* Teacher Training Institute *curriculum to be created?* Two "explorers" set out to investigate, consulting lecturers and programme leaders through interviews and working sessions. Their interim findings were shared widely and refined based on collective feedback. The exploration resulted in a participatory, appreciative, and design-oriented approach, guided by several key conditions (including practice what you preach, transparency, and manageability).

Design and Development in Five Stages
The process was organised into five stages. Within this structure, all stakeholders—university staff, primary school professionals, and students—worked closely and continuously to co-create the new curriculum. Everyone had a genuine opportunity to contribute ideas, participate, and take part in decision-making. The process design was informed by methodologies such as the *Golden Circle, Theory U, Design Thinking*, and *Deep Democracy*. The key principles for safeguarding collectively are:

- **Working in the triangle:** Regardless of the task at hand, the involvement of students, primary school partners, lecturers, and other colleagues of Inholland was mandatory. Bringing these perspectives together at the "co-design table" was essential for developing a Teacher Training Institute curriculum that would be both suitable and future-proof.

- **Reflexive monitoring:** Without a roadmap and a need to respond to unexpected developments, only broadly formulated milestones were set up beforehand, based on backcasting from the programme's start in September 2024. Using principles of *reflexive monitoring*, adjustments were made over time. Each year, new high-level plans were created according to both upcoming milestones and prior progress.

- **Designing in connection:** The activities of diverging, showing and sharing, and converging were interwoven into the approach during each stage. Design teams were encouraged to look beyond the boundaries of the Teacher Training Institute and to seek out inspiring examples. They were required to involve stakeholders genuinely and substantially. Upon completion, teams were expected to account for how they had done so. While teams partly determined their own working methods, they were also

Figure 6.1:
Stage I: Local Show & Share session in Dordrecht

Figure 6.2:
Stage II: Show & Share session Leiden

supported through organised "traingle" sessions with students, teachers, and practice, as we will explain in more depth below.

- **Beyond the usual suspects:** Teacher Training Institute ensured a strong representation of staff and students from all locations and practice regions. This maximised the collective wisdom of the group and allowed as many people as possible to grow into the new educational system. Before the start of each stage, anyone could apply to participate in design teams of their choosing.

Stage I – Mobilising the Collective for Creating the Foundation

The first stage (2021-2022) involved the largest collective design task: creating the foundation on which all subsequent stages would be built. It was essential to have broad input and foster a sense of ownership from Inholland lecturers, primary school partners, and students.

The university and the primary schools believed they knew each other well. Yet, it was discovered that relationships were limited to a select group of lecturers and internship supervisors and that contact information was scattered across numerous files. Collaborative design requires a more intensive and broader partnership.

Another obstacle was that primary school teachers and students could not attend meetings because they were typically scheduled during school hours. Our approach was adapted by scheduling meetings after school hours and at nearby locations. Participation improved because of this change (Figure 6.1).

Engagement was further enhanced through the deployment of asynchronous online tools. As a result, 1,000 people contributed to establishing the foundation. This included the mission, values, design principles linked to professional tasks, intended learning outcomes, and requirements for the macro-schedule. Even though it was a complex and demanding undertaking, its value is undeniable; the foundation proved to be solid and garnered broad support.

Stage II – Development of Building Blocks

In the next stage (2022-2023), design teams developed and tested the building blocks of the Teacher Training Institute curriculum. Examples included professional tasks and learning outcomes, citizenship education, target groups, a seamless learning environment, professional development, and operational management. Testing took place in pilot environments at all locations.

All teams followed the same iterative rhythm of diverging, showing and sharing, and converging. A practical issue was that the design teams were scattered over five locations of Inholland. To address this, the ideas were shown during digital stand-ups on a biweekly basis.

Also, two events were organised with broad stakeholder representation and over a hundred participants. By scheduling these sessions in the evening and including dinner, participation was made as inviting as possible. This inspired high attendance and set the stage for attendees to contribute to decision-making at the critical point between diverging and converging on the content of the building blocks (Figure 6.2).

Stage III and IV – Curriculum Design and Implementation

With the necessary building blocks in place, the curriculum design phase started (2023–2025). Sixteen design teams, comprising 55 lecturers, 22 primary

school teachers, five researchers from several research centres, and 21 students from different locations and programmes, developed all educational modules. Over a course of two years, it took 20 design days and three iterations per design stage. Each design team was responsible for one module. They also had to align and synthesise their evolving designs into a meaningful whole. To this, show-and-share sessions were organised:

- **Peer-review sessions** during curriculum design days enabled the design teams to review and align the progressing designs of each other's modules (Figures 6.3 and 6.4).

- **Feedback rounds** after the design days allowed teams to present interim designs to their respective stakeholders—students, teachers at primary schools, and lecturers. At these meetings, programme, examination, and curriculum committees were asked for feedback.

- Teacher Training Institute **study days** were organised and attended by more than 150 participants from Inholland and partner schools. These days were devoted to show-and-share activities and workshops that allowed participants to engage with aspects of the curriculum redesign.

Teams incorporated the collected feedback into their designs and made prototypes, resulting in an enriched product. The outcomes of each iteration were documented in an online-accessible roadmap, allowing lecturers and practitioners to follow the progress of the new curriculum.

In parallel with the design of the educational modules, other teams continued developing building blocks related to profiling, the personal and professional development programme, a comprehensive intake process, and the organisation. Over 500 people contributed to these stages.

Stage V: Working in the Triangle Permanently
Concurrent with the launch of the first two study phases in September 2024, curriculum management teams were established to continuously safeguard the quality of implementation, uphold the foundation, and oversee the ongoing development of the new educational units. Within these teams—operating under the direction of the curriculum committee—the roles of student, expert, practitioner, and teacher/educator are permanently embedded, safeguarding the triangle.

Process Coordination
The change process was continuously supported by a dedicated process team, which had a central role throughout all stages of the transition. This team consisted of experts in organisational change and curriculum development, and its composition shifted partially from stage to stage in response to the expertise required. It had the responsibility not only for designing and organising the expedition and supporting the various design teams but also for continuously coordinating with other key stakeholder groups. These stakeholders included middle and senior management, HR, committees, research groups, and support departments.

The process team handled communications to ensure coherence, alignment, and organisational readiness at each step of the transition. During Stages II and III, a need arose for more substantive frameworks on themes such as flexibilisation, curriculum design, and research capacity.

To meet this need, a dedicated and temporary team with the required expertise was established. This team

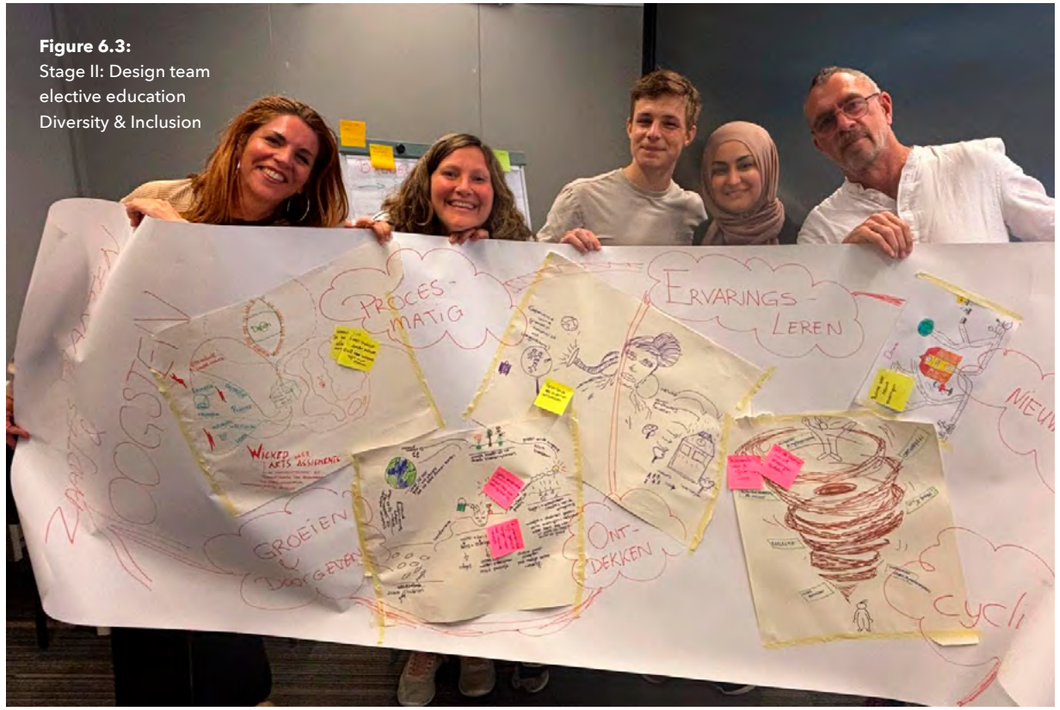
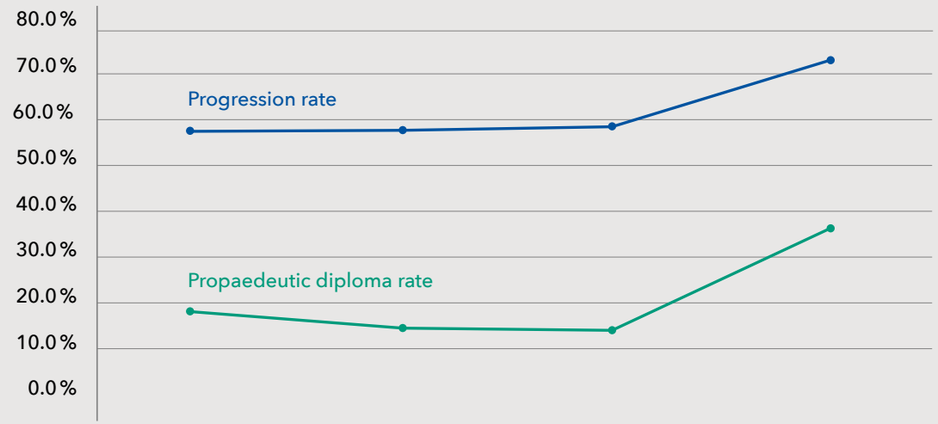


Figure 6.3:
Stage II: Design team elective education Diversity & Inclusion

Figure 6.4:
Stage III: Learning from others – *Blended Learning Waves* (gluren bij de buren)

Figure 6.5:
Results of students changed after redesigning the Teacher Training Institute

	21/22	22/23	23/24	24/25
Number of students in cohort	870	779	752	720
Number progressing in cohort	503	452	439	526
Progression rate	57.8%	58.0%	58.4%	73.1%
Propaedeutic diplomas	156	107	99	259
Propaedeutic diploma rate	17.9%	13.7%	13.2%	36.0%



operated alongside the broader process team and ensured that emerging design choices aligned with the long-term ambitions.

This integrated approach ensured that both the overarching process and the substantive elements of the new curriculum evolved in tandem.

Factual Results
In the 2024-2025 academic year, first-year students started the new curriculum, and in the 2025-2026 academic year, all students began using it. Currently, about 2,500 students are using the new curriculum. The first results are more than promising—an increase in scores in the 100-day survey and the National Student Survey (NSE) has already been reported. The score improvements are even greater for first-year students.

Also, a significant increase in the number of students progressing to year two is observed. Furthermore, evaluations show that students and practitioners experience little to no gap between theory and practice. Such gaps were considered problematic in the past.

3. Dynamic Learning Agenda and the Art of Advancing Together
An expedition at this scale is complex and risky, and the learning curve for both the process team and expedition members was steep. The case study is of interest to anyone who is considering starting a collective expedition to innovate education. Below is a selection of dos and don'ts for progressing together, based on the ESC *Dynamic Learning Agenda*.

SCD in Me
An expedition requires leadership, courage, and perseverance for those involved. The Teacher Training Institute case offers three additional insights.

Recognising pain and grief
During the change process, acknowledging loss, grief, and achievements proved crucial. Some lecturers struggled with shifting from expert roles to learning coaches and from solo teaching to team teaching, leading to concerns such as: "What will happen to my subject?"

Organisational culture significantly influenced reactions. Strong cultural norms sometimes resisted affective interventions like guided meditation, which some viewed as: "What a waste of time and money!"

Attending to the affective side of the change process is essential—not only to continue the journey together but also to create space for autonomy in how the change unfolds. We adjusted our methods and accepted that reflection must be brief: "You have ten minutes for reflection. No more."

Options were offered for different styles, like making by hand, drawing, or reflective campfire sessions. This approach helped validate discomfort, explain the value of emotional awareness, and gave teams greater control over their own processes.

MAYA principle
SCD focuses on exploring and requires new ways of working and a new language. Also, it takes time and careful planning to co-create and learn. As expedition leaders, we needed to understand what fellow travellers were familiar with and capable of at specific moments. We sensed that pushing too hard risked people disengaging. By sensitively "dosing" participation and new ways of working, a new visual language was introduced in presentations, working methods, and conversations.

Initially, this was packaged in familiar terminology or in mixed forms of text and imagery. Metaphors were explicitly explained. Information about each next step in the change process was offered in manageable pieces. This approach brings to mind the *Most Advanced Yet Acceptable* (MAYA) principle. Created by designer Raymond Loewy, it contends that you have to stretch what people know, but you can't take it too far.

Figure 6.6:
Stage I: Local Show & Share session in Dordrecht

Figure 6.7:
Stage II: Show & Share session Leiden

SCD with Others

What makes the Teacher Training Institute case stand out is the number of people involved and the time spent? Three insights are derived at this level.

Bring in and keep perspectives

Co-design brings together many, sometimes conflicting, perspectives and interests. Much effort was put into building relationships, not only to bring all perspectives to the table but also to keep them there. This required creating an environment in which everyone felt invited to contribute to improving the evolving design. *Theory U* and *Deep Democracy* informed many of our actions, and three group norms were consistently emphasised: 1) listen with an open heart; 2) speak frankly; and 3) accept that no one holds the monopoly on truth.

Systemic reflection

Design is a process of reflection-in-action (Schön, 1983) and of team reflection (Stompff et al., 2016).. To enable the 16 curriculum design teams to collectively reflect on their progress, outcomes, and collaboration, a special check-out tool was developed through several iterations. This was named the "expedition map", which was based on the *Map of Meaning*. This map (Figure 6.7) depicts a non-existent island with areas such as the "Source of Ideas", the "Bridge of Connection" or the "Cave of Uncertainty". It enables team members to reflect on what they did, how they felt about it, and what they need and hope for in the next session.

Boundary objects for co-designing education

Each team worked with the same large canvases to create blended learning waves. The teams started with paper canvases (Figure 6.4) and later migrated their evolving designs to online canvases (Miro), which were displayed on smartboards in the workspaces.

These canvases enabled them to literally stand around their design, adding, organising, and removing elements together in highly interactive sessions that involved everyone on the team.

Because all teams used the same format, the waves for the distinctive modules were comparable, allowing other teams to easily provide feedback on intermediate outcomes. Also, the online versions were easy to share with different stakeholders. This empowered the design teams to co-design parts of the curriculum and to synthesise into a meaningful whole at the same time.

The canvases proved to be genuine *boundary objects* that have a recognisable identity for everyone, yet are adaptable and open to individual interpretation (Star & Griesemer, 1989). Because many teams were working on parts of the curriculum, separated in time and location, boundaries existed between them.

The canvases depicted the *Blended Learning Waves* of a module-in-progress, empowering members in a team to design and adapt parts of their module-in-progress. This enabled others *across* team boundaries to see what the module-in-progress was becoming, to reflect and offer feedback, and to adopt others' ideas in their own modules. The canvases empowered the collective to design and reflect *within* teams and *across boundaries* and to align and coordinate all activities into a coherent curriculum.

SCD within Systems

The new version of the Teacher Training Institute required a cultural and organisational change. Notably, the design choices were made at the system level. The focus on this particular level led to three insights.

Preserving complexity
The complexity of redesigning a full curriculum must be reflected in the design approach from the start. It should not only be a desirable curriculum but also a financially viable and feasible programme. In other words, it should be manageable and workable for all involved.

Co-design requires that many people with different types of expertise contribute throughout the process. In addition, input from students, lecturers, and partners was indispensable. For example, we needed the expertise of system administrators and timetable officers. Because of the input of diverse stakeholders available at different times, a linear sequence of activities with a core design team was impossible.

Everything had to be redesigned, from learning goals to online learning environments. It resulted in a highly iterative approach. At the start, only the contours were clear, and details were filled in over time as the ideas developed.

Reassuring the existing system
"Why do we have to figure this out together? When will it be more concrete? Just tell us what to do."

It was a question the process team faced regularly. The uncertainty was stressful for many, including the management. The existing system relied on a linear, project-based approach led by a small group. To prevent a mid-way fallback, it was essential for the process team to reassure the existing system and reduce uncertainty. At the same time, the participants—from students to directors—had to learn to navigate uncertainty.

When certainty about content is lacking, certainty about the process helps (Ardon, 2020). Thus, the process team introduced a schedule with clear milestones and provided monthly updates. Each stage followed a recognisable rhythm to provide stability, with phases of diverging, showing and sharing, and converging.

Design days always started with a plenary check-in, work sessions with lunch, a best-practice session, and a check-out. In addition, an expedition map was designed to show what participants might encounter along the way (Figure 6.7). The management team was frequently informed of the rationale, process, and results achieved.

Broad representation
It became apparent that specific students, lecturers, and locations were overrepresented on the design teams because the same "usual suspects" repeatedly stepped forward when something was needed. Consequently, the potential of the group was not fully utilised, increasing the risk of "old wine in new bottles". Input from some of the research groups was also insufficient. Actions taken to correct these issues included:

- **Reaching out:** Rather than asking potential contributors to come to us, we went to them. We joined team meetings on location, visited classrooms, and attended network meetings in the field to ensure participation.

- **Providing compensation:** Recruiting students and practitioners for longer-term involvement became much easier once we started compensating them. With partner schools, agreements were made to split staffing costs 50/50 between the university and the partnership.

- **Tailoring collaboration with research groups:** The gap between the five research groups narrowed once we initiated active dialogue about modes of collaboration and identified overlaps between curricular needs and research agendas.

4. ESCollaboration
During the change process, Guido Stompff, Professor of Design Thinking and ESC member, advised the expedition leaders and helped address challenges. Joint sessions, like design workshops for a new intake procedure, boosted innovation when needed. In 2024, the Inholland Teacher Training Institute was used as a test case to demonstrate organisational constellation and to examine the relationships among the expedition leaders, the commissioning body, and the various stakeholder groups. This exercise prompted a purposeful transfer of ownership to the expedition members.

Systemic Co-Design **requires new ways of working and a new language**

CHAPTER CONTRIBUTIONS

Dynamic Learning Agenda
- SCD in me
- SCD with others
- SCD in systems

Transferable SCD-knowledge
- Partnership within co-creation of educational programmes
- Canvas as a boundary object for collective curriculum design
- Making space for the affective side of co-design
- Reassuring the complex existing system

SCD-repertoire
- *Participatory co-design,*
- *Deep Democracy*
- *Theory U*
- *Expedition map*
- *Canvas Blended Learning Waves*

SCD-outcomes
- *Expedition map* used within and outside Inholland
- Student-as-partner knowledge disseminated to other programmes within and outside Inholland
- Knowlegde transfer through Inholland's Centre for Teaching and Learning

7. Cross-Boundary Learning Environments as Catalysts for Local Learning Ecosystems

Ilya Zitter

Educational institutions: HU University of Applied Sciences Utrecht: Institute for Social Work, Institute for Nursing Studies, Institute for Allied Health Professionals and Institute for Human Movement Studies, with in total 20 educational programmes (14 bachelor and 6 master programmes)
Research institutions: Research Centre for Learning and Innovation, Research Centre for Social Innovation, Research Centre for Healthy and Sustainable Living
Boundaries crossed: cross-faculty, cross-educational institutes, cross-programmes, cross-domains (Health & Wellbeing), cross-spheres (research-practice, professionals-residents)
Students involved: ca. 3,000 students
Educators involved: team of >55 educators
Timeframe: 2020-2024

1. Introduction: Setting the Stage

Before we introduce our case, we would like to set the stage for how a *Systemic Co-Design* (SCD) perspective frames the work we did. During this case, I closely collaborated with many different colleagues. Therefore, this chapter is written in the we-form. Even though it is a well-trodden path, we set out to practice what we preach: carry out ongoing cycles of reflection, learning, and adaptation ourselves, to stimulate an iterative, reflexive approach for all participants involved.

As practice-oriented researchers, we did not start with a research plan set in stone. Instead, we adopted a more flexible approach and kept in close connection with the ongoing developments. This encouraged an iterative approach to development that can potentially continue, even after our initial research ends. Our experiences, both the positive and negative, can be seen through the lens of SCD in systems. The case we will present in this chapter took place in a real-life context at different levels of scale. It involved various and often conflicting agendas, unforeseen circumstances, and many different points of view. These traits are inherent in systemic interventions in the real world.

Hopefully, our insights will contribute to the collective knowledge development guided by the shared *Dynamic Learning Agenda*. Specifically, we aimed to answer the core question: *How can SCD operate within real-life contexts ("in the mud", so to speak) and address regional education challenges?"*

Introducing our Case

At the start of this project, the COVID-19 crisis broke out. The COVID-19 crisis developed against the backdrop of an already overburdened and fragmented healthcare system, which would not be able to cope with the huge growth in the number of people with chronic diseases. The complexity and fragmentation of our healthcare system call for more insight and self-sufficiency of residents than ever, and require close collaboration between professionals; collaboration between professionals and residents is equally important.

The challenges described above have led to plans to radically innovate education for future professionals in healthcare and social care. Future graduates are

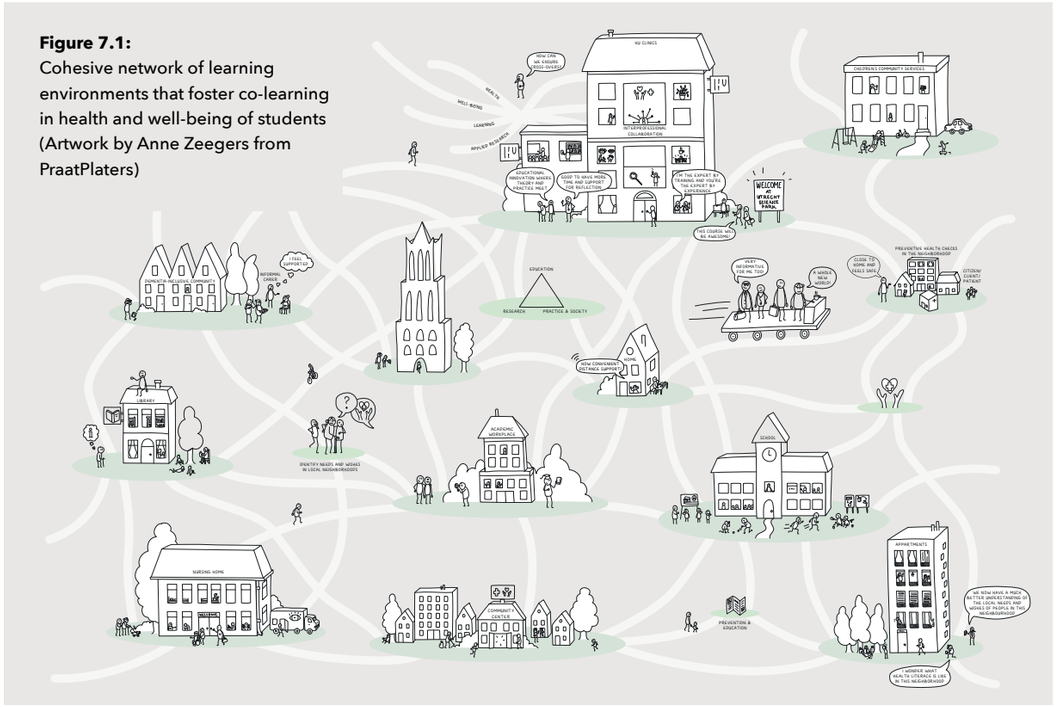


Figure 7.1:
Cohesive network of learning environments that foster co-learning in health and well-being of students (Artwork by Anne Zeegers from PraatPlaters)

expected to excel not only in their domain-specific competencies but also in interprofessional collaboration, understanding of clients' contexts, acting as health advocates, being entrepreneurial, and initiating or accelerating innovation. At the same time, traditional structures and practices in education and the involved healthcare and social care domains hamper the development of such skills and resist efforts to change the education system.

The case study in this chapter aimed to consolidate and expand a network of *Cross-Boundary Learning Environments* (CBLEs) in the domain of health and well-being in the Utrecht area (Figure 7.1). CBLEs are characterised by learning and working across multiple boundaries, such as the boundary between domains (i.e., healthcare and social care), between education and practice, between research and practice, and between professionals and residents (Bouw et al., 2019; 2021a). The intended CBLEs should stimulate interprofessional co-learning for all participants, help innovate the education of future and current professionals, and act as the much-needed game changers in the notoriously fragmented system of healthcare and well-being. As learning should take place around real societal challenges involving groups of residents in the local context, this project explicitly aimed to contribute directly to the quality of life of residents in Utrecht and its surroundings.

Ideally, all organisations, stakeholders, partnerships, associations, alliances, consortia, and networks in healthcare and well-being in the Utrecht area should grow closer and evolve into local learning ecosystems that are able to tackle current and future societal challenges. In a local ecosystem, the different actors can collaborate across the aforementioned boundaries. Moreover, the actors involved can learn individually and collectively to come up with solutions, since there are no ready-made solutions available for the challenges we face as a society.

In this chapter, we focus on the idea that CBLEs can function as catalysts for evolving local learning ecosystems and contribute to accelerating the process of a fragmented system growing into coherent, more mature learning ecosystems (Zitter, 2021).

This can be achieved by continuous involvement in a specific neighbourhood or area, by addressing real-world problems, by bringing together different points of view, by injecting fresh perspectives, and most importantly, by focusing on cross-boundary learning by all actors involved in the CBLE. Concrete examples of CBLE contributions vary from learning and collaborating with walk-in centres for people with early-stage dementia to asylum-seeker centres to healthcare institutions and resident initiatives. To function optimally as a catalyst, we must consider different levels of scale for CBLEs. We defined the following three levels (Bouw et al, 2021b):

- Operational level (micro)
- Tactical level (meso)
- Strategic level (macro)

The case we collaborated on, and which is central to this chapter, is a large-scale programme called HU Health & Well-being, carried out at HU University of Applied Sciences, Utrecht. This programme involved the participation of four educational institutes with a total of 20 educational programmes (14 bachelor's and six master's programmes) (see table). The final goal was to ensure all 9,000 students in HU's health and well-being bachelor's and master's programmes learned in one or more of the CBLEs during their studies. Embedding the CBLEs into these curricula required a collective change involving many different actors, a broad range of perspectives, and a variety of interconnected systems.

HU Health & Well-being

Institute	Bachelor	Students	Master	Students
Institute for Social Work	Social Work Creative Therapy	2084	Community Development	62
Institute for Nursing Studies	Nursing Medical Assistance	2251	Innovation in Health & Well-being Physician Assistant Advanced Nursing Practice	664
Institute voor Human Movement Studies	Physiotherapy Cesar Kinetics Therapy	1495	Physiotherapy Movement Care	443
Institute for Allied Healthcare Professionals	Orthoptic Optometry Pharma Science Skin Therapy Healthcare Management Dental Care Dental Prosthetics Speech and Language Therapy	2671		

Table 7.1:
Educational institutes and educational programmes (at the start)

2. Approach and First Findings

Our aim was to enrich the educational innovation of HU Health & Well-being. To achieve this goal, we carried out practice-oriented research from a design perspective. We used a design-based approach in this project that included iterations of analysis, design, testing, and evaluation. Our approach allowed systematic monitoring and evaluation to: a) create knowledge on cross-boundary learning and collaboration in healthcare and well-being and b) innovate practices onsite and guide expansion (both in the number of people involved and diversity of the environments).

We carried out the design-based approach at multiple levels:

- Within CBLEs, the operational level (micro)
- Between CBLEs, the tactical level (meso)
- Across the network of CBLEs, the strategic level (macro)

The CBLEs of HU Health & Well-being

HU Health & Well-being includes different kinds of CBLEs in different developmental stages. The following three main kinds of CLBEs can be distinguished.

Preventive health checks – mobile CBLE

Students work for 8-12 weeks and map a specific neighbourhood or area from the perspective of preventive health, lifestyle, and health promotion. They focus on residents with low health literacy. This CBLE does not have a fixed location; it is a mobile CBLE that uses host locations operated by well-placed organisations. Students organise short-term activities, which give local cross-boundary learning and collaboration a boost.

Student-led clinics – central CBLEs

There are currently seven monoprofessional student-led clinics that welcome residents of the Utrecht area. Besides these, there is free legal and financial advice for students and collaboration with the professional neighbourhood team. For HU Health & Well-being, the monoprofessional approach is extended with an interprofessional, cross-boundary approach.

In neighbourhoods – local CBLEs

The third type of CBLE is situated in different neighbourhoods of the Utrecht area. For example, CBLEs are situated in community centres or asylum seekers' centres. Groups of students from different educational programmes work on real-world challenges in collaboration with professionals, researchers, and residents. The partial solutions contribute directly to improving the local quality of life. These CBLEs can also have added value for the evolving local learning ecosystems.

Within CBLEs, the operational level

The design-based approach we took yielded five design principles for CBLEs, which were adopted by many of the participants. These principles supported the development, adjustment, and launch of the specific CBLEs (operational level). One principle focused on working, learning, and conducting research in heterogeneous groups from care and welfare domains, centring the resident. As a result, explicit attention was paid to group composition in CBLEs to ensure heterogeneity. In summary, these principles proved fundamental in structuring development work within CBLEs.

The design principles were also used to guide the professionalisation of participants, though they also expressed a need for more hands-on guidance for their day-to-day struggles. We found that the daily job of running a CBLE was quite challenging. For example, educators in the local CBLEs were confronted with dynamic challenges. However, traits of the practice-based research, such as reflective monitoring,

yielded positive results and were integral in adjusting and redesigning CBLEs. For example, the systematic descriptions we made together with participants from the CBLEs facilitated discussions about the similarities and differences between CBLEs and helped to reconsider design choices.

Between CBLEs, the Tactical Level

Some CBLEs could be linked to each other. For example, the mobile or the central CBLEs could be linked to specific local CBLEs. Such connections were made, but most were temporary or informal instead of being more long-term, proactive, and systematic. To stimulate further exchange between learning environments, many sessions and meetings were organised. Also, exchanges took place at a personal level, and we set out to enrich these meetings. However, successful practical solutions and more fundamental designs were not reused extensively; participants tended to develop their own solutions and designs for their CBLE from scratch.

Still, we have noted that one major breakthrough was made: the CBLEs adopted shared learning outcomes. The examination boards of the four participating educational institutes approved of the learning outcomes specific to HU Health & Well-being. This approval made them valid for all students from each of the 20 educational programmes. This was a substantial result because such a joint design requiring assessment and examination across so many different institutes and programmes is notoriously hard to achieve. It should be noted that this innovation is not fully developed yet, and counterforces, such as the need to scale up to accommodate more students, will present challenges.

Across the Network of CBLEs, the Strategic Level

In our effort to help the project leaders and programme managers in charge of HU Health & Well-being, we collaboratively analysed the overall network of CBLEs. Insights from these analyses were used to enrich the interactive, guided sessions, which we initiated periodically to stimulate redesigning across the network of CBLEs. This process turned out to be quite tough, since some outcomes would entail more top-down, time-consuming interventions, while the project leaders and programme managers did not wish to interfere with the grassroots initiatives and did not want to overload the CLBE participants. However, the sessions themselves were positive, since they did foster discussions between the right people at the macro, strategic level.

Project-Based Reflections, Insights, and Conclusions on Research Content

HU Health & Well-being is still going strong, though the current shrinking number of students nationwide and the financial consequences do put developments at risk. The design of the CBLEs—within, between, and across the network—brought successes and defined areas for improvement.

The main success was the active involvement and commitment of the four different educational institutes and their 20 educational programmes. Managers have jumped into the deep end, and all involved (educators, designers, project leaders, researchers, coordinators, healthcare professionals, and social workers) have learned to swim together. This success, to which we contributed with our approach, has also been recognised with a Dutch Education Award (2025).

Areas for improvement can mainly be found at the level of the network of learning environments. There is still potential for redesign to improve the network as a whole and to optimise CBLEs to actually function as catalysts for accelerating the growth and maturation of local learning ecosystems.

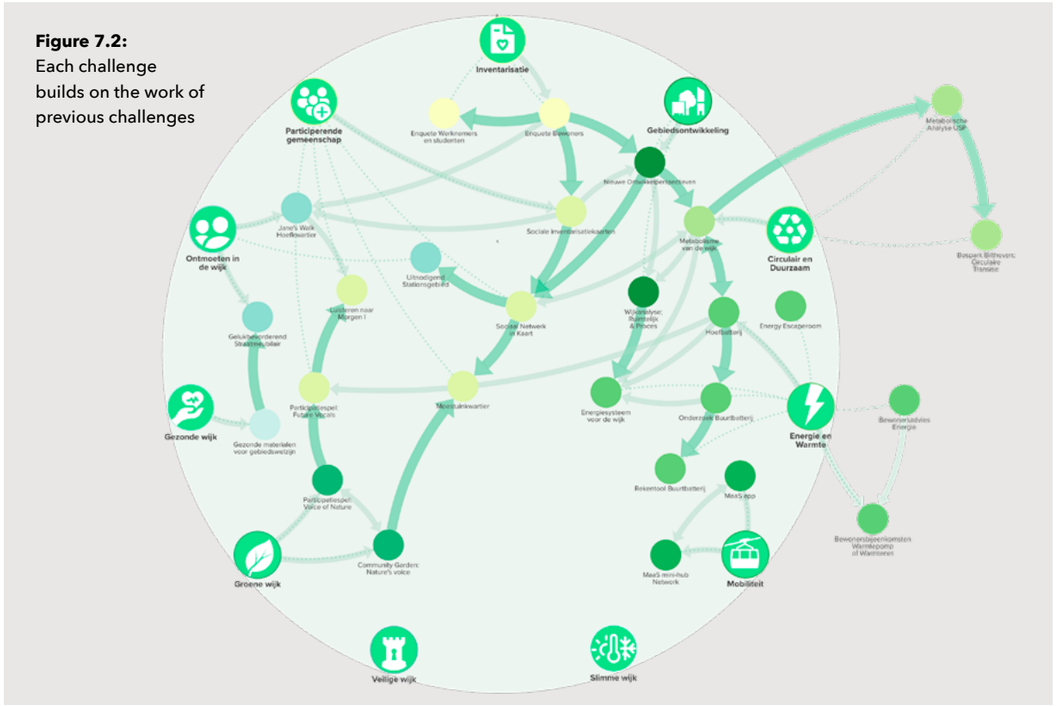


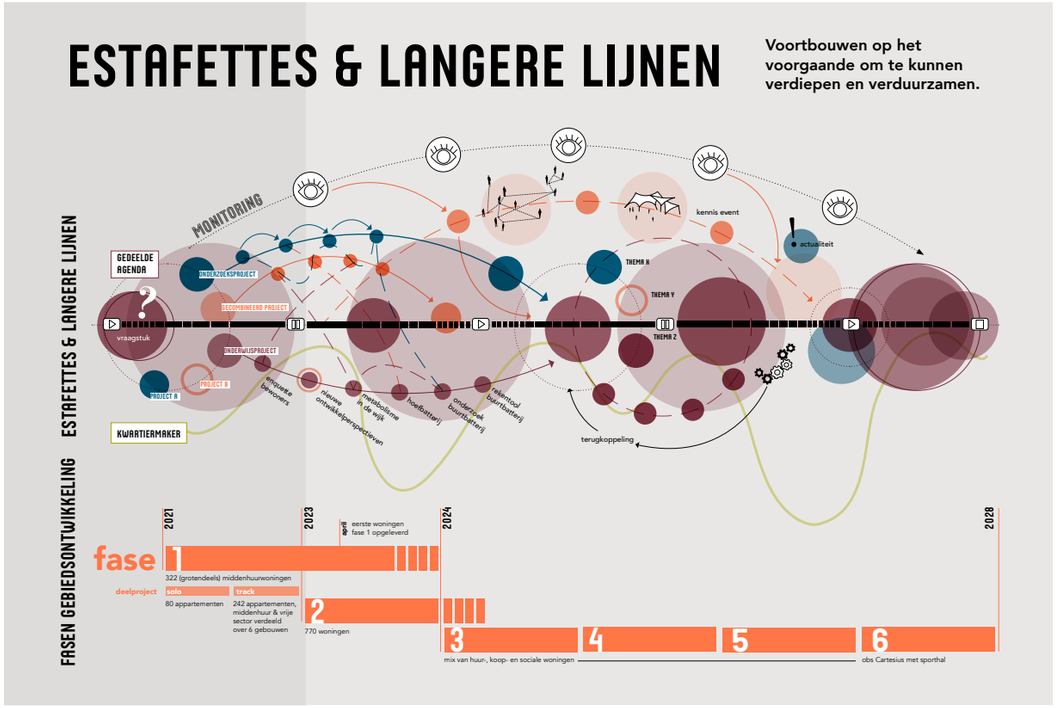
Figure 7.2:
Each challenge builds on the work of previous challenges

For example, we see that lessons can be learned from a learning environment in the Dutch city of Amersfoort. Amersfoort is in the midst of a 10-year-long development project to become a new living, working, learning, and leisure area with approximately 4,000 new housing units.

The Amersfoort CBLE functions as a central innovation space for residents, businesses, organisations, researchers, and students. Students from over 10 different educational programmes are involved in tackling real-world challenges in the local area. These challenges are not stand-alone; they are connected to the overall challenges identified for this area. These include circular and sustainable neighbourhoods and community participation.

Moreover, each challenge builds upon the work of the previous challenges (Figure 7.2). Through continuous involvement, this CBLE manages to contribute to the local learning ecosystem. Ideally, we think that HU Health & Well-being will be able to learn from the design solutions and experiences of this CBLE. Exchange between the involved participants was organised through the institute-wide network for professional development (enriched with insights from our practice-oriented research), but reusing the insights and recontextualising them for the context of Health & Well-being did not turn out to be such a straightforward path. One explanation for this struggle could be that the lead in the CBLE in Amersfoort is taken by professionals from the domain of urban planning. They are more used to long-term horizons, while Health & Well-being might be more focused on the here and now.

Overall, we carried out this practice-oriented research from a design perspective at the different levels of scale (micro, meso, macro) of (re)designing CBLEs, and with this research, we triggered the intended reflections, interaction, discussions, and learning. In this way, we contributed to evolving learning ecosystems in the Utrecht region.



3. Dynamic Learning Agenda reflections
We will reflect on the following core aspects of the ESC *Dynamic Learning Agenda*: SCD with others and the reflections on SCD in systems and SCD in time will be combined.

SCD with Others
To facilitate the collaboration between the educators from different educational institutes, researchers from different research groups and external stakeholders, we collaboratively developed a set of design principles. We were happy to see that these design principles were embraced by the project leaders and programme managers and were actively propagated to foster dialogue and exchange between the different CBLEs. We were involved by the project leaders and programme managers in the process of actively encouraging participants to make the design principles context specific and give them local colour, while also trying to make all involved see the common ground, despite the many differences between the settings and neighbourhoods in which the CBLEs are embedded.

SCD in systems and SCD in Time
HU Health & Well-being and our design-based approach took place within very dynamic real-life contexts, and we all worked and learned together 'in the Mud'. Many hours and much energy was spent (and is still being spent) on designing and enacting the different kinds of CBLEs while navigating a fragmented landscape.

The future of the designed CBLEs (currently involving about 3,000 students) and the intention to scale up to engage all students from the educational programmes involved (about 8,000-9,000 students) remains uncertain. Developing CBLEs across the different boundaries (across domains; education and practice; research and practice; and professionals and residents) needs creative *Systemic Co-Design*, which in turn requires professional agency, organisational change capacity, strong educational leadership and more. To sustain the transition that has been initiated over time, we will also need to imagine alternative futures, which is a big ask in educational contexts that tend to focus on the here and now.

← **Figure 7.3:**
Relays & long lines - building on the work of the previous to deepen and sustain

4. ESCollaboration
The insights of ESC were used by the people involved. For example, two participants involved in ESC were also part of HU Health & Well-being. One was the lead researcher, and one was actively involved in the institute-wide learning network for professional development, and both were part of an internal research and innovation project about CBLEs and learning environments.

In the project we carried out, many insights and methods from ESC were used, which led to different types of outputs. For example, instead of written material, like scientific articles, we developed visual material in the form of a series of posters in collaboration with designers. These posters were consequently displayed on many different occasions to function as conversation starters. The visualised elements did indeed trigger unexpected discussions among participants (Figure 7.3 shows one of 6 posters). The series of posters was also shared with the ESC community at an ESCalator.

Acknowledgements
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Furthermore, we would like to thank colleagues who supported us in this endeavor from Research Centre for Learning and Innovation (Research Groups Vocational Education, Driving Educational Change, and Co-Design), Research Centre for Social Innovation (Research Group Participation, Care and Support), Research Centre for Healthy and Sustainable Living (Research Groups Innovation in Preventive Care and Research Group Participation Through Communication). Finally, we would like colleagues from the Teaching and Learning Network (the institute-wide facility for the professionalisation and support of educators and researchers of the HU).

CHAPTER CONTRIBUTIONS

Dynamic Learning Agenda
- SCD with others
- SCD in systems
- SCD in time

Transferable SCD-knowledge
- The added value of a *Systemic Co-Design* perspective in an educational context at the boundary of the crossover between health and well-being

SCD-repertoire
- Reflexive monitoring, also from a *Systemic Co-Design* perspective
- A variant of *MissionMapping*
- Visual material to trigger dialogue

SCD-outcomes
- How to work with design principles within, between and across multiple learning environments
- New insights at the interface of a design perspective on learning environments and a *Systemic Co-Design* perspective
- The potential pitfalls of sustaining transitions over time

8. Students as Partners: Thinking, Deciding, and Acting Together

Senka Rebac and Guido Stompff

Educational institution: Inholland University of Applied Sciences (Inholland)
Research institution: Inholland: Research Groups Design Thinking, Authentic Leadership, Study Succes
Boudaries crossed: cross-roles, cross-faculties, cross research groups, cross-location
Students involved: > 150
Educators involved: 50-60
Timeframe: 2024-2025

1. Introduction

What if students feel just as responsible for the quality of their education as educators do? What if educators see students as valuable partners to enhance their programmes and curricula? And what if everyone involved in the education process – students, educators, researchers, staff, and management alike – wants to overcome the traditional mindset of education?

Students as Partners (SaP) is an approach in which educators and students collaborate as active partners to co-develop and implement initiatives within and for education. The word "partner" is a deliberate choice in SaP: the collaboration goes beyond consulting students about plans or employing them as coaches or buddies. Partnership is about an equal contribution from students, educators, staff, and managers to improve education. The underlying principle of SaP is that students and staff possess different, but complementary, forms of knowledge, skills, and experience. By facilitating a process that draws on diverse perspectives, better education and innovation become possible.

SaP can cover a wide range of topics:

- Improved execution of lesson programmes by engaging students as coaches or educators
- Co-designing new lesson programmes with students and shifting the lens from designing for them to with them
- Co-designing policies and communication methods of educational institutions
- As co-researchers in education and research, contributing from their specific perspectives and expertise

Mick Healey is one of the pioneers of SaP and acknowledges the power dynamics and the complexity of collaboration. His vision of SaP is to create a partnership that centres on collective ownership and responsibility with the goal of fostering an inclusive, participatory, and innovative educational culture.

Systemic Co-Design (SCD) focuses on facilitating the co-creation process among diverse partners, each bringing different perspectives, knowledge, languages, and interests. It explicitly pays attention to co-ownership, the agency of partners, and systemic aspects that operate "beneath the surface." It is not hard to see the relation with SaP. The question that guides this chapter is:

What can the principles of SCD contribute to partnerships with students, and vice versa?
This is explored through an extensive multi-case study.

	Context	Location	Scope	Students as
1	Faculty: Pabo (Teacher Training Institute)	Five locations	Curriculum redesign	Co-designer
2	Faculty: Social Work	Alkmaar	Redesign module in first year	Co-designer/teacher
3	Recruitment, Inflow & Relationship	Alkmaar	Workshop for choosing the right study	Designers
4	Faculty: Creative Business	Rotterdam	Redesign module	Co-designer/teacher
5	Inholland Student Success Centre	Amsterdam	Empowering students to direct their learning	Buddies
6	Inholland Student Success Centre	Rotterdam	Setting up CAMPBES for students of oversea islands	Community builders
7	Urban Leisure & Tourism Lab	Amsterdam	Cocreating the roles of students in labs	Co-designers/coaches
8	Research Group Study success	Haarlem	Improve Student Well Being Monitor (SWM)	Sparring partners
9	Faculty: Law	Rotterdam	Deployment of student assistants in two first year courses	Co-designer/coach
10	Faculty: Creative Business	Haarlem	Making feel students more at home	Co-designer/coach
11	Faculty: Electrical engineering	Alkmaar	Development of Study Career Guidance (Dutch: SLB)	Co-designers
12	Faculty: Business Innovation	Amsterdam	Development of minor on advanced technology	Co-designers
13	Faculty: Oral care	Amsterdam	Mentor program	Co-designers
14	Centre of Teaching and Learning	Amsterdam	Part of the core team: communication &events	Co-worker
15	Staff: Communication	Rotterdam	Developing communication on SaP for students	Co-developers
16	Faculty: Pabo (Teacher Training Institute)	Five locations	Design/implementation of modules	Co-developers

Table 8.1:
The context, location, scope, and student roles of the 16 SaP pilots

2. Approach Case Study: 16 SaP Pilots

In 2024, a research programme on SaP was launched as part of a Comenius Leadership programme to introduce SaP to the faculties at Inholland and to change the mindset of faculty members towards seeing students as partners. Three research groups collaborated in this initiative: Study Success, Authentic Leadership, and Design Thinking. The programme consisted of 16 pilots conducted across Inholland University of Applied Sciences (Table 8.1). Each addressed different topics. All pilots began after an extensive intake process to assess whether SaP had a chance to be adopted and to formulate a straightforward "assignment." Each SaP pilot was uniquely situated in a context. It had a specific challenge, a dedicated team, a specific plan, and one or two dedicated researchers from the Comenius team. These researchers conducted intake sessions, provided methods and tools, facilitated sessions, and studied changing relationships within the teams. To strengthen equality, students participating in the SaP pilots were compensated for their contributions. Together, the various pilots form a multi-case study that led to relevant insights. We present three critical findings in this chapter.

Framing to Enhance Collective Ownership

Each SaP pilot began with defining an assignment, a necessity to establish agreements with educational programmes and faculties. The brief was carefully developed through multiple intake meetings involving team leaders, programme managers, relevant educators, and the SaP research team.

Within the faculty of Social Work, it was agreed that the SaP pilot would focus on improving a module that many first-year students struggled with. Evaluations had identified issues with the assessment and the language used, so the pilot aimed to explore whether the assessment could be improved and better incorporate students' lived experiences.

However, there was little enthusiasm among students to engage with this assignment. While they recognised the issues, they felt these were merely symptoms of a bigger problem they could not quite pinpoint. The pilot team decided to "open up" and reframe the assignment to explore what truly needed attention. They did this through reframing sessions, where different ways of looking at the problem were considered. A frame is essentially the lens through which a team views and interprets a problem. It shapes what the group sees as relevant and how they organise their collective actions (Valkenburg & Dorst, 1998).

The team members shared perspectives on the module in the first-year programme and jointly identified several frames to explore. One such frame concerned the relation with other modules: this particular module did not seem to align well with the modules in the programme before. Fruitful ideas arose that extended beyond revising the assessment, such as adapting learning materials or having second-year students as coaches. Ultimately, the team decided to redesign the entire module programme and to execute it together to test their new approach.

This reframing of the assignment was not an isolated case; in six other pilots, the teams also decided to reframe their assignments. This is hardly surprising. The students' perspectives had only been indirectly considered during the intake phase. The question was whether this reframing (adapting the assignment) would be accepted. In some cases, such as the Social Work example, this went smoothly because the responsible staff were actively involved in the pilot. In other cases, the pilot team had to "renegotiate" the new assignment.

Although opening up and redefining the assignment required additional time, it ultimately led students and educators to take shared responsibility for the

Figure 8.1: Outcome of a pilot session

outcomes of their pilot. For instance, the students in the Social Work SaP team continued their efforts even after the pilot officially ended, voluntarily teaching first-year students weekly. However, taking ownership often resulted in overly ambitious projects that the pilot teams could not fully realise. This occasionally led to frustration among students and educators. Nonetheless, even in these cases, participants reported predominantly positive experiences, and they felt they were genuinely contributing to education.

Starting with Talents

Several pilots involved experiments with other interventions. Once it was clear what the projects were about, participants were asked what they wanted to contribute to the project and what they "brought to the table" in terms of their talents, knowledge, network, and time. Some students wanted to apply what they had learned, such as creating personas. Others wished to contribute a personal talent, like filmmaking. Some students saw the project as an opportunity for personal development, such as strengthening their leadership skills.

Educators often mentioned practical contributions, such as ensuring alignment with management, but they also expressed a desire to "learn to give space." Together, the participants developed a plan based on everyone's input. For instance, if someone wanted to make a film, the plan had to include an element related to film (Figure 8.1).

With this intervention, the pilot teams began working with more energy and greater autonomy. Even without active involvement from the researchers, they made agreements, divided roles, created plans, and met their deadlines. In two cases, the teams worked so proactively that the surrounding organisation could not keep up. For example, a SaP pilot team that focused on communication had already produced the first promotional videos months before a suitable place on the website was available.

Working with what participants bring to the table not only generated energy but also made ambitions more realistic. The focus shifted to what the team members themselves could achieve, rather than creating plans

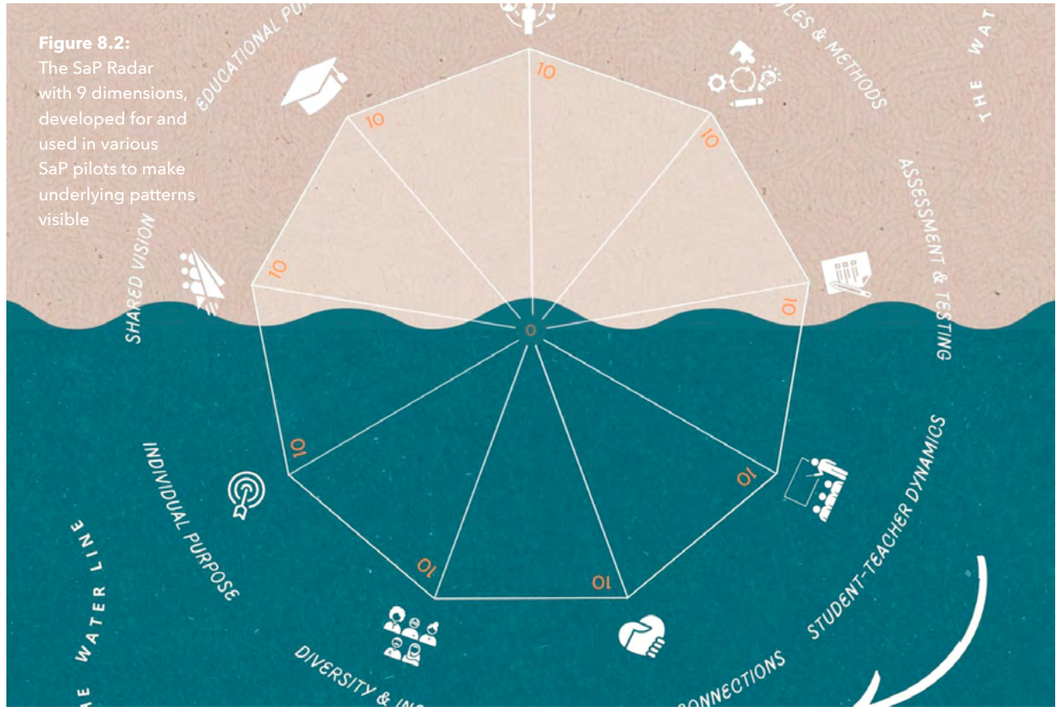

Figure 8.2:
The SaP Radar with 9 dimensions, developed for and used in various SaP pilots to make underlying patterns visible

for others to implement. This led to pragmatic proposals. For example, one SaP team decided that high school students at open days should be given "the honest story" about their potential study programmes to help reduce dropout rates. They developed and delivered a short workshop themselves, using the limited resources available.

Uncovering and Discussing the Relationships within the Team

Partnership has visible and easily discussable "above the waterline" aspects for contributing ideas to curriculum development. When the outcomes are positive, the collaboration appears fruitful. However, there are also factors at play that are less visible and harder to discuss between partners, such as power dynamics or differing interests. We refer to this as the undercurrent, or "below the waterline."

A team of researchers, educators, and students developed a method (both before and during the project) to work with what happens above and below the surface in a partnership. This *SaP Radar* (Rebac & Thölke, submitted) provided partners with insights into how each participant perceives and experiences the partnership. This created an open dialogue about the partnership and everyone's perspective on it, helping to guide future collaboration.

The *SaP Radar* is not just a measurement tool but a living method, developed from a *Systemic Co-Design* approach. Using the radar, teams work with a mega-canvas measuring five by five metres, on which various dimensions of partnership are displayed. In the version used in several SaP pilots, nine dimensions were identified, including visible ones such as "teaching style" and less visible ones such as "inclusion and diversity" (Figure 8.2).

Participants were invited not only to talk about collaboration but also to take a position on the canvas in relation to the dimensions. By standing closer to or further from the centre, it became clear how strongly they feel about a given dimension. This allowed them

Figure 8.3:
A SaP Radar session deploying a mega-canvas on the ground.

to embody the experience of collaboration, as it became visible who was where (see figure). It highlights different perspectives, reveals points of tension, and shows where connection is felt. Participants could choose to stand together or select entirely different dimensions. A facilitated dialogue then allowed them to move across the canvas or explore another dimension, to sense how that feels. By physically moving on the radar, experiential learning occurred through the body: where tension arose, where relief was felt, and where resistance existed. In this way, the *SaP Radar* made the invisible visible. It showed implicit power dynamics, unspoken expectations, and ingrained patterns between students and educators.

A few examples will help illustrate this. The first demonstrates how strong implicit power dynamics can be and how people's actions reinforce them. In one of the early meetings of a pilot, an educator spontaneously stood up and grabbed a large sheet of paper to write down the collective action points. Later, the educator realised the impact of this small gesture on the group's dynamics and how it reinforced existing power relations and roles. Instantly, the educator was in the lead, just as in the classroom, the students leaned back. No matter how well-intentioned, the educator struggled to relinquish responsibility, which limited the space for students to step forward and take leadership. Conversely, the researchers observed students struggling to break free from their dependence. One student, looking at the workshop leader confidently in the eyes, stated, "I truly feel equal here." Then, they briefly turned around to check with the learning coach (educator) and asked, "Right?"

Another example highlights the importance of vulnerability in achieving partnership. One educator began explaining why a participant had positioned themself in a particular place on the radar, initially radiating the certainty that had characterised the participant up to that point: well prepared, smiling, and verbally confident.

Suddenly, the participant realised something.

The participant's posture appeared to shift, and the participant began recounting a lesson in which a sense of "failure" had occurred. There were frequent pauses, signs of uncertainty about what to share, and an increasing tendency to look toward the floor. Tears filled the participant's eyes while stating, "I felt like I was falling through a deep hole. I wasn't allowing myself to fail. Not me."

This moment of vulnerability transformed the atmosphere in the session. By showing up as a human being with fears and concerns, rather than as an all-knowing professional, space opened up. Other participants began to share as well, and some moved toward the dimension of *meaningful connections* on the radar.

It became tangible what partnership truly means, not as a concept, but as an experience. Partnership begins where control ends.

The strength of this methodology lies in the collective awareness that gradually emerges. Sessions often proceeded in a relaxed manner, but sometimes denial and resistance were encountered because becoming aware of implicit relationships was not always comfortable. Looking in the mirror was always a tense moment, accompanied by emotion. It was precisely in these moments that the systemic work began. The method thus functioned as a compass for strengthening connections among students, educators, researchers, and support staff.

3. Dynamic Learning Agenda Reflections

This chapter reflects on the question: what can the principles of SCD contribute to partnerships with students, and vice versa? The three interventions described were not entirely pre-planned, but evolved over the course of the two-year pilot programs. What was the impact of using the ESC *Dynamic Learning Agenda*?

SCD in Me

This lens on SCD focuses on the individual: how can one make use of *Systemic Co-Design*, and what does it require? An important learning experience that emerged during the many pilots was the significance of giving ample space to the personal. First and foremost, this meant paying attention to talents or personal developmental goals. This strengthened intrinsic motivation because people work from something that matters to them. It also transformed relationships. By discussing what participants wanted to do and learn, a sense of vulnerability emerged, allowing participants to see each other and give each other space to develop and explore. As a student from a SaP pilot on communication reflected in an interview, "She [another student] took the lead, but she actually knew too little [about communication] to determine what the next step could be. That was sometimes difficult (...) but [it was] OK because everyone could speak up. It went fine."

SaP is about equality while acknowledging that students and educators are not the same

This was also evident in the *SaP Radar* workshops. By literally moving on the radar, experiential learning occurred. Participants physically felt the underlying systemic patterns before they were consciously aware of them. Personal growth began the moment someone allowed themselves to be vulnerable and admit "not knowing," like the educator who felt she had "failed." Letting go of the façade of perfection created space for authenticity and connection. This shift sparked a change in perspective and thinking, as participants became aware of their own behaviour in relation to others and how resulting patterns were deeply embedded in the fabric of the educational environment.

Working with what participants brought to the table and becoming aware of the systemic impact of words and actions transformed team dynamics. Doors were opened to alternative perspectives and talent development. This made it necessary to reconsider the assignment and embrace the accompanying uncertainty. Participants needed courage to stand up for what mattered to them and situate it within a larger context of ingrained systemic patterns. By doing so and following through on it, participants experienced personal growth and ownership, even when their goals proved overly ambitious.

A remaining question is whether SaP projects should start with less defined assignments to promote shared ambitions and collective exploration. Yet, it seems that challenging and even rejecting initial briefs fosters ownership and personal development. Choosing to stand for something, even if it provokes resistance, contributes to personal growth, much like a snake that sheds its old skin to grow.

SCD with Others

SaP is about equality while acknowledging that students and educators aren't the same. Each brings a different perspective, knowledge, skills, levels of power, and interests. Innovation literature often stresses that diversity offers a rich source for generating ideas. For that, a genuine partnership is essential; partners co-design what they want to achieve, jointly decide what to do, and collectively take responsibility to make it real.

The challenge is that inequality is deeply embedded in education. An educator decides what happens in a classroom, assesses students' work, and is paid to teach. Students are used to being guided; their future depends on their grades, and they pay school fees.
To deal with this during the pilots, various arrangements, such as compensating students, were made to make the relationship somewhat more equal.

Extensive intake meetings were also held with participating managers, educators, and staff to gauge how "SaP-minded" they were. If there was doubt, a pilot would not commence. During the pilots, participants' perceptions of equality were monitored, and the SaP Radar was used to make relationships discussable. Interventions such as reframing and working with whatever participants "bring to the table" were designed and adapted to strengthen equality.

What was unique about SaP was that while outcomes were important, the primary goal was to create lasting changes in relationships in education. This contrasts, for example, with community participation, where the goal is to generate broad support in decision-making, or with co-design with users to create better products.

The emphasis on relations and equality in the pilots created space for *Systemic Co-Design*. Through the evolving partnership, participants felt empowered to

stand up for something they believed was important, deploying their (sometimes hidden) talents, showing vulnerability, and truly seeing others with all their imperfections. This made contributions more equal, which enhanced co-creation. The focus on equal relationships allowed Systemic Co-Design to flourish.

That said, participants did not always feel this way. In several pilots, there was open resistance to the many reflection moments. As one participant noted, "We're just getting into it, and now we have to talk about the relationship once again."

SCD in Systems and SCD in Time

The practical aspects proved to be the main stumbling block for several SaP pilots. It was difficult to get teams together due to school schedules, locations, and conflicting agendas. As a result, some involved lecturers had the SaP activities scheduled as if they were official lessons. Despite these cases, the pilots ran more smoothly and had a positive impact on areas as the redesign of a course.

A similar observation was made in programmes where lecturers had KPI (key performance indicators) agreements regarding SaP. For example, they agreed on goals, desired outputs, and the number of hours assigned. Continuity was better in these cases than in the cases where educators volunteered and contributed in addition to their daily work. Scheduling people, setting KPIs, and defining task allocations are conventional ways to achieve results in organisations, rooted in an approach where a manager directs an educator on what is needed, and the educator directs students on what to do.

Even so, this traditional approach positively contributed to creating partnerships. This is a paradoxical finding because partnership does not align with the implicit expression of traditional hierarchical structure. On a larger scale, across the entire university, a comparable phenomenon was observed. Thanks to the Comenius Leadership program, SaP was placed on many agendas as a catalyst for educational change. This seems necessary because change does not arise spontaneously.

There is even a follow-up in the form of a fund that offers more programmes the opportunity to work with SaP to improve education. From a change management perspective, the Comenius project and the fund function as supportive structures to help initiate change. There is a long-term vision for partnership, but for now, it can only be realised with additional resources and expertise.

The question remains whether the support structure is temporary and will lead to sustainable change, where lecturers and students spontaneously seek each other out to improve their education. Traditionally structured support may remain necessary to encourage partnership. This question is also relevant for SCD: which support structures are needed for *Systemic Co-Design*, and to what extent are they temporary?

4. Conclusions

Systemic Co-Design can contribute to developing equitable partnerships in education. It helps to foster ownership, as participants begin to set their own ambitions and goals. It stimulates motivation because participants are encouraged to bring their talents and personal developmental goals to the table. It raises awareness of implicit and often unequal relationships, and of how participants unknowingly reinforce these. Conversely, the pursuit of partnership in SaP contributes to Systemic Co-Design. By emphasising the development of equal relationships rather than output, space is created for exploration, growth, and connection, allowing participants to more easily let go of control and trust one another. It is precisely in these encounters, in the connections, in this living field of relationships, that new ideas arise and change gains meaning.

The case also demonstrates the importance of supportive structures to get the process started, in the form of funding, time, and attention. Paradoxically, these structures reinforce existing relationships while simultaneously initiating the desired shift toward more equitable relationships. The question remains: how long is "temporary"?

5. ESCollaboration

Insights on reframing, leveraging talents, and cultivating equitable relationships have been translated into the concept called "partnercipation." Partnercipation focuses on developing new forms of collaboration for complex, real-world challenges, in which government, residents, entrepreneurs, and experts work together to reflect, decide, and act collectively.

The *SaP Radar* has been adapted into the *Partnership Wheel*, which is shared within ESCuela. Train-the-trainer programs for this method are offered through Compassion, in collaboration with ESC.

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CHAPTER CONTRIBUTIONS

Dynamic Learning Agenda
- SCD in me,
- SCD with others
- SCD in systems

Transferable SCD-knowledge
- Co-Design to enhance partnership with students
- Working with talents to enhance ownership
  The need for supportive structures for *Systemic Co-Design*

SCD-repertoire
- Framing and Frameboards for goalsetting and collective ownership
- Embodied Systemic work with *SaP Radar*

SCD-outcomes
- Relations between students and lecturers
- Improved curricula, programs and courses
- Enhanced ownership of students for their education

9. MissionMapping in Action: Driving Sustainable Energy Education Across Europe

Lenny van Onselen, Joep Kuijper and Remko van der Lugt

Educational institution: HU University of Applied Sciences Utrecht
Partners: Studio Raakvlak, Katapult, UPV, other partners from the CoVE SEED network and local stakeholders
Boundaries crossed: cross-universities, cross-educational institutions, cross-disciplines, cross-public/private, and cross-borders
Students involved: ca. 1,000 (in at least 5 countries)
Educators involved: ca. 60
Timeframe: September 2024 – June 2025

1. Introduction

Imagine collaborating with 14 partners from five European regions to improve sustainable energy education. Perhaps there is an engineer from a large Dutch company designing education with a community developer from Germany, a solar power engineer from Finland, a teacher from Spain, and a university professor from Greece.

How do you navigate within such a diverse network of teachers, researchers, regional leaders, and company partners as they seek innovative solutions to improve sustainable energy education?

The SEED (Sustainable Energy Education) project sought to answer this question by working with 106 private sector institutions for education development. The project reached over 1,000 students and 60 teaching staff, and developed about 40 programmes, innovation labs, and courses. Within the SEED project, *MissionMapping* generated ideas, actions, and new connections related to responsive education, challenge-based learning, summer schools, and education innovations.

In the context of increasingly complex societal transitions—such as the shift toward sustainable energy—there is a growing need for educational ecosystems that transcend traditional institutional boundaries (Zitter, 2021). These educational ecosystems are characterised by hybrid learning environments in which formal education, workplace learning, and non-formal learning are interconnected (Bouw, et al. 2024). Such integration fosters continuous learning across professional life stages. It enables close collaboration between education and industry, with human capital development as a shared objective. Learning communities are ways for educators, students, professionals, and policymakers to share knowledge and address bigger issues that no one can solve on their own.

The SEED initiative brings together experts from five European regions—Utrecht, Turku, Valencia, Bochum, and Western Macedonia—to advance vocational education in support of the sustainable energy transition. As a Centre of Vocational Excellence (CoVE), SEED seeks to foster regional educational development by leveraging international partnerships to co-create innovative educational strategies and practices. The goal of a CoVE is to empower teachers and students in vocational education and training (VET) to deliver high-quality skills and innovative education, producing future-proof professionals (van de Plas et al., 2022).

Figure 9.1:
MissionMapping helped create an overview of activities and new ideas for learning in the SEED project on regional and transnational level.

The five regions are collaborating in the four-year Erasmus+ programme to develop sustainable energy education through regional CoVEs. Different people contribute to the CoVEs in the SEED project:

- Project partners: a consortium of vocational and higher education, companies, and other organisations, some with specific project roles (e.g., project manager and work package leader)
- Regional partners (SEED partners and other organisations in a regional CoVE)
- Regional stakeholders (national influential partners and education providers outside the consortium)

The project partners regularly held transnational meetings, during which work package leaders, regional leaders, and educators from the five regions participated. The regional partners regularly hold regional meetings to work on project tasks aimed at improving sustainable education. Furthermore, twice a year, a broader network of regional stakeholders was consulted about sustainable energy education innovations. The goal of SEED was to align regional educational strategies with broader societal developments in their collaborative mission to transform sustainable energy education. *MissionMapping* was applied to support the co-development of innovative learning systems.

MissionMapping

MissionMapping is a method to empower collective sensemaking and impact-making. It is particularly useful in education design for societal challenges. This method is a collaborative, visual approach that uses mapping at its core and is best used in workshop settings where "the whole system is in the room." This is because it is integrative, utilising different perspectives to gain a broader view of the challenge at hand. The method is grounded in theories from complexity science, design research, and transition management. Theories that embrace the messiness of reality, particularly in the social world. This makes *MissionMapping* a humble approach; it reflects what is already

happening and gives a network the means to connect initiatives. This aligns with scholars who say that transitions can be managed only to a minimal extent. The opportunity lies in their ability to be slightly guided by combining and connecting bottom-up initiatives with top-down guidance in a co-evolutionary process. Besides its navigational role, *MissionMapping* also strengthens the network's social fabric. It fosters ownership by using co-design principles to create the map as a group. It's an artefact that symbolises the broader movement, and participants literally see their part in it. The *MissionMapping* process consists of several steps, as presented in the landscape metaphor. This is something everyone is familiar with, so in many networks it becomes a shared language.

Participants start by defining their North Star, which serves as the session's starting point and frame. They continue by collecting building blocks from personal stories and initiatives. These are the basis for creating islands with shared ambitions. After this, the collective landscape begins to take shape. Shaping it by using islands, waterways, and potential threats in the sea. As a final step, participants navigate the landscape in their boats, finding places where they feel urgency and can make waves. Over time, the map is updated and reinterpreted, becoming a living record of the network's learning journey. This iterative process helps participants keep situating their local activities within a larger trajectory and recognise how their work contributes to regime-level change.

2. Approach and Findings: Applying MissionMapping to Innovate Education

When we kicked off SEED, we had one big question: How can regions learn together to innovate sustainable energy education while staying true to their regional missions and needs? That is where *MissionMapping* came in. Imagine a giant map—not of places, but of ideas, actions, and ambitions. A map that helps you see what is happening locally, spot gaps, and connect the dots across borders. With SEED, we set out to build a map to connect, collaborate, and innovate energy education in five European regions.

The SEED partners started with *MissionMapping* in September 2024. Two experts from HU University of Applied Sciences Utrecht trained regional project leaders, educators, and key partners in *MissionMapping*. The partners adopted the *MissionMapping* approach to track activities, map lessons learned, and make connections for new educational initiatives. We used *MissionMapping* to explore activities in the regions and transnationally, to create an overview and identify gaps, and to zoom in and out of a region. This not only allows people to see the details but also to analyse them more generally, to adapt to new information and changing circumstances, and to define a position. Western Macedonia, Greece, jumped in immediately, inviting local stakeholders to sketch out their regional mission. Other regions followed suit, shaping their maps with local stakeholders to reflect their unique contexts. Each map felt like planting a seed—full of potential.

Soon, these maps became more than diagrams. They turned into conversations about priorities, opportunities, and dreams. Every six months, we revisited them—not as static documents, but as learning agendas. The maps helped us track progress, share lessons, and imagine what could come next. The islands helped partners to explore sailing routes where activities link or support one another. *MissionMapping* supported partner interactions and strengthened connections with regional stakeholders.

In February 2025, during a meeting in Valencia, five colourful maps were spread across a room

Figure 9.2:
The trainer explains to the regional coordinators how to facilitate MissionMapping

(Figure 9.3). As the SEED partners compared the island themes and clusters of themes that spoke to one another emerged. The partners called the clusters of themes "archipelagos," indicating potential transnational collaboration in learning (Figure 9.4). Suddenly, the big picture came to life:

- International project and challenge-based learning
- Building and sustaining transnational networks for education
- Connecting VET and universities for a skilled future
- A clear, dynamic vision of skills needs of future energy professionals
- Responsive, sustainable energy education everywhere

These themes were bridges for transnational learning and collaboration. Back in their regions, partners added international activities to their maps, blending local and global perspectives. By the end, there were five interconnected *MissionMaps* and a shared commitment to keep learning strategies alive and evolving. The partners evaluated the five *MissionMaps* and laid the foundation for agreements among international partners to continue the learning strategies for sustainable energy education across the five regions.

Facilitating MissionMapping

The partners adopted the approach by facilitating *MissionMapping* in their own regions. Internationally, the SEED partners applied *MissionMapping* to support the transnational dialogue on learning strategies in sustainable energy education, and they made adaptations to make it suitable for the SEED project.

The partners were asked to describe their experience with *MissionMapping* by answering four questions:

1. Overview: Did it help you get an overview of people and activities in your network relevant to your regional development & learning goals? Please explain how.

2. Coordination: Did *MissionMapping* help you to coordinate pilots, activities, and lessons learned in your region? Please give an example.

3. Dynamics: Did *MissionMapping* help you discover dynamics and frictions in the system? Please share why.

4. Collaboration: Did *MissionMapping* help initiate new collaborations regionally and internationally? Please give a few examples.

Using *MissionMapping* was not just about making maps; it became a way for partners across regions to see all the actions partners take to the bigger mission, spark new ideas for collaboration, and set learning goals together.

"For me, the best lesson learnt is that it is much easier to get an overview of all regions with a visual tool like MissionMapping than with written reports or plans."
– A regional coordinator of the Netherlands

In Germany, Spain, and the Netherlands, *MissionMapping* served as a tool to coordinate the development of new educational activities by adopting best practices from other regions and to connect with stakeholders in the labour market. In Greece, the map played a different role; it strengthened relationships with local partners and opened the door to collaboration.

Figure 9.3:
Regional stakeholder meeting in Utrecht, stakeholders and SEED partners map theme islands with activities and ideas

Figure 9.4:
SEED partners are comparing themes of the regional maps to see transnational overlap

Figure 9.5:
Theme islands (archipelagos) for cross-national collaboration in learning

In Germany, the *MissionMap* revealed hidden dynamics in the educational ecosystem. New ideas were developed, such as a summer school. However, the biggest hurdle was the time it took to align all stakeholders. The summer school turned into a spring school, and it took time to build stronger connections to achieve new goals for learning in the region.

"To fully benefit from the dynamics of a regional network, timing and schedule alignment are crucial—and not always easy to achieve." – A regional coordinator from Germany

Interestingly, in the Netherlands, Greece, and Spain, the tool didn't initially uncover tensions or frictions in the network. Uncovering such tensions takes time, courage, and trust within an ecosystem. Possibly, there were no major conflicts, but, more likely, only the regional coordinator engaged in reflection, and the broader stakeholder network was not fully engaged.

Also, when partners have more time to reflect, the reasons may differ for the Dutch compared to those in Southern European countries, who handle conflicts and tensions differently. Across all regions, the *MissionMap* highlighted gaps in the ecosystems and encouraged partners to develop their CoVE regionally and internationally.

"The map showed where we need to invite more relevant partners, and this opens the door to new collaborations both regionally and internationally." – A regional coordinator from Greece

MissionMapping proved valuable for shaping an international learning strategy. It supported alignment between regions, helped form agreements for student and teacher exchanges, and inspired joint development of educational programmes.

"Aligning mission maps across regions also revealed new initiatives beyond the SEED project—a clear sign of how powerful this approach can be." – A regional coordinator from Spain

MissionMapping supported sensemaking within this large, networked group of people pursuing a similar mission. In this case, it facilitated transnational dialogue and thematic convergence to aid the development of new ideas in sustainable energy education. *MissionMapping* helped create an overview of the CoVE's ecosystem.

Using a systemic approach, it helped identify gaps in the network, sparked new connections, and fuelled initiatives for exchange. Of course, challenges remain, such as time and funding to collaborate towards the regional and international learning goals.

Furthermore, facilitation experience and training are necessary for regional coordinators to use *MissionMapping* to develop a regional and international learning strategy. Also, partners were not always aware that the map could be helpful to coordinate regional development and explore dynamics and frictions in the network. But the potential is clear: *MissionMapping* is more than a tool—it's a *Systemic Co-Design* approach stimulating collaboration and innovation in education for the energy transition.

3. Dynamic Learning Agenda Reflections

SCD in Me

MissionMapping enables participants to take on a systemic practice without labelling it as such. It follows the saying attributed to Buckminster Fuller, "If you want to teach people a new way of thinking, don't try to teach them. Instead, give them a tool, the use of which will lead to new ways of thinking." *MissionMapping* is one such tool, and it allows for thinking differently about activities within transition networks.

"Overall, this tool is not really an entry-level workshop, but rather an immersive and valuable exercise for more experienced players." – A regional coordinator in Greece

This does require the facilitator to keep emphasising systemic ways of thinking, utilising all their senses as instruments, and staying with the analogy of map-making as long as possible (even if this is a bit longer than comfortable). Otherwise, *MissionMapping* may regress to a pretty form of doing a thematic analysis with hexagonal post-its.

SCD with Others

Engaging with a clear analogy of the explorer and cartographer helps people with a variety of backgrounds understand each other, or at least engage with each other's input without completely understanding it. In this way, *MissionMapping* can function as a boundary-spanning activity, and the resulting *MissionMap* can function as a boundary object.

"It showed who brings expertise in which field (or "island") and helped us distribute activities in a smart way. This gave us a more structured approach to our regional development and learning goals. And to stay in the metaphor of building an archipelago: the mission map also captures who is navigating us towards which island."– A regional coordinator in Germany

It can function as a "third space" in which generative conversations and activities can take place without fully understanding the overall situation. The regional coordinator of Greece wrote, "The tool really laid out the greater picture of all the different gears that make our regional machine work."

The condition, however, is that the content remains sufficiently accessible and, therefore, strongly curated. A hundred hexagons with slogans is still a hundred

Figure 9.6:
SEED partners are revisiting the regional maps after 6 months

hexagons with slogans. So it's essential to work with visualisations and layering.

SCD in Systems
MissionMapping increasingly tries to include the "mud" (the complexity) of the real system on the map. The regional coordinator from Spain explained, "[...], it flagged connections worth a deeper look that could surface both barriers and opportunities."

MissionMapping accounts for system complexity by adding underlying layers with visual descriptions of context and by showing undercurrents and weather systems. Still, it remains challenging to avoid crude simplifications and modelling when using mission mapping. So the question is: where do you go deep, and where do you label the system as "terra incognita?"

SCD in Time
Using *MissionMapping* over a more extended period is usually difficult, but in CoVE SEED, we managed to do so. The regional coordinator from Spain explained, "From my point of view, mission mapping needs periodic updates to reveal changes; without dedicated resources, the near-term benefits are not clear. Large-scale info work is hard."

As we needed to develop a learning strategy regionally and internationally, the *MissionMap* served as a continuously referenced overview that we regularly updated based on new insights. The SEED partners collectively adopted the tool within their own regions. Additionally, the partners used *MissionMaps* again to identify changes and note concrete goals to continue international collaboration.

With *MissionMapping*, educators and stakeholders can create an overview of a moment in time within a complex educational system within a region and even across international borders. However, the map itself also creates movement in the system. The map could be making waves, and we see the landscape changing as we map it. By continuously using it as a reference, we also need to be aware of and adapt the map to account for the changes it creates.

4. ESCollaboration
At the onset of ESC, we identified the need for transition networks to gain an overview. This also included the network of ESC itself. We engaged in a variety of mapmaking activities. At first, these efforts were in parallel to our initiative to develop *MissionMapping* as a method, but increasingly, the two processes intertwined. HU University of Applied Sciences Utrecht and creative partner Studio Raakvlak developed and applied *MissionMapping* across a variety of ESC projects and activities, amongst other things, leading to the *Dynamic Learning Agenda*.

The CoVE SEED project is used as an example in this chapter, as Lenny van Onselen, also an ESC researcher, was responsible for educating the SEED partners in co-designing educational ecosystems. She introduced *MissionMapping* as a methodology to facilitate transnational learning and collaboration in sustainable energy education.

The *MissionMapping* approach was, over the course of a year, fully adopted by impact makers in education as a *Systemic Co-Design* tool to map local ecosystems and to fuel a transnational dialogue for future European partnerships, in exchange, learning, and international collaborations.

CHAPTER CONTRIBUTIONS

Dynamic Learning Agenda
- SCD in me
- SCD with others
- SCD in systems
- SCD in time

Transferable SCD-knowledge
- Navigating complexity across Europe
- Coordinate transnational learning and collaboration
- Adaptation of Dutch SCD method to other cultural contexts

SCD-repertoire
- *MissionMapping* principles andguidelines
- Training and materials to facilitate *MissionMapping*
- *MissionMapping* adapted for transnational collaboration by adding a new feature "archipelagos"

SCD-outcomes
- Goals and actions for regional and transnational exchange, learning and collaboration within the SEED project
- *MissionMapping* fuels learning and collaboration by creating a dynamic overview and stimulating a dialogue within both a regional and a transnational network

10. Systemic Co-Design Beyond Borders: The International Perspective

Liliya Terzieva and Heleen Geerts

Educational institution: The Hague University of Applied Sciences (THUAS)
Research institution: THUAS: Designing Value Networks Research Group
Boundaries crossed: cross-universities, cross-disciplines, cross-networks, and cross-borders
Students involved: ca. 100
Educators involved: ca. 150
Timeframe: January – September 2025

1. Introduction

While ESC's roots lie in Dutch higher education, its reach has grown far beyond national borders. In an increasingly complex and interconnected world, the ability to design collaboratively and systemically across boundaries has become both a necessity and a promise. Challenges such as climate change, educational transformation, and sustainable regional development are not contained within disciplinary or geographic limits. They require new forms of cooperation – adaptive, reflective, and integrative – where design becomes its own language for systems change.

The framework of *Systemic Co-Design* (SCD) has proven to be a living, evolving methodology – one that thrives when shared, translated, and tested in diverse contexts. Internationally, its relevance stems from its ability to connect people, institutions, and knowledge systems through iterative processes of reflection and action. These processes make transformation tangible, whether in education, entrepreneurship, or sustainability transitions.

ESC has been positioning itself internationally through three complementary pathways: cross-university, cross-network, and cross-thematic collaboration. Each of these reinforces its systemic essence by connecting what is otherwise fragmented (Figure 10.1).

2. Approach and Findings: Applying Systemic Co-Design

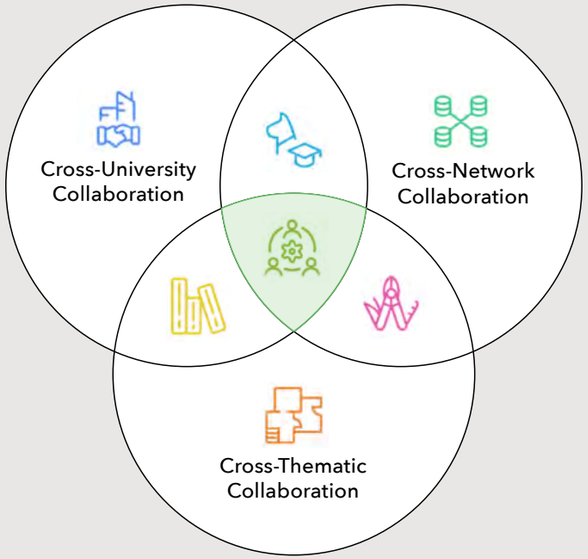
The internationalisation of ESC is not simply a matter of expanding geographically, but of cultivating connections between universities, networks, and thematic fields. Wherever they travel, the concepts of SCD are not part of a ready-made methodology. Instead, they grow contextually, adapting through relationships, shared experimentation, and reflection. These developments embody the grounding principles of SCD that change emerges from co-created understanding, diversity of perspectives, and iterative learning.

Cross-University Collaboration: Learning Through Shared Experimentation

The cross-university collaborations illustrate how the SCD approach creates spaces for learning and experimentation that transcend institutional walls. Two emblematic examples, the Sustainability Wine Intensive Week with the University of Pisa and the Design Boot Camp with the University of Asti, reveal how the application of *Systemic Co-Design* functions as a shared language among educators, students, and local stakeholders who explore complex regional transitions together.

In Pisa, the Sustainability Wine Intensive Week was conceived as a living laboratory where sustainability

Figure 10.1:
ESC international positioning

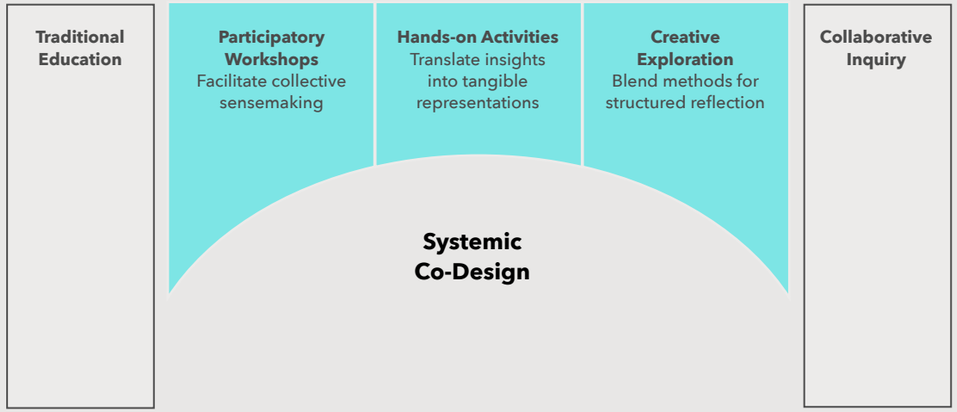


challenges in the Tuscan wine sector presented an opportunity for collective learning. Students and lecturers from The Hague University of Applied Sciences (THUAS) and the University of Pisa worked side by side with members of the Tuscan Wine Routes Federation. The design of the week followed *Systemic Co-Design's* participatory and iterative logic. Workshops such as the Wine Beyond Sustainability World Café and *Appreciative Inquiry* sessions facilitated collective sensemaking, while hands-on activities such as *LEGO® SERIOUS PLAY®* prototyping (Figure 10.4) and storytelling workshops translated abstract insights into tangible representations. The process invited participants to question assumptions, to engage with the system rather than talk about it, and to imagine alternative futures grounded in local realities.

A similar spirit animated the collaboration in Asti. The *Design Boot Camp*, organised together with Prof. Graziella Benedetto and her team, condensed the framework of *Systemic Co-Design* into an intensive one-day experience around the theme "the wine house of the future." Here, the methods of gamification, storytelling, and podcast making blended with the *Triple-Layered Business Model Canvas* and *LEGO® SERIOUS PLAY®,* forming a bridge between creative exploration and structured reflection. Students and educators co-designed games and narratives that explored how future wine houses might respond to changing societal and environmental conditions. What emerged was more than a creative output; it was a shared understanding of the wine ecosystem as a living system of interrelated values, actors, and dynamics.

Both cases demonstrate how the f*ramework of Systemic Co-Design* transforms traditional education into collaborative enquiry. The approach turns participants into co-owners of the process, fostering a sense of shared responsibility and continuity. In Tuscany, the week was not perceived as a one-time project but as part of a broader conversation about regional sustainability and cultural heritage. In Asti, the process nurtured connections that continued beyond the event itself, linking academic learning with local entre-

Figure 10.2:
Collaborating learning through co-design



preneurial imagination. Across both the artistic and design dimensions of SCD methods played a crucial role: by inviting play, storytelling, and creation, the process opened affective and cognitive channels that deepened understanding and empathy. Through these interventions, the *Systemic Co-Design* lens proved to be not only a method for innovation but a way of seeing – one that binds learning, research, and practice into a single, holistic experience.

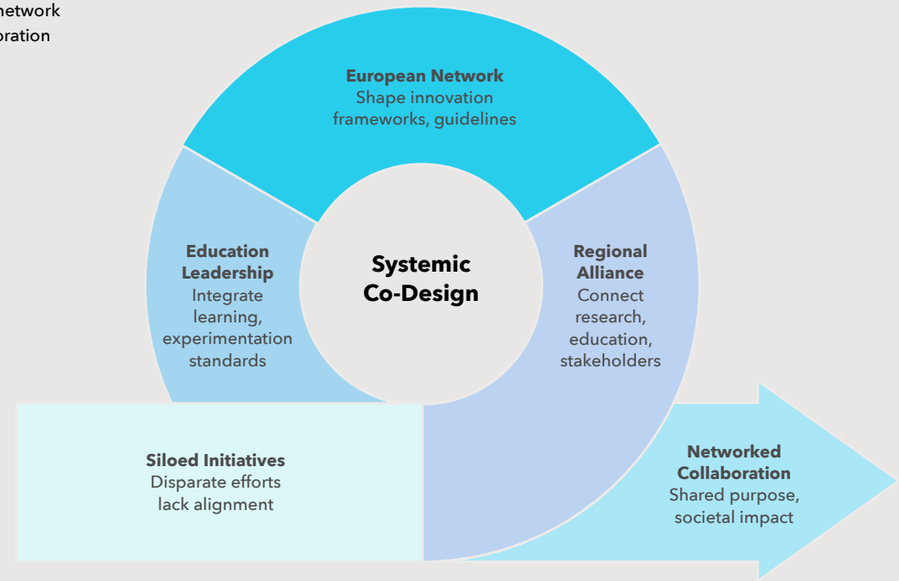
If the university collaborations demonstrate the framework of SCD's pedagogical power, the cross-network dimension reveals its systemic nature. The ESC itself is a network of universities of applied sciences. Still, each of these institutions is embedded within broader ecosystems that embody the same logic of interdependence and collective learning.

At the regional level, ESC's members participate in the South Holland Impact Alliance (ZHIA), a strategic partnership linking THUAS, Inholland University of Applied Sciences, and Rotterdam University of Applied Sciences. ZHIA connects research, education, and local stakeholders through living labs focused on sustainability, care, digitalisation, and inclusion. Within this alliance, the principles of SCD act as a conceptual framework that helps align disparate initiatives under a shared purpose of societal impact. The alliance itself operates as a living system. In other words, it evolves, adapts, and learns through continuous interaction among its actors.

Beyond the regional context, ESC's systemic reach extends through the European Network of Living Labs (ENoLL), where ZHIA represents its members as an Innovation Partner. Through this platform, ESC participates in shaping the international frameworks and principles that guide open and user-driven innovation across Europe.

Importantly, ESC co-leads the ENoLL Working Group on Education and Learning, where a *Systemic Co-Design* perspective is brought to the forefront as both an educational philosophy and a practical methodology

Figure 10.3:
Cross-network collaboration



for transformation. In this forum, the insights from SCD principles – reflection-in-action, iterative prototyping, and transdisciplinary collaboration – are translated into shared standards and guidelines that influence how living labs integrate learning and experimentation.

This cross-network engagement highlights how the SCD framework operates as both content and structure; it is the subject of learning and the architecture of connection. By engaging with networks like ZHIA and ENoLL, ESC moves beyond the traditional boundaries of academia and positions itself at the intersection of policy, research, and practice.

In this chapter, we will explore the idea of *Systemic Co-Design* becoming an instrument for designing the networks themselves – crafting the relationships, feedback loops, and reflective practices that sustain collaboration. In this setting, education does not follow innovation. Instead, it leads it, creating systemic infrastructures for collective intelligence and social change.

Cross-Thematic Collaboration: Systemic Co-Design in Context

The third dimension of ESC's internationalisation is its cross-thematic collaboration. This is the ability of the *Systemic Co-Design framework* to move fluidly across domains such as inclusion, entrepreneurship, sustainability, and tourism. Rather than being confined to a specific sector, this framework provides a design language that can connect sectors, allowing diverse actors to work together toward shared transitions.

Internationally, ESC is increasingly recognised as a valued partner in multi-stakeholder projects and European initiatives. The collaborations as practice partners with the Let Her In network, the European Development Foundation, Nikanor VET Centre, and the Krakow University of Economics all testify to the growing resonance of SCD as an integrative groundwork for societal innovation.

In parallel, THUAS's participation in the Start For Future Cooperative (SFF) expands the *Systemic Co-Design*

approach into the domain of entrepreneurship and innovation education. SFF unites universities, startups, and public organisations across Europe to accelerate the transition toward sustainable, responsible business models. Within this network, ESC contributes its systemic design perspective, ensuring that innovation processes remain connected to ethical, social, and ecological dimensions. Is this role starting to reinforce ESC's identity as both a thought leader and a learning partner within Europe's evolving innovation landscape?

A Living Practice Across Borders

Across all three pathways, a unifying insight emerges: the groundwork of *Systemic Co-Design* cannot be exported. Instead, it must be co-evolved. In every international collaboration, the approach adapts to local cultures, values, and rhythms while remaining anchored in its fundamental principles of participation, reflection, and creativity. Whether in the vineyards of Tuscany, in the networked laboratories of South Holland, or in the entrepreneurial ecosystems of SFF and beyond, *Systemic Co-Design* takes root through relationships that grow wherever people come together to learn with, rather than about, complex systems.

In this sense, the Expertisenetwork Systemic Co-Design is becoming not only a platform for applied research and education but also a living organism that embodies the very dynamics it studies. Each collaboration contributes new insights to its *Dynamic Learning Agenda*, reinforcing the understanding that systemic transformation is not achieved through dissemination, but through shared creation – step by step, context by context, border by border.

The principles of *Systemic Co-Design* are not part of a ready-made methodology; rather, they develop contextually.

3. Dynamic Learning Agenda Reflections

SCD with Others

Systemic Co-Design is, above all, a social practice. It comes to life through the relationships between people who think, act, and create together. International collaboration has amplified this dimension, revealing both the richness and the complexity of co-designing with others.

In the collaborations with the universities of Pisa and Asti, for instance, "the others" were not only students and lecturers, but also winegrowers, regional federations, and local communities. Working across languages and traditions required the group to cultivate relational sensitivity. This was accomplished by listening deeply, finding common metaphors, and translating systems thinking into accessible, experience-based learning. Similarly, in the partnerships within the SFF, "the others" included entrepreneurs, policymakers, and citizens engaged in societal transitions of their own.

These interactions have enriched the *Systemic Co-Design* lens by expanding its emotional and cultural vocabulary. They show that co-designing across borders demands humility and an openness to unlearn as much as to learn. Power dynamics, cultural assumptions, and institutional constraints inevitably surface. However, it is precisely in navigating these differences that the method's transformative potential becomes visible.

The international experience has reaffirmed that *Systemic Co-Design* does not seek consensus but cultivates shared understanding through diversity.
This expansion also brings new questions. How can facilitation practices remain inclusive when operating across languages and hierarchies? How can co-design spaces honour local knowledge without imposing external frameworks? These are not questions to be looked at for solving, but to be lived continuously within the evolving practice of *Systemic Co-Design*.

SCD in Systems

How do we co-design in systems? This question is equally reshaped by international experience. Within the Dutch context, ESC members already work within complex multi-actor networks. However, these systems become even more layered and fluid abroad.
Through the cross-network collaborations – particularly with ZHIA and ENoLL – the *Systemic Co-Design* field has moved from being a local practice to a networked mode of operating.

By contributing to the ENoLL Working Group on Education and Learning, the ESC finds itself co-designing within a living system of policies, frameworks, and cross-institutional collaborations. This setting has clarified that SCD is not only a tool for analysing systems, but also a way of being inside them and shaping the conditions for collective learning and adaptive governance.

At the same time, acting within such meta-systems brings new tensions. It exposes the fragility of alignment between diverse partners, each with its own rhythms, incentives, and cultures. It raises awareness of the systemic paradoxes of scale: how to maintain intimacy and trust while participating in large, distributed networks and how to keep the method reflective when the system demands efficiency and output.
These challenges also offer insight. International collaboration has shown that *Systemic Co-Design* is most powerful when the system itself becomes reflective. Through the living-lab structures of ZHIA and ENoLL, the ESC is learning that *Systemic Co-Design* in systems means designing not only products or interventions, but also the very relationships and feedback loops that sustain change.

SCD in Time

Systemic Co-Design in time, addresses the temporal nature of change. Systems evolve slowly, but people, projects, and institutions often move fast. Internationalisation has exposed this tension with new clarity. In the field-based pilots in Italy, the immediacy of co-creative workshops contrasted with the long-term sustainability of regional transformation. With the University of National and World Economy, the tourism resilience project invited reflection on how short-term learning moments could seed enduring change within local economies. These experiences prompted a deeper appreciation of time as a systemic factor by showing that transformation requires both moments of intensity and periods of maturation.

Working across borders also means engaging with different academic calendars, funding cycles, and cultural notions of time. This multiplicity challenges the linearity of project management and invites a more organic rhythm of learning. Within the ESC, time is increasingly seen not as a backdrop but as a mate-

Figure 10.4:
LEGO® SERIOUS PLAY® session at Sustainability Wine intensive week

rial of design; it is something that can be stretched, layered, and made visible through reflection. The *Dynamic Learning Agenda* itself has become a temporal bridge, connecting past experiments, present insights, and future intentions.

The unexpected development here is the recognition that international collaboration extends the temporal horizon of *Systemic Co-Design*. Relationships built in one project often reappear years later in new forms. Knowledge generated in one country finds resonance elsewhere. Each pilot adds a thread to a long, evolving tapestry of collective learning.

At the same time, this raises further questions. How can continuity be maintained when projects end and partnerships shift? What practices of documentation and storytelling can keep the learning alive? How can we design not only for results but for ongoing becoming? In grappling with these questions, the ESC learns to treat time as both a constraint and an ally – a force that tests commitment and deepens understanding.

Emerging Developments

Reflecting through these three lenses reveals that the internationalisation of *Systemic Co-Design* has been expanding the *Dynamic Learning Agenda* itself. It has added to the transformation of the network's learning questions from internal reflection points into global dialogues. Each collaboration adds new perspectives on what it means to co-design with others, in systems, and in time.

Together, these experiences suggest that *Systemic Co-Design's* future lies not in codifying a single method but in nurturing a learning culture that evolves through encounter. The more the approach travels, the more it learns – about inclusion, about systems, about patience. And perhaps the most profound development is this: the realisation that *Systemic Co-Design* is itself a living system, growing through the relationships, networks, and timescales it helps to reveal.

4. ESCollaboration: Insights Generated Through International Collaboration

The international trajectory of the ESC reveals that *Systemic Co-Design* is not a set of methods to be transferred, but a living practice that grows through relationships, reflection, and shared experimentation. As the network has crossed borders geographically, institutionally, and thematically, it has been setting the pathway to discover that what travels is not the format of co-design but its essence: an ethos of learning together within complexity.

Across the three pathways explored in this chapter – cross-university, cross-network, and cross-thematic collaboration – *Systemic Co-Design* has demonstrated its capacity to connect people, ideas, and systems that otherwise remain separate.

The international collaborations have therefore not only broadened the scope of *Systemic Co-Design* but also held a mirror to its practice. They have reminded the network that to design systemically is to remain open to the unexpected, to difference, and to the slow unfolding of change. The ESC's role in this process has shifted from being a network that applies *Systemic Co-Design* to one that embodies it: a living learning system in its own right, co-evolving with the institutions, regions, and partners it engages with.

Ultimately, the insights emerging from the international ESCollaboration affirm that *Systemic Co-Design* is both a method and a mindset for navigating transitions together. It fosters shared purpose across disciplines and geographies, inviting participants to move beyond problem-solving toward collective meaning-making. It shows that education can be a catalyst for societal transformation when it acts as a space of enquiry, creativity, and care. And it reminds us that the value of co-design lies not in perfect solutions but in the capacity to stay connected while exploring the unknown.

In this spirit, the internationalisation of the Expertise-network *Systemic Co-Design* is less an expansion than a deepening – a weaving of relations across places, times, and systems. What emerges is a constellation of learning communities that mirror the transitions they seek to influence: diverse yet connected, adaptive yet grounded, always learning, always becoming.

CHAPTER CONTRIBUTIONS

Dynamic Learning Agenda
- SCD with others
- SCD in systems
- SCD in time

Transferable SCD-knowledge
- Cross-border collaboration
- Collaborative learning through co-design
- SCD drives networked impact

SCD-repertoire
- Living practice across borders
- Systemic transformation through shared creation
- Building relationships and feedback loops
- Transformation requires moments of intensity and periods of maturation

SCD-outcomes
- SCD cultivates shared understanding through diversity
- Transformation of DLA learning questions to global dialog

Reflection Section 2: Rethinking Educational Systems

The chapters in this section reveal that *Systemic Co-Design* can help large-scale redesign of education. Boundary crossing and rethinking educational systems support the required educational transition to prepare better and equip future professionals.

It Takes a Crowd to Build New Education showcases a large-scale, comprehensive redesign of a programme using a *Systemic Co-Design approach*. The redesign resulted in a significant increase in National Student Survey scores and greater student success. The project showed that a large-scale redesign requires all participants, including those leading the current education system, to embrace the learning process. During the design process, much effort was put into building relationships and making space for reassurances and emotions. This support for participants not only encouraged them to bring their perspectives to the table but also to keep them there, even when some of those viewpoints were a minority.

Cross-boundary Learning Environments (CBLE) as Catalysts for Local Learning Ecosystems features a radically different way of learning that has grown into a large-scale programme across 20 educational programmes. Using a systemic design-based approach sparked new ways of thinking about education on different levels. The daily work took place within each CBLE (operational level), in the collaboration among different CBLEs (tactical level), and in the overall network that connects them (strategic level). Educators, researchers and external stakeholders collaboratively designed CBLEs, fostering dialogue and exchange within the network to enrich education and prepare students to address complex societal problems.

Students as Partners: Thinking, Deciding, and Acting Together highlights the value of student partnership in education. Students showed high energy and ownership when asked to participate in this way, often taking on work beyond

the original assignment because the topic mattered to them. However, as soon as educators stepped back into their traditional leadership roles, students' energy quickly faded. This shows how difficult—yet essential—it is for educators to unlearn old habits. The challenges in the current educational system are that it is still built around teachers taking the lead rather than co-creating with students.

MissionMapping in Action: Driving Sustainable Energy Education Across Europe shares a case in which an SCD method supported educators, companies, and other stakeholders in crossing various boundaries and navigating towards a shared mission. The challenge in this case was to train partners from regional educational ecosystems to facilitate an unfamiliar SCD method in just one month. The SCD method was quickly adopted by applying and learning collectively. It was a prime example of a successful "learning by doing" approach.

Systemic Co-Design Beyond Borders: The International Perspective presents a framework for growth across three dimensions: cross-university, cross-network, and cross-thematic. Travelling abroad as an ESC delegate (also described in Chapter 9) supports a co-created SCD approach adapted to local contexts through relationships, shared experimentation, and collective reflection. Crossing borders strengthened the social dimension of SCD, the value of systemic reflection, and the patience for changes to mature. Meanwhile, new questions emerge, enriching SCD with an international perspective.

Rethinking educational systems requires empathy and respect for what already exists, while still creating space for bold moves toward what is needed next. A key insight across all chapters is that educators are no longer leading the design of education; instead, they should become facilitators of large-scale rethinking of learning, partnering with all colleagues, students, researchers, and people from their field. At the same time, letting go too early may cause educators to fall back into old patterns. Rethinking education requires balancing different approaches, engaging in close collaboration while providing time for ideas to mature, and using SCD methods while adapting them to local contexts. •

Conclusion: Overall Reflection and Ways Forward

ESCuela versus Learning What to Do When We No Longer Know What to Do

Across the chapters in this book—which cover cases from redesigning learning on minor, master, and institutional levels to designing systemically rich learning environments, living labs, and international collaborations—we witnessed a shared movement beneath the surface. These projects, situated in diverse contexts and working with different tools, reveal a common trajectory: a shift toward *Systemic Co-Design* to rethink how we learn individually and collectively, how we collaborate, and how educational systems transform.

During editorial conversations and contemplative dialogues, six themes surfaced consistently. Sometimes they were explicitly explained in the chapters, and sometimes they were unspoken and only emerged during interactions between authors. These themes became the undercurrent for this conclusion section. They are essential to highlight because they offer a lens to understand the deeper movement taking place.

Awareness of Systems versus Taking Your Place in the Whole

Working systemically means recognising that education does not stand alone. It is embedded in broader professional ecosystems, organisational cultures, and societal transitions. Across the projects in Sections 1 and 2, the authors describe a growing awareness of what it means to take one's place in these larger structures and to act responsibly within them.

Whether it is a lecturer navigating their role in a hybrid learning environment or a consortium co-designing with municipalities, the shared insight is this: each actor shapes the system by how they show up and relate to others. *Systemic Co-Design* makes this visible and invites students, practitioners, and educators to consciously step into this awareness.

Time and Rhythm versus Between Chronos and Kairos

Systemic Co-Design unfolds in rhythms that do not always match the pace of traditional education. The chapters illustrate a constant negotiation between *Chronos*—deadlines, semesters, credit structures—and *Kairos*—the right moment for learning, insight, or change.

Projects such as rich learning environments, living labs, and long-term curriculum redesigns show that meaningful transitions require slow accumulation, time for reflection, and engagement in iterative loops. A thread through many narratives is the need to create space for a different tempo—one where learning can deepen, relationships mature, and insights arrive when the system is ready.

Respect and Empathy versus The Gentle Work of Co-presence

Co-design depends on listening, seeing, and experiencing. Listening, as many authors describe it, helps look beyond traditional tools and learning from the conversations, the silences, and the willingness to suspend one's own assumptions. Moments of empathy—between students and practitioners, lecturers and school partners, and international collaborators—enable trust and joint ownership.

Seeing is also vital, with several cases deploying the tools and methods that rely on visual means to jointly construct meaningful maps and canvases. These visual means serve as boundary objects, offering both guidance for discussions and a framework for listening, sketching, and making in collaboration. In this collaboration, they transform what is known into something new.

Experience, when participants viscerally felt relationships through the SCD-methods applied (between students and lecturers, for example), as is described across the chapters. Experiences also helped make invisible elements tangible, revealing "underwater" forces that resisted change.

Such learning experiences go beyond the individual. For example, co-presence is a mutual experience of being with others and sharing experiences at the same time and in the same space. It is a powerful source for collective learning.

This emphasis on gentle, authentic encounters also emerged strongly in our co-creative editorial sessions. *Systemic Co-Design* requires a posture of humility, allowing space for others to speak, and sometimes allowing the system itself to lead.

Power and Responsibility versus Naming Dynamics, Navigating Tensions

One of the themes that surfaced most strongly—but is least explicitly addressed in the chapters—is power. Several projects reveal the challenges of shared decision-making, legitimacy, hidden interests, and institutional pressures.

In education, co-design is often approached with a hopeful mindset: *we design together for a better future*. Yet *Systemic Co-Design* makes visible that power does not disappear when we work collaboratively. It must be recognised, named, and negotiated.

The chapter on *Students-as-Partners* demonstrates that in education, the power relationship between the lecturer and student is deeply ingrained and hard to overcome, as both tend to fall back into their conventional roles.

The examples in the book—from programme redesign to *MissionMapping* with stakeholders—show the necessity of developing a repertoire for navigating power dynamics responsibly. This is a frontier ESCuela will need to expand: integrating power literacy, influence mapping, and collaborative governance into *Systemic Co-Design* education.

Learning and Transition versus Vulnerability as a Condition for Growth

A recurring insight across contributions is that *Systemic Co-Design* requires the willingness to not know. Students grapple with open-ended challenges where solutions cannot be predetermined. Educators face the tension between assessment requirements and emergent learning. Organisations navigate ambiguity during structural change.

The research on "safe uncertainty" resonates strongly here: *Systemic Co-Design* education demands high uncertainty, but also a strong safety net. Chapters demonstrate how this safety net is created while posing new questions at the same time. This process involves using iterative rhythms, reflective practices, shared responsibility, and educators modelling vulnerability themselves.

Connectedness and Parallel Processes versus System Dynamics Show Up Everywhere

One of the most striking patterns across the book is how group dynamics mirror the larger system. Tensions, breakthroughs, silences, accelerations, and obstacles appear simultaneously at micro (teams, stu-

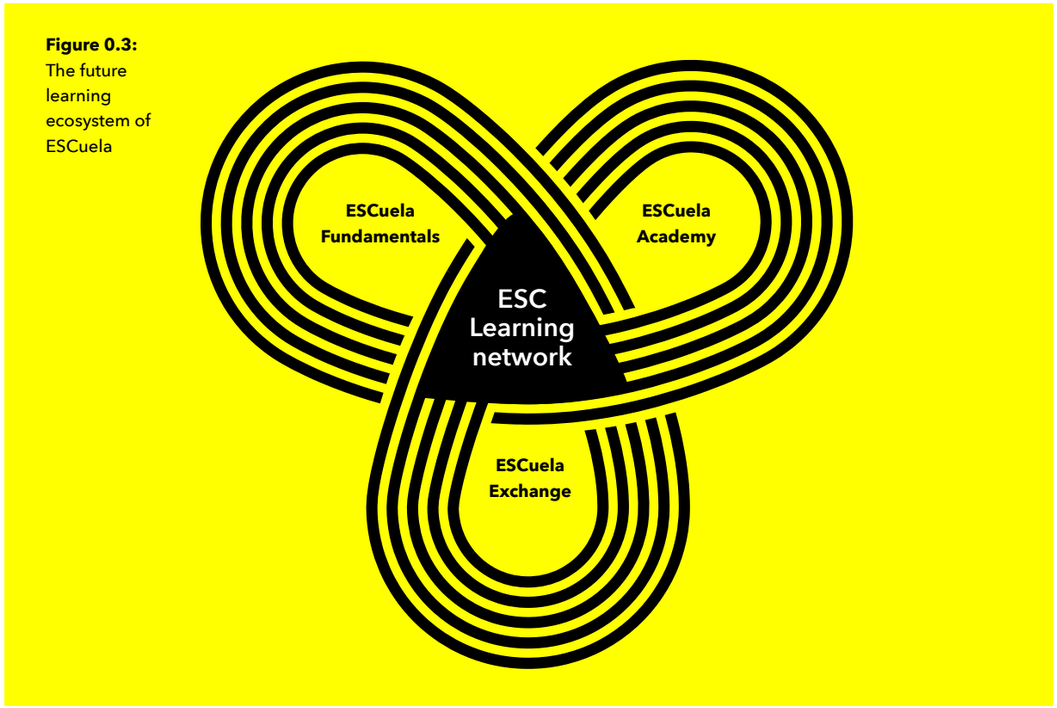


Figure 0.3: The future learning ecosystem of ESCuela

dent groups), meso (programmes, institutions), and macro (educational systems) levels. Paying attention to this mirroring is not a distraction from the work; it is the work of SCD. By learning to observe and work with these patterns consciously, *Systemic Co-Designers* cultivate the capacity to stay attentive to what the system is trying to show.

What this Means for Systemic Co-Design in Education

Taken together, the chapters in this book illuminate how *Systemic Co-Design* can reshape both learning and educational systems. Learning is no longer seen as the transfer or translation of knowledge within a conventional *Knower-Learner* relation. Instead, it must be seen as a form of collective learning, where:

- Knowledge products empower the transformation of knowledge rather than claiming truth.
- Curricula become places of joint enquiry rather than content delivery.
- Educators become facilitators of emergence rather than transmitters of knowledge.
- Students become co-creators of knowledge rather than consumers.
- External partners become peers in learning rather than merely clients.
- Institutions learn to evolve collectively rather than through isolated initiatives.

This book documents a movement already underway across multiple programmes and universities. It shows that *Systemic Co-Design* cannot be an add-on to regular education; it reorients what education is for in times of transition.

The Future of ESCuela versus A Strategic Direction

As described in the closing section of the book, ESCuela, a school for collective learning on *Systemic Co-Design*, will continue to grow over the next four years as part of the SIA Sprong programme. The future of ESCuela responds directly to the themes that emerged:

1. ESCuela Exchange: A knowledge-exchange platform where universities of applied sciences share tools, methods, research insights, and educational innovations emerging from their SCD practices.

2. ESCuela Fundamentals: A foundational entry programme for professionals and educators new to *Systemic Co-Design*. Supervised by coaches, the programme supports those who feel the complexity of their work, but lack the methods, mindset, or network to address it.

3. ESCuela Academy: A modular deepening programme for experienced practitioners that will include advanced training, thematic modules, and, over time, a train-the-trainer trajectory.

Together, these pillars strengthen ESCuela as a learning ecosystem—connecting the world of education, practice, and research for Design in Education for Transitions.

ESCuela's guiding question—"learning what to do when we no longer know what to do"—captures the essence of *Systemic Co-Design* education. We learn by engaging with complexity, acting iteratively, reflecting collectively, and staying open to what emerges.

An Invitation Forward

As this book comes to a close, we recognise that *Systemic Co-Design* is not a finished, complete, or static approach. It is a lived practice—a way of learning, working, and being in the world. It concerns collective learning, transforming individual perspectives and knowledge, and co-shaping practices. The examples in this book show what becomes possible when we step into that practice together. They also raise new questions about how to strengthen equity in co-design, how to assess learning in uncertainty, how to redesign institutional structures, and how to cultivate systemic capacities across complete educational ecosystems.

These questions now move to the core of ESCuela's next phase. We invite you—educators, researchers, practitioners, and students—to continue exploring them with us, to join the network, co-create the ESCuela programme, bring *Systemic Co-Design* into your own contexts, and keep learning how to act with wisdom, courage, and care in a world that urgently asks for new ways of thinking and doing. The journey of ESCuela is just beginning. Thank you for helping shape it.

ESC operates both as a platform for applied design research and as a living example of its methodology in action

Biographies

Frank Berkers
Professor, Collective Business for Transition, RUAS

Since 2023, Frank Berkers has served as Professor of Practice (lector) in Business for Transition at the Knowledge Centre for Business Innovation. In this role, he develops knowledge to support organisations in designing and operationalising value-driven alliances—forms of collaboration that enable fundamentally different economic approaches in line with the meaning economy. Frank is also the lead scientist for networked business models at TNO Vector – Centre for Societal Innovation and Strategy, where he has worked for the past 15 years.

Philippa Collin
Lecturer-Researcher IDG-HUB, Inholland

Philippa Collin worked as a researcher and lecturer at Inholland University of Applied Sciences for 25 years. Her background is in intercultural communication, cultural anthropology, and inclusive social design in the creative industries. She established the ESC IDG-Hub and has explored the intersections between transition education and environmental sustainability, with an emphasis on inner development and embodied, arts-based learning. Her research into embodied learning highlights its potential to inspire environmental hope and agency among students and staff.

Nanda Deen
Strategy and Organisational Development Specialist in the Public Sector, independent

Nanda Deen BBA is an experienced leader of collective change processes in the social domain. As a freelance professional, she works with a wide range of clients, primarily in higher education and municipal government. She firmly believes that true, sustainable transformation can only occur when all stakeholders are engaged and collaborate in shaping their shared future. With her creative, supportive, and cooperative style, she enjoys designing and guiding complex trajectories, moving seamlessly from strategy to grassroots initiatives and back again.

Heleen Geerts
Lecturer-Researcher and Liaison Manager Entrepreneurship, THUAS

Heleen Geerts is a Lecturer, Researcher, and Liaison Manager for Entrepreneurship at The Hague University of Applied Sciences and a member of the Designing Value Networks Research Group. Her work focuses on *Systemic Co-Design* research in ecosystems and experimental learning environments like living labs. She also specialises in exploring value networks for transitions across entrepreneurial contexts. Heleen is co-author of the book Innovating with Labs: That's How You Do It! This experience led her to take part in the establishment of the THUAS Learning Community "Haagse Labs" and the Retail Innovation & Experience Campus. She also holds a position as a vocational professor (practor) for new retail & entrepreneurship at Regional Vocational Institution ROC Mondriaan.

Jens Gijbels
Founder Fundamentals Academy

Jens Gijbels is the founder of Fundamentals Academy and is determined to develop and celebrate the full potential of the creative industry. He is a creative strategist with a soft spot for learning, collaboration, and applying a designerly approach to make an impact. Using the creative agency Fundamentals Academy, he develops new collaborations and learning environments where the work field, educators, researchers, and government meet. His Fundamentals' team consists of numerous creative professionals who actively lead workshops and processes throughout the Netherlands and Europe. Jens is also a guest lecturer at the MOME Design and Art University in Budapest.

Manon Joosten
Researcher Design Thinking, Inholland

Manon Joosten is an action researcher with the Design Thinking Research Group at Inholland University of Applied Sciences and a core team member of the Center for Teaching and Learning. She designs, facilitates, and studies change processes in education and professional practice, drawing on action research, Design Thinking, and Deep Democracy. Her work focuses on making innovation and decision-making more democratic, increasing impact, and fostering purposeful friction. She develops and guides collaborative approaches to societal challenges, striving to build collective agency and harness the power of design-led thinking—offline, online, and outdoors.

Joep Kuijper
Design Strategist, Studio Raakvlak

Joep Kuijper designs co-creative tools that help changemakers strengthen their capacity to navigate complex challenges. He worked on public issues at the National Youth Council and then at the Ministry of Health, where he connected lived experience and institutional logic through design methods. His work supports pioneers who face shifting goals, diverse interests, and rigid systems.

Today, he runs the strategic design consultancy Studio Raakvlak, which is a partner in the Expertisenetwork Systemic Co-Design, and develops new methods with the Co-Design Research Group at Utrecht University of Applied Sciences.

Remko van der Lugt
Professor Co-Design, HU

Remko van der Lugt studies how designers' ways of working, tools and mindset can support and speed up innovation for transition processes. His work integrates co-design with systemic work and systems thinking. Remko is Professor of Co-Design and Interim Professor of Organising Educational Change at HU University of Applied Sciences Utrecht. He is also a founding Partner of the Expertisenetwork Systemic Co-Design (ESC). Remko studied Marine Technology at Delft University of Technology and did his PhD. on Sketching in Design Idea Generation Meetings at the Faculty of Industrial Design Engineering at the same university. Remko has a wealth of experience in facilitating creative problem-solving and co-design processes in professional practice.

Claudia Mayer
Lecturer-Researcher Creative Business, Inholland

Claudia Mayer has been a lecturer in the Creative Business programme at Inholland University of Applied Sciences since 2018. She joined the Societal Impact Design Research Group in 2023, where she applies and develops co-design methods across a broad range of projects. Her research focuses on the impact of Generative AI on the business models of the design sector. Since 2025, she has also been a trainer at the newly established Centre for Teaching & Learning (CTL). Beyond Inholland, she advises design companies on growth strategies through her consultancy, Creative-Business.Pro. Claudia holds a Master's degree in Business Administration from the University of Innsbruck.

Lenny van Onselen
Senior Researcher Co-Design, HU

Lenny van Onselen is a senior design researcher at the Co-Design Research Group at HU University of Applied Sciences Utrecht. She studies Systemic Co-Design, innovating education and professionals developing design ability. She creates impact by facilitating co-design processes and creating toolkits for professionals and educators. Additionally, she aims to inspire curriculum developers for enriching and designing hybrid learning environments. She obtained her PhD in Industrial Design Engineering from the Delft University of Technology with a dissertation on becoming a design professional through coping with value-based conflicts. She has experience in consulting, teaching, and researching sustainable co-design and curriculum innovation.

Senka Rebac
Researcher Authentic Leadership , Inholland
Senka Rebac is a trainer, researcher, educator, and developer specializing in partnerships and systemic change in higher education and beyond. She supports teams in building shared responsibility and reflective practice, combining design thinking and systemic approaches. Her approach is practical, grounded in real cases, and centered on meaningful and sustainable change.

Hans Rood
Lecturer Business Administration, RUAS

Hans Rood earned his degree in Business Administration from Erasmus University Rotterdam in 2005, specialising in Marketing Management and Financial-Economic Management. Since 2018, he has served as a core lecturer in the Business Administration programme at Rotterdam University of Applied Sciences, where he contributes to curriculum development, coaches students and colleagues, and teaches courses such as Digital Transformation, Sustainable Production, and Creating Social Value. With a diverse background spanning the corporate sector, non-profit organizations, and research, Hans bridges theory and practice. Together with his colleague Sybe Stuij, he plays a key role in advancing the course Draagvlak Creëren (Creating Support).

Wina Smeenk
Professor Societal Impact Design, Inholland

Wina Smeenk is the founder and chair of ESC. She brings extensive experience in co-design, both in practice and in academic research. In 2010, she founded Wiens Ontwerperschap, a co-design agency through which she conducted numerous practice-based projects with governments, NGOs and businesses. These projects also formed the foundation of her PhD research, Navigating Empathy, which explored the role of empathy in co-design processes. Wina is also the author of The *Co-Design Canvas* and Design Play Change.

Guido Stompff
Professor Design Thinking, Inholland

Guido Stompff is a professor at Inholland University of Applied Sciences. He is specialised in design thinking/doing and an advocate for a designerly approach towards all kinds of challenges. His research team focuses on participatory approaches on design, whereby stakeholders collectively design, decide and implement. Also his team closely collaborates with faculties to innovate educational programmes. During his 25-year design career, he has won numerous design awards. In his academic career, he obtained a PhD on innovation-in-the-wild, with a focus on collective intelligence. He collaborates closely with other researchers in the Expertisenetwork Systemic Co-Design (ESC) and the Center of Creative Innovation (CoECI).

Sybe Stuij
Lecturer and Researcher Business Administration, RUAS

Sybe Stuij holds a Master's degree in Strategic Management from Erasmus University Rotterdam. Since 2013, he has been a lecturer in Business Administration at Rotterdam University of Applied Sciences and, since 2015, a researcher at the Knowledge Center for Business Innovation. Drawing on his expertise in curriculum development, he co-designed the course Draagvlak Creëren (Creating Support) in 2023, enabling hundreds of second-year students to master the essential principles of this critical discipline.

Liliya Terzieva
Professor Designing Value Networks, THUAS

Liliya Terzieva is a professor of Designing Value Networks at The Hague University of Applied Sciences, the Netherlands. Her PhD is in the field of Economic and Organizational Sciences of Leisure and Tourism. She has 20 years of international experience in Bulgaria, China, France, Malta, Vietnam, and the Netherlands, among others. She has worked in non-governmental, public, educational, and business organizations. Her work has focused on entrepreneurial learning and mindset, value generation, leadership, tourism, leisure, and strategic and human-centred design. Her research has focused on her interest in the impact of value-diverse, multi-stakeholder collaborative interactions and the role design plays in these environments.

Kim van Veldhuijzen
Designer of Learning Experiences, Fundamentals Academy

Kim van Veldhuijzen is a designer of learning experiences and, currently, project lead for the Learning Experiences & Design at Fundamentals Academy. With a background in Co-Design and Human-Centered Design, she focuses on creating learning environments that foster both professional development and personal growth. For eight semesters, she coordinated the international minor Co-Design Studio. In addition, she specialises in Challenge-Based Learning and often collaborates with vocational, higher education, and academic institutions, as well as industry partners, to strengthen connections between these stakeholders and students.

Ivo Vrouwe
Professor Professional Development and Blended Education, RUAS

Ivo Vrouwe is a design engineer and researcher in education with a background in architectural design and product development from TU Eindhoven and the Amsterdam University of Applied Sciences. After earning his PhD in Architecture from KU Leuven with the dissertation Sensemaking in Construction: The Necessity of Making, his work has focused on the value of making in design education. Currently affiliated with Rotterdam University of Applied Sciences, Ivo leads research on professional development and educational design. His work focuses on developing human-centred approaches that connect making, technology, and learning across educational and professional boundaries.

Celina Whitehead
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Celina Whitehead is a design researcher at The Hague University of Applied Sciences, working within the Research Group Designing Value Networks. She specialises in applying design methodologies, systems thinking, and collaboration approaches to tackle sustainability challenges. Her expertise spans diverse areas such as food system transitions, *Systemic Co-Design*, and regenerative urban living labs. Holding an MA in Industrial Design from the Royal Academy of Art, The Hague, and a BSc in Industrial Design Engineering from THUAS, Celina integrates life-cycle thinking in both materials and social systems, bridging research, material sciences, and creative design. Her ongoing work at THUAS focuses on researching and facilitating design methodologies that support transition projects, including grant proposal writing, academic research papers, workshop facilitation, and internal communication design.

Ilya Zitter
Professor Vocational Education, HU

Ilya Zitter is a professor at HU University of Applied Sciences Utrecht, at the Research Centre for Learning and Innovation, and is chair of the Research Group on Vocational Education. This research group aims to develop, validate, and circulate knowledge needed to improve and innovate vocational and higher professional education. The overall aim of the Research Centre for Learning and Innovation is to contribute to the creation of a climate of learning and innovation and to champion it as an important prerequisite for the continued development of our society. Ilya has 20+ years of experience in practice-based and design-oriented research on improving and innovating vocational and higher professional education. The focus is on cross-boundary learning environments (CBLEs) and how they are maturing and growing into catalysts for evolving local learning ecosystems.

Systemic Co-Design **takes a systemic perspective on design by looking at the interwovenness of issues, the reciprocal and interconnected relations between actors, and the dynamics within a larger system**

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Colophon

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How do we learn and teach amid complex societal change?

ESCuela: ESC & Education shares lessons from more than a decade of *Systemic Co-Design* (SCD) practice in classrooms, communities, and international collaborations. Blending reflection and practice shows how learning transforms when teachers become co-learners, students become partners, and education becomes a collective act of transformation. This book explores the tensions between SCD in learning practices and traditional educational systems. It highlights six themes essential for learning in transitions: systems awareness, time, respect, power, vulnerability, and connectedness.

ESCuela offers a way to create the conditions for meaningful and transformative learning. It invites educators, students, designers, and changemakers to rethink how we learn together to shape a more just and sustainable futures.

ESCuela: ESC & Education is the third volume in a trilogy. This series reflects on four years (2022–2025) of collective learning within ESC. Together, the three parts offer a layered perspective on the application and evolution of *Systemic Co-Design*.