

UnBoxed 2026

Teaching practices,
methods,
tools,
exercises
around the globe
for learning
on the edge

IDFW '26
LATVIA

RTU
INNOVATIONS

A?
Aalto University
Design Factory

DF
GN

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UnBoxing Learning on the Edge

**Opening a box expands possibilities
— it lets us explore its edges, change
its shape, and redefine what's inside
or outside.**

UnBoxed is the Design Factory Global Network's (DFGN) non-traditional conference on teaching and learning. It is dedicated to sharing practices, methods, tools, and learning setups that educators and practitioners have actually tried, in real programmes, with real students. Unlike traditional academic conferences, UnBoxed values experience over polish, and conversation over presentation.

Across Design Factories, learning has always taken place at the edge of what is known, predictable, or comfortable. This year, the Design Factory Global Network turned 15. It is a moment not just to celebrate, but to examine ourselves: what are we actually doing at these edges, and what have we learned from it? Contributions were invited across three tracks: *Thinking*, *Touching*, and *Talking*. This booklet presents radical reinventions of established practices as well as more subtle changes to move the needle. Please consider the submissions a starting point — learning from these experiences happens by engaging with the authors.

The Thinking track invited practices that challenge and expand how learners make sense of the world, which drew the most submissions of the three tracks. Several contributions revolve around designing for creativity, through *coopetition-based collaboration* (RTU Design Factory), *rhizomatic thinking* (Aalto Design Factory), and *LLM agents as solution space expansions* (Design Factory Shenkar). Others focus on the learning journey itself, mapping *what years of practice actually change* (Fusion Point), building *qualitative ways to capture creative value* (METU Design Factory), exploring the middle-ground of *adopting novel technology in classrooms* (RTU Liepaja Academy), and testing *where AI might extend a teacher's presence* (RTU Design Factory). A third cluster looks more outward, from *visioning the future we actually want* (RTU Design Factory) to treating *cities as learning systems* (Forge Design Factory), with two further contributions turning *research into market-ready ventures* (Oper.space; Oper.space, Fusion Point, and inno.space).

The Touching track invited practices that revolve around *making, building,* and *being physically present* as ways of learning. Several contributions present a game or method: a card deck introducing *TRIZ's contradiction matrix* (Cali Design Factory), a participatory game built around the *Quadruple Helix* ("Gheorghe Asachi" Technical University of Iași, RTU Design Factory), and short, low-stakes making experiences designed to *lower the threshold of the prototyping lab* (Aalto University Design Factory). Two further contributions work at a bigger scale: one using *systems mapping for sustainable transformations* with water quality transparency as an international case study (NYC Design Factory, HAMK Design Factory, Pace University), the other examining the *spatial relationship between a Design Factory and the city around it* (RTU Design Factory).

The Talking track invited practices that support dialogue where differences matter — bridging different perspectives, disciplines, values, or experiences. Several structures are offered for reflection and discussion: a *taxonomy for making collaborative behaviours visible and discussable* (Forge Design Factory), dialogue structures that *make every student's voice heard* (Riga Technical University), strategies for *forming teams in innovation education* (IdeaSquare CERN), and a *self-assessment framework for regenerative thinking* (HAMK Design Factory, Design Factory Shenkar). Others focus on bridging the university and industry world, whether through principles for *scaling technology-driven innovation courses* (Fusion Point, IdeaSquare CERN, METU Design Factory, Oper.space, inno.space), or by co-creating *career pathways between early-career researchers and industry partners* (Riga Technical University). Lastly, some submissions redesign larger structures, for example by taking principles from *open-world games to support students' learning journeys* (Future Design Factory), *role-playing the design process to get municipalities on board* (RTU Design Factory), and presenting archetypes to *rethink what a Design Factory itself might become* (Design Factory Melbourne).

Together, these three tracks describe what learning on the edge looks like. Each one represents a unique, deliberate push against the walls of socially constructed boxes.

Sharing the Passion for Doing

The Design Factory Global Network (DFGN) is a network of 38 innovation hubs based in universities and research institutions in 25 countries across five continents. Each Design Factory serves as an experimentation platform for interdisciplinary, problem-based learning. We bring together students, educators, researchers, and industry partners to work on real challenges.

The network's mission is to reshape the way education is done, and to build the diversity of skills and perspectives needed to operate in rapidly evolving environments.

UnBoxed 2026 Host: RTU Design Factory

RTU Design Factory is part of the Science and Innovation Centre at Riga Technical University, Latvia's oldest and largest technical university. Established within Riga Technical University in 2016, the Design Factory serves as a platform for students to develop innovative ideas, build industry connections, and acquire entrepreneurial competencies. It operates one of the best-equipped prototyping workshops in the Baltics with facilities for 3D printing, laser cutting, CNC milling, and large-format production.

RTU Design Factory is led by Dr Elina Miķelsone, a researcher and innovation expert known for developing the Coopetition format: a collaborative hackathon model that has received international recognition.

Demonstrations

Round 1

Monday, October 5, 2026 @14:00–14:30

What If We Stopped Measuring Creativity with Numbers?

A co-created qualitative KPI framework that enables evaluating creative industry projects through narrative, reflection, and sector-specific value dimensions beyond traditional metrics.

Arzu Gönenç Sorguç
Serkan Alkan
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METU Design Factory

The Challenge or Opportunity

Creative industries operate through both tangible and intangible values such as creativity, cultural impact, and user experience, which conventional quantitative metrics fail to capture. This creates a structural misalignment in how projects are evaluated, funded, and developed. Within the CoARA research assessment reform framework, this challenge becomes an opportunity to redefine evaluation practices. This work addresses that gap by introducing qualitative KPIs as a structured yet flexible approach to assess creative processes, collaboration, and societal relevance across sectors such as film, gaming, and wearable technologies.

The Practice in a Nutshell

This practice was developed within the CoARA funded project at METU Design Factory, focusing on designing and implementing qualitative Key Performance Indicators (KPIs) tailored for creative industries especially for wearable technologies, game development, and film making. It introduces

SDG 4, 9

This practice reimagines how creative and innovation projects are evaluated in higher education and industry (SDG 4) by developing assessment frameworks that better capture the societal and cultural value of creative work (SDG 9).

Snapshots from the COARA workshops on collaborative and creative practices.



Creative Industries KPI Cards



Training Materials



↑ COARA workshops

a co-creation based methodology that transforms how creative projects are evaluated.

The process is designed as a pipeline in which workshops, and structured exercises lead into a custom lexicon in different dimensions. The workshops and exercises are designed by including researchers, designers, and industry practitioners from film-making, game development, and wearable technologies sectors.

The proposed qualitative dimensions are then translated into a KPI framework along with a physical card deck, its digital counterpart and an interactive prompt-based tool. While cards enable users to evaluate, log and track the progress, the prompt-based tool enables users to generate prompts tailored to their project context and KPIs. In pilot implementations, project teams use these prompts to produce narrative-based self-assessments, while evaluators complement them with structured qualitative feedback.

The method was tested with over 30 participants and applied in pilot projects across three targeted creative sectors. It functions both as an evaluation framework and a reflective tool, enabling multi-perspective assessment that captures creative processes, collaboration dynamics, and societal impact.

Rather than replacing quantitative indicators, the approach integrates them into a broader, qualitative-first evaluation logic, aligned with CoARA principles. It reframes evaluation as a dialogic, context-sensitive process, making invisible aspects of creative value visible and actionable.

Lessons Learned

The project demonstrated that qualitative evaluation becomes more accessible and meaningful when supported by shared vocabularies and structured tools. One key lesson learned was that creative industry actors engage more confidently with nuanced assessment methods through collaborative workshops and pilot applications. The process also revealed the importance of facilitation in overcoming initial ambiguity and highlighted how generative systems can reproduce dominant assumptions and biases. At the same time, the framework strengthened collaboration across researchers, industry experts, and institutional leadership, supporting a broader cultural shift beyond purely quantitative evaluation practices.



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Arzu is a mechanical engineer by training, currently serving as a Professor at the METU Department of Architecture and the Director of the METU Design Factory. Arzu's work bridges engineering and architectural design by exploring the intersection of artificial intelligence, computational design, biomimetics, acoustics, and interdisciplinary innovation to foster new pedagogical models like our Deep-Tech Driven Design course.



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Barış received his Industrial Design BID and MID from Pratt Institute (New York, USA) and his PhD in Industrial Design from Middle East Technical University in 2012. Barış has been working as a lecturer at Middle East Technical University since 2009 and has been a manager at the METU Design Factory since 2016. Previously, he worked as a lecturer at Başkent University where he has given lectures on Design Studio, Basic Design and Furniture Design. Apart from his duties at the university, he provides consultancy services to various industrial organizations on design and product development.



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As an architect and researcher at METU Design Factory, Müge also contributed to the academic curriculum within METU. Her research and practice explore the intersection of computational design, digital fabrication technologies, biomimetics, and artificial intelligence to drive innovation in the built environment.



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Şevval is an architect and researcher at METU Design Factory. She received her Bachelor's degree from TOBB University of Economics and Technology and her Master's degree from Building Science Program at Middle East Technical University, where she is currently pursuing her Ph.D. Her work focuses on computational design, nature-informed architecture, biomimetics and digital fabrication.



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Mert holds a Bachelor of Arts degree in Translation and Interpreting from Hacettepe University and completed his M.Sc. in Science and Technology Policy Studies at METU and is currently pursuing a Phd in the same department. His thesis focused on how language influences scientific understanding among non-experts, particularly in makerspace environments. His fields of interest include science communication, linguistic relativity, maker culture, technology assessment, and inclusive innovation practices.



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Anil received his undergraduate degree in Architecture from Bilkent University and is currently pursuing a Master of Architecture degree focusing on building energy systems optimization, kinetic façade systems, and performance-driven architectural design. Alongside his graduate studies, he works as a researcher at Middle East Technical University Design Factory, where his research interests include computational design, adaptive and responsive building envelopes, robotic fabrication, mechanics, and mechatronics.

Design to Nudge Cycling

How can we co-design urban interventions with municipal authorities to nudge citizens to cycle rather than drive cars? Let us role-play the design process to improve its quality and effectiveness!

Andra Marta Babre
Emils Rode
Riga Technical University

The Challenge or Opportunity

Designing effective urban interventions means working at the edge of institutional permission. Over two years in the Cycle4Climate project, we have watched Espoo, Gävle, Pärnu, Riga municipalities consistently choose low-risk, low-creativity solutions, not because better ideas are absent, but because the design process does not give those ideas a path to yes. Through a co-design process involving such tools as Stakeholder Mapping, User Personas and Behavioural Journeys, universities have been working with the municipalities to refine the intervention ideas and focus them on target groups.

SDG 11, 13

This practice develops co-design approaches for sustainable urban mobility (SDG 11) as a direct response to reducing transport emissions and building climate-responsive cities (SDG 13).

The Practice in a Nutshell

Three nudging interventions each will be implemented in the four partner cities by the time of the UnBoxed conference. The interventions are informed by collection of traffic data in pilot areas of the four cities, and a survey of residents' mobility habits and preferences.

The interventions differ in scope, scale and approach, and include 'Cycling Ambassador' programme in Espoo, promotion of a new bicycle lane in Gävle, a festival to celebrate the opening of a de-motorised street in Pärnu, and design of bicycle parking sheds for large-scale housing estates in Riga.

To what extent has the co-design process improved the cities' intervention plans? How to make interventions like the ones tested in this project part of the partner municipalities' practices?

We would like to reflect on the intervention co-design process by role-playing it with workshop participants. With a 'design sprint' method we will try to be more creative and more productive: not only ideating the interventions but thinking together of ways how to "sell" those creative ideas to the municipalities!

After a brief introduction, workshop participants will work in small groups (4–5 persons) to ideate and negotiate interventions that municipalities cannot say "no" to: focused on specific target groups, easy to implement, and with potential to become part of the municipalities' regular practice.

Lessons Learned

We would like to explore if co-ideating with a group of people from creative and innovative environments can produce better results than our actual co-design process has over the past 2 years. The main roadblocks we have seen so far have to do with the way processes are organised at municipalities, which prefer low-risk but also low-impact and low-creativity solutions. By crossing the institutional boundaries in this role-playing exercise, we hope to gain insights that we can bring back to our city partners in the ongoing Cycle4Climate project.

More information

<https://centralbaltic.eu/project/cycle4climate/>



INTRODUCTION

As part of the Interreg Central Baltic programme's project Cycle4Climate, partners in four cities (Espoo, Gävle, Pärnu, and Riga) and four universities (Metropolia UAS, University of Gävle, Tartu University and RTU) are collaborating to design and implement interventions to nudge cycling - both behavioural and physical ones.

The interventions are informed by other components of the project, such as collection of traffic data in pilot areas of the four cities, and a survey of residents' mobility habits and preferences.

However, the design of interventions themselves is only partly based in data, as the interventions have been pre-defined by partner cities before the start of the project. Through a co-design process involving such tools as User Personas, project partners RTU and Metropolia have been working with the city partners to refine the intervention ideas and focus them on specific target groups.

AIM

This paper reflects on the ongoing behavioural intervention process to produce conclusions and recommendations for designers, urban planners, and researchers.

RESEARCH QUESTIONS

How can co-design process improve the cities' behavioural intervention plans?

How to make such interventions part of the partner municipalities' regular practices?

Tools & Methods: Pre-intervention Toolbox

Field Intervention for Climate Change Mitigation Behaviors



Source: Bergquist, M., Thier, M., Golding, M. H., & Van Der Linden, S. (2023). Field interventions for climate change mitigation behaviors: A second order meta-analysis. *Proceedings of the National Academy of Sciences*, 120(12), e2214651.120

Tools & Methods: CREATE Action Funnel



METHODOLOGY

Stakeholder Mapping, User Personas and Behavioural Journey Mapping methods were used when to co-design interventions in the four partner cities, in collaboration of representatives from both municipalities and universities.

The interventions differ in scope, scale and approach, and include diverse initiatives: e.g., 'Cycling Ambassador' programme in Espoo, a new bicycle lane in Gävle, a festival to celebrate the opening of a de-motorised street in Pärnu, and design of bicycle parking sheds for large-scale housing estates in Riga.

Design Process + Behavioural Design Methods



FINDINGS, RESULTS

The intervention process is ongoing: two interventions have already been implemented by each city partner, while the third one is being planned. Evaluating the results, effectiveness or impact of those interventions is difficult, as effects can be observed in the longer term. However, final intervention designs are more detailed and focused than initial plans. The question of making intervention planning and implementation part of the cities' regular practice requires further study.



CONCLUSIONS

With intervention design and implementation ongoing, preliminary conclusions can be drawn:

- Regardless of the co-design process to refine interventions, municipal partners stay loyal to pre-conceived intervention ideas.
- Despite evidence that the most effective intervention types are Social Comparison and Financial Incentives, implemented interventions focus on Education which is proven as the least effective intervention type.
- Focusing on target groups represented by User Personas would help to make interventions more effective - but cities lack data to describe those user groups.

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Open Innovation Ecosystem Game

A participatory and analytical game designed to help stakeholders to explore, understand and critically evaluate innovation ecosystems through Quadruple Helix.

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Elīna Mīkelsone

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Technical University in Iasi

The Challenge or Opportunity

The identified challenge and opportunity is closely linked to the potential exploration of the open innovation ecosystems and understanding of the most relevant concepts linked to them. This practice could bridge various domains, engage policymakers, researchers and practitioners into exploration, building and evaluation of the innovation ecosystems evolving around. As a teaching and practical exercise, this tool and methodology could bridge the gap in terms of clear understanding of the roles within an ecosystem, increase critical thinking skills, advance problem-solving and solution oriented capacities, and promote collaboration and engagement.

SDG 4, 17

This practice builds systems thinking and innovation literacy through experiential learning (SDG 4) while modelling inclusive multi-stakeholder collaboration across academia, industry, government, and civil society (SDG 17).

The Practice in a Nutshell

The game uses four types of cards, each grounded in a taxonomy derived from over 45 peer-reviewed sources in the open innovation and ecosystem literature:

- ▶ Stakeholder Cards represent the ten key actor types in an innovation ecosystem — government, industry, academia, civil society, orchestrators, intermediaries, complementors, investors, NGOs, and digital platform providers — each defined with roles, functions, and academic references.
- ▶ Process Cards represent twelve mechanisms and activities through which ecosystems operate — from Quadruple Helix co-creation and ecosystem orchestration to hackathons, trust-building, boundary-spanning, and innovation lifecycle management.
- ▶ Challenge Cards represent twelve barriers and tensions that characterise real ecosystems — including IP issues, power asymmetry, trust deficits, coordination costs, the generativity-versus-control tension, and conceptual fragmentation across actors.
- ▶ Outcome Cards represent eleven expected results — multi-dimensional innovation, value co-creation, knowledge spillovers, social innovation, new governance models, and inclusive participation — linked to literature on what open innovation ecosystems actually produce.

The game unfolds across three phases. In Phase 1, participants collaboratively construct a representation of a real, existing ecosystem — selecting stakeholder cards, connecting them through process cards, identifying active challenges, and linking current outcomes. This map reveals perceived reality: current power structures, missing actors, and existing bottlenecks. In Phase 2, participants redesign the ecosystem into an ideal future state — reconfiguring roles, adding or modifying processes, reducing challenge cards, and enhancing desired outcomes. This map reflects aspirational thinking: alternative governance models, more inclusive configurations, and unmet needs. In Phase 3, the two maps are compared and reflected upon. The structural gap between the existing and ideal ecosystems becomes the core analytical space — the site where research questions, intervention designs, and policy recommendations emerge. Tested within an entrepreneurial accelerator and digital innovation hub, this game brought together different participants and increased their understanding of innovation

ecosystems by bridging and harmonizing different points of view and building scenarios.

Lessons Learned

The participants not only dive deeper into the understanding of innovation ecosystems concepts, but also, they have the opportunity to realistically create their own development scenarios based on actors, processes, challenges and outcomes visual cards. Moreover, the game-based methodology suggests the real potential to increase analytical skills, cause-effect type of thinking and to develop further problem-solving skills. Participants do not simply describe their ecosystem in their own terms; they engage with the concepts that the scholarly community has identified as analytically significant, producing data that is inherently comparable across contexts and cases.



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Elena is a lecturer within the Engineering and Management domain who seeks new ways of researching and teaching about innovation and entrepreneurial ecosystems. Moreover, as a Fulbright Alumna, she is passionate and currently seeking for new ways of teaching and exploring interactive and experiential learning pathways



Elina Mīkelsone

Riga Technical University

Elina is a Professor at the Riga Technical University with a wide experience in ideas management, the exploration of new ways to promote the way in which ideas are translated into real impact. She has consistently demonstrated exceptional leadership, entrepreneurial spirit, and ethical conduct in the field of business and innovation management.



Adriana Bujor

"Gheorghe Asachi" Technical University in Iasi

Adriana is currently a lecturer within the Engineering and Management Department, focusing on researching co-creation processes and open innovation. Moreover, she is highly engaged into promoting the entrepreneurial mindset and applying new and interactive teaching methodologies

Demonstrations

Round 2

Monday, October 5, 2026 @14:30–15:00

Visioning the Future

Before we can build it, we have to imagine it first – instead of focusing on technology, let's look for the answers inside of us: what future we actually want to live in?

Paula Cukura
Riga Technical University

The Challenge or Opportunity

Time traveling – more commonly referred to as a guided visualisation meditation – is an experience designed to clarify the inner compass and vision for the change agents DFs aspire to empower. Backed by sustainability and well-being science, it encourages authentic presencing, deep listening, increased values- and passion-driven agency, and a more optimistic outlook towards the future that younger generations increasingly lack. The future might be grim, yes, but it might as well be the best-possible-scenario-ever: depending on how we build it. Either way, before we can live it, we have to imagine it first.

SDG 4, 13

This practice builds sustainability agency and futures literacy in learners (SDG 4) while fostering the mindsets and motivation needed for climate action (SDG 13).

The Practice in a Nutshell

This exercise is being used in various settings as a stand-alone activity or as a grounding, exploratory opening for the upcoming activities. After a brief introduction, the group is invited for a time-traveling exercise: 10–15 minute guided visualisation meditation into the future. The exact meditation outline depends on the context: at RTU, it has been used as an introductory exercise before designing organisational impact strategy (theory of change), planning future activities or exploring personal core values for youth leaders. The audience, therefore, has been varied: from public authorities to students, science park managers, entrepreneurs and scientists both online and offline. The experience is followed by a short reflection and practical exercises, based on the session's general goal and tailored to the case at hand.

Lessons Learned

The feedback varies from the context and participant's previous background. More open-minded participants, naturally, find the exercise soothing, calming and inspiring. It requires the facilitator to monitor the space and to be able to handle scepticism or the inability of participants to stay focused. It also requires courage, patience, and good scientific grounds to back the practice in order to lead it with confidence and trust.



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Paula is a social innovator & RTU DF team member. Over the past nine years, she has been supporting ecosystems for social and environmental justice. She is currently researching creative ways to mobilise action for transformational leadership, sustainability & Doughnut Economics.

From Tacit Knowledge to Design Principles: An Educational Design Research Approach to Scaling Technology-Driven Innovation Courses

As a consortium of five DFs, we conducted an educational design research process to derive design principles for technology-driven courses aimed at increasing students' entrepreneurial capacities

Kirstin Kohler

Chutimon Espedal

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Arzu Gönenc Sorguç

METU Design Factory

The Challenge or Opportunity

We share our experience from the TECH2X project, which explores how universities can create research-to-market pathways through student–researcher collaboration across the four universities (University of Bologna, ESADE, TH Mannheim, METU, and IdeaSquare CERN), funded by the EIT Higher Education Initiative. The work presented here focuses on the first phase of this pathway: technology-driven innovation courses. These courses aim to identify socially impactful business opportunities based on technologies developed in university laboratories.

The goal of the TECH2X project is to scale a successful technology-driven course model beyond the consortium. Achieving this requires making the tacit knowledge underlying the course design and implementation explicit. In the following, we describe how this knowledge was codified.

The Practice in a Nutshell

The partners of the TECH2X project formed a community of practice that enabled peer learning among educators and institutions. The five participating Design Factories adopted a rigorous Educational Design Research (EDR) approach to capture knowledge on course design as best practices, expressed in the form of design principles. These principles are intended to serve as a blueprint for higher education institutions beyond the consortium.

We describe the EDR process conducted in the TECH2X project through two iterative cycles. The process was structured as follows: two of the five partners (UniBo, ESADE) acted as lighthouse partners, drawing on several years of experience in delivering technology-driven innovation courses. During the first EDR cycle, knowledge from these courses was codified through methods including document analysis, observations, interviews, and focus groups. The collected information was subsequently synthesized into a preliminary set of design principles.

In the second EDR cycle, these principles were used by the two pilot partners (TH Mannheim, METU) to guide the design of newly established technology-driven innovation courses at their institutions. All four universities then delivered their courses in parallel, each implementing the same underlying principles while adapting them to their local context. At the end of this cycle, the four universities synthesized their experiences and reflections on their respective course implementations. This resulted in a revised, refined, and more formalized set of 22 design principles.

These principles were organized into eight categories based on van den Akker’s curriculum components. Subsequently, they were translated into a set of 22 illustrative cards that provide a tangible tool for course design workshops with educators, supported by a course design cookbook.

As part of our demonstration, we will distribute selected cards from this card deck, allowing participants to gain hands-on experience with how the principles can be applied during the course design process.

SDG 4, 17

This practice makes tacit knowledge about technology-driven innovation course design explicit and transferable through educational design research, creating shared principles that can scale across institutions (SDG 4 & 17).

Lessons Learned

We conclude that the structured application of the EDR process is highly effective in making tacit knowledge about course design accessible to a broader audience. It represents a valuable instrument for disseminating this knowledge and facilitating peer learning among educators. This peer learning was further supported by the fact that all participating institutions shared similar values, not only in their pedagogical approaches but also in their collaborative practices and working culture, which can be traced back to their longstanding partnership within the Design Factory Global Network (DFGN).

Further Information

The TECH2X Project is funded by the European Union.

More information can be found on the project web-page:

<https://www.tech2x.eu/>



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Kirstin is a Professor of User Experience Design and Design Innovation, bridging the gap between engineering, design, and business. Her research focuses on fostering creativity and collaborative problem-solving, with a specific emphasis on design-driven methodologies and experimentation. Having led extensive interdisciplinary and international projects, she specializes in connecting students with partners across industry and civil society. Kirstin is dedicated to creating engaging, challenge-based learning environments that cultivate both technical engineering expertise and essential 21st-century skills.

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Laura Bellorini

Esade Business & Law School

Laura has an international background in marketing and international relations, with professional experience in both European public institutions and the private sector. She has extensive experience in educational innovation and entrepreneurship, and she currently works as Manager at Fusion Point, Esade, where she contributes to the development of innovative learning experiences and challenge based education initiatives.



Victoria Cochrane

Esade Business & Law School

Victoria is Director of the Rambla of Innovation, Esade's ecosystem for innovation and entrepreneurship training and support. Victoria has been working closely alongside colleagues at CERN in EC Innovation Initiatives and Funding Programmes for over 10 years, particularly the ATTRACT Initiative which has the aim of getting great ideas out of the labs and directly benefiting society.



Ole Werner

IdeaSquare CERN

Ole did his M.Sc. in Behavioral Change at Radboud University Nijmegen, worked at CERN IdeaSquare for 3 years, co-coordinating the Educational Programs, and is now pursuing a PhD, researching the emergence of team dynamics in Self-Managed teams.



Clio Dosi

University of Bologna

Clio is an Assistant Professor at the University of Bologna, Department of Management, where she teaches Organisation Science in the Master of Management Engineering. She is part of Oper.space, the Innovation Factory of the University of Bologna, where she coordinates Oper.lab (Open Innovation Observatory).



Matteo Vignoli

Department of Management, University of Bologna

Matteo is a faculty member at the University of Bologna, working at the intersection of design thinking, innovation, entrepreneurship, and management. His work focuses on how individuals, teams, and organizations develop innovation capabilities, with particular attention to design-driven approaches, experimentation, and mindset development.



Arzu Gönenç Sorguç

METU Design Factory

Arzu is a mechanical engineer by training, currently serving as a Professor at the METU Department of Architecture and the Director of the METU Design Factory. Arzu's work bridges engineering and architectural design by exploring the intersection of artificial intelligence, computational design, biomimetics, acoustics, and interdisciplinary innovation to foster new pedagogical models like our Deep-Tech Driven Design course.

Fishbowls

Round 1

Monday, October 5, 2026 @15:30–16:00

Scaffolding Creativity: challenging and expanding problem- solving using personalized LLM agents

Personalized multi-agent AI method
for enhancing creativity

Assaf Krebs
Yigal David
Shenkar

The Challenge or Opportunity

Large language models (LLMs) are widely adopted; nevertheless, their impact on human creativity remains theoretically and empirically unsettled. Our method proposes a persona-guided collaboration framework that mediates human-LLM interactions in creative problem-solving contexts. It will address key gaps in Information Systems (IS) and Human-Computer Interaction (HCI) research by examining the influence and effect of a personality-mediated framework on outcomes of creativity per user's personality traits, levels of user engagement, and interaction dynamics.

The Practice in a Nutshell

Our method conceptualizes creativity as requiring a multiple mindset - an adaptable cognitive mode that flexibly alternates along a spectrum between the imaginative and the practical. A multiple mindset is not necessarily linked to fixed personality traits but arises from dynamic configurations. Our multi-agent framework operationalizes this complexity through functionally differentiated LLM personas, each embodying distinct cognitive orientations derived from research on creativity and cognitive science. By this, the method aims to provide the necessary theoretical and empirical groundwork for building adaptive creativity systems that dynamically personalize AI behavior in real-time.

The method pursues four primary objectives: examining relationships between user personality traits and engagement with distinct AI personas, comparing self-directed versus algorithmically structured interaction sequences, developing a theoretical personalization model for optimizing human-AI collaboration, and creating an adaptive machine-learning algorithm that infers user traits to maximize creative outcomes. It contributes to IS, HCI, and computational creativity by advancing a theoretical and empirical understanding of adaptive human-AI co-creativity. Its practical implications span education, design, and innovation management. Persona-guided and mode-switching interfaces are positioned as pathways toward cognitively diverse, personalized, and creativity-enhancing AI systems.

SDG 4, 9

This practice explores personalised human-AI collaboration as a tool for enhancing creative learning (SDG 4) while contributing to the development of adaptive, human-centred AI systems (SDG 9).



Assaf Krebs

Shenkar
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Assaf is a designer, researcher, and Senior Lecturer at Shenkar. He is Co-Director of Design Factory Shenkar and specializes in interdisciplinary innovation, healthcare innovation, disability studies, and AI. His research focuses on GenAI, creativity and social design. He teaches both practical courses in design & innovation, and theoretical courses in philosophy, psychoanalytic theory, and Buddhism. Alongside his academic work, he exhibits in design biennales and international exhibitions.



Yigal David

Shenkar

Yigal is an engineer, researcher, and senior faculty member at Shenkar. He serves as Co-Director of Design Factory Shenkar, and specializes in machine learning, voice analysis, and corporate strategy. His research focuses on GenAI and voice sentiment. He teaches courses in Consumer Behaviour, Business Models, and Data Engineering. With over 25 years of industry experience, he has held executive leadership roles, including VP of Products and CEO in telecommunications and high-tech companies.

Co-Creating Pathways for Early-Career Researchers Between Academia and Industry

A structured fishbowl method for co-creating early-career researcher pathways between academia and industry through dialogue with ECRs, universities, and partners.

Mihails Korčevskis
Riga Technical University

The Challenge or Opportunity

Early-career researchers often navigate unstable boundaries between academic expectations, industry needs, mobility opportunities, and unclear career identities. Within ECROS, RTU is responsible for developing collaboration frameworks for researcher mobility, industrial PhD pathways, intersectoral placements, and academia-industry cooperation. This fishbowl tackles the Talking track by asking how universities, industry partners, and researchers can design dialogue where different expectations matter and where career support is co-created rather than delivered as a top-down service.

SDG 4, 8, 17

This practice reimagines how research career pathways are co-designed across academia and industry (SDG 4 & 8) through structured multi-stakeholder dialogue within a European university partnership (SDG 17).

The Practice in a Nutshell

This contribution presents a structured fishbowl format used as a co-creation method in ECROS, a Horizon Europe project supporting early-career researchers across the EUt+ alliance. The method is designed for stakeholder dialogue at Riga Technical University, where the focus is on collaboration frameworks, industrial PhD pathways, mobility, and academia-industry cooperation.

The session starts with a short framing of the ECROS challenge: early-career researchers are expected to build academic excellence, transferable skills, industry relevance, and international mobility, while institutional support is often distributed across separate services. Participants then join a rotating fishbowl discussion with three stakeholder positions: early-career researchers, university support structures, and industry or external partners.

The discussion is organised around three guiding questions: Who should define a meaningful research career pathway? What makes academia-industry collaboration useful rather than symbolic? How can mobility and industrial exposure support learning without becoming an additional administrative burden? Participants outside the inner circle observe patterns, tensions, and missing voices, then enter the conversation to add perspectives from their own Design Factory or university context.

The method is currently being developed within the ECROS project and is intended for use in project workshops, partner meetings, and stakeholder sessions. For UnBoxed, it will be shared as a live learning setup, producing practical tensions and design principles for co-creating researcher career support.

Lessons Learned

The main lesson is that researcher career support should not be designed only as a catalogue of services. ECROS suggests that career pathways become more meaningful when ECRs, universities, and industry partners discuss expectations, constraints, and possible futures together. The approach is still developing, so the key recommendation is to start with dialogue before designing tools: map the tensions, identify who is missing from the conversation, and make institutional limits visible early.

Further Information
<https://ecros.univ-tech.eu/>



Mihails Korčevskis

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Mihails works at Riga Technical University as a Senior Domain Expert. Through the Horizon Europe ECROS project, he supports early-career researchers through structured career guidance, mobility and academia-industry collaboration. He focuses on collaboration frameworks that connect universities, industry partners, and researchers to co-create more diverse and sustainable research career pathways.

Fishbowls

Round 2

Monday, October 5, 2026 @16:00–16:30

Digital Educators or Tech-Support for Broken Systems?

A practice-based program in tech-education, providing skills to train educators capable of rebuilding students' capacity to think, reflect, and engage in a digital world.

Maija Demitere
Rogier Jupijn
RTU Liepaja Academy

The Challenge or Opportunity

Digital education technology is stuck in a loop of superficial optimization, causing documented cognitive atrophy and attention fragmentation among students. Taking our new MA program “Digital Technologies for Education” as a case study, this contribution tackles the systemic failure of Higher Education to address this crisis. It addresses the urgent need to move past disjointed, “wishy-washy” software training toward a holistic framework, giving future educators the deep pedagogical confidence and critical tech agency required to rebuild students’ capacity to think, reflect, and engage.

The Practice in a Nutshell

Our practice centres on navigating a global trend in modern learning: the educational whiplash of moving from uncritically adopting commercially-driven EdTech apps to the current discussion on banning all technologies in a classroom. To establish a critical middle ground, the “practice” we are bringing to this Fishbowl is a conceptual framework for evaluating and designing digital technologies in learning environments.

We want to use the curricular blueprint of our newly licensed MA programme, “Digital Education Technologies” at RTU Liepaja Academy, as a live case study. Because the programme is in its inaugural launch phase, we are not presenting past student outcomes, but rather the architectural plan designed to train future educators as critical digital engineers. We will map out how our curriculum synthesizes human-centred “Innovative Pedagogy” – which focuses on inclusive education and the cognitive needs of diverse learners – with technical IT development. We will explore how educators-in-training will be tasked with critically evaluating digital inclusion solutions and prototyping novel interventions that combine neuropedagogy and universal design with immersive technologies like VR. The goal is to ensure pedagogy drives the technology, not the reverse.

We want to invite participants to share insights and look at the core problem: How do Higher Education institutions successfully synthesize foundational, human-centred pedagogy with rapid technological advancement to train truly critical digital educators?

Lessons Learned

Although in its inaugural launch phase, our curriculum design process revealed a crucial takeaway: building a truly interdisciplinary programme requires ongoing dialogue between IT developers and pedagogical experts. Feedback from regional employers and educational associations strongly validates this integrated approach. Our key recommendation for institutions attempting similar frameworks is to build cross-faculty alliances early to ensure human-centred pedagogy drives technological adoption. Our immediate development plan is to test this blueprint with our first cohort, actively evaluating their ability to prototype digital-physical interventions across diverse environments of knowledge transfer.

SDG 4, 10

This practice develops critically grounded digital educators equipped to rebuild students’ cognitive agency (SDG 4) with an explicit focus on inclusive design and addressing inequities in how technology serves diverse learners (SDG 10).



Maija Demitere

RTU Liepaja Academy
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Maija is an artist and researcher focused on deep ecology and sustainability through an interdisciplinary, hands-on approach. Combining conceptual philosophy with rapid prototyping tools, she creates public art and objects that engage communities in critical dialogues about food, waste, and resource consumption.



Rogier Jupijn

RTU Liepaja Academy

Rogier is a creative engineer and educator from the Netherlands whose diverse practice spans digital fabrication, web development, and technical consulting for artists. Merging hands-on engineering with creative problem-solving, he specialises in bridging the gap between complex digital technologies and expressive artistic exploration.

An open
door isn't an
invitation.
Who gets to feel
at home in the
prototyping lab?

Lowering the threshold to start working with your hands
by running short, low-stakes making experiences that
bring in people who might not otherwise give it a go.

Shreyasi Kar
Jasmine Xie
Aalto University Design Factory

The Challenge or Opportunity

Our prototyping labs are central to how we teach, but they can be intimidating. The machines, the noise, and the unspoken know-how can quietly signal “this isn’t for me” to anyone who hasn’t made things before. People usually talk about this as the gender gap in tech, and that was our starting point too. But at our Design Factory we saw the same wall in front of anyone who has never had the chance to make and break things. Simply walking into the lab doesn’t make people feel they can pick up the tools. The opportunity is to lower that first barrier on purpose, so that making, prototyping, and experimenting feel less intimidating.

SDG 4, 10

This practice lowers the threshold to hands-on making by designing short, low-stakes prototyping experiences that actively welcome people who might not otherwise feel at home in a technical lab (SDG 4 & 10).

The Practice in a Nutshell

For the past three years we have run a workshop as part of Shaking up Tech, a Finland-wide programme that encourages young women and gender minorities currently in high school, to take up technology subjects and studies at university. Our workshop during Shaking up Tech brings a group of complete newcomers into the same prototyping lab that our degree students use.

The workshop, “Light up your life with touch,” runs ninety minutes in small groups of no more than ten. Participants code an Arduino, build their own touch sensor, and use it to control an LED strip. Most arrive having never written a line of code, and leave with a small, working, playful object they made themselves.

What makes it work is less the content than the conditions: small groups, a concrete and interesting end goal, facilitators who openly make their own mistakes and work through them, and nothing that assumes prior knowledge. We have changed it every year based on feedback, mostly around one tension: giving people real learning without overwhelming them, while not oversimplifying to the point of being patronising.

That experience is now shaping something bigger. We are exploring a course for our own university students built as a buffet of short modules, each introducing a different prototyping technique. Students pick the modules where they want to level up, building their own plate depending on what would make them feel more confident in the lab.

This fishbowl opens all of that to the network: how different Design Factories lower the same threshold, what travels between contexts, where welcoming people in tips into watering things down and patronising them.

Lessons Learned

Our takeaway is balance: something real, pitched so people are stretched, not swamped. Three years of reworking has been tuning that single dial. Year one was over-ambitious, a mechatronics toy with programmed motors; people learned plenty, but we ran short on time and for some it became “homework”. Year two we stripped it to simple circuits, with more time to play and read code. Year three kept that base but used commonly available components, making it more accessible. Our advice: design an achievable outcome first, then guard the conditions, group size, framing, permission to fail, as carefully as the content.



Shreyasi Kar

Aalto University Design Factory

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Shreyasi (she/they) is the Head of Operations for Aalto Design Factory, leading the operations and development of the co-creation platform. She has coordinated the ATTRACT Academy, connecting researchers and students to promote the societal impact of innovations as well as developing pathways into STEM education. As an artist and designer, her work is rooted in developing open tools and platforms to make the life-sciences more relevant, engaging, and accessible to a wider public.



Jasmine Xie

Aalto University Design Factory

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Jasmine (she/they) is the Electronics Workshop Specialist (2020–present) at Aalto University's Design Factory and assists students and members of the Aalto community with the electronic and programming elements in their projects. She is also a new media artist who works primarily in the realms of technology and costuming. Her expertise includes working with sensors, micro-controllers, light, sound, and mirrors, to create wearable art and interactive installations.

Open World Education

Open World Education uses principles from open-world games to design education as a navigable learning environment where students shape their own pathways while maintaining traceable learning outcomes

Gerald Kooistra

Future Design Factory, NHL Stenden

The Challenge or Opportunity

Higher education often struggles to balance learner autonomy with accountability. Curricula are increasingly specified through learning outcomes, assessment frameworks, and accreditation requirements, yet students frequently experience learning as following a predefined path rather than navigating a meaningful educational journey. Open World Education addresses this challenge by exploring how principles from open-world game design can support learner agency, motivation, exploration, and ownership while remaining compatible with qualification frameworks such as the EQF and institutional quality assurance requirements.

SDG 4, 9

This practice reimagines curriculum design through open-world game principles, giving students meaningful agency over their learning pathways while maintaining alignment with formal qualification frameworks (SDG 4 & 9).

The Practice in a Nutshell

Open World Education is a curriculum design approach inspired by open-world games such as *The Legend of Zelda: Breath of the Wild* and *Elden Ring*. Rather than organizing learning primarily as a sequence of predefined courses and assignments, learning is designed as a navigable environment in which students can make meaningful choices about projects, learning activities, collaborators, and developmental pathways.

The approach has been explored within design, entrepreneurship, and technology education, particularly in the Communication & Multimedia Design programme at NHL Stenden University of Applied Sciences. Students formulate personal learning goals, select projects and challenges, build portfolios, and demonstrate achievement through evidence gathered across authentic learning experiences. Learning remains aligned with formal qualification frameworks through transparent learning outcomes and assessment processes.

To better understand and design educational openness, the approach introduces five dimensions: place of learning, progression structure, choice space, guidance, and normativity. These dimensions help educators analyse and intentionally design the balance between freedom and structure. Recent work has also led to the development of the Open World Education Index (OWEI), a framework for evaluating openness, coherence, studyability, traceability, emergent learning capacity, and community engagement within educational programmes.

The approach has informed curriculum design discussions, educational research, workshops, and international collaborations within the Design Factory Global Network and European higher education initiatives.

Lessons Learned

Learners often demonstrate greater ownership, engagement, and creativity when educational structures provide meaningful freedom rather than only predefined routes. At the same time, openness requires carefully designed support systems, transparent expectations, and coherent assessment practices. One important insight is that openness and quality assurance are not opposites; they can reinforce one another when learning outcomes remain traceable while pathways remain flexible. Current development focuses on refining the Open World Education Index and testing its application across different institutions and educational contexts.



Gerald Kooistra

Future Design Factory, NHL Stenden

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Gerald is a design lover, education enthusiast, and a formal leader.

Demonstrations

Round 3

Tuesday, October 6, 2026 @10:00–10:30

Breaking the Wall with Coopetition

Coopetition-based idea management method enabling diverse teams to rapidly generate, refine, and scale innovative solutions through structured collaboration and constructive competition.

Elīna Mīkelsone
Riga Technical University

The Challenge or Opportunity

This practice addresses the challenge of fostering rapid, high-quality idea development in diverse, interdisciplinary teams. Through coopetition-based hackathons, students from different universities collaborate and compete simultaneously, using structured idea management tools to generate, refine, and evaluate solutions. This approach enhances creativity, cross-cultural learning, and the ability to transform early-stage ideas into impactful, actionable concepts within a short timeframe.

SDG 4, 17

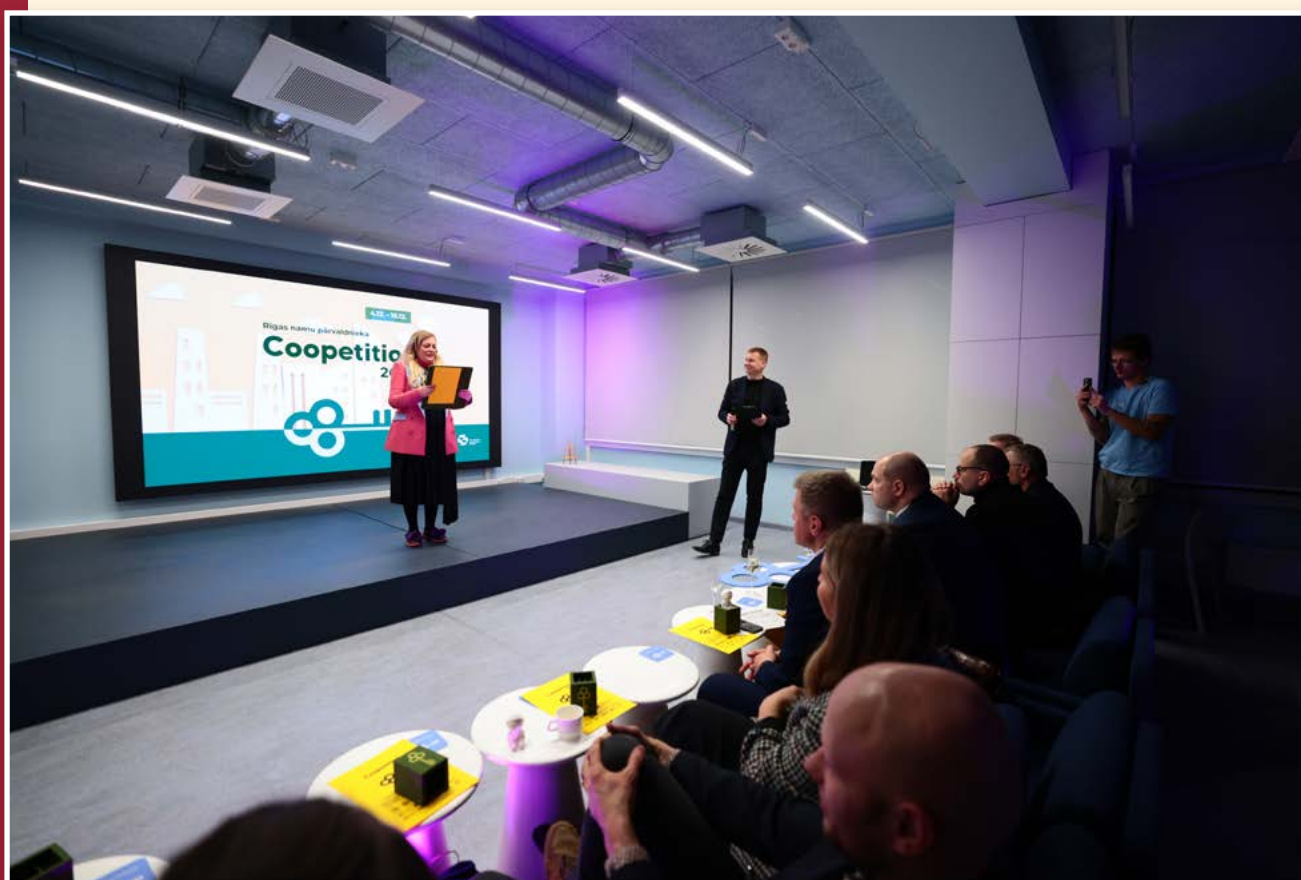
This practice advances innovative, collaborative pedagogy in higher education (SDG 4) through structured international university partnerships (SDG 17).

The Practice in a Nutshell

The practice is a coopetition-based hackathon model combined with structured idea management to support rapid innovation in sustainability challenges. It is implemented in an international learning context, such as the SWAPthePROBLEM programme, involving students from different universities (e.g., Hannam University and Riga Technical University).

Students are organised into diverse, cross-cultural teams and work intensively over a two-week period. The process is divided into phases. In Week 1, participants focus on problem exploration, idea generation, and initial validation using idea management tools (e.g., idea canvases, evaluation criteria, and feedback loops). Ideas are shared openly across teams, encouraging learning from others while maintaining a competitive element.

Facilitators guide the process through workshops, mentoring sessions, and structured checkpoints. Teams pitch early-stage ideas, receive peer



↑ One of the first coopetitions in 2024

and expert feedback, and iteratively refine their concepts. Coopetition is embedded by allowing visibility of ideas across teams while still aiming for the strongest final solutions.

In Week 2, teams further develop their concepts into more concrete, implementable solutions, including prototyping, impact assessment, and final presentations.

This practice has been applied in international hackathons and short-term innovation programmes, particularly in higher education settings focused on creativity, entrepreneurship, and sustainability. It is typically used in intensive formats (1–2 weeks), but elements of the method can also be integrated into courses or workshops to enhance collaborative ideation and innovation skills.

Lessons Learned

Coopetition significantly enhances both the speed and quality of idea development. Open idea sharing combined with structured idea management leads to more refined, innovative solutions and strong peer learning. Students report higher engagement, creativity, and cross-cultural collaboration skills. Clear facilitation and well-defined evaluation criteria are critical for balancing collaboration and competition. For future development, integrating digital idea management tools and extending post-hackathon support could further strengthen impact. This approach is highly recommended for educators seeking to foster rapid, collaborative innovation in diverse learning environments.



Elina Mīkelsone

Riga Technical University

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Elina is Head of Design Factory and professor at Riga Technical University, as well as the Founder of the Idea Innovation Institute and an internationally recognized expert in Idea Management and Innovation Management. She specializes in idea management systems, organizational innovation, and innovation capability development, and is the author of 50+ scientific publications, and an Expert at the Latvian Council of Science, regularly delivering keynote speeches and presenting research at international conferences. With more than 15 years of practical experience, she has consulted over 400 organizations, designed and implemented web-based Idea Management Systems, and created the “Fitness of Ideas” program, empowering more than 2 000 professionals to enhance idea generation, evaluation, and innovation implementation.

Tech Forward: Human- Centered Innovation Lab

Tech Forward is an advanced program that helps students and researchers turn university-developed technologies into market opportunities through entrepreneurial training and innovation methods.

Valentina Iadarola

Matteo Vignoli

University of Bologna-Oper.space

The Challenge or Opportunity

The main challenge of the programme was to align the needs of the University's research groups with the interests and skills of the selected students. The challenge for TF lies precisely in finding common ground between the two groups and bringing together, through an innovative project, two worlds that usually work separately.

The program's methodology is a hybrid model known as Tech to Market, an adapted Design Thinking process aimed at identifying and designing new applications for a specific technology (Cocchi, Dosi and Vignoli 2023).

The Practice in a Nutshell

The Tech Forward programme was launched in 2025 through a memorandum of understanding signed by four regional universities, establishing a collaborative framework to promote interdisciplinary innovation and the valorisation of advanced research technologies, originating from University Research Teams. Within this agreement, each university identified an innovative patented technology and ensured the involvement of its research groups as technology partners (TP) throughout the programme.

Tech Forward adopts a challenge-based and human-centered educational approach in which students from different disciplines collaborate to develop innovative applications based on emerging technologies. Working in multidisciplinary teams, students address real-world challenges through design thinking, creative workshops, user research, facilitation activities, prototyping, and final presentations.

The programme combines online learning, intensive workshops in Bologna and Bertinoro, and an immersive experience at CERN through the "i2Planet" exercise, which uses speculative scenarios and collaborative activities to stimulate creativity, critical thinking, and problem-solving. The active cooperation of TP, particularly during the initial "Discover Phase", has been essential in helping students fully understand the technologies they were working on. At the same time, teachers and coaches supported the teams through intensive mentoring sessions focused on technology analysis, idea selection, and prototype validation.

The first edition of Tech Forward, in 2025, involved 30 university students and 6 research groups. Feedback collected from participants highlighted a strong impact on transversal skills such as communication, empathy, creativity and collaboration. At the same time, students identified several areas for improvement, including stronger technical support, better time planning, and clearer integration between learning activities and project development.

Now, in 2026, the programme is in the final stages of its second pilot edition. Building on the feedback gathered during the first year, the consortium is defining improvements aimed at making the programme more effective for both students and researchers, while further supporting the creation of high-tech academic spin-offs.

SDG 4, 9

This practice advances innovation-focused higher education through interdisciplinary, challenge-based learning (SDG 4) while bridging university research and real-world technology applications (SDG 9).

Lessons Learned

The Tech Forward programme successfully promoted transferable skills such as creativity, communication, empathy, teamwork, and problem-solving through challenge-based and interdisciplinary learning focused on real technologies and societal challenges. Students particularly valued collaboration with experts, multidisciplinary teamwork, and the CERN experience, while research groups appreciated the programme's innovative educational approach and its ability to identify new application areas for technologies. Feedback from both students and research partners highlighted the need for clearer objectives, stronger technical mentoring, improved involvement of research groups, better technology selection, and more time dedicated to prototyping and final project development in future editions.



Valentina Iadarola

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Valentina is an experienced Project and Program Manager with a strong background in community-based and open innovation projects. Passionate about international teamwork, she has over 5 years of experience applying Lean methodologies, design thinking, and participatory approaches to drive innovation within academic and collaborative environments.



Matteo Vignoli

Alma Mater Studiorum, University of Bologna-Oper.space

Matteo is an Associate Professor of Organizational Change and Business Process Design at the Department of Management of the University of Bologna. He works on "building the future" through research, education, and the application of Design Thinking to business challenges. He teaches in several master's programs and business schools, and collaborates on innovation projects with global organizations.

Making Collaboration Visible: Using Salmons' Taxonomy to Support Dialogue and Reflection

A demo of a visual collaboration framework that helps students reflect on, and discuss collaborative behaviours within digital and physical learning spaces, through an interactive demonstration.

Gianna Tomasso

Glen O'Sullivan

Limerick School of Art and Design

The Challenge or Opportunity

Collaboration is often expected within higher education and industry, yet students are rarely given a structured way to discuss how collaboration develops, where challenges emerge, or how group dynamics influence the collaborative process. Our practice addresses this by implementing Janet Salmons' Collaboration Taxonomy as a visual reflective framework used across both online and face-to-face environments. Through the use of visual icons, collaborative activities, and reflective dialogue, participants develop a shared language for discussing participation, communication, trust, and collective decision-making. The framework makes collaborative processes more visible by supporting richer dialogue and greater awareness of how collaborative practice is shaped throughout a project lifespan.

SDG 4, 10

This practice develops a shared visual language for collaborative reflection, helping diverse learners make group dynamics visible and improving participation, communication, and decision-making in both physical and digital learning environments (SDG 4 & 10).

The Practice in a Nutshell

This practice is used within the Collaborative Practice module of the MA in Instructional and Learning Design at Technological University of the Shannon. The module brings together students from diverse professional backgrounds, including education, training, design, business, healthcare, and the creative industries, who work collaboratively on authentic design projects with NGOs and Industry.

Students are introduced to Janet Salmons' Collaboration Taxonomy at the beginning of the module through a visual framework represented by a series of icons. Each icon corresponds to a particular aspect or stage of collaborative practice and provides students with a shared language for discussing collaboration. Throughout the semester, students engage in face-to-face workshops, online collaborative activities, group projects, and reflective journaling. As they work together, they use the visual taxonomy to identify and discuss collaborative behaviours, communication patterns, decision-making processes, challenges, and successes.

The framework is embedded within both teaching and assessment. Students regularly map their experiences against the taxonomy, using the icons to reflect on their own contributions and those of their teams. These reflections are captured through Moodle journals, collaborative discussions, project reviews, and peer feedback activities. The visual nature of the framework helps students recognise collaborative processes that are often difficult to articulate, making group dynamics more visible and open to discussion and improvement.

The approach has been used across multiple cohorts of postgraduate students within the MA programme and continues to evolve through student feedback and ongoing curriculum development. It supports collaboration in both physical and digital learning environments, creating structured opportunities for dialogue, reflection, and shared understanding throughout the collaborative process.

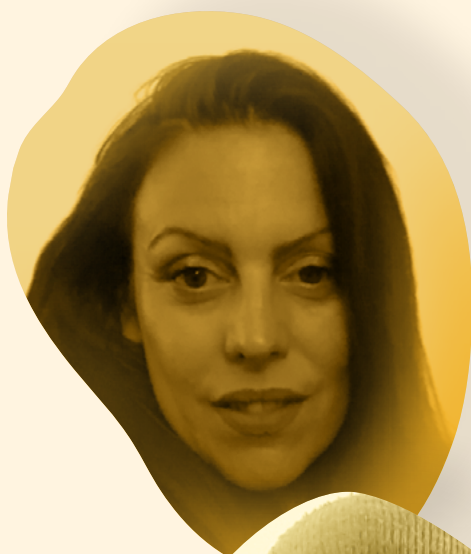
Lessons Learned

A key takeaway has been that students become more confident discussing stages of collaboration when provided with a shared visual language. The taxonomy helps make group dynamics visible, enabling richer reflection

on participation, communication, trust, and decision-making. Student feedback has highlighted the value of the icons as prompts for reflection, particularly when navigating challenges within teams or working across online and face-to-face environments. Future developments will focus on developing digital visualisations of collaborative journeys and exploring how an extended framework might support interdisciplinary collaboration beyond instructional design. We recommend embedding the framework consistently throughout a project rather than using it solely for reflection at the end.

Further Information

<https://www.linkedin.com/pulse/shaping-global-citizens-tus-ma-students-i5wke/>



Gianna Tomasso

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Gianna is a lecturer in Critical and Contextual Studies at the Limerick School of Art & Design (LSAD) and Joint Programme Leader of the MA in Instructional and Learning Design at Technological University of the Shannon: Midlands Midwest (TUS). Her work spans art and design education, instructional design, transdisciplinary practice, and creative pedagogies, with a particular interest in collaboration, emerging technologies, neurodiversity, and socially engaged learning.



Glen O'Sullivan

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Glen is a graphic designer, design historian, material culture enthusiast and lecturer at the Limerick School of Art & Design (LSAD), Technological University of the Shannon: Midlands Midwest (TUS). His research has its origins in addressing the gaps in wayfinding technologies and Irish Design, and also in giving a discourse to innovative efforts made to improve design pedagogy. He is currently module coordinator for Critical and Contextual Studies and Joint Programme Leader for the MA in Instructional and Learning Design programme.

Demonstrations

Round 4

Tuesday, October 6, 2026 @10:30–11:00

Twinital: Digital Twins for Inclusive Learning Communication

Twinital is an AI-powered digital twin system that enables students to interact with a personalized digital version of a professor through a real-time video avatar with the professor's likeness and voice, extending teaching presence and enabling access to course-specific academic support beyond office hours.

Raghav Joshi

RTU Science and Innovation Centre

Elīna Mīkelsone

RTU Science and Innovation Centre

The Challenge or Opportunity

Students often require academic support outside office hours, particularly when preparing for assignments, exams, or navigating course-related questions. However, access to professors and academic staff such as advisors or coordinators is limited by time, workload, and availability. This creates gaps in learning continuity and leads to repeated, time-consuming queries across students.

Twinital addresses this challenge by exploring AI-powered digital twins that represent educators through personalized avatars capable of interacting with students in real time. Students can ask questions at any time and receive responses based on lectures, slides, research materials, and other approved institutional content, enabling more continuous and accessible academic support beyond traditional classroom boundaries.

SDG 4, 9

This practice extends teaching presence through AI-powered digital twins, supporting continuous and inclusive learning beyond classroom constraints (SDG 4) while exploring responsible human-centred applications of emerging technology in education (SDG 9).

The Practice in a Nutshell

Twinital is a prototype system that enables students to interact with a digital representation of a professor using course-specific academic materials such as lecture slides, notes, and research publications.

In practice, students engage with the system by asking questions related to course content, assignments, or conceptual understanding. The system retrieves relevant information from a curated knowledge base and generates responses based on that context, supporting guided academic interaction rather than static information retrieval.

The experience is designed to simulate natural communication with an educator, allowing students to receive explanations in a conversational format that adapts to different learning needs. Interaction is structured around real academic queries, such as exam preparation, clarification of lecture topics, and understanding of course material.

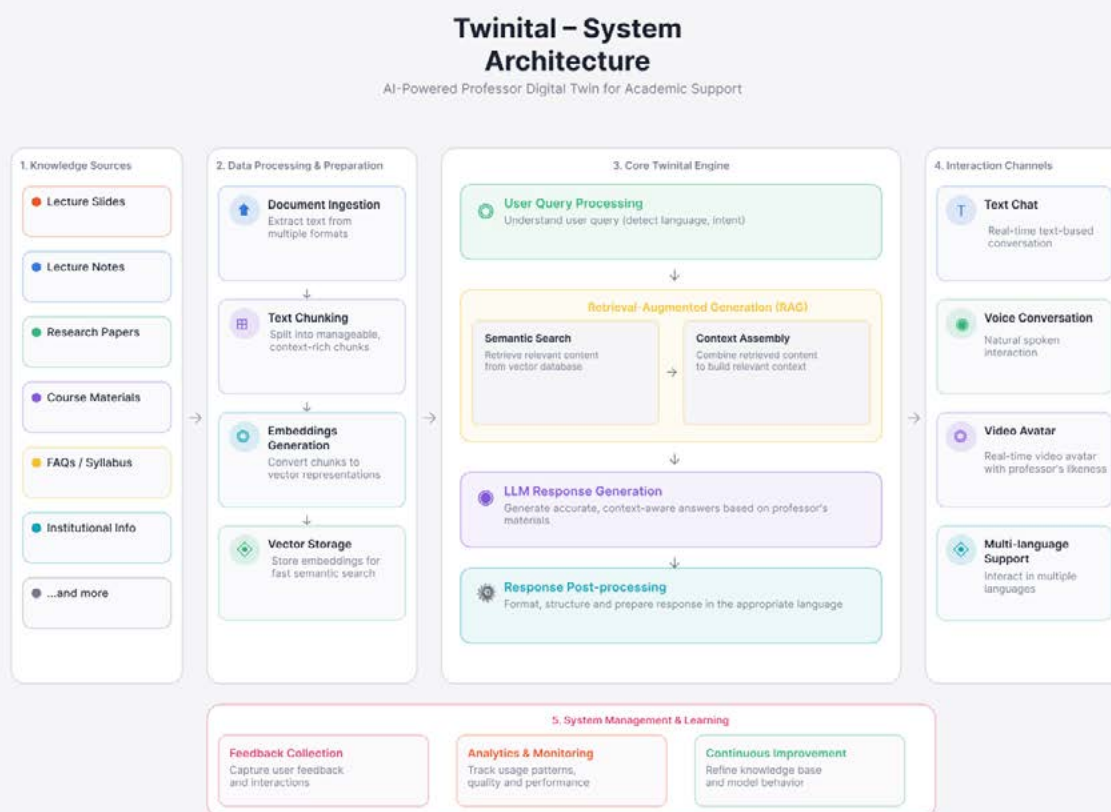


The system has been tested in controlled prototype environments using sample academic datasets and simulated student interactions. It is not yet deployed at institutional scale but is being iteratively refined based on testing feedback and observed usage patterns.

The current focus is on improving response relevance, expanding coverage of academic content, refining interaction quality to better reflect real educational support scenarios, and exploring multilingual capabilities that would allow students to receive answers in different languages. The project explores how AI systems can extend teaching presence in a responsible and structured way while keeping educators' materials central to the learning experience.

Lessons Learned

Initial testing shows that students value immediate access to course-specific explanations outside office hours, especially for exam preparation and conceptual clarification. The most effective interactions occur when queries are tied directly to structured academic material rather than open-ended questions. A key challenge has been maintaining consistent response relevance across diverse inputs and ensuring the system remains aligned with source content. The work highlights the importance of well-organized knowledge bases and careful retrieval design. Future development will focus on improving grounding reliability, expanding content coverage, and refining interaction quality across modalities and languages for broader educational use.



More Information

Explore the prototype at: <https://www.twinital.com>



Raghav Joshi

RTU Science and Innovation Centre,
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Raghav is a Computer Systems student at RTU driven to solve real-world communication challenges through technology. He is building Twinital, a digital twin platform designed to enable inclusive and accessible learning.



Elina Miķelsone

Head of Design Factory (RTU Science and Innovation Centre)

Elina is the Founder of the Idea Innovation Institute and an internationally recognized Idea Management and Innovation Management expert.

If we are not this then what? Exploring best practice archetypes to inform our design factory evolution.

Canvassing best practice archetypes to inform
our evolving design factory

Anita Kocsis
Aaron Down
Jake Carroll
DFM

The Challenge or Opportunity

In the evolution of DFM, we are exploring how the organisation we design influences and serves the stakeholders, mainly students and the broad industry sector, including the start-up ecosystem

The Practice in a Nutshell

How do we fill a gap no other part of the university currently occupies: a structured space for students to figure out the kind of work they want to do in the world, and a support system that gives them the agency to do it alongside interdisciplinary peers?

Lessons Learned

We report on the learnings over 6 months and expect to table feedback and insights from our stakeholder group, providing a clearer picture of where our gap is and where our contribution lies with respect to interdisciplinary innovation practices applied to an initiative, market, or mission.

Outline

Swinburne Design Factory Melbourne since 2011, like any interdisciplinary learning lab is in its next evolution. We have undergone considerable shifts accordingly to the positioning of the perceived role of Design Factory in this time. We are rightsizing again to meet the need of an increasingly diverse stakeholder groups that includes students, researchers, industry partners, academic and professionals from within the university across schools and externally including diverse industry verticals. In our earlier iteration as a design factory we moved from with a Faculty of Arts, Health and Design and then to a school of Design and Architecture in which our pedagogic DNA aligns, and in the last 5 years shifted into the Innovation and Enterprise portfolio that is positioned to enable students to shape their careers by challenges, build ventures, commercialise research both in and out of the classroom.

Today Design Factory Melbourne charged with a university wide initiative seeks to focus on industry innovation practices, services and improvements led by students to afford students currency by their experiences aligned to real world and potentially self-determined challenges that may fall outside the discipline and or classroom?

How then do we offer a selective program, familiar with other design factories in which DFM fills a gap no other part of Swinburne currently occupies: structured space for students to figure out the kind of work they want to do in the world, and a support system to give them the agency to do it alongside interdisciplinary peers. If we are not an internship program, startup accelerator, consultancy with student labour, or placement clearinghouse. What are we?

If we are the next generation of work integrated learning, the common descriptor of real work experience integrated into the university curriculum what does that look like?

We explored a series of archetypes in our strategic positioning recognising that the DFM Innovation Platform, known as LPII (Learner Powered

SDG 4, 17

This practice explores how Design Factories can evolve their organisational model to better serve diverse student and industry stakeholders (SDG 4) while drawing on shared archetypes and collective wisdom across the global Design Factory network (SDG 17).

Industry Innovation) in its infancy could operate under several archetypes; that result in different outcomes such as how work gets sourced, who defines the work and what the student experience feels like. The following best practice archetypes were canvased:

Agency / Consultancy — industry brings problems; LPII solves them with student teams. Easy to explain to industry; high risk of becoming “students as labour.” May be difficult to differentiate in a very saturated agency market.

Sandbox — LPII provides the conditions; students and partners co-define what happens. Highest agency, hardest to defend operationally to council.

Moonshot Factory — LPII identifies big bets worth making and incubates them. Aspirational; requires sustained capital and risk tolerance.

Studio / Institute — LPII has a point of view, defines what’s worth working on, draws on internal expertise, invites students into a structured practice. Defensible, distinctive, builds reputation over time.

Federated Platform — LPII is a thin shell coordinating heterogeneous activity under multiple program shapes. Most flexible; highest risk of incoherence.

We have explored a few prototypes to pilot for the short term rather than a permanent commitment. We aim to present in more detail the parameters of the challenge, the local ecosystem, the university strategy and the evolving Design Factory Melbourne’s key actors involved in this change journey thus far and seek insights from our broader design factory global network family in shaping our next archetype at the edge of university business model boundaries, disciplines, student experiences, clients and business types and our design of an innovation platform.



Anita Kocsis

DFM

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Anita is Professor and Director at Design Factory Melbourne (DFM). As custodian of DFM for the past ten-plus years, she has led the evolution of teams that are dedicated to interdisciplinary industry integrated learning experiments with students, researchers and diverse stakeholders. She is a boundary spanner interested in hybrid, third-space teams to enable a culture of applied innovation, recognising that the edges, while uncomfortable, are the spots that may be rich sources of knowledge-ability. Her yet to be realised dream is how the DFGN collective capital might be the next global university business model; #DFGNunicollab.



Aaron Down

DFM

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Aaron is Associate Director of the Learner Powered Industry Innovation Platform Design Factory Melbourne and Course Director at Swinburne University, where he connects students, researchers and industry to solve complex, real-world challenges. A human-centred designer, strategist and facilitator by training, he has spent his career working at the edges – between disciplines, sectors and cultures. His collaborators have included CERN, Stanford University, the European Commission, ANSTO, the Australian Energy Regulator, Metro Trains, Sony PlayStation, Yanmar and the Victorian Department of Education. His animating question is how universities can become true engines of applied innovation: not just teaching creativity, but practising it.



Jake Carroll

DFM

Jake is Innovation Platform Lead at Design Factory Melbourne.

Opening/ closing circles, structured peer feedback, retrospectives, and 7th and 8th graders

Three repeatable dialogue structures: opening/closing circles, structured peer feedback, and retrospectives, used in computer science lessons to make every student's voice heard.

Nadežda Zeņina
Riga Technical University

The Challenge or Opportunity

Teaching computer science to 7th and 8th graders in a regular public school in Riga means navigating a dense curriculum, mixed motivation, and classrooms where many students default to silence. Resources and materials are abundant; genuine participation is not. This practice explores how three small, repeatable dialogue structures borrowed from agile and design thinking can shift that dynamic without redesigning the whole course, making space for every voice and giving students more ownership of their learning.

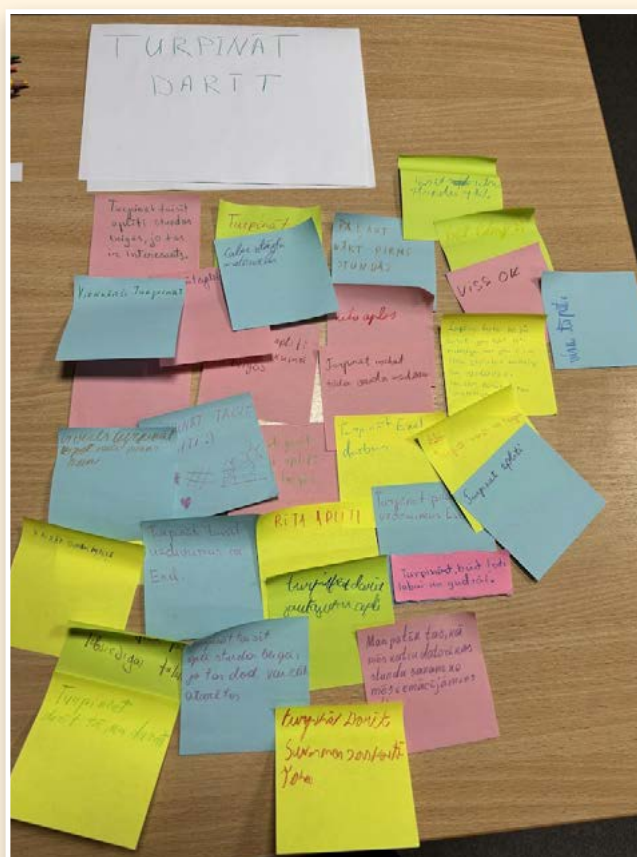
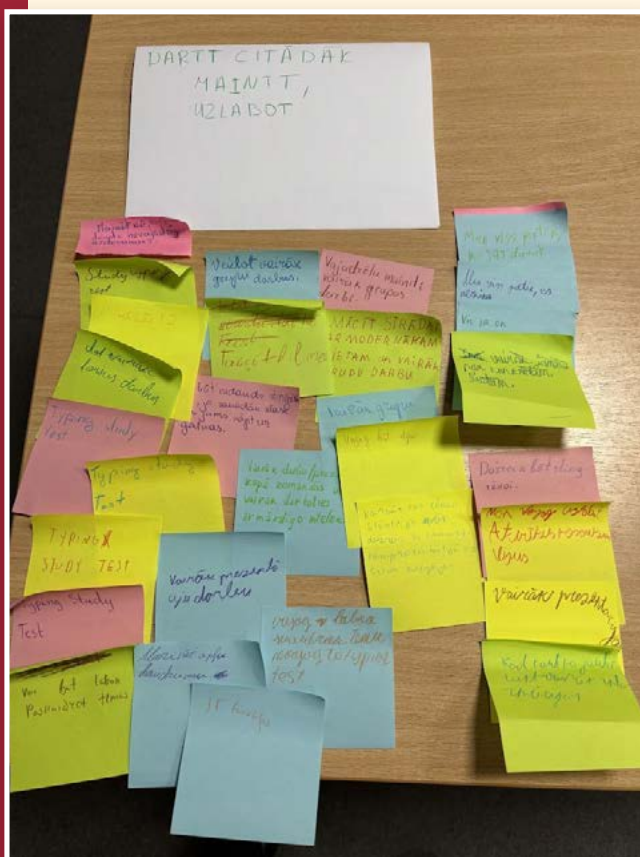
The Practice in a Nutshell

The practice introduces three dialogue structures into weekly 40-minute computer science lessons for 7th and 8th-grade students at a public school in Riga, Latvia.

- ▶ Opening and closing circles. Each lesson begins with a short circle: a question about the previous topic, posed either by the teacher or increasingly by students themselves. The closing circle mirrors this: each student shares one thing they learned. Over time, student-led questioning generated questions the teacher had not anticipated, making the circle a learning moment rather than a routine check-in.
- ▶ Structured peer review. During a major web development project, students followed a structured process: individual planning against assessment criteria; paired A/B review (one builds, one checks, then swaps); revision; and a final presentation circle. Each student presented both the visual side and the code structure of their website

SDG 4, 10

This practice introduces simple, repeatable dialogue structures into secondary computer science teaching, ensuring every student's voice is heard and building accountability and ownership into the learning process (SDG 4 & 10).



and answered specific questions from peers about design and code choices. This made AI-assisted work more accountable; students had to navigate and explain their own code, not just produce a result.

- **Retrospectives.** At the end of the year, students anonymously wrote on sticky notes what should continue and what should change. Responses were grouped and fed directly into the following year's course design, visibly closing the feedback loop.

These structures have been used across two academic years with classes of 20–25 students. They require no special equipment, fit within a standard 40-minute lesson, and can be adopted one at a time or independently of subject matter.

Lessons Learned

Students consistently named the circles as one of the most valuable parts of the course not because they were entertaining, but because, in their own words, they “help remember more.” The retrospectives surfaced patterns that were not always visible during lessons: requests for more group work, peer collaboration, and continued dialogue structures. Acting on this feedback strengthened trust between students and the teacher. The central tension remains: a dense curriculum leaves little room for reflection, and creating space for dialogue often means trading breadth for depth. For others considering this approach: start with the closing circle only. Five minutes is enough to begin.



Nadežda Zeņina

Riga Technical University

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Nadežda is an IT project manager with experience in software testing, product maintenance, and quality leadership, and a seasonal lecturer at Riga Technical University. Over the past year, she has also taught computer science to 7th and 8th graders at a public school in Riga, bringing professional practice into the classroom.

Fishbowls

Round 3

Tuesday, October 6, 2026 @11:30–12:00

From Ginger Rhizomes to Engineering Classrooms: Teaching Rhizomatic Thinking with PESTEL

Exploring Structured Reflection and Rhizomatic Thinking
in Engineering Education

Meri Kuikka
Vikki Eriksson
Aalto Design Factory

The Challenge or Opportunity

Engineering education is increasingly expected to address complex real-world problems that involve multiple perspectives, where no single discipline is enough on its own. At the same time, ideas such as rhizomatic thinking, systems thinking, and reflective practice are widely discussed, but how they are understood in teaching practice is still not always clear. This fishbowl is based on a teaching intervention in a master's-level engineering course at Aalto University where a structured framework (PESTEL) was used alongside reflective activities. The aim is not to present results, but to open discussion on how such ideas are used in teaching and what questions they raise.

SDG 4, 9

This practice develops rhizomatic and systems thinking in engineering education by connecting technical decisions to broader socio-technical contexts (SDG 4 & 9).

The Practice in a Nutshell

The course was a master's-level engineering elective where students worked with engineering-related cases using structured reflection activities. A PESTEL framework (Political, Economic, Social, Technological, Environmental, Legal) was used throughout the course to guide reflection in several assignments and in a final group oral discussion.

Students chose examples from their own engineering field and reflected on how technical solutions are linked to wider social and environmental issues. Reflection was done both individually and in groups, and students revisited their ideas several times during the course with feedback from teachers.

In the final assessment, students discussed a shared case in groups and were asked to connect different perspectives based on the PESTEL dimensions they had worked with earlier. They also built on each other's ideas during the discussion.

From a teaching point of view, the course involved balancing structure and openness: using a clear framework to support thinking about complex problems, while still leaving room for different interpretations and unexpected connections.

This fishbowl contribution does not present the course as a fixed method or solution. Instead, it uses it as an example to support discussion about how teachers work with structured reflection tools in practice, and how these relate to broader ideas such as systems thinking and rhizomatic thinking in engineering education.

Lessons Learned

This experience raises more questions than answers. How do structured tools shape what students notice in complex problems? What kinds of thinking do they support, and what might they limit? How do teachers understand "making connections" or "systems thinking" when they see it in student work? And how do we balance giving students structure with giving them freedom to explore?

Overall, the case is meant as a starting point for discussion about how abstract ideas in education are turned into teaching practice, and how their meaning can change when used in real classrooms.



Meri Kuikka

Aalto University

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Meri is a university teacher at Aalto University, Finland, specializing in integrating sustainability, creativity and entrepreneurship into multidisciplinary project-based courses.



Vikki Eriksson

Aalto Design Factory

Vikki is a researcher and design educationalist who focuses on the relationship between design, business and technology.

Design Factory in the City

As university-based learning environments located in cities, large or small, what are the spatial implications and potentials of the Design Factory engaging with its immediate urban neighbours?

Emils Rode
Riga Technical University

The Challenge or Opportunity

Let us discuss the existing and potential role of the Design Factory in their host city and its innovation system. As part of the RTU research project ‘The Role of Innovation and Creative Districts in Catalysing Urban Economic Growth’ (2025), we analysed the location of Design Factories in cities vs. the locations of their main collaboration partners. The conclusion is that while spatial configurations of these relationships differ across cities, they are not necessarily defined by proximity, but are not “placeless” either. We would like to explore further the place-making and anchoring potential of the Design Factory in the city.

SDG 11, 17

This practice examines how Design Factories can deepen their role as place-based urban innovation anchors (SDG 11) through stronger engagement with city partners and the broader Design Factory network (SDG 17).

The Practice in a Nutshell

In the 2025 research, we did a literature review and desktop analysis, supported by interviews with selected Design Factories. This time we would like to bring the conversation back to the whole Design Factory Global Network using the opportunity afforded by the UnBoxed conference.

Do Design Factory managers and operators think of themselves as part of their host city in the immediate spatial and temporal sense? While much of our business is ongoing virtually and takes place with partners far outside of the city, being anchored in place has benefits for both the Factory and the City. But how can this be further unfolded?

The Design Factory can work with its local municipal and/or regional authority as a partner. What are the opportunities or challenges for this?

The Design Factory itself is a place – usually within its host University. Is it an opportunity or a limitation? Can the Design Factory work in a temporary or movable location? Can it be one of the entry points to the University – and for whom? What facilities or abilities does it have, or need, to enable this?

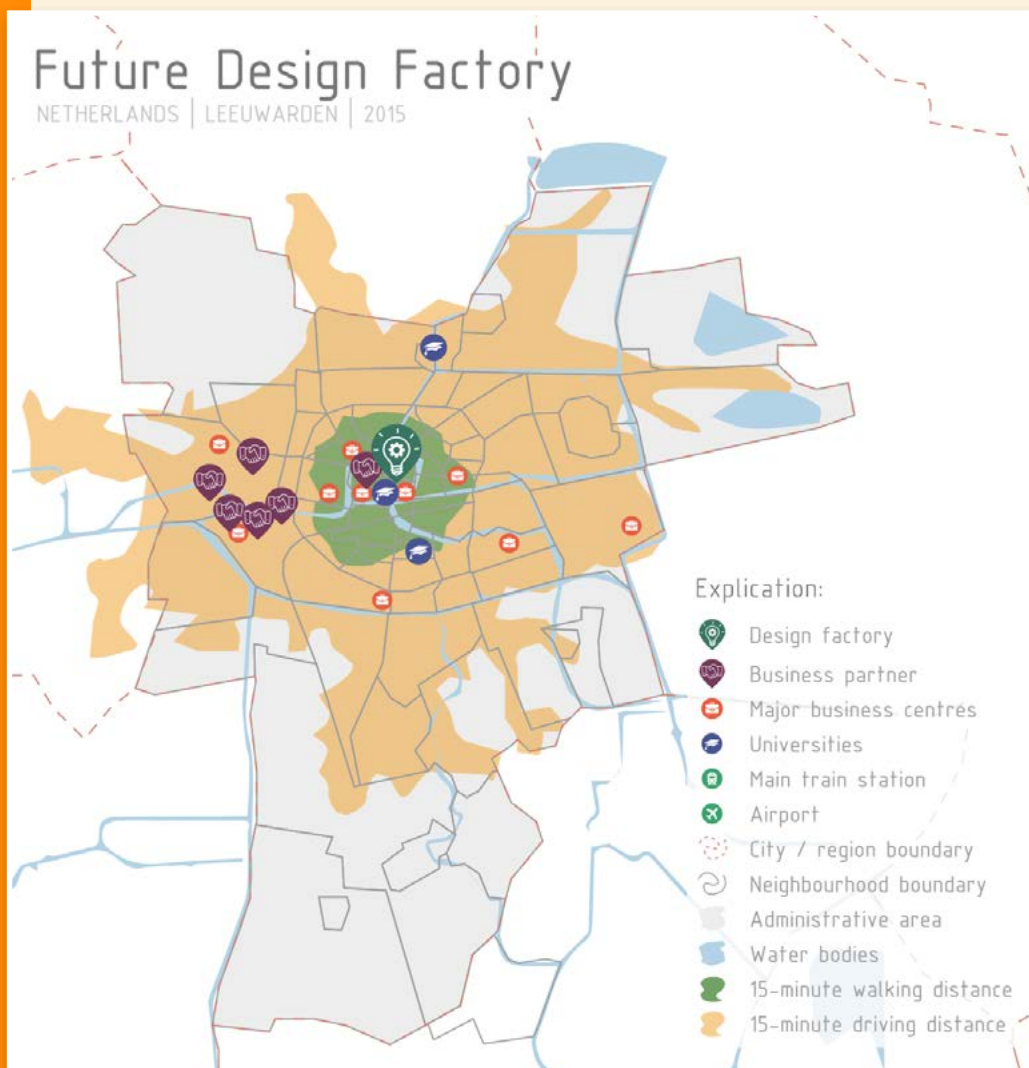
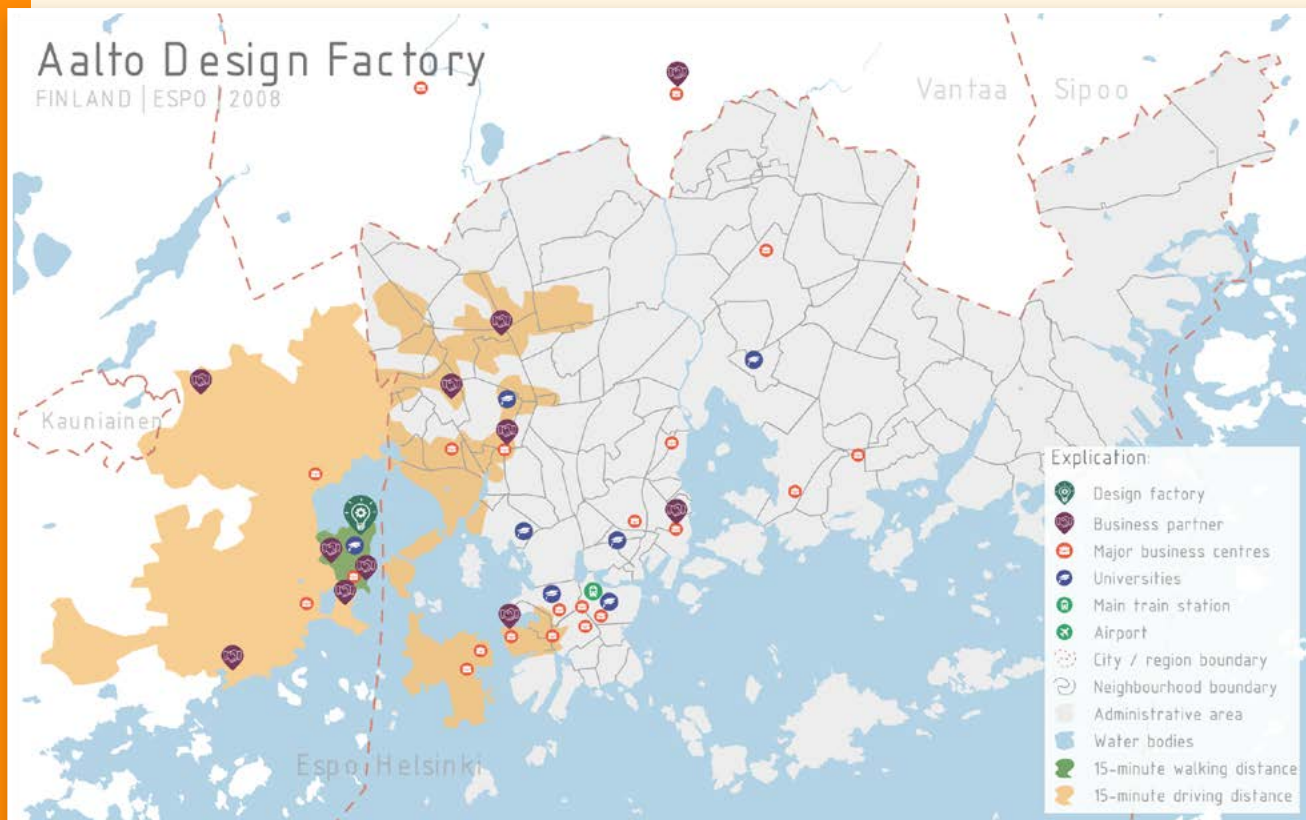
Is everything now a café? Does the Design Factory need a specific spatial form to reflect its function? How can we leverage physical proximity to other actors to open new opportunities for collaboration and being in-place?

Perhaps there are new forms emerging of where, and what, the Design Factory can be in the city – or beyond? Let us discuss your practices and unboxed ideas!

Lessons Learned

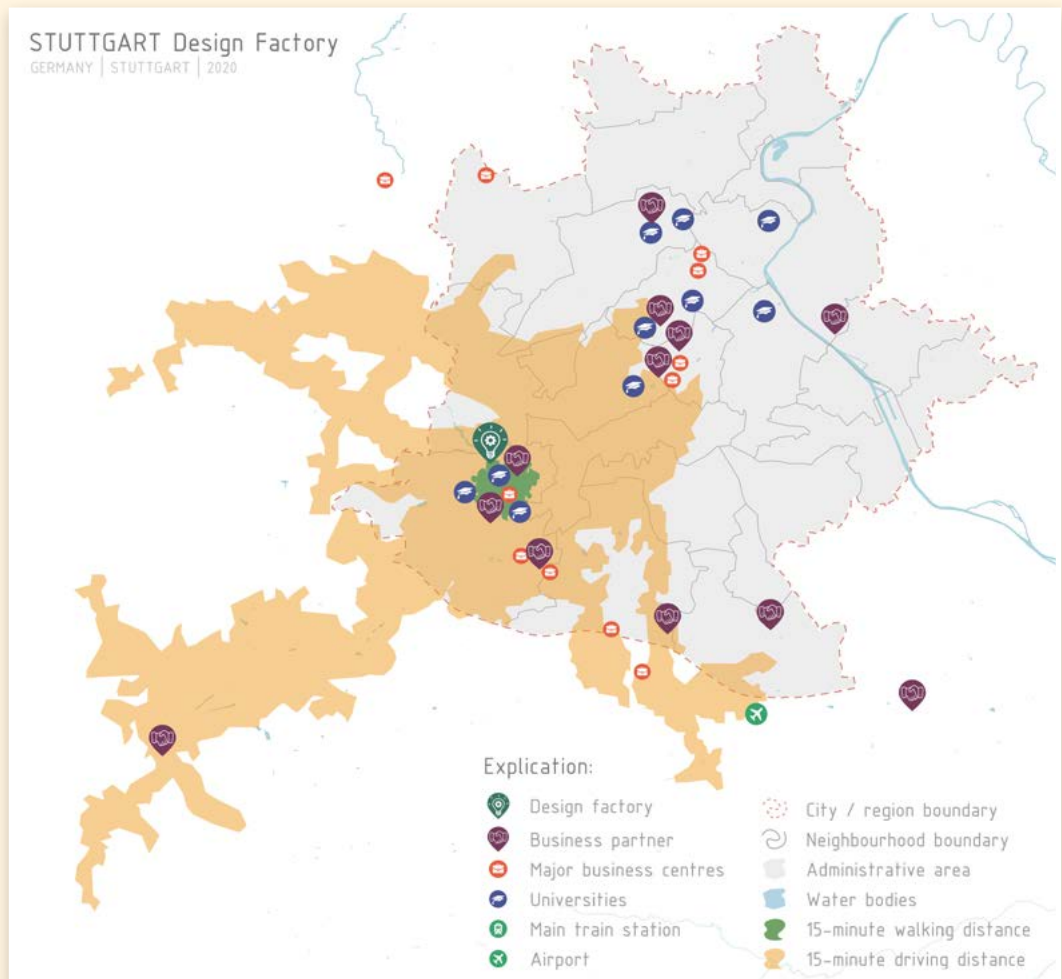
While cities work on long time scales, and their spatial forms take centuries to solidify, Design Factories work in extremely short-term innovation cycles, going from idea to prototype in weeks, hours or even minutes!

This workshop asks open-ended questions and facilitates a conversation rather than steering it to certain answers. We would like to open the discussion which could lead to the participating Design Factory rethinking its relationship with its surrounding city. If this topic has sufficient traction with the participants, we can take the conversation further and formulate a future collaborative research or innovation project among selected Design Factories



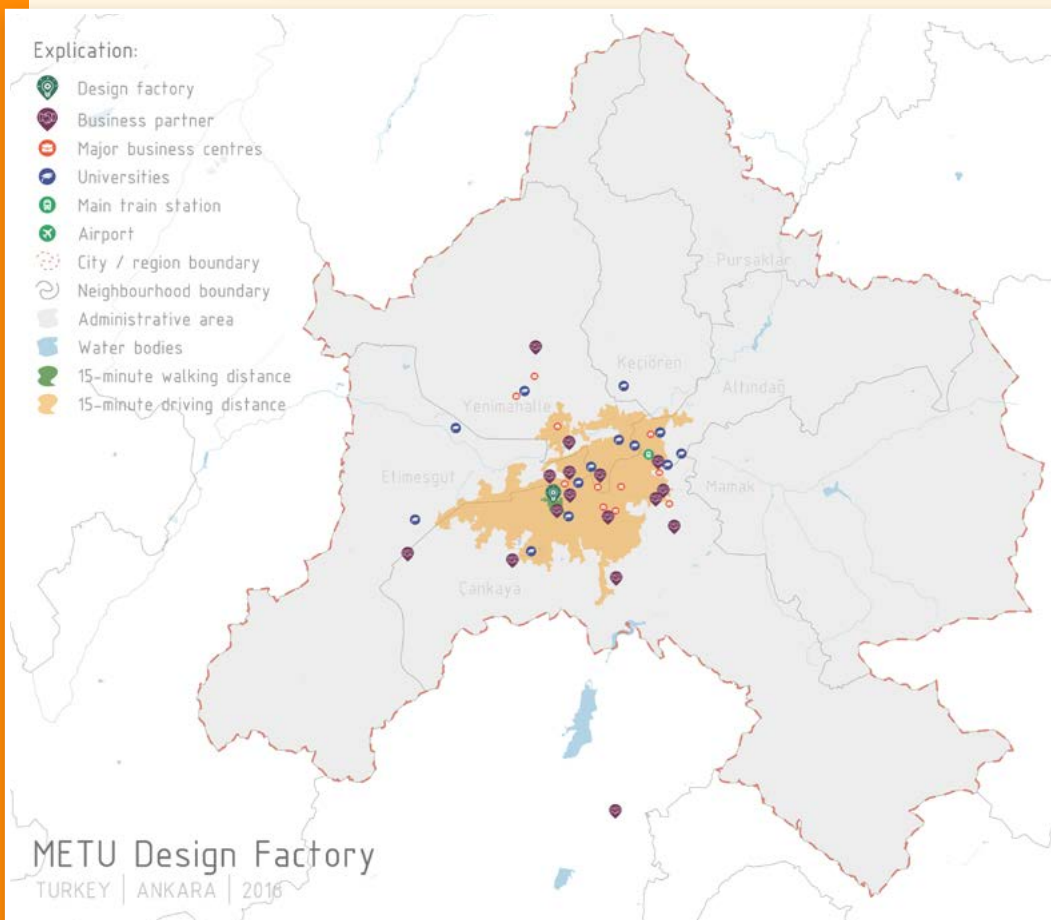
↑ Espoo
← Leeuwarden

Figures describe mapping Design Factories and their collaboration partners in selected cities.



↑ Stuttgart
← Ankara

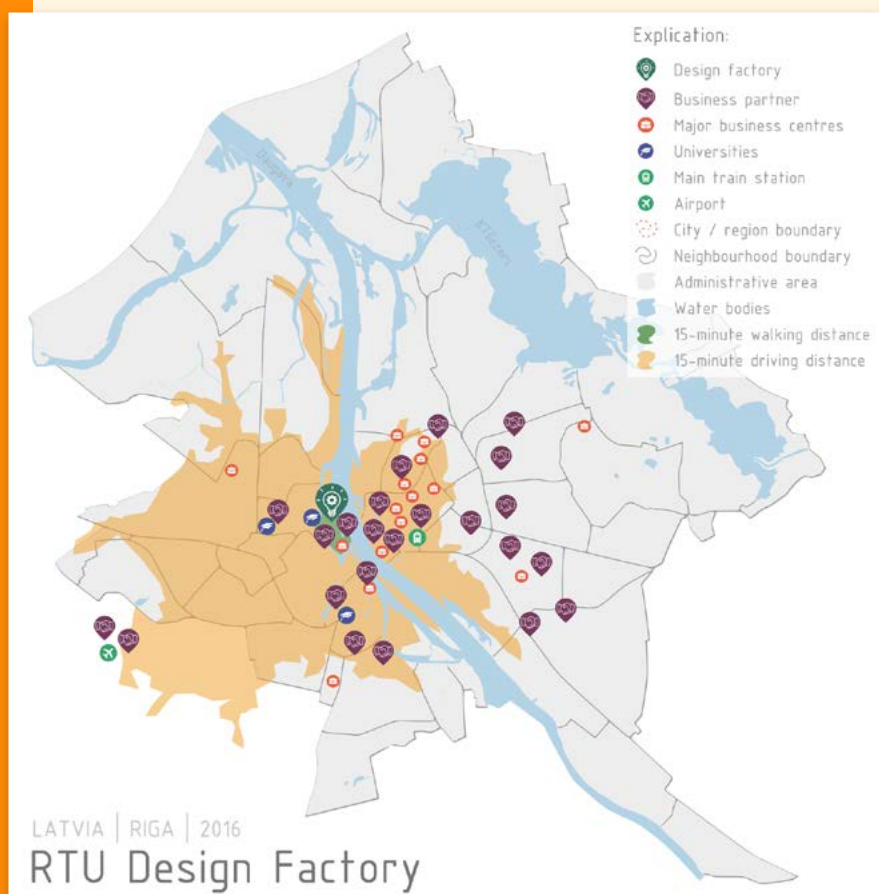
Figures describe mapping Design Factories and their collaboration partners in selected cities.





↑ St Cugat Barcelona
← Riga

Figures describe mapping Design Factories and their collaboration partners in selected cities.



Emils Rode

Riga Technical University
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Emils is a researcher and project manager at Riga Technical University Architecture and Design Institute. He works with such topics as urban planning, participatory design, urban knowledge economy.

Team formation strategies in innovation education

Reflections on team formation strategies and their effects in innovation education and, in particular, the IdeaSquare planet programme

Ole Werner

CERN & Vrije Universiteit Amsterdam

Mikko Sairanen

Beatrice Stanimirova

CERN

The Challenge or Opportunity

At IdeaSquare, we have observed team formation to be a key steering factor of team performance within our transformative innovation education program, IdeaSquare Planet. More generally, team formation is a decisive stage to achieve productive dialogue that reinforces learning. How a team is composed shapes whether students encounter genuinely different viewpoints or merely echo each other, and thoughtful formation practices can be designed as interventions that set the conditions for the productive, difference-rich discussion. Team structure, in particular certain types of diversity, has repeatedly been found among the most important factors contributing to performance (Hackman, 2002; Horwitz et al., 2007).

SDG 4, 10

This practice examines how intentional team formation strategies in innovation education can foster productive interdisciplinary dialogue and diverse perspectives (SDG 4 & 10).

The Practice in a Nutshell

Various strategies and approaches to team formation exist. The three main types are self-selection, random assignment, and intentional grouping. Intentional grouping may furthermore use various criteria as the basis of grouping, including abilities, behaviours, role, discipline, gender, and nationality. Different hybrid approaches are possible as well, such as allowing self-selection under specific criteria.

In the IdeaSquare Planet program, we have gathered experience with multiple strategies. According to our observations, team formation based on self-selection has its downsides in terms of biases and need for psychological safety affecting students' choices of team members. Whereas this option may reduce networking, a randomized or intentional grouping typically breaks socially close groups into various student teams, thus possibly fostering inter-team communication during the programme.

When it comes to intentional grouping, our main approach has been to form teams focusing on disciplinary diversity (mixing, for example, students of design, engineering, management, and humanities). This is directly related to the learning goals of IdeaSquare Planet, which emphasize interdisciplinary collaboration and communication. However, we perceive a need to explore team formation based on different behavioural and psychological traits, such as motivation. This may nevertheless require more effort, as such information is more difficult to obtain than that related to students' background or demographics.

A central challenge for us has been that the student groups are often pre-defined by the university partners, which frequently leaves the team at IdeaSquare with little control over, or even information about the team structures. In these cases, we have found it useful to respond with program design choices but it would also be beneficial to increase the control over team formation.

Lessons Learned

Our experience suggests that there is no “one-size-fits-all” approach to team formation. However, in order to manage team formation consciously and intentionally, it's important to better understand its effects on learning outcomes. In our observations, teams that developed a sense of purpose (i.e., “we are creating a new, cool society”) reported more “aha moments” than

groups focusing on the experience (i.e. “traveling to CERN with friends and having a good week”). Such dynamics along with individual and team-level motivation are likely partially affected by team formation strategies. Further qualitative and quantitative research can help us to test these hypotheses.



Ole Werner

CERN & Vrije Universiteit Amsterdam

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Ole holds an M.Sc. in Behavioral Change from Radboud University Nijmegen (2022) and has been applying his expertise in behavioral psychology to innovation sciences at CERN IdeaSquare since November 2022, following his work at Design Factory Stuttgart. He is a first-year PhD Candidate in Vrije Universiteit Amsterdam, focusing on applying self-determination theory in team-level innovation contexts.



Mikko Sairanen

CERN

Mikko is the coordinator of research activities at IdeaSquare, holding a DSc (Tech) in Business and Technology from Tampere University, Finland, where he also obtained his Master's degree in Industrial Engineering and Management in 2022. With expertise in sociotechnical innovations for a low-carbon circular economy, he has contributed to multiple international research consortia, published in peer-reviewed journals, and serves as Co-Managing Editor of the CERN IdeaSquare Journal of Experimental Innovation (CIJ).



Beatrice Stanimirova

CERN

Beatrice holds a BA from Newcastle University, an MA in Education, and is a graduate of the Diplomatic Academy in Vienna. Previously working with UNITAR on educational programmes and training, she now contributes to new projects and initiatives at IdeaSquare.

Fishbowls

Round 4

Tuesday, October 6, 2026 @12:00–12:30

Applying tech-to-market into different Universities

A format where students and researchers partner through Exploration and Pre-incubation phases to identify market applications and prepare university technologies for the market

Clio Dosi

Matteo Vignoli

University of Bologna

Laura Bellorini

Esade Business & Law School

Victoria Cochrane

Esade Business & Law School – Ramon Llull University

Chutimon Hnudee Espedal

inno.space, Technical University of Applied Sciences Mannheim

Kirstin Kohler

inno.space, Computer Science Department, Technical University of Applied Sciences Mannheim

The Challenge or Opportunity

This practice addresses the challenge of creating structured research-to-market pathways within diverse university ecosystems. The opportunity lies in bridging the gap between academic research and commercialization by integrating multidisciplinary student-researcher collaboration with institutional support. The model navigates tensions between education, technology transfer, and entrepreneurial experimentation, exploring whether Design Factories can evolve from peripheral units into institutional orchestrators that connect students, KTO/TTO offices, and incubators across the entire university.

SDG 4, 9, 17

This practice develops replicable research-to-market pathways through structured student-researcher collaboration across universities (SDG 4 & 9), coordinated through an international Design Factory partnership (SDG 17).

The Practice in a Nutshell

Developed within the EIT Higher Education Initiative by a consortium of Design Factories (Bologna, ESADE, Mannheim, and METU), this experiment is a coordinated process designed to accelerate commercialization while preserving educational value. The practice consists of two connected phases:

- ▶ Upstream “Exploration” program: Students work with research teams to identify potential market applications and validate opportunities around existing university technologies.
- ▶ Downstream “Pre-incubation” program: This phase focuses on customer discovery, defining the Minimum Viable Product (MVP), and venture preparation.

The process is orchestrated by Design Factories, which coordinate a wide range of actors: researchers, students, incubators, coaches, and Knowledge/Technology Transfer Offices (KTO/TTO). To date, the practice has been tested through two implementation rounds, resulting in the development of open shared tools, coordination practices, team structures, and coaching mechanisms designed for replication. The activity takes place within the university ecosystem, adapting to various configurations ranging from technical universities to generalist institutions.

Lessons Learned

Two implementation cycles show that success requires shared tools and clear coordination between diverse institutional actors. A key takeaway is that university configuration—whether technical or general—deeply shapes the design of these pathways. However, challenges remain regarding patent selection, researcher onboarding, managing evolving teams, and navigating university bureaucracy. Recommendations for others include focusing on the Design Factory’s role as an institutional orchestrator to manage the inherent tensions between education, technology transfer, and incubation.



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Clio is an Assistant Professor at the University of Bologna, Department of Management, where she teaches Organisation Science in the Master of Management Engineering. She is part of Oper.space, the Innovation Factory of the University of Bologna, where she coordinates Oper.lab (Open Innovation Observatory).



Victoria Cochrane

Esade Business & Law School – Ramon Llull University

Victoria is Director of the Rambla of Innovation, Esade's ecosystem for innovation and entrepreneurship training and support. Victoria has been working closely alongside colleagues at CERN in EC Innovation Initiatives and Funding Programmes for over 10 years, particularly the ATTRACT Initiative which has the aim of getting great ideas out of the labs and directly benefiting society.



Chutimon Hnudee Espedal

inno.space, Technical University of Applied Sciences Mannheim

Chutimon is a part of the teaching team at the inno.space Design Factory at the Technical University of Applied Sciences in Mannheim. She helps to coordinate and run interdisciplinary, human-centered courses for students, helping bridge the gap between technology and real-world challenges.



Kirstin Kohler

inno.space, Computer Science Department, Technical University of Applied Sciences Mannheim

Kirstin is a Professor of User Experience Design and Design Innovation, bridging the gap between engineering, design, and business. Her research focuses on fostering creativity and collaborative problem-solving, with a specific emphasis on design-driven methodologies and experimentation.



Laura Bellorini

Esade Business & Law School

Laura has an international background in marketing and international relations, with professional experience in both European public institutions and the private sector. She has extensive experience in educational innovation and entrepreneurship, and currently works as Manager at Fusion Point, Esade, where she contributes to the development of innovative learning experiences and challenge-based education initiatives.



Matteo Vignoli

Department of Management, University of Bologna

Matteo is a faculty member at the University of Bologna, working at the intersection of design thinking, innovation, entrepreneurship, and management. His work focuses on how individuals, teams, and organizations develop innovation capabilities, with particular attention to design-driven approaches, experimentation, and mindset development.

Radical Research: The City as a Learning System

A design research approach that uses the city as a live learning system, asking how universities can help regenerate civic value, not just buildings.

Eleanor Moloney
Rebecca Marsden
Forge Design Factory

The Challenge or Opportunity

Urban regeneration is too often treated as a matter of property, infrastructure and economic return. This practice asks what happens when interdisciplinary design research enters that space and treats the city as a shared learning system. In Limerick, vacant buildings, underused spaces and civic ambition create an opportunity for cross-institutional collaboration between university, city, industry and community partners. The challenge is not simply how to fill space, but how to generate new forms of value: social, cultural, educational and economic.

The Practice in a Nutshell

Radical Research is a place-based design research approach emerging through the development of Forge Design Factory in Limerick. It uses the city as a live field of inquiry, asking students, researchers, civic partners and industry collaborators to work with real urban conditions rather than invented classroom briefs.

The practice begins with an edge condition: a vacant building, underused civic site, stalled regeneration area, discarded material stream, skills gap or institutional challenge. Participants are invited to examine the assumptions around that condition. Why is this space considered empty? Who decides what counts as value? What forms of knowledge are missing from regeneration conversations? What kinds of futures are being imagined, and by whom?

SDG 4, 11, 17

This practice uses the city as a live learning system for design research, building civic value and agency through cross-institutional collaboration between universities, communities, and industry (SDG 4 & 11) while contributing to a broader network of Design Factories engaging with place-based innovation (SDG 17).



↑ Dine and Design

The method may include site mapping, speculative scenarios, stakeholder conversations, material investigation, visual storytelling, prototyping and reflective dialogue. Making is used as a way of thinking, not just as a way of producing outcomes. The purpose is not to solve the city, but to make its hidden questions visible.

In the fishbowl session, this practice opens a conversation about the role of Design Factories in civic regeneration. Can design research regenerate more than buildings? Can it regenerate confidence, agency, local imagination and institutional relationships? What risks emerge when universities step into live urban change? And how do we teach students to work responsibly and with agency in places that are complex, political and unfinished?

The session would be structured as a short provocation followed by open discussion, inviting participants to test, challenge and extend the method through their own Design Factory contexts.

Lessons Learned

The strongest lesson is that a Design Factory cannot remain inside the institution if it wants to matter. Its value lies in allowing research, design, experimentation and learning to leak into the city and wider society. Cities are complex systems, shaped by guarded interests, fragile trust and uneven access to opportunity. The work is not to arrive with a polished solution, but to create conditions where new connections can form between learners, institutions, communities, industry and place. Success takes time and can be measured in changed relationships, shared language, civic confidence and the sense that design research belongs in public life.



↑ **Nicholas Street Animation**

→ **Fresh Film**



Additional Information

<https://forgedesignfactory.ie/>



Eleanor Moloney

Forge Design Factory
eleanor.moloney@tus.ie

Eleanor is Director of the LSAD Research Institute at Technological University of the Shannon, where she oversees research activity across art, design, education, digital arts and media, including postgraduate research and funded RDI projects. Her work sits between creative practice, research infrastructure and civic/industry collaboration, including the development of LSAD's FORGE Design Factory in the Midlands & Midwest of Ireland.



Rebecca Marsden

Forge Design Factory

Rebecca is Manager of Forge Design Factory at Technological University of the Shannon, and Industry Partner and Networks Coordinator with TU RISE, based at LSAD, Clare Street, Limerick. Her work connects design, textiles, sustainability and circular economies, supporting research partnerships and the growth of creative industry ecosystems across the Midlands and Midwest.

The Development of Students' Self-Assessment Framework

We are developing a preliminary student self-assessment tool to evaluate learning and knowledge growth in Regenerative Thinking, to be used in academic courses. This tool is unique as there are no comparable tools that exist for that end.

Sanna-Maaria Siintoharju

HAMK Design Factory, Finland

Assaf Krebs

Shenkar Design Factory, Israel

Jari Jussila

HAMK Design Factory, Finland

The Challenge or Opportunity

Regenerative Thinking is the ability to create new ideas, possibilities, and solutions by combining knowledge, imagination, and creativity. It involves exploring multiple perspectives, generating alternatives, and producing original concepts rather than simply analysing or selecting from existing options. A key challenge has been assessing regenerative learning in higher education. Traditional grading doesn't suit regenerative thinking, as it requires a shift in mindset – confirmed across several domains / disciplines, and as mentioned before. There is a lack of tools to evaluate this development. Student self-assessment or their evolving thinking is especially important – which is why we set out to design one.

SDG 4, 13

This practice develops assessment tools for regenerative thinking competencies, preparing students to address complex ecological and social challenges (SDG 4 & 13).

The Practice in a Nutshell

At our universities, we're teaching regenerative thinking and mindset. For these kinds of courses, we reckon there's a real need for a different kind of assessment tool. We're focusing on students' growth in their know-how and understanding, rather than just rote learning. We've put together a scientific paper on the topic titled "Beyond Sustainability – Designing a Reflective Self-Assessment Framework for Higher Education", which was presented at the END Congress in Madeira in June 2026. Since the paper and its findings are still preliminary, we're keen to keep building on the work and properly flesh out the tool. Some key findings:

Reflective questions derived from the content analysis focused on elements such as

- ▶ a holistic worldview
- ▶ regenerative practice
- ▶ nurturing as a form of praxis
- ▶ meaningful relationships connected to place

The tool needs further development and systematic testing and fine tuning

Lessons Learned

The key idea is that you just can't use numerical grading in regenerative thinking courses – it doesn't really fit. It's something heaps of other colleagues around the world are grappling with as well. Another big thing is that we genuinely need feedback and fresh ideas on how to develop an assessment tool that actually works for students in this space.



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Sanna-Maria is a Master's of Business Administrator, senior lecturer and doctoral researcher from Nokia. Currently, she works at HAMK Design Factory, and her PhD is "Developing Regenerative Thinking in Higher Education". Her main responsibility at HAMK is to be a link between degree programs and combine students to work around the same table with business challenges. Interdisciplinary is one of their key elements, as well as creating a safe environment for their students and clients. This allows everybody to set their innovative minds and ideas free. Sanna-Maaria's comfort zone at work is in an international environment and she works fluently under two umbrellas of HAMK; RUN EU Universities and Design Factory Global Network (DFGN). Via Design Factory she has built her own educational network all over the world. Private her is a triathlete, mother of three kids and a rider.



Assaf Krebs

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Assaf is a designer, researcher, and Senior Lecturer at Shenkar. He is Co-Director of Design Factory Shenkar and specializes in interdisciplinary innovation, healthcare innovation, disability studies, and AI. His research focuses on GenAI, creativity and social design. He teaches both practical courses in design & innovation, and theoretical courses in philosophy, psychoanalytic theory, and Buddhism. Alongside his academic work, he exhibits in design biennales and international exhibitions.



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Jari is Director of the HAMK Design Factory and a Leading Principal Research Scientist at Häme University of Applied Sciences. His academic work is dedicated to improving the world through regenerative design and transformational learning.

Additional Articles

What Does Your CBI Course Actually Change?

A visual systems map of the CBI learning journey—PRE, DURING, POST—developed from twelve years of Fusion Point practice and 215+ articles, used to interrogate what our courses actually change.

Mireia Sierra Andrés
Fusion Point

The Challenge or Opportunity

Design Factory programmes operate on the assumption that interdisciplinary challenge-based learning transforms students. But which elements actually drive that transformation, and does it persist? Developed through twelve years of Fusion Point implementation and a systematic literature review of over 215 articles, the CBL Systems Map offers a practitioner tool to deconstruct what happens before, during, and after a CBI course: from foundational conditions and transformative mechanisms to short-term outputs and long-term outcomes. This session uses the map to open honest conversation across the network about what we actually know — and what we are still leaving to chance.

The Practice in a Nutshell

The CBL Systems Map organises the CBI learning journey into three chronological phases. The PRE phase covers foundational conditions: institutional infrastructure, the innovation ecosystem, and pedagogical scaffolding. The DURING phase maps the transformative mechanisms active inside a course: how challenges are framed, how interdisciplinary teams function as “social engines” of learning, how students navigate self-regulated and socially shared regulation, and how the emotional “Groan Zone” either catalyses or collapses transformation. The POST phase addresses course impacts: assessment design, project outputs, and learning outcomes — including the largely under-researched question of whether those outcomes persist into professional life.

The map was developed by treating the literature review itself as a CBI challenge, using Design Thinking tools (“How Might We” questions, knowledge mapping, gap clustering) to navigate over 215 articles and surface systemic connections between pedagogical design choices and student transformation. It has been used as a reflective framework within Fusion Point programme design across twelve cohorts of engineering, business, and design students, and is currently the conceptual backbone of a doctoral research project on the mechanisms and durability of CBI impact.

In the fishbowl, I will introduce the map through a brief visual walk-through (approximately five minutes), then invite participants to use it as a lens on their own programme. Framing questions for the inner circle will include: Which mechanisms are you explicitly designing for — and which are you leaving to chance? Where do you see evidence of genuine transformation? How long does it last? The conversation will move between inner-circle and wider participation, designed to surface both shared assumptions across the network and the productive disagreements that sharpen practice.

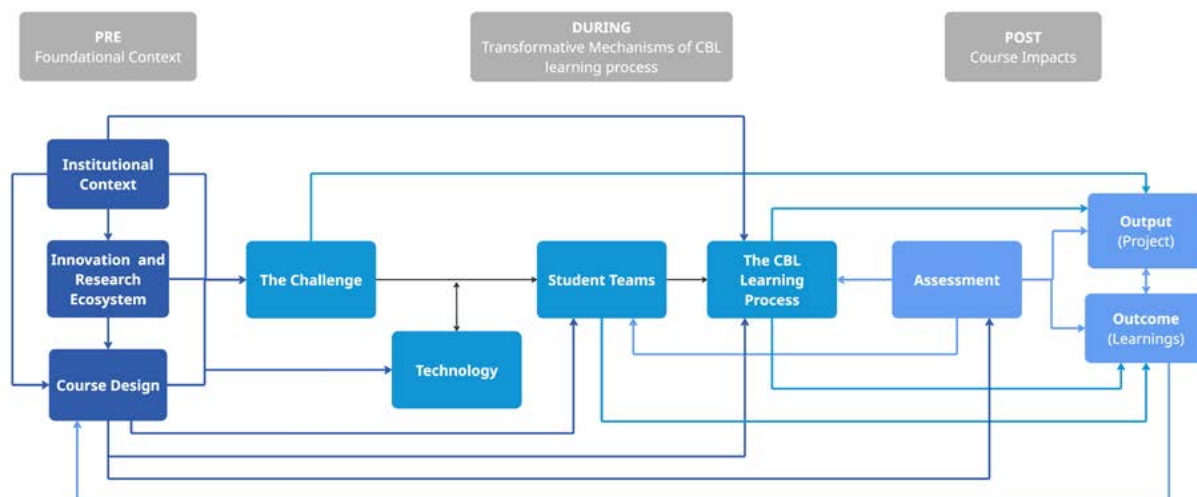
Lessons Learned

The most consistent finding from applying this framework is how rarely programmes explicitly design for the POST phase — for the durability of what students carry into professional life. Practitioners tend to invest heavily in challenge framing and team composition, then assess outputs rather than outcomes. The map also surfaces a productive tension: the

SDG 4, 17

This practice advances evidence-based understanding of how challenge-based learning actually transforms students across the full learning journey (SDG 4) while offering a shared reflective framework for the Design Factory network to critically examine and improve its collective practice (SDG 17).

features most likely to drive transformation — ambiguity, interdisciplinary friction, the Groan Zone — are precisely the features students find hardest and instructors find most difficult to hold. The open question this session is designed to explore: are we designing for transformation, or for completion?



↑ The figure presents the CBL learning process through a PRE–DURING–POST framework. It shows how the process moves from the foundational context, through the course experience, to the final course impacts. In the Fusion Point CBI model, technology plays a central role during the course, shaping both the challenge and the learning process. The figure serves as the thesis roadmap and defines the main unit of analysis.



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Mireia is Academic Coordinator, Faculty and Research Lead at Fusion Point (Esade, UPC & IED). She has led the academic coordination of Fusion Point courses with CERN IdeaSquare since 2022 and is a PhD candidate at UPC, researching the CBL learning process and longitudinal learning residue. She also teaches sociology at UB and Esade.

Treez: Contradiction- based innovation

A card deck to introduce innovators, developers and designers around the world to TRIZ's (Altshuller) Contradiction Matrix. Parameters and Inventive Principles to facilitate the production of ideas.

Diana Riveros
Jaime Aguilar
Pontificia Universidad Javeriana

The Challenge or Opportunity

The contradiction matrix is a very useful tool that is typically easier for engineers to use. We are translating TRIZ's parameters and principles to the languages and concepts used by other disciplines (social sciences, business, design and software) to improve the appropriation of the tool.

The Practice in a Nutshell

This is a brand new tool that we are going to test with the amazing DFGN family. The card deck works as a board game, so we are going to “play” with it. A previous version of the deck has been used in courses and workshops during the ideation phase of a project. The facilitator gives each team a deck and they can explore the contradiction matrix with these practical examples depicted in the cards.

Lessons Learned

People are drawn to pictures and humour within them. These cards have helped students and companies to understand and memorize the concepts in the Contradiction Matrix for an easier application. Examples and interpretations from different knowledge areas are key for the appropriation of the methodology.

SDG 4, 9

This practice makes TRIZ-based innovation methodology accessible across disciplines by translating engineering tools into the languages of design, business, and social sciences (SDG 4 & 9).



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Both Jaime Aguilar and Diana Riveros have made significant contributions to innovation in education at Javeriana Cali by integrating challenge-based, interdisciplinary, and experiential learning models that directly connect students with real-world industry and social problems, moving beyond traditional lecture-based teaching.

Designing Learning Ecosystems for Sustainable Systemic Transformation

We present a model for sustainable systemic transformation where students address real challenges through systems thinking, stakeholder engagement, and international collaboration, extending learning.

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NYC Design Factory, Pace University

Jari Jussila

Markku Mikkonen

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Gale Epstein Center for Technology, Policy
and the Environment, Pace University

The Challenge or Opportunity

Systemic sustainability challenges cannot be effectively addressed through classroom-based learning alone because the systems producing these problems spread across institutions, infrastructures, communities, and governance structures. In response, this practice uses water quality transparency and the public's "Right to Know H₂O" as an anchor problem to connect systems thinking, stakeholder engagement, public-facing engagement, and multidisciplinary international collaboration. The goal is not only to support sustainability-related and disciplinary learning outcomes, but to situate learning within the real systems, actors, and contexts shaping the problem space.

The Practice in a Nutshell

The practice was developed through collaboration and courses at the NYC Design Factory at Pace University (USA) and the HAMK Design Factory at Häme University of Applied Sciences (Finland), together with their local and international partner networks, forming the first internationally connected student team collaboration through the Millennium Campus Network (MCN). The catalyst was the Gale Epstein Center for Technology, Policy and the Environment at Pace University. Unlike traditional course-centered models, the process begins with identifying a problem and desired systemic impact before defining the educational structures needed to support it. The practice

UN Sustainable Development Goals: Health, Clean Water, and Partnerships. This practice embeds sustainability learning within real systems and stakeholder contexts, using water quality as a civic anchor problem that highlights the interdependence of human health and well-being and access to clean water and sanitation (SDGs 3 and 6). Through intentionally designed international collaboration across universities, communities, and public networks, it strengthens partnerships for sustainable development and collective action (SDG 17).



← Water-related Sustainable Development Goal 6 and Sustainable Development Goal 14 displayed at the United Nations in New York

↓ Students and instructors from Pace University and Häme University of Applied Sciences at the United Nations in New York



← Students from Pace University and Häme University of Applied Sciences at the Gale Epstein Center for Technology, Policy and the Environment during a cross-cultural, technology and environmental learning experience

intentionally combines learning, mobility, and public-facing amplification mechanisms to extend learning and engagement beyond the classroom.

In this case, the problem was the public's "Right to Know H₂O": how individuals access, interpret, and act upon real-time water quality information. This challenge served as a systems-level anchor across three interconnected components of the learning experience.

First, students engage in systems mapping to understand the broader socio-technical systems surrounding water quality, including environmental monitoring, public communication, governance, infrastructure, trust, and civic engagement. This helps students understand the interdependencies shaping the problem space.

Second, students conduct stakeholder mapping across universities, public organizations, laboratories, communities, and partner institutions. Learning extends beyond the classroom through interviews, workshops, collaborative exchanges, public presentations, and engagement with external actors.

Third, the practice incorporates mechanisms designed to amplify impact beyond the university environment. The Design Factory Global Network supports international knowledge exchange and expands awareness of the problem space across institutions. The MCN transforms student work from classroom-facing presentations into public-facing exhibitions reaching global audiences while also providing external mentorship and interdisciplinary collaboration. Erasmus-supported mobility activities further deepen engagement through visits to labs in New York and Hämeenlinna, international organizations, such as the United Nations, and stakeholder environments, such as the Center for Technology, Policy and the Environment at Pace University.

Together, these mechanisms create a learning ecosystem in which making, mobility, collaboration, and public engagement function as interconnected practices for advancing sustainable systemic transformation.

Lessons Learned

One key lesson was that sustainable systemic transformation requires more than project-based coursework; it requires intentionally designed ecosystems that connect students to real systems, stakeholders, and public-facing contexts. Systems mapping helped students maintain focus on root causes and interdependencies rather than isolated solutions. External networks and public-facing engagement opportunities significantly increased both student engagement and the perceived relevance of their work. The practice also demonstrated the importance of building amplification mechanisms, such as global networks and mobility programs, in extending educational experiences into broader societal impact. Future work will focus on developing stronger approaches for evaluating long-term educational and systemic outcomes.

Further information

Gale Epstein Center for Technology, Policy and the Environment, Pace University: <https://gectech.pace.edu>

Millennium Campus Network: <https://www.mcnpartners.org>



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**UnBoxed 2026: Teaching practices, methods, tools, exercises around
the globe for learning on the edge**

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