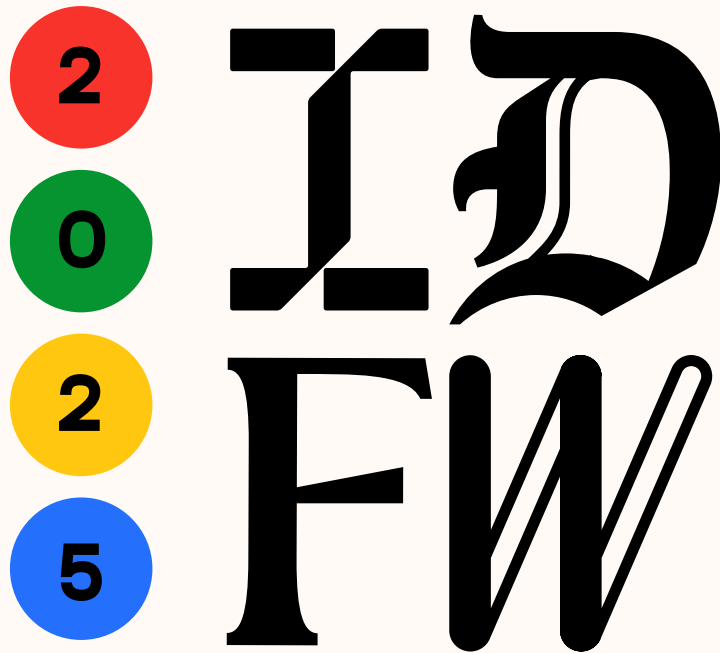


UNBOXED 2025:



TEACHING PRACTICES,
METHODS, TOOLS
AND EXERCISES
ACROSS THE GLOBE
FOR IMPACTFUL
EDUCATION
FOR INNOVATION



DFGN UnBoxed Magazine 2025:
Teaching practices, methods, tools and exercises
across the globe for impactful education for innovation

Layout: Anna Kuukka

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THE GLOBE FOR IMPACTFUL
EDUCATION FOR INNOVATION

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UNBOXING IMPACTFUL EDUCATION



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UNBOXING IMPACTFUL EDUCATION



Opening a box invites curiosity – it promises discovery, something unexpected, intentionally crafted, and ready to be explored.



This booklet gathers a collection of practices, tools, and provocations for impactful education across the Design Factory Global Network and its member institutions. This year, we had three broad themes under which contributions were called for: effective collaboration in higher education, impactful design- and project-based learning for innovation and leveraging technology for impact.

The resulting contributions highlight diverse themes, underscoring the dynamic shifts in how educators are preparing students for a complex and changing world. UnBoxed contributors continue to challenge and evolve conventional teaching models. Across the board, there's a strong emphasis on real-world problem-solving within interdisciplinary and challenge-based learning frameworks, often facilitated through project-based learning (PBL) and service learning (SL).

Many contributions demonstrate a commitment to engaging with external stakeholders, such as industry and public organizations, thereby ensuring that learning is authentic, impactful, and addresses genuine societal needs. This push for practical application is often paired with a focus on cultivating student agency and transformative learning,

recognizing that education extends beyond knowledge acquisition to encompass critical reflection, collaborative problem-solving, and the development of future-ready capabilities.

One of the prominent threads woven throughout practices showcased this year is the strategic integration of Generative AI (GenAI), not merely as a tool for efficiency, but as a catalyst for critical thinking, creative expression, and meaningful dialogue and interaction in the classroom. Contributors this year do not shy away from critical discussion of digital creation tools like TikTok and the importance of imagining collective desirable futures.

Finally, several contributions explore the evolving role of the educator, balancing responsibilities as custodians of learning outcomes, collaborators with external partners, and guides for students, while navigating the opportunities and ethical challenges presented by emerging technologies. At the intersections of technology, design, and art, educators are expanding how learning is experienced – visually, emotionally, and systemically.

Each contribution is an offering – playful, rigorous, and generously shared. We invite you to explore them with curiosity and care, and reach out to the contributors to learn more about their work. We welcome you to join the discussions and demonstrations in the UnBoxed conference October 6th-7th at NYCDF as we collectively imagine and shape the future of education.



Andreea Cotoranu
Pace University, NYC Design Factory

Andreea is the Director of the NYC Design Factory and a Clinical Professor of Information Technology at Pace University. She leads project-based courses in human-computer interaction, focusing on interdisciplinary, globally connected learning experiences that prepare students to creatively design and apply technology to solve complex problems.



Jonathan Williams
Pace University

Jonathan is a Clinical Assistant Professor of Human Centered Design at Pace University. Drawing from his prior experience from both higher education and educational consulting groups, his teaching work centers on the intersections of design and technology, leading students to create just, equitable, and sustainable socio-technical futures.



Klaus Castrén
Aalto University Design Factory

Klaus is the Head of Design Factory Global Network as well as Head of Community at Aalto Design Factory. His experience managing an educational platform from the service side gives him a unique perspective on enabling learning that depends on industry collaboration, hands-on experiences, international teams, informal education, and, of course, passion-based learning.



Tua Björklund
Aalto University Design Factory

Tua is the Director of Aalto Design Factory and an Associate Professor in Aalto University School of Engineering, Finland. She draws from academic research and industry examples to teach product development, design thinking and innovation practices, including the Product Development Project, a 9-month interdisciplinary project-based course turning ideas into innovations.



Vikki Eriksson
Aalto University Design Factory

Vikki is the Head of Research at Aalto Design Factory and leads the bachelor-level interdisciplinary product development minor at Aalto University, Finland. She teaches across several of courses which gives her the ability to engage with a number of her passions simultaneously, including sustainable product development and societal impact.



Vitória Fiorella de Freitas
Aalto University Design Factory

Vitória is a student assistant in the Design Factory Global Network. She is a Design and Media bachelor's student at Aalto University, with previous experience from the fashion industry. Vitória is originally from Portugal with Italian roots, and she's excited to build connections and collaborate with people from diverse fields and backgrounds.

SHARING THE PASSION FOR DOING

The Design Factory Global Network is a network of innovation hubs in higher education and research organizations across five continents. With roots in Aalto University and Aalto Design Factory established in 2008 in Finland, the Design Factory Global Network was born in 2011 as the concept spread to its third continent. For the past 14 years, the network has grown through the active contributions of its members, united by a shared aim: to drive change in teaching, learning, and research through a passion-based culture and effective problem-solving.

As a network, we share best practices and collaborate in experiments, education and various projects. We bring together educators, researchers, and business practitioners to create new opportunities for continuous learning and professional development. UnBoxed represents one of the formats through which we capture insights and practices across different Design Factories. Established in 2022 as a conference, UnBoxed is a two-day event held at a different Design Factory each year, where attendees learn more about the ecosystem of one of the Design Factories and share practices across the network. To make it easier to share the insights, this booklet captures each of the UnBoxed 2025 contributions in a nutshell.

UNBOXED HOST OF THE YEAR: THE NYC DESIGN FACTORY AT PACE UNIVERSITY

Pace University has been transforming students' lives academically, professionally, and socioeconomically since 1906. With campuses in New York City and Westchester, it serves 13,600 students across seven schools, offering bachelor's, master's, and doctoral programs. Rooted in its mission of opportunities, Pace empowers students to reach their full potential as innovative thinkers and problem solvers, uniquely prepared to make positive and lasting contributions to the world.

The Seidenberg School of Computer Science and Information Systems at Pace is at the forefront of technology education, equipping students with strong technical foundations and hands-on learning experiences. With expert faculty in AI, cybersecurity, data science, and human-centered design, Seidenberg connects students to top companies, start-ups, and government agencies, providing valuable industry connections and career opportunities.

The NYC Design Factory, located within the Seidenberg School, is a collaborative hub where students utilize technology and design tools to develop their creative problem-solving skills. Through passion-based learning and co-creation with faculty and industry practitioners, it fosters interdisciplinary and international collaboration, empowering students to experiment, innovate, and tackle real-world challenges.

DESIGN FACTORY GLOBAL NETWORK

1. Aalto Design Factory
Aalto University, Helsinki, Finland
2. Sino-Finnish Centre
Tongji University, Shanghai, China
3. Swinburne Design Factory Melbourne
Swinburne University of Technology,
Melbourne, Australia
4. DDHUB-Duoc Design Hub
Duoc UC, Santiago de Chile, Chile
5. CERN Ideasquare
CERN, Geneva, Switzerland
6. Design Factory Korea
Yonsei University, Seoul, South Korea
7. Porto Design Factory
Porto Polytechnic, Porto, Portugal
8. Future Design Factory
NHL Stenden University of Applied Sciences,
Leeuwarden, the Netherlands
9. METU Design Factory
Middle East Technical University,
Ankara, Turkey
10. Design Factory Javeriana Bogotá
PUC Javeriana, Bogotá, Colombia
11. NYC Design Factory
Pace University, New York, USA
12. RTU Design Factory
Riga Technical University, Riga, Latvia
13. UPV Design Factory
Universidad Politécnica de Valencia,
Valencia, Spain
14. Design Factory NZ
Wintec, Hamilton, New Zealand
15. Fusion Point
ESADE, Universidad Politécnica de Catalunya
and IED Barcelona, Barcelona, Spain
16. Kyoto Design Lab
Kyoto Institute of Technology, Kyoto, Japan
17. Cali Design Factory
PUC Javeriana, Cali, Colombia
18. inno.space Design Factory Mannheim
Hochschule Mannheim, Mannheim, Germany
19. Sandbox
University of Tartu, Tartu, Estonia
20. Design Factory @SIT
Singapore Institute of Technology
Singapore
21. HAMK Design Factory
Häme University of Applied Sciences,
Hämeenlinna, Finland
22. St. John's University Design Factory
St. John's University, New York City, USA
23. Hannam Design Factory
Hannam University, Daejeon, South Korea
24. Design Factory Shenkar
Shenkar College, Tel Aviv, Israel
25. Oper.Space
University of Bologna, Bologna, Italy
26. Design Factory London
Brunel University London, United Kingdom
27. nandin Innovation Centre
ANSTO, Sydney, Australia
28. Design Factory Aveiro
PCI - Creative Science Park Aveiro Region
Aveiro, Portugal
29. Viikki Food Design Factory
University of Helsinki, Helsinki, Finland
30. VILNIUS TECH "LinkMen fabrikas"
Vilnius Gediminas Technical University,
Vilnius, Lithuania
31. Design Factory Pforzheim
Hochschule Pforzheim, Pforzheim,
Germany
32. Design Factory Stuttgart
ARENA2036, Stuttgart, Germany
33. iCubo UDD
Universidad del Desarrollo,
Santiago de Chile, Chile
34. Design Factory Nantes
Université de Nantes, Nantes, France
35. SEIUNISA
University of Salerno (UNISA)
Salerno, Italy
36. Design Factory Manchester
Manchester Metropolitan University,
Manchester, United Kingdom
37. Forge Design Factory
TUS Limerick School of Art and Design,
Limerick, Ireland
38. Design Factory Birmingham,
Aston University
Birmingham, United Kingdom
39. Design Factory ULaval,
Université Laval,
Québec, Canada





UnBoxed 2025 | Theme 1:

IMPACTFUL DESIGN- AND PROJECT-BASED LEARNING FOR INNOVATION



INTEGRATING GENAI AND SERVICE- LEARNING IN DESIGN INNOVATION EDUCATION



Agnes Xue

Singapore Institute of Technology (SIT)
agnes.xue@singaporetech.edu.sg

Dr. Agnes Xue is a distinguished Singaporean industrial designer. Her multifaceted career reflects her dedication to advancing design education, healthcare innovation, and entrepreneurial ventures. She is currently an Associate Professor at the Singapore Institute of Technology (SIT), and she also holds the position of Visiting Senior Academician at SingHealth.



Zheng Renjie

Singapore Institute of Technology (SIT)

Zheng Renjie, also known as RJ Zheng, is an Associate Partner at CDG Architects in Singapore and serves as an Associate Faculty at SIT. He has expressed pride in his students' work addressing real-world challenges, particularly in areas like mental health and climate change.



Joshua Teo

Singapore Institute of Technology (SIT)

Joshua Teo is the Co-Founder and Principal of Rhindon, a design thinking and placemaking consultancy, based in Singapore. He is a seasoned practitioner who is recognized for his contributions to organizational transformation through human-centered design approaches. Joshua extends his expertise to academia as an Associate Faculty SIT, where he mentors and educates future change agents in design thinking methodologies.



This study contributes to the ongoing discourse of introducing genAI to aid service learning, introduced to enhance the rapidly evolving field of interdisciplinary design innovation education.

THE CHALLENGE OR OPPORTUNITY

At the Singapore Institute of Technology, an interdisciplinary design innovation module engages students in solving real-world problems. Integrating service learning (SL) enhances this by allowing students to apply theory in practical contexts, boosting understanding and skills. However, SL faces challenges such as limited educator training, resources, and sustainable partnerships. This study explores how Generative AI (GenAI) can support SL by automating tasks such as project management, customizing learning materials, and fostering partnerships. By reducing administrative burdens, GenAI enables educators to focus on mentorship, thus improving the learning experience and sustainability of design innovation education.

THE PRACTICE IN A NUTSHELL

This practice describes a pedagogical approach piloted at the Singapore Institute of Technology (SIT) that blends Service-Learning (SL) and Generative Artificial Intelligence (GenAI) within an interdisciplinary design innovation module. The teaching method is based on a Critical Design Futures Thinking (CDF™) conceptual framework, which prompts students to collaboratively explore complex, real-world challenges and generate innovative, practical solutions.

In this practice, students engage in projects that are directly tied to community or industry needs, thus allowing them to apply theoretical learning in authentic contexts. This service-learning model enriches students' understanding by fostering active collaboration with external partners, such as community organizations or small to medium-sized enterprises (SMEs). However, challenges exist, including a lack of educator training, insufficient structural support, and difficulties in sustaining community collaborations.

To address these barriers, the study proposes integrating GenAI tools such as ChatGPT and Google Gemini. These technologies assist by automating administrative tasks (e.g., project management, scheduling), curating personalized learning content, and streamlining communication between stakeholders. GenAI can also support students by offering immersive digital collaboration environments and facilitating ideation and prototyping processes. This method has been applied at SIT, spearheaded by the authors, who collectively advocate for a future-forward applied learning ecosystem. Their work illustrates how GenAI can bridge gaps between theory and practice, reduce educator workload, and enhance the sustainability and scalability of SL practices in design innovation education.

LESSONS LEARNED

Key lessons from this approach underscore the value of integrating Service-Learning with GenAI to bridge theory and practice, enhance student engagement, and alleviate educator workload. The method has effectively deepened student learning through real-world projects while AI tools streamlined logistics and fostered collaboration. Feedback suggests improved critical thinking, communication, and project outcomes. Future

development should focus on building educator readiness and refining AI integration. Educators adopting this model should prioritize partnership-building, scaffold AI use responsibly, and create adaptive frameworks that align with real-world complexity, ensuring relevance, sustainability, and student-centered impact in interdisciplinary education.



FROM IDEA TO HAPPY CUSTOMER: ENTREPRENEURSHIP ON A GAME BOARD



The New Business Game
is a facilitated, gamified tool for
developing entrepreneurial skills through
collaborative, experiential learning in
project-based and hybrid settings.



Meri Kuikka

Aalto University Design Factory
meri.kuikka@aalto.fi

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

THE CHALLENGE OR OPPORTUNITY

The entrepreneurial education game addresses the challenge of teaching complex entrepreneurial competencies in an engaging and accessible way, especially in hybrid or online learning environments. Entrepreneurship education often struggles to bridge the gap between theory and practice, leaving students feeling disconnected from abstract business models or passive lectures. This game offers a solution by simulating real-world decision-making through iterative, team-based gameplay rooted in action learning and gamification.

THE PRACTICE IN A NUTSHELL

The New Business Game is a facilitated learning tool that enables students to work in small teams and navigate a board game simulating the entrepreneurial journey. Built on concepts from effectuation theory (Sarasvathy, 2001), experiential learning (Revens, 1982), and the EntreComp framework (Bacigalupo et al., 2016), the game invites players to construct their own entrepreneurial path from a blank board using challenge cards, collaborative planning, and reflective debriefing.

The gameplay is divided into three iterative rounds. In the first round, students build a path from an idea to happy customer using sticky notes. In the second round, they draw challenge cards to test their idea. In the third round, they identify skills, knowledge and attitudes needed at each stage of their journey, and map them to their own existing competences. After each round, the teams reassess their progress and adjust their strategy, aligning with the "build-measure-learn" approach (Ries, 2011) and action learning principles. The experience concludes with a facilitated debrief, where students reflect on their decisions, teamwork, and how the game connects to entrepreneurial theory.

Originally developed at Aalto University, Finland, by Elina Kähkönen and Håkan Mitts, this tool has been used primarily in university-level entrepreneurship and innovation courses within project-based learning frameworks. It has been applied in both in-person classroom settings and adapted for fully online delivery using platforms like Zoom and Miro, where breakout rooms and virtual whiteboards replicate the physical game environment. The game's flexibility also allows it to be customized for various disciplines, including a variety of project courses, teacher training and sustainability education, making it relevant beyond traditional business contexts.

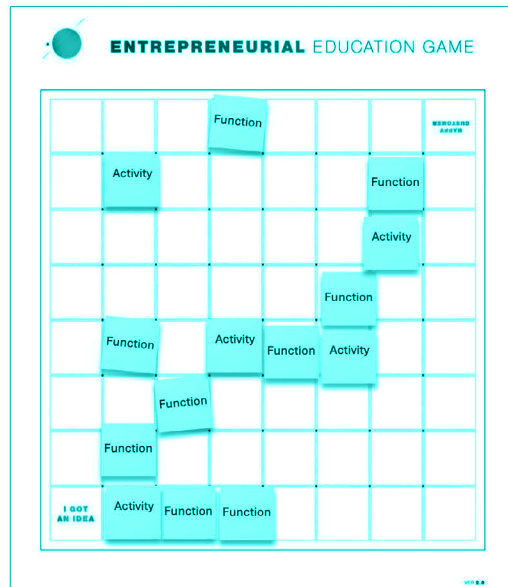
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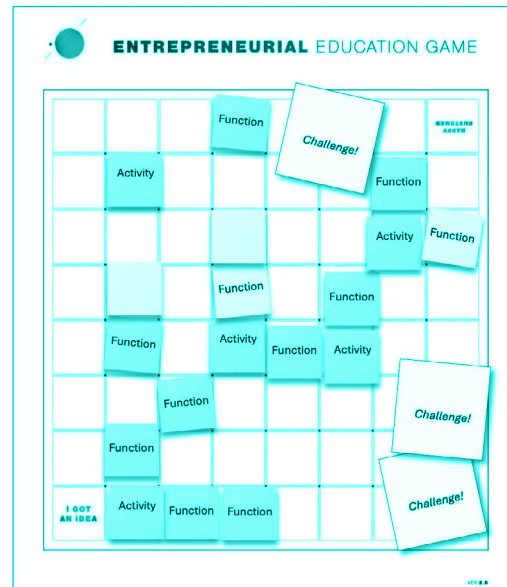
LESSONS LEARNED

Students consistently report high engagement and deeper understanding of entrepreneurial concepts after gameplay. The most impactful learning emerges during the debrief, where students reflect on group dynamics, risk-taking, and creativity. Key lessons include the importance of using reflective dialogue and ensuring challenge cards are contextually relevant. Online adaptation has also proved effective. Future improvements include diversifying challenges and incorporating self-assessment tools. Educators interested in using the tool are advised to focus on the quality of facilitation and group composition to maximize learning.

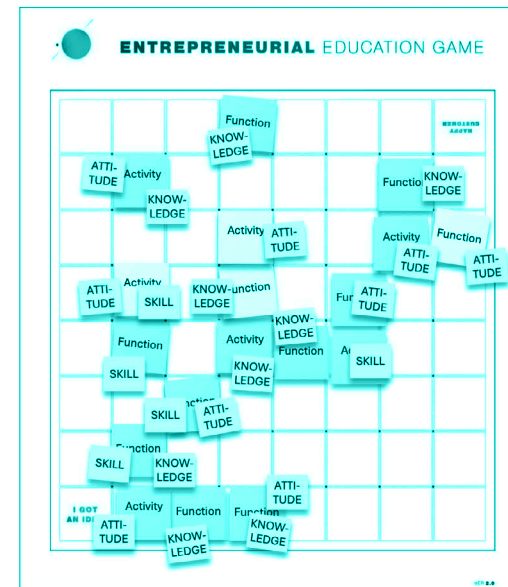
Download the game manual, facilitation slides and printable game board here: <https://avp.aalto.fi/tool/entrepreneurial-education-game/>



Round 1: Building a path



Round 2: Real-world challenges



Round 3: Competence mapping

ASIAN CASE STUDIES OF CULTIVATING FUTURES THINKING MINDSET THROUGH DESIGN



Nadya Shaznay Patel
Singapore Institute of Technology (SIT)
nadya.patel@singaporetech.edu.sg

Nadya's work sits at the crossroads of Critical Design Futures (CDF) thinking, design-driven and futures-oriented entrepreneurship education, and GenAI applications for innovation. Her interdisciplinary design innovation and digital media production modules which integrate hands-on industry briefs with futures-oriented, AI-enabled experimentation to resolve real-world problems, have inspired her students to produce AI-enabled prototypes presented to industry partners.



Masaki Iwabuchi
JPMorgan Chase & Co. / Tohoku University

Masaki Iwabuchi is a NY-based Strategic Design Futurist with 20 years of experience in strategic foresight and vision creation through design artifacts. Since 2021, Masaki has served as a Strategic Design Futurist at JPMorgan Chase and a Visiting Associate Professor at Tohoku University.



Makoto Takahashi
Tohoku University

Makoto Takahashi has been a professor in the Graduate School of Engineering at Tohoku University since 2012. His research interests include human-machine interfaces, safety of socio-technical systems, resilience engineering, cognitive engineering, risk communication, and cyber security.



Applying Social Dreaming and Intellectual Agility in our experimental Japan and Singapore design workshops shows the shifts of non-design students from tool users to future-ready thinkers.



THE CHALLENGE OR OPPORTUNITY

Across Asia, most project-based courses hand non-design students a checklist of design tools but seldom stretch their imagination. Masaki Iwabuchi's Social Dreaming-through-Design invites cohorts to externalize collective "desirable futures" in a matrix, while Nadya Patel's Designing Preferred Futures with Intellectual Agility channels those dreams into critique, prototyping, and back-casting exercises. They each cultivate futures literacy, collective intelligence, and systems awareness in multidisciplinary studios of non-design students. Our fishbowl unpacks comparative instructional insights from Japan and Singapore and invites participants to adapt the dreaming-critique tandem to rewire the mindsets present in their own programs.

THE PRACTICE IN A NUTSHELL

Tohoku University in Japan

(3-day (24hrs) intensive course, 15 engineering Masters and PhD students)

Masaki Iwabuchi leads a sprint titled Social Dreaming through Design. Day 1 grounds students in present-state mapping; Day 2 runs nightly social-dreaming matrix circles where teams free-associate dream fragments, edge signals, and personal anxieties. On Day 3, they cluster those fragments into long-horizon worldviews and build quick speculative artefacts—a meal receipt from a post-carbon Tokyo, a smart-shrine votive, etc. Students formed small groups and co-created an artifact from futures with individuals from other disciplines.

Singapore Institute of Technology University-level Module

(12 weeks, 500-800 students from mixed programmes)

Nadya Patel embeds a three-loop CDF thinking scaffold where students engage in Critique, Create, and Consider to achieve intellectual agility when addressing real-world issues. Students run GenAI ‘sparring’ dialogues to surface unseen assumptions, distil insights for a future persona, and visualize preferred transitions using an Artefact-of-the-Future. Students’ projects are showcased at an exhibition so that they engage the public for feedback. Pre- and post-surveys show a jump in futures mindset and an increase in self-reported creative confidence.

We prototype a cross-studio collaboration using a shared Dream-Critique Canvas on Miro, so both cohorts of students map their dreams to critique with questions and transition steps. Faculty members swap guest lectures and discuss select students’ projects. It will be interesting to study comparative analytics to highlight mindset shifts across disciplines, informing iterative tweaks for each cohort or institution.

The result is a living, hybrid pedagogy that lowers the threshold for futures thinking, turns divergent dreaming into tangible prototypes, and offers transferable rubrics and worksheets for other Design Factories to test.

LESSONS LEARNED

Students report heightened “futures reflex”—a habit of asking why now; what hurts; how else, before fixing problems. Masaki’s Social Dreaming-through-Design and Nadya’s Designing Preferred Futures with Intellectual Agility clarify growth pathways and demystify “designerly” work for novices. Challenges: measuring intangible dispositions and aligning calendars across institutions. We plan to longitudinally track students beyond the courses, pilot a micro-credential that certifies futures-ready dispositions, and publish a full journal article. We recommend early framing of design as cultural literacy, use of speculative artefacts to externalize thinking, and explicit critical debate with artefacts and reflection prompts.

SUPPORTING USER TESTING DURING DEVELOPMENT: ADF USER TESTING TOOLKIT



Sara Figueiredo

Aalto University Design Factory

Sara is a doctoral researcher at Aalto Design Factory, investigating how problem-based learning and collaborative design practices can drive educational innovation. Building on her experience as a former creative strategist at the Design Factory Global Network team, she continues to develop practical teaching tools and foster meaningful international collaboration.



Aaro Packalén

Aalto University Design Factory

aaro.packalen@aalto.fi

Aaro Packalén is the course coordinator for the Product Development Project (PDP) at the Aalto University Design Factory. With a background in electrical engineering and product development, he is currently completing his master's thesis on Ideation practices in the health technology industry. He is passionate about exponential thinking, product development, and fostering innovation within diverse, interdisciplinary teams.



Vikki Eriksson

Aalto University Design Factory

Vikki Eriksson is the Head of Research at Aalto University Design Factory, supporting research that explores innovation practices, organizational development studies, radical creativity and the potential of design-driven approaches to have a positive societal impact. Her teaching focus includes user studies, engineering impact, speculative design and future studies, as well as sustainable product development.



More meaningful user testing for students, educators and professionals in 3 simple phases.



THE CHALLENGE OR OPPORTUNITY

Project-based learning emphasizes hands-on experiences, empowering students to engage deeply with real-world challenges. Integrating a user testing toolkit enhances this by offering structured methods to gather authentic feedback. It fosters critical thinking as students analyze interactions to improve their projects, while promoting empathy through user-centered design. The toolkit supports iterative learning and encourages refinement through constructive input. Ultimately, it prepares students for professional environments by nurturing collaboration, communication, and problem-solving skills, essential for future success.

THE PRACTICE IN A NUTSHELL

The toolkit was created to support the early and continuous integration of user testing throughout the design and development process. It tackles the common issue of postponing user feedback until late stages, when changes become more difficult and

costly. It offers structured guidance to students, educators, professionals, and early-stage teams, even without prior expertise in user research.

Adaptable to different experience levels, the toolkit supports multidisciplinary teams and includes tools suited to various testing contexts. It encourages focused preparation, observation, and analysis of user interactions. By breaking the process into manageable steps, it simplifies adoption and empowers teams to begin meaningful user testing early on, when ideas are still flexible and easier to adjust.

The toolkit is most useful when tangible elements, like low-fidelity prototypes or early versions of a product, are available for testing. It is particularly helpful for understanding user interaction, addressing uncertainties, comparing design options, spotting usability issues, making design decisions based on feedback, and clarifying confusing features or unexpected behaviors. It is structured into three main sets: **Pre-Testing**, **During Testing**, and **After Testing**. These guide users through the full testing cycle. An additional expansion pack includes fictional user profiles, company briefs, and role-play cards to enable simulated testing scenarios when teams do not have active projects.

The toolkit's flexible format allows educators and professionals to select and combine tools based on session goals, available time, and participant experience. It can be adapted to different phases of product development and varying team resources. Each tool includes a short description and usage tips, making it easy to integrate into both classroom and professional contexts, whether for a quick session or a longer learning experience.

LESSONS LEARNED

This toolkit was co-developed by Cali Design Factory (Colombia), iCubo (Chile), and Aalto Design Factory (Finland), each contributing a tool addressing different stages of innovation, from interdisciplinary collaboration to decision-making and user testing. Tools were tested in 2–3 educational settings, and feedback from both educators and students was key to refining them. Educators praised the depth of the toolkit but noted challenges in integrating it into shorter courses, which led us to include suggested implementation scenarios in the handbook. Student feedback indicated that role-play helped them experience user testing methods in practice and feel confident in applying them to future projects.



Access the toolkits here:
<https://designfactory.aalto.fi/toolkits/>

EXPANDING THE HORIZON: A WORKSHOP FOR NODE-BASED IDEA MAPPING AND IDEATION



A node-based mind-mapping activity designed to support creative ideation through divergent thinking and research-based exploration.



Daniel Lichtman
St. John's University
lichtmad@stjohns.edu

Daniel Lichtman's work and research explores how communities can use the tools of game design to tell stories about their culture and heritage, and imagine possible futures. His work has been exhibited, presented and published internationally; he is an Assistant Professor of Game Development and Emerging Media at St. John's University.

THE CHALLENGE OR OPPORTUNITY

Students frequently commit to a single concept for a creative project, like a video game, without exploring alternative creative directions, delving into the specifics of their idea, or gathering contextual inspirations. This mind-mapping exercise offers an engaging and intuitive framework for guiding students through this initial phase of a design-focused creative project. By constructing a node-based mind-map, students effectively engage in divergent thinking and creative ideation early in their projects. This process allows them to generate and record a diverse range of creative ideas, potential details, and sources of inspiration, thereby broadening the possibilities for project development.

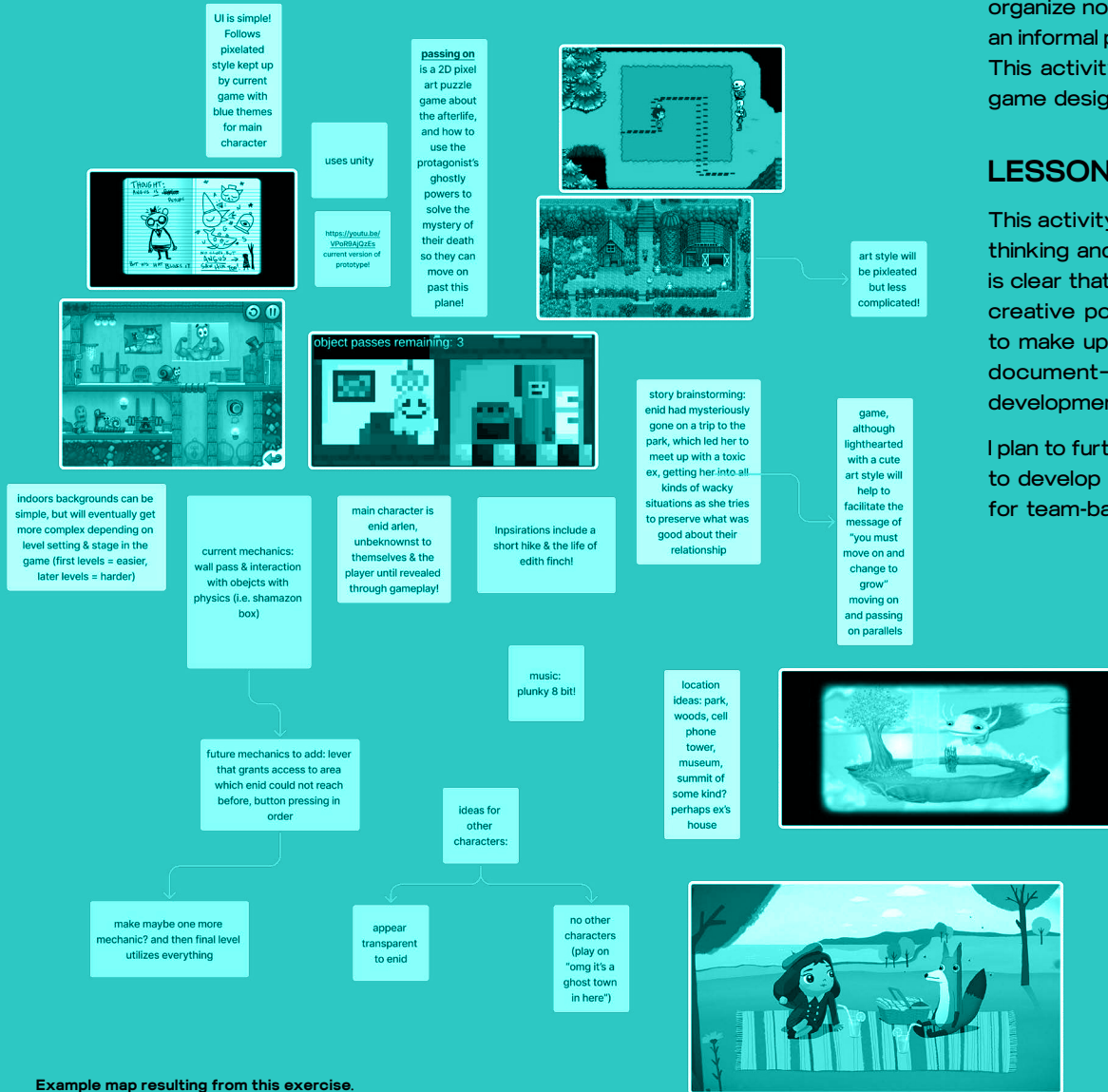
THE PRACTICE IN A NUTSHELL

During this activity, students create an open-ended node-based mind-map using Figma (or similar design software), in which they generate a wide variety of ideas for all aspects of a creative interactive media project such as a video game.

Students first identify a one-sentence starting point for their idea, and write this at the center of their map. The instructor reminds students of the different areas of their project that will require design considerations—in the case of a video game, this may include game-play mechanics, game narrative, character development, environment design and more. Students undergo a series of 'lightning rounds', in which they quickly add content to their mind-map, outlining possible details about their games for as many relevant design areas as possible. Content can include text fragments, images found online, students' sketches, links to video clips, and other media. Content is inserted onto the map around the core idea. Students are encouraged to use visual material wherever possible, for example to illustrate a UI or game art style.

As part of this process, students are encouraged to pursue open-ended contextual research to discover and document sources of inspiration for their project, and to insert found content into their map. For example, in designing a character, students can insert inspirational pictures of characters from existing video games.

During the early stages of the mapping process students focus on following the direction of their thoughts, putting content onto the map as quickly as possible without worrying about organization or categories. This facilitates a generative, 'free-flowing' creative process in which ideas accumulate and develop upon one another. Students can present their maps to the class, and classmates can provide feedback



Example map resulting from this exercise.

and suggest references to add to each other's maps. Later in the process, students organize nodes on their maps into categories, which begins to transform the map into an informal planning document. Students often update the map as their project evolves. This activity has been successfully implemented in both introductory and advanced game design courses at St. John's University.

LESSONS LEARNED

This activity is effective in supporting students to spend time engaging with divergent thinking and creative ideation. Based on the resulting maps and student feedback, it is clear that the activity supports students in expanding upon and adding detail to the creative possibilities of their project. Many students voluntarily return to their map to make updates as their project evolves, and use their map as an informal planning document—for example, using color coding to indicate which aspects of project development are in progress or completed.

I plan to further explore how to incorporate student feedback into this activity, and how to develop the mind-map into a dynamic project-management document, particularly for team-based projects.

THE ENTREPRENEURIAL EDUCATORS DILEMMA?



An open-ended discussion on the virtues and pitfalls of entrepreneurship education by taking an introspective look on the methods and assessments we use in the evaluation of our students.



Apurva Ganoo
Aalto University
apurva.ganoo@aalto.fi

I am a Lecturer in Entrepreneurship with my research and teaching both focusing on early-stage entrepreneurship and its connections to broader entrepreneurial ecosystems. In my teaching, I specialize in early-stage entrepreneurship, focusing on problem identification, user understanding, business models, and value propositions. I employ experiential, practice-based methods in teaching and have mentored numerous project teams.

THE CHALLENGE OR OPPORTUNITY

Engage in open, philosophical discussions on the challenges both, students and educators, face with aligning the virtues of learning with the struggles of modern academic structures, mainly referring to institutional procedures, course evaluation and assessments, and general tensions in academia. Here, I hope to guide the discussions, in an open manner, to adopt a critical perspective towards entrepreneurship and management education, recognize and understand the tensions educators feel or grapple with, and conclude with some tangible ways which we can address these issues.

THE PRACTICE IN A NUTSHELL

In Alasdair MacIntyre's "After Virtue," he presents the case of an intelligent child to who the author wishes to teach the game of chess. The child, while having no particular interest in learning the game of chess, does have an interest in candy, and thus, the author proposes getting the child to play the game of chess for the incentive of getting candy. MacIntyre then discusses how, in this case, it may rather be the desire for the candy, than an innate interest in learning the game, driving the child's desire to learn and play chess. It is also hoped, as outlined by MacIntyre, that "there will come a time when the child will find in those goods specific to chess, in the achievement of a particular kind of analytical skill, strategic imagination... for trying to excel in whatever way the game of chess demands" (p. 188). In some ways, I feel a similar analogy is apt, in entrepreneurial education, from both the perspectives of the educators and the students. Here, the proverbial candy may be replaced by institutional commodities such as standardized 0-5 grading scales, credits (ECTS), number of students trained (quality vs. quantity), and standardized forms of assessment (exams, tests, and so on).

While the practice of teaching (and learning) may be virtuous themselves, it could be argued that within higher education today, there are many examples of such "candies," which, while promoting education, may not be developing for the same intrinsic reasons, and more importantly, potentially occurring at the detriment of entrepreneurial education. As such, I will utilize this analogy as the starting point for discussions on entrepreneurship education, and the challenges of aligning virtues with the ways we teach and assess, and end the discussions by exploring how educators navigate and reconcile with such tensions.

LESSONS LEARNED

The lessons learned will focus more towards the next steps we as educators can take to grapple with such tensions, and I will also share some examples and anecdotes from theory and practice that may assist you in developing your educational practices. The goal is to help educators think more openly and critically about assessments and evaluations in higher education, come up with new methods for such evaluations, and think more holistically on these aforementioned topics.



UnBoxed 2025 | Theme 2:

EFFECTIVE COLLABORATION IN HIGHER EDUCATION



DESIGN THINKING SUMMER CAMP WITH UN SUSTAINABLE DEVELOPMENT



**Service/Product/User Experience
Design Thinking Summer Camp where
Sustainability & Technology research is
grafted in Culture & Space with Visual
Form & Function and Creativity.**



Hyun-Kyung Lee
Yonsei University/DFK
hyunkyunglee@yonsei.ac.kr

Full Professor at CDM (Culture & Design Management) division, HASS
(Humanities, Arts, Social Science) dept., UIC (Underwood International
College), Yonsei University, South Korea.

THE CHALLENGE OR OPPORTUNITY

UNOSD, in partnership with Yonsei University Korea Design Factory, successfully conducted the 2023 SDGs Youth Summer Camp from August 16th to 19th, 2023. This initiative, supported by the Korea Environment Corporation (K-eco) and the Ministry of Environment, was designed to equip young leaders with problem-solving capabilities and to foster opportunities for tangible solutions in line with the 2030 Agenda.

THE PRACTICE IN A NUTSHELL

Hosted at the Yonsei University International Campus in Incheon, Republic of Korea, the camp attracted 21 young leaders from various countries, divided into six focused groups. The primary theme for this year was SDG 6 (Clean Water and Sanitation). Emphasizing the necessity of a user-centered perspective, the camp integrated design thinking techniques to foster innovation in SDG implementation. This summer camp primarily focused on SDG 6 (Clean Water and Sanitation) and employed design thinking methods for the SDGs, highlighting the importance of a user-centered approach in developing innovative solutions for SDG implementation. Learning materials aided design thinking for the SDGs, and as a result of the summer camp, six student groups designed and developed innovative solutions to advance the SDGs. The groups worked through seven modules, consisting of lectures, discussions, and workshops, over a four-day period. Facilitated by design thinking experts and mentors, this process enabled the groups to shape and evolve their respective projects intricately.

LESSONS LEARNED

During the conclusive pitch session, each of the six groups showcased their groundbreaking ideas. Out of these, two groups stood out and were lauded for their exceptional contributions. The Design Innovation Award was presented to 'EcoSwap' (Group 3) for their pioneering approach to mitigating the environmental impacts of the fast fashion industry. Concurrently, 'Aqua Care' (Group 6) was honored with the SDG Impact Award, which highlights their unwavering commitment to pivotal global goals, with a particular focus on water management. These accolades not only celebrated the recipients but also epitomized the unwavering commitment of all participants to engender positive global change.



Final Presentation Scenes

"CLASSROOM CHALLENGES": DIVERSE STRATEGIES AND OUTPUTS IN CHALLENGE-BASED INNOVATION



DFJBOG's "Classroom Challenges" enriches education through open innovation, working with real-world challenges from the University and external stakeholders via Challenge-Based Innovation (CBI).



Lucas Rafael Ivorra Peñafort

Facultad de Arquitectura y Diseño - Pontificia Universidad Javeriana
ivorral@javeriana.edu.co

PhD. PMP. Assistant Professor, Department of Design. Coordinator, Design Factory Javeriana Bogotá. Fan of aviation, brownies, mountains, and dancing.



Alfonso Gómez Gómez

Facultad de Arquitectura y Diseño - Pontificia Universidad Javeriana

Dean of the Faculty of Architecture and Design. Architect and Master in Construction (National University of Colombia). Member of the Bogotá Habitat Advisory Council and the GRIMET research group.



Sandra Carolina Valbuena Bermúdez

Facultad de Arquitectura y Diseño - Pontificia Universidad Javeriana

Director of the Department of Architecture. Architect (PUJ). MSc (Politecnico di Torino). Wide experience leading sustainability and climate adaptation in Colombia and Latin America.



Costanza Ordóñez Torres

Facultad de Arquitectura y Diseño - Pontificia Universidad Javeriana

Architect. Master in Urban and Regional Planning (PUJ) and Master in Construction and Real Estate Management (Polytechnic University of Madrid). Extensive experience in Higher Education. She is a fan of art, legendary cultures, and autobiographies.



Martín Horacio Gómez Jaramillo

Facultad de Arquitectura y Diseño - Pontificia Universidad Javeriana

Director of the Industrial Design Program and the Design Department. Industrial designer (Jorge Tadeo Lozano University). Extensive experience in contemporary furniture and jewelry.



Willmar Ricardo Rugeles Joya

Facultad de Arquitectura y Diseño - Pontificia Universidad Javeriana

PhD student in Environmental and Rural Studies, Professor and researcher in Systemic Design and Complexity, Designs and Sustainabilities.

THE CHALLENGE OR OPPORTUNITY

Students co-create products, services, strategies, or processes through immersive collaboration with stakeholders. The key challenge is harmonizing real-world requirements with pedagogical goals while ensuring viable outputs. To bridge this gap, we begin by deeply engaging stakeholders to define needs, then co-adapt project briefs with educators to align with learning frameworks. The process emphasizes continuous dialogue – facilitated by iterative feedback loops – to nurture intuitive relationships between partners and students. This monitoring dynamic ensures mutual value: stakeholders gain actionable solutions, while students achieve transformative learning through context-driven, socially embedded design.

THE PRACTICE IN A NUTSHELL

"Classroom Challenges" is a teaching strategy developed by the Faculty of Architecture and Design at Pontificia Universidad Javeriana and supported by DFJBOG (Design Factory Javeriana Bogotá). This is a cross-cutting strategy across all departments of the Faculty, such as the Design and Architecture departments, which look to foster "Learning through Direct Experience" and "Problem-Based Learning". This strategy strengthens the link between academia and the professional environment, allowing students to address current issues with a critical and creative perspective with diverse approaches in specific contexts. It has encouraged the integration of participatory design methodologies and systems thinking, both of which are fundamental to the training of designers and architects. Furthermore, it has promoted interdisciplinary work, facilitating dialogue between architecture, design, and other disciplines, positioning students as active agents in generating transformative and sustainable solutions for society.

The process begins when internal university units or external stakeholders propose a challenge they want to explore. The DFJBOG/Faculty meets with them to define the scope and nature of the challenge. Once the initial scope is set, DFJBOG works with the Faculty to identify which courses and lecturers are best positioned to address the challenge based on course content, schedule, and learning outcomes. The challenge is then refined in collaboration with the lecturer. A project brief and agreement are agreed to formalize expectations and responsibilities.

Throughout the course, students engage in a structured innovation process that includes understanding the problem, researching context, ideating, prototyping, and testing ideas. They receive mentorship from lecturers, stakeholders and DFJBOG staff

when required. At the end of the process, DFJBOG discusses with the stakeholders to reflect on what happened, what was learned, and how the results might inform future iterations. Based on this, there is scope for scaling or repeating the challenge in other classes or contexts.

LESSONS LEARNED

"Classroom Challenges" strengthens the faculty's strategy, connecting undergraduate and graduate programs with real-life challenges, through flexible academic models. It has contributed to enriching new programs (e.g., PIES, a PhD proposal) and gaining high national recognition. It fosters open dialogue between industry and academia beyond conventional stakeholder frameworks. The approach emphasizes holistic growth, encouraging participants to build self-trust and wellbeing. Still, this initiative faces challenges when balancing learning outcomes: developing human skills (e.g., negotiation) and human-machine skills (e.g., AI prompting); diversifying collaboration beyond financial exchange; and expanding to Non-Traditional Research Outputs (NTROs).



One of the key pillars of the Classroom Challenges is bringing onboard passionate, capable people, who are willing to pursue their dreams (Hence, "Soñadores") during a project and find ways to 'make things happen'.

DECISION-MAKER BASED DESIGN



A tool to align innovations with decision-makers' priorities, reducing risk and boosting adoption by turning their needs into value proposition attributes for market launch.



Diana Riveros

Centro Javeriano de Innovación y Emprendimiento
riveros@javerianacali.edu.co

Diana Riveros is a dynamic innovation strategist with over a decade of experience driving transformative solutions for Javeriana University. Passionate about fostering creativity and leveraging emerging technologies, Diana specializes in turning bold ideas into scalable, market-ready ventures.



Gabriel Devia

Cali Design Factory, Centro Javeriano de Innovación y Emprendimiento

Gabriel Devia is an economist passionate about innovation and transformation, with experience in designing new ventures with a social focus. Specialized in creating high-impact solutions, he combines systems thinking and agile methodologies to turn bold ideas into purpose-driven projects.

THE CHALLENGE OR OPPORTUNITY

The Decision-maker based design tools tackle the challenge of low adoption of innovations by involving all key decision-makers early in the design process. Our method addresses the gap between solution development and real-world implementation by mapping, analyzing, and aligning the priorities of diverse stakeholders. This approach increases the viability of solutions and boosts their potential for successful adoption—especially in sectors like healthcare, public policy, or social innovations—where decision-making is distributed across the value chain and innovation projects are usually high-stakes.

THE PRACTICE IN A NUTSHELL

This practice centers on decision-maker-based design tools developed at Cali Design Factory to boost innovation success. By engaging all key decision-makers early and consistently, it goes beyond user needs to incorporate the pains and gains of stakeholders across the value chain—including those in the business sector where the product or service will be deployed.

The tools guide innovators in identifying the critical decision-makers in their project context and in understanding their unique – and sometimes conflicting– priorities, constraints, and expectations. Through structured workshops and collaborative sessions using the tools, participants can collect and synthesize this information to translate decision-makers' needs into clear value proposition attributes.

This method promotes continuous dialogue between innovators and stakeholders, reducing risks of misalignment or rejection during go-to-market phases. By fostering shared understanding and prioritization, it helps innovators refine solutions to be viable, desirable, and feasible from multiple perspectives.

This tool has been applied primarily within the Cali Design Factory, a university-based open innovation lab in Colombia, working with multidisciplinary teams from academic research groups, startups, and public sector projects. It has been used in contexts ranging from medical technology development to public policy design, where navigating complex stakeholder networks is crucial for impact.

Through this practice, participants develop skills in stakeholder analysis, strategic communication, and value proposition design, directly enhancing their ability to bring innovations from concept to real-world adoption.

LESSONS LEARNED

We tested the tools with 56 Aalto students, 6 Javeriana students, and 9 Javeriana tech managers, confirming that early stakeholder alignment increases innovation adoption. The tools effectively helped teams map stakeholder relationships and priorities. Key challenges included distinguishing direct from indirect influencers and clarifying the roles

of users versus clients. Some terms, like 'parameters,' caused confusion. We're now refining the tool to improve intuitiveness without sacrificing depth. The tools perform best in collaborative environments where stakeholder buy-in is critical. Starting with small pilot projects eases adaptation. We're excited to continue refining it for future innovation initiatives.



Workshop with Tech Managers from the Technology Transfer Office, using the tool for solutions developed at Javeriana University Cali.

PORT: AN EXPERIMENT IN ECOSYSTEM DRIVEN ENTREPRENEURSHIP EDUCATION



An Experiment in Ecosystem Driven Entrepreneurship Education.



Apurva Ganoo
Aalto University
apurva.ganoo@aalto.fi

I am a Lecturer in Entrepreneurship with my research and teaching both focusing on early-stage entrepreneurship and its connections to broader entrepreneurial ecosystems. In my teaching, I specialize in early-stage entrepreneurship, focusing on problem identification, user understanding, business models, and value propositions. I employ experiential, practice-based methods in teaching and have mentored numerous project teams.

THE CHALLENGE OR OPPORTUNITY

The demonstration will focus on sharing some insights on a pilot we conducted at Aalto University to promote entrepreneurship and support student-driven concepts beyond the ideation stage with the support of our ecosystem actors and partners.

THE PRACTICE IN A NUTSHELL

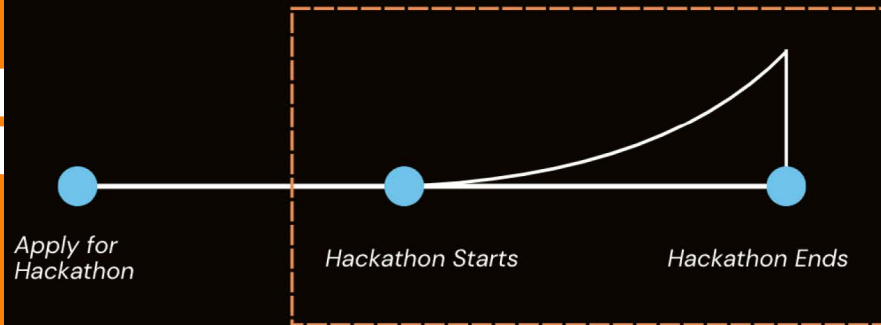
We experimented with a new type of a competition where the hackathon was only the beginning of the entrepreneurial journey for the students. In January 2025, we at Aalto University were invited to participate in two prestigious university startup competitions: Innova 2025, and Global Student Startup Competition (GSSC). To select our Aalto representatives, we needed to organize some kind of a competition to fairly select our winning teams (i.e., yet another hackathon). However, we set out to rethink how and what the hackathon process could look like – leading to the concept of PORT_ which we organized for the first time in March 2025. As a secondary goal, we also wanted to explore whether we could leverage the promise of this competition to encourage our more entrepreneurial students to actively develop their ideas and startups afterward. In this session, I aim to share the philosophy behind the concept, outline the key activities we undertook, and highlight some of the lessons we learned from this endeavor.

LESSONS LEARNED

Identify clearer, more prominent role for the various ecosystem actors as part of PORT_: like we could ask some of them to run a workshop, provide mentors, provide post-event support, or pitch training, etc. For the future, we will also keep the tracks separate from corporate/sponsorships, as this will allow us to ensure that the focus remains on entrepreneurship and student-driven ideas as opposed to corporate ones.

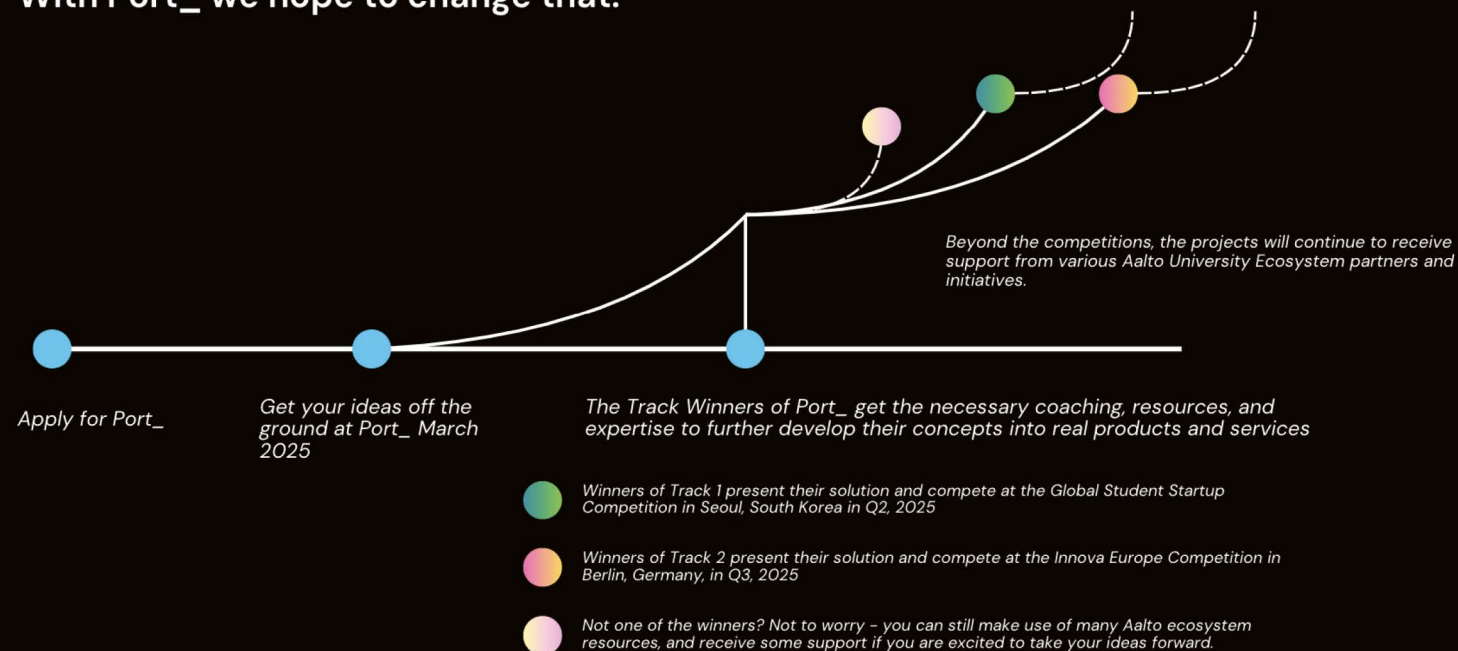
We can also start developing our own package/stack of sorts that is offered to all the teams that compete or win one of the tracks at PORT. Prototyping budget(s), X number of hours of mentoring with some mentors, or separate access/ability to participate in some incubator or accelerator programs.

A typical hackathon process looks something like this...



- A lot of great ideas, conversations and interactions get started
- But, typically, the end of the hackathon also unfortunately signals the end of these initiatives and concepts.
- **With Port_ we hope to change that.**

With Port_ we hope to change that.



MANCHESTER AT DAWN: USING FACEBOOK LIVESTREAMING TO CONNECT UNIVERSITIES AROUND THE WORLD



Magallanes World Study Tour:
livestreaming sustainable approaches to
design from Manchester to 7 international
universities.



Paul Bason
Manchester Metropolitan University
p.bason@mmu.ac.uk

Paul Bason has a background as a Producer and Creative Director leading international media production projects in the private sector and in the heritage institutions. He is now Reader in Digital and Creative Industries at Manchester School of Art (Manchester Metropolitan University).

THE CHALLENGE OR OPPORTUNITY

The Magallanes world study tour is an annual virtual event that brings together 7 universities from Asia, North America and Europe. This year the theme chosen was Discover Urban Nature: Step into a Sustainable Future and each university made a presentation to the others on this theme.

The presentation could not be prerecorded – something that brought technical challenges, but also an element of authenticity that helped to create a unique experience bringing together students from around the world.

THE PRACTICE IN A NUTSHELL

On a cold and misty November morning three colleagues gathered in a park at the centre of the Manchester Met campus, just as the sun was rising.

Using a mobile phone to stream video to Facebook Live, Head of International for the Faculty of Art and Design, Rachelle Viader Knowles gave an introduction to Manchester and the university. Following on from this, Paul Micklethwaite gave a 25 minute tour of the park and other areas of the public realm that had recently been redeveloped.

As the city and the park came to life, Paul was able to point-out design decisions that had been relating to layout, materials and maintenance. Paul had undertaken a lot of background research, talking to the designers and contractors of the scheme and therefore was able to talk about the design intentions and also comment on where they had and had not been successful.

There was a particular focus on how to accommodate the needs of non-human life into the scheme and some of the difficulties associated with this as animals and plants adapt to an urban environment.

In an unscripted moment, as Paul was moving from one end of the park to the other, we came across a local resident who had been feeding squirrels and birds in the park for several years. In an impromptu interview he was able to tell the audience about the families of animals, their habitat and the kind of food they need. This brought an additional dimension to the content, highlighting all the affordances of the live format.

To conclude the session, Paul and Rachelle answered questions from all the participating universities about the city of Manchester, about the university and its approach to sustainability. Students were keen to participate, and this enthusiasm underlined how students remained engaged for over an hour in an event that was novel and rewarding for everyone concerned.

LESSONS LEARNED

Although the presentation was not scripted in the usual sense, preparation and rehearsal were key to its success. The third member of the team (Paul Bason) acted as producer, thinking through some of the technical issues ahead of time and on the day monitoring the live stream and looking out for problems (and opportunities).

In conclusion this was a great example of making authentic international connections for students and promoting the university without the carbon costs associated with air travel.





Unboxed 2025 | Theme 3:

LEVERAGING TECHNOLOGY FOR IMPACT



BRAINROT, ANTI-NOSTALGIA, AND EXPERIMENTAL DECONSTRUCTION IN OUR HYPER-DIGITAL ERA



The method is variable and multihyphenate, but essentially involves using tools of cultural decay or stagnation against themselves as a vector for critique.



Tyler Thier
Pace University
tthier@pace.edu

Tyler Thier is the Honors Senior Thesis Advisor at Pace University, as well as an adjunct professor and freelance cultural critic. His criticism, pedagogy, and research are particularly concerned with divisive, poor-taste, exploitative, and otherwise controversial or dangerous multimedia.

THE CHALLENGE OR OPPORTUNITY

Engaging critically with digital creation tools like TikTok or social media phenomena like brainrot, which we often stigmatize as "populist" or "unacademic," can actually enhance our understanding of and contribute to the subverting of harms brought on by nostalgia, chronic online-ness, IP saturation, and other technocapitalist realities.

THE PRACTICE IN A NUTSHELL

The method involves three steps:

- 1) Choose type of IP or content that hasn't yet been tampered with or confronted, like an episode of The Simpsons, or some seemingly unironic content from a TikTok account, etc. View and discuss reactions as a group.
- 2) Engage with critical literature that tackles, analyzes or theorizes this kind of subject. A great example would be showing an episode of "Skibidi Toilet," to then read and discuss "Filtch-Feed Forward" by Jeff Nagy ([https://www. parapraxismagazine.com/ articles/filtch-feed-forward](https://www.parapraxismagazine.com/articles/filtch-feed-forward)).
- 3) Here's where the creative component sets in: find a "deconstruction," "subversion," or "experimentation" of the primary material, have the class consult it, and try to emulate its techniques in a project of their own. An example would be having them read parts of the satirical viral spec script "Marijuana Simpson" and then constructing something in that vein for a different IP of their choosing. Another example would be examining "cringe accounts" or "brainrot feeds" on Instagram or TikTok and having students experiment with this style of hyper-ironic editing in their own social media posts, of course, using existing intellectual property (IP) or content as the foundation for their creative critiques or subversions.

LESSONS LEARNED

Previous instances of applying this practice in the classroom have produced some great critical uses of multimedia, filmic techniques, writing compositions, and so on. It allows for technological innovation across genres, from digital media to short film to scriptwriting, etc. An overarching challenge, however, has been the idea of assessment of such work, something that I've been wrestling with since reading Browning et al.'s "Experimental Academic Writing" with its dialogue about generative grading and feedback on experimental work of this caliber: <https://files.eric.ed.gov/fulltext/ED416484.pdf>



Still from viral internet sensation 'Skibidi Toilet,' in which disembodied head with elongated neck pop ups from toilet bowl with eerie, exaggerated smile.

<https://files.eric.ed.gov/fulltext/ED416484.pdf>

<https://lareviewofbooks.org/article/david-lynchs-late-style/>

<https://vimeo.com/88077122>

<https://archive.org/details/233219778marijuanasimpson/>

AI-ENABLED DESIGN FICTION: STORY MODELS AND CRITICAL PROMPTING TO SUPPORT SCAFFOLDING AND AGENCY



Luca Iandoli
St. John's University
iandoli@stjohns.edu

Luca Iandoli is Dean of the Collins College of Professional studies at St. John's University. Proud Fulbrighter at the MIT Center for Collective Intelligence, his research focuses on collective intelligence, interaction design, and product aesthetics.



Jia Shen
Rider University

Jia Shen is a Full Professor of Information Systems and Director of the UX Lab in the Norm Brodsky College of Business at Rider University. Her research is at the intersections of experience design, cognition, digital innovation, and digital well-being



**Sustaining dialogical interaction with
gen-Ai through storytelling model
and a critical prompting workflow.**



THE CHALLENGE OR OPPORTUNITY

The use of Gen-AI in the classroom is subject to increased scrutiny. On the one hand, Gen-AI can support students' learning if implemented to support active engagement and integrated adequately with innovative assessment. On the other hand, it could foster opportunistic and unethical behavior, ultimately impoverishing learning by undermining a sense of agency, especially in creative tasks. We argue that the tradeoff between productivity and agency must be solved in favor of the latter. We hypothesize that one way to increase agency is to have students engage in sustained dialogical

interaction with a gen-AI bot guided by a storytelling model and a critical prompting workflow.

THE PRACTICE IN A NUTSHELL

We tested our method with students in an undergraduate course in business and a graduate course in communication across two different institutions. Students were given challenges about "The Future of... in 50 Years" and asked to speculate on how these domains will evolve, articulating their ideas in short stories during two different sessions using Gen-AI.

In the first study, we asked students to craft three short stories with Gen-AI help about "The Future of Books in 50 Years" using a narrative structure based on "(person) in (place) needs help doing (activity) because (motivation)." We instructed them to explore different aspects of future book interaction with a focus on unique technological or social implications.

In the second study, students were asked to create three short stories on "The Future of Food in 50 Years"—a topic selected for comparison while testing our critical prompts in addition to the story structure from study 1. We instructed students to pick their most compelling story and improve it using critical prompting based on four factors (Task, Format, Voice, and Context). For instance, using "Format," students could ask AI to package the story as a design brief, or using "Voice," they could request the style of a famous science fiction writer (Sterling, Asimov, etc.).

LESSONS LEARNED

The students appreciated that the structured prompting provided an initial structure and introduced concepts beyond their current knowledge supporting elaboration on ideas they couldn't fully develop independently.

Students expressed a trade-off between efficiency/productivity and sense of creative ownership and viewed AI more positively when it amplified their ideas rather than replacing their creative process. Students who maintained a sense of directing the AI (giving specific prompts, making selections) reported more positive experiences than those who felt the AI was leading. They were more engaged when AI produced unexpected ideas, suggesting that novelty enhanced perceived value.

THE IMPACT OF GAI TAILOR-MADE AGENTS ON CREATIVITY



Various cognitive styles /
thinking ways for GAI interface
to enhance users' creativity.



Assaf Krebs

Shenkar - Engineering. Design. Art.
assaf.krebs@shenkar.ac.il

Co-director Design Factory Shenkar; designer; researcher.



Yigal David

Shenkar - Engineering. Design. Art

Co-director Design Factory Shenkar; engineer; researcher.

THE CHALLENGE OR OPPORTUNITY

To change the way students use AI tools. We sought to change the Human-AI interaction mode from "deposit a question and deliver the AI's solution as is", to "collaborate with two personas who think differently and brainstorm together all the way to your solution." The strategic idea is to turn the LLM (Large Language Models) tools to collaborators / enablers rather than generators / providers.

THE PRACTICE IN A NUTSHELL

We conducted two different unrepeatable user experiments. All of them engaged students from design and engineering disciplines. In Experiment 1 (n=108), participants engaged in interactions with four distinct personas: Rational, Bounded Rational, Convergent, and Divergent, to solve similar problems but not identical. They were randomly distributed among the four personas (4 groups), and one additional group had the flexibility to switch personas during the session. Each group had two sessions: one by using regular ChatGPT and another one by using our tailor-made interface (in random order). Each persona was designed through prompt engineering to shape the mentioned behaviors.

Experiment 2 (n=81) was conducted during our four-day Jamweek hackathon, offering real-world environment during the ideation phase. Here we reduced our personas from four to two, focusing on Convergent thinking (Alex) and Divergent thinking (Taylor). Participants were randomly divided into standard ChatGPT and WeavyAI, as a control group, and into our Alex & Taylor dedicated interface.

In both experiments we collected data through quantitative questionnaires and qualitative observations. For data analysis, we used tools such as T-tests and ANOVA.

In Experiment 1 there were no significant results. In Experiment 2 which engaged users with different AI tools during our Jamweek hackathon, they were asked to rate how effectively the AI tool with which they worked assisted them in formulating creative solutions throughout the entire process on a scale of 1 to 5. Those who utilized only standard ChatGPT (and similar tools) reported an average rating of 3.55 (n=252), while participants who used WeavyAI (a specialized AI tool supporting the design process) rated their experience slightly lower at 3.49 (n=118). Notably, participants who engaged with our experimental Alex & Taylor AI tool reported significantly higher perceived creativity support, with an average rating of 4.09 (n=58).

LESSONS LEARNED

This research aims to pioneer the integration of cognitive style personas into LLM platforms to enable collaborative interaction with AI tools in creative higher education environments. Our primary objective was to investigate whether persona-driven AI can promote deeper engagement and more effective problem-solving outcomes than generic AI systems, thereby making significant contributions to the fields of human-computer interaction (HCI), educational technology, and design thinking practitioner pedagogy. It seems that there is an answer for that, however, it is an ongoing study, and its roadmap includes prompt engineering refining to strengthen Alex & Taylor personas, and more experiments to solid our statistical pillars for greater reliability.



BOOSTING CRITICAL DESIGN AND FUTURES THINKING THROUGH INTELLECTUAL SPARRING WITH AI BOTS



Nadya Shaznay Patel
Singapore Institute of Technology

Assistant Professor in the Business, Communication and Design cluster at the Singapore Institute of Technology, with a passion for critical design futures thinking, I co-develop design innovation and multimedia design modules to develop learners' critical competence, design dexterity and futures flexibility for innovation.



Luca Landoli
St. John's University
ilandoli@stjohns.edu

Dean and a professor in the Department of Computer Science at St. John's University, Fulbright Visiting Scholar at the MIT Center for Collective Intelligence, research collective intelligence, loves and researches in interaction design, product aesthetics, and design-driven education.



Live demo to show how individual and team AI sparring partners stretch students' creative reasoning, capture conversational analytics, and scaffold project-based learning.



THE CHALLENGE OR OPPORTUNITY

Generative-AI chatbots promise productivity but often encourage passive answer-seeking. Our classrooms needed technology that provokes, not placates, student thinking. We tackle this by deploying Cogito, a one-to-one Critical Design Futures sparring bot, and Cogitamus, its collective counterpart that interrogates whole teams. Both bots flip the ask-an-AI script: they question students, surface assumptions, and score argumentative depth in real time. The demonstration addresses the challenge of cultivating creative confidence and rigorous reasoning when class sizes, time zones, and staff bandwidth limit human coaching. The bots' analytics further create an evidence trail for instructors to target feedback precisely.

THE PRACTICE IN A NUTSHELL

How do individual- and team-based AI sparring bots influence students' metacognitive behavior, creative output, and Design & Futures Thinking mindset over a design-studio cycle? Teaching practice orchestrates parallel pilots in two courses at St John's University, New York. One use case integrates Cogito during individual concept-generation sprints. Students log into the web app, choose a Critical Design Futures thinking lens, and engage in five-minute voice or text sparring rounds. Cogito counters each claim with Socratic prompts based on question starters underpinned by the CDF thinking framework, timestamps metacognitive moves, and delivers an 'Intellectual Sparring Index' after each session. These analytics feed weekly reflection journals graded for depth rather than correctness.

In another use case, Cogitamus enables a collaborative workspace where project teams invite the bot as an equal 'member.' During studio critiques, the bot interjects clarifying questions gleaned from prior posts, highlights sentiment shifts, and posts end-of-day summaries listing unsettled assumptions and divergent ideas. A dashboard visualizes collective argumentation density, prompting teams to bolster thin areas before the next milestone. Both pilots run for a few weeks and share a common research protocol: pre/post Design & Futures Thinking Mindset survey; logging of all human-AI turns; instructor rubrics for project creativity and rigour; and semi-structured interviews with students.

Technology deployment is intentionally lightweight: both bots run on the same LLM backend with custom prompt taxonomies. Familiarization training for instructors is in the form of a one-hour online session. The UnBoxed demonstration will recreate a live round of individual and team sparring, followed by real-time dashboard walkthrough, inviting attendees to try both agents on their challenges.

LESSONS LEARNED

Cogito sessions boost metacognitive depth. Reflections show more clarifications and counter-argument logs than pre-pilot samples. Teams using Cogitamus report increased collective intelligence, crediting the bot's neutral questions for unpacking assumptions and surfacing varied frames of reference. Students appreciate real-time analytics, yet caution that scores can become goalposts rather than guides. Instructors appreciate the granular transcript search, which halves feedback preparation time. Challenges include onboarding skeptical students and balancing bot interjections with studio flow.

<https://pagasalabs.com/cogito>

PROMPT, PROTOTYPE, REPEAT: AN EXPERIMENT ON TEACHING IN THE AGE OF GENERATIVE EVERYTHING



Exploring how AI - generative (ChatGPT) and predictive (Graph Neural Networks) - can empower interdisciplinary student teams in experiential learning courses to think critically and create meaningfully.



Mireia Sierra Andrés

Fusion Point, Esade Business School
mireia.sierra@esade.edu

Fusion Point Academic Manager and researcher with more than 3 years experience supporting students through experiential learning adventures on leveraging science and technology for social impact innovation. Sociologist, pathologically curious and life enthusiast!



Laura Bellorini

Fusion Point, Esade Business School

Laura has over 15 years of experience managing international projects and teams. Since 2018, she has been the Manager of Esade Fusion Point, where she leads the development of educational innovation initiatives to foster creativity, innovation, and entrepreneurship in academia. Laura is dedicated to building collaborative ecosystems that connect students, researchers, and organizations to drive positive social impact through innovation in higher education. She holds a degree in International Political Science, a Master's in Marketing, has completed training in Design Thinking and Co-Creation at IED Barcelona, and earned a Diploma in Social Innovation from the UN-mandated University for Peace. Multilingual (Italian, English, Spanish, French, German and Catalan), Laura has previously worked at prestigious institutions such as the European Parliament and the European Commission, leading EU projects in the fields of research and education.



Ole Werner

CERN IdeaSquare

Ole obtained his M.Sc. in Behavioral Change at Radboud University Nijmegen, the Netherlands in 2022. Next to his master's thesis at the ARENA2036 in Germany, he started working at Design Factory Stuttgart. There, he encountered the Design Factory Global Network (DFGN) and the opportunity to apply his knowledge of behavioral psychology in innovation sciences. Via the DFGN, Ole got in touch with CERN IdeaSquare, and is now putting his knowledge and thoughts to work for the innovation space since November 2022. Next to his work, Ole enjoys improv acting, doing sports and photography. And Cosmic Firefighter!



Catarina Batista

CERN IdeaSquare

Catarina is a passion-driven innovator and researcher with a strong interest in futures thinking, psychology and societal challenges. After spending the last 4,5 years working as a designer and innovation coach within multidisciplinary teams, Catarina sees herself as a facilitator and connector. Bridging people with intercultural backgrounds, she is able to continuously adapt and cooperate in diverse teams, appreciating and embracing everyone's uniqueness and contributions. With vast life experience in multiple European countries, she is now based at CERN Ideasquare while juggling her MSc Psychology studies at Northumbria University and volunteering work in humanitarian organizations. Catarina is especially intrigued about the intersection between behavior science, design innovation and humanitarian challenges. And Mindset Accelerator!



Josep Lluís Berral

Fusion Point UPC Faculty

Researcher, specialist in applied machine learning and data mining, focusing on autonomic data-center management systems.



Manuela Procopio
Fusion Point IED

Manuela is a designer, researcher, and mentor. She has co-founded multiple design initiatives focused on future thinking and service design, leading UX projects that challenge conventional approaches to digital experiences. Her current focus is on sustainable design practices, low-impact digital design, inclusive research methods, and the evolving role of AI in design. As Academic Manager at IED (Istituto Europeo di Design), she teaches Interaction and Sustainable Design courses. Manuela actively mentors design teams while pioneering new frontiers in applied design through her academic work and strategic consulting. Her approach combines critical thinking with hands-on experimentation to explore how design can create positive impact.



Eduard Alarcon
Fusion Point UPC Faculty

Eduard is a full professor at the Telecom School, UPC BarcelonaTech, former invited professor at CU Boulder and KTH, and ICREA Academia Award. Activities related to innovation in higher education include General co-chair of the 2014 CDIO Barcelona International Conference and organizing committee of the 2013 CDIO International conference hosted at MIT and Harvard.

THE CHALLENGE OR OPPORTUNITY

We will dive into how AI is being used as both a design tool and a learning challenge in the interdisciplinary CBI4AI course at Fusion Point (Esade, UPC, IED). Students apply generative and predictive AI in sustainability-focused challenges, framed through sessions on AI ethics and transparency. A key feature is the i2Planet sprint, where students collaboratively build a hypothetical society on an exoplanet, applying systems thinking and AI in a speculative, future-focused setting. We will share survey and interview insights on the opportunities and tensions of using AI in interdisciplinary, challenge-based learning.

THE PRACTICE IN A NUTSHELL

This session explores how AI is integrated into interdisciplinary, challenge-based experiential learning at Fusion Point—a collaboration between UPC (engineering), IED (design), and Esade (business). In the CBI4AI course, co-designed with IdeaSquare at CERN, students tackle a real-world challenge: How might we optimize urban infrastructure for equitable access to water, food, and health (SDGs 2, 3, 6 & 12) using Graph Neural Networks (GNNs)? Students receive foundational input on AI ethics, bias, and technical use of generative and predictive AI, including GNNs. They document their use of AI tools throughout the design process and explain how they are integrated

into the final solution. A key feature is the i2Planet sprint, where interdisciplinary teams design societal systems on an imagined exoplanet, applying systems thinking to balance scarce resources, social complexity, and sustainability. This futuristic sandbox pushes students to test AI tools beyond Earth-bound constraints creatively. Workshops, prototyping, and iterative feedback link speculative ideation to real-world technical challenges, helping students navigate both the creative and ethical dimensions of advanced AI.

We will present early insights from surveys and interviews with students and faculty, highlighting how participants experience AI as a tool for creativity, collaboration, and complexity—but also as a trigger for uncertainty, ethical reflection, and interdisciplinary negotiation. This fishbowl invites participants to exchange lessons, strategies, and practices for teaching with and about AI in experiential, interdisciplinary learning contexts.

LESSONS LEARNED

Student feedback reflected strong enthusiasm for hands-on AI exploration, especially around GNNs, paired with a desire for deeper understanding and earlier scaffolding. Students connected AI tools meaningfully to real-world challenges and appreciated the integration of ethics through archetype exercises. Teachers found value in prompting early reflection—not just on what AI can do, but how and why it's used. Moving forward, we will also analyze the impact of the i2Planet sprint on team learning and innovation outcomes, as well as the depth and quality of GNN usage. Next steps involve refining tools, improving facilitation, and enhancing assessment frameworks.



Students explaining the GNN of their project during i2Planet sprint at IdeaSquare, CERN



ART MAKING AND VIEWING AS DESIGN THINKING: FLOOD (IN)TOLERANT ECOLOGIES



We will explore how artists and gallery educators raise awareness of climate change and engage audiences in creating sustainable solutions via artwork created with both new and ancient technologies.



Sarah Cunningham
Pace University Art Gallery
scunningham@pace.edu

Pace University Art Gallery Director Sarah Cunningham views academic galleries—the spaces themselves, the art on view, and their educational public programs—as catalysts for interdisciplinary research, critical reflection, and civic engagement. As an academic gallery director working across from New York City Hall, she sees the gallery as a hands-on learning laboratory where artists, faculty, students, neighbors, tourists, and municipal workers can collaboratively examine issues impacting our communities.



Mary Mattingly
Artist

Mary Mattingly, who is exhibiting at Pace University Art Gallery during the Unboxed 2025 Conference, is an interdisciplinary artist whose work explores ecological relationships through sculptural ecosystems, performative installations, and research-based collaborations. Rooted in a deep inquiry into urban ecology and interdependence, her work addresses urgent issues around water, food systems, and climate adaptation.



Will Pappenheimer
Pace University Art Department (retired)

New media artist Will Pappenheimer is currently working on a post-photographic image series generated from AI text prompts that merges a remodeled art historical practice of reinterpreting iconic artists' works with domestic sites affected by catastrophic water damage. The absence of human presence raises the question of whether there would be anyone left to record these ruins—the artworks have degraded, and the artists have disappeared with only traces are left behind.

THE CHALLENGE OR OPPORTUNITY

By drawing parallels to design thinking, this fishbowl will invite conversation about how artists and gallery educators foster creative inquiry, technological experimentation, and community connection to address the climate crisis.

THE PRACTICE IN A NUTSHELL

The work of both Mary Mattingly and Will Pappenheimer echoes Tim Brown's model of design thinking – inspiration, ideation, and implementation – and embodies its key qualities—empathy, integrative thinking, optimism, experimentalism, and collaboration—in response to climate change and environmental vulnerability.

Mattingly begins with close observation of ecological shifts in New York City's environment, imagining plant ecologies that might adapt to future conditions. Her ideation involves low-light gardening, hydroponic regrowth, and the reuse of materials in small urban spaces. The resulting interactive ecosystem, paired with a foraging map, invites public engagement via co-learning and transforms the gallery into a living lab.

Pappenheimer's AI-generated image series takes a more speculative approach. Inspired by catastrophic flooding and art historical reference, his work imagines post-human scenes of destroyed artists' studios. Ideation emerges through text-to-image processes that blur authorship, while the final images raise ethical questions about representation – particularly when AI inherently pulls from real images of trauma and loss.

Sarah Cunningham, as a gallery educator, deepens this process by guiding audiences through open-ended questions that encourage personal reflection and dialogue. Rather than offering fixed interpretations, she enables viewers to move through their own versions of inspiration, ideation, and implementation. This fosters the core design thinking traits and positions art as a tool for building thoughtful, responsive communities.

LESSONS LEARNED

Art making and gallery education can foster deep, participatory engagement with pressing issues like climate change, providing a space for reflection, experimentation, and dialogue. Artists model design thinking methods – empathy, integrative thinking, optimism, experimentalism, and collaboration – through their creative practice. Audiences, too, can move through these stages when invited to connect personally with the artwork. Ultimately, creative, interdisciplinary, open-ended approaches foster not just understanding, but action toward more sustainable and just futures.

Sarah Cunningham: <https://www.saltmound.net>

Mary Mattingly: <https://marymattingly.com>

Will Pappenheimer: <http://www.willpap-projects.com>



Mary Mattingly, Rooted, living sculpture, 2024-2025

SYSTEMATICALLY INCORPORATING EQUITY INTO DESIGN THINKING FOR AI EDUCATION



Equity-Aware Design Thinking for AI (EquiThink4AI) is a dual-component framework that embeds equity principles into AI education to proactively address bias in the design and development of AI systems.



Andreea Cotoranu
Pace University
acotoranu@pace.edu

Andreea Cotoranu is a Clinical Professor and Director of the NYC Design Factory at Pace University, where she teaches project-based courses focused on helping students design and apply technology solutions to real-world problems. Her work combines human-computer interaction, computing education, and interdisciplinary collaboration to create hands-on learning experiences that build student engagement, creativity, and innovation.



Christelle Scharff
Pace University

Christelle Scharff is a Professor of Computer Science and Co-Director of the AI Lab at Pace University, with a PhD in Symbolic AI from the University of Nancy and INRIA in France. Her research spans global software engineering, mobile computing, and AI for social impact, and she has taught internationally, including as a two-time Fulbright Scholar in Senegal.



Yves Wautelet
KU Leuven

Yves Wautelet is a Professor of Information Systems at KU Leuven and an invited professor at UCLouvain and UNamur, with a PhD from UCLouvain focused on project and risk management in large-scale enterprise software development. His research covers software engineering, IT governance, and sustainability, and he applies his expertise beyond academia as an administrator of Fanyatu NPO, supporting reforestation and circular economy initiatives in the Congo Basin.



James Brusseau
Pace University

James Brusseau holds a PhD in Philosophy and has authored books, articles, and media in the history of philosophy and ethics. He teaches in Europe, Mexico, and at Pace University, and is currently a visiting professor at the University of Trento. His academic research explores the human experience of artificial intelligence in personal identity, authenticity, and freedom.

THE CHALLENGE OR OPPORTUNITY

AI-powered systems increasingly influence critical aspects of daily life, yet these systems often embed and reinforce biases, disproportionately disadvantaging marginalized communities. Addressing these challenges requires a fundamental shift in how we teach the development of these systems, ensuring that future professionals develop not only technical expertise but also are equipped with the skills needed for ethical AI design.

THE PRACTICE IN A NUTSHELL

We developed the Equity-Aware Design Thinking for AI (EquiThink4AI) framework, a dual-component model that systematically embeds equity principles into AI education. The first component extends Design Thinking by incorporating principles from EquityXDesign and Liberatory Design, ensuring that equity concerns are proactively addressed throughout the development of AI systems. The second component enhances the framework with pedagogical strategies, including Problem-Based Learning (PBL), experiential learning, and interdisciplinary collaboration, fostering student engagement, real-world problem-solving, and ethical reasoning. EquiThink4AI provides educators and students with a structured methodology for teaching and applying equity-centered AI development.

EquiThink4AI Classroom Exercise: Identifying and Mitigating Bias in AI Image Generation

The following is an example of a hands-on classroom exercise developed for the EquiThink4AI framework. This exercise builds on students' prior introduction to key concepts in AI, types of bias in AI systems (using the NIST bias categories: systemic, statistical & computational, or human), and the core beliefs and design principles of EquityXDesign. It is designed to make visible the various ways bias can be encoded in AI systems, specifically in generative AI for image creation, and to foster practical application of equity-focused design principles. By engaging directly with generative AI tools, students gain hands-on experience in identifying, classifying, and reflecting on real-world examples of bias, while considering strategies for more equitable technology design.

Instructions

In this exercise, you will interact with AI software for image generation to observe and reveal different types of biases. You will categorize the observed biases with respect to the NIST bias categories and reflect on your findings using the discussion questions below. We will use the free version of <https://poe.com>. Start by creating an account, then select StableDiffusionXL as the bot. Users have 3000 points and each prompt is worth 120 points. StableDiffusionXL is a high-quality image generation model tailored toward more photorealistic outputs.

Task

Test out the following prompts to generate images. Select 3–4 prompts from the following list: toys in Iraq, an African man and his fancy house, a doctor, a portrait of a productive person, attractive people, or a Black African doctor helping poor and sick white children. Generate several images for each selected prompt. Document your work by providing the generated images that reveal biases. Then, classify each bias using the NIST bias categories.

Discussion Questions

- What common themes did you notice in the biases present in the images generated by the AI tool?
- Were there any unexpected biases that emerged in the images?
If so, what were they?
- Were there any images where it was challenging to classify the bias?
- Why was it challenging?
- How might these biases affect the perception of the subjects in the images (e.g., people, places, professions) in real-world contexts?
- Can you think of real-life scenarios where such biased representations could have serious implications?
- Who should be responsible for addressing and mitigating these biases in AI-generated images—developers, users, or regulators? Why?
- What ethical guidelines should be considered when developing or using AI tools that generate visual content?
- What steps could be taken to reduce the biases identified in this exercise in future AI developments?
- How can AI developers incorporate fairness and inclusivity into their models?

LESSONS LEARNED

We implemented the EquiThink4AI framework in AI Ethics and Global Innovation Practice courses, fostering students' awareness of equity issues in AI through hands-on activities such as bias audits and case studies. Students explored algorithmic fairness, particularly in image generation and automated speech recognition exercises, which revealed real-world examples of bias and encouraged critical reflection. Our results highlight the value of a structured, design-based approach for embedding equity into AI education. Thus far, only the Empathize, Define, and Test phases have been covered in these courses. Moving forward, we plan to expand the framework to include the Ideate and Prototype phases, enhance educator support, and adapt activities for interdisciplinary and larger classroom settings.



FROM PIXELS TO PATTERNS: AI IMPACT ON (AFRICAN) FASHION



We explore how generative AI can transform (African) fashion by enabling designers, artisans, and technologists to co-create print patterns for the runway and beyond.



Christelle Scharff
Pace University
cscharff@pace.edu

Christelle Scharff is a Professor of Computer Science and Co-Director of the AI Lab at Pace University, with a PhD in Symbolic AI from the University of Nancy and INRIA in France. Her research spans global software engineering, mobile computing, and AI for social impact, and she has taught internationally, including as a two-time Fulbright Scholar in Senegal.



Krishna Mohan Bathula
Pace University

Dr. Krishna Mohan Bathula is a Clinical Assistant Professor of Computer Science at the Seidenberg School of Computer Science and Information Systems at Pace University in New York. He has a Ph.D. in Computer Science (Machine Learning and Generative AI) from Pace University and an International MBA (Entrepreneurship) from EAE Business School, Spain.



FNU Kaleemunnisa
Pace University

Dr. Kaleemunnisa is an Applied Data Scientist with expertise in NaturalLanguage Processing (NLP), Machine Learning, and Deep Learning. She has a PhD in Computer Science from Pace University and MBA from EAE Business School in Spain. She is an Adjunct Assistant Professor at Pace University.



Stephanie Sicilian
Pace University

Stephanie Sicilian is a graduate student in Information Systems at Pace University's Seidenberg School. She is a Graduate Research Assistant in the AI Lab, where she works on generative and classification models and supports the AI programs. Stephanie also serves as Communications Lead for the campus Google Developer Group (GDG) on campus, helping organize events focused on AI and emerging technologies.



Kseniya Liavitskaya
Pace University

Kseniya Liavitskaya is a Computer Science undergraduate student at the Seidenberg School, Pace University, NYC. She is an undergraduate researcher focusing on the use of AI in fashion and cybersecurity.



Rohan Niranjana Kalpavruksha
Pace University

Rohan Niranjana Kalpavruksha graduated from Pace University with a MS in Data Science from Pace University. He has expertise in data science, machine learning, and LLMs. He worked on AI research and model deployment projects in the AI Lab at Pace University. He previously was an iOS developer at Mercedes-Benz Research and Development where he contributed to building scalable user-centric applications.



Riya Golani
Pace University

Riya Golani earned her M.S. in Computer Science from Pace University, where she specialized in developing frontend interfaces for interacting with AI models. Her technical expertise includes extensive work with Python, Hugging Face, and the MERN stack. She currently works as a Software Development Engineer at Amazon.



Gisele Faye
ESMT

Gisèle Faye is a telecommunications engineer and graduate of ESMT Dakar (École Supérieure Multinationale des Télécommunications). She currently works as an Associate Atlassian Consultant at Valiantys. For her master's thesis, Gisèle is investigating how AI can drive innovation and transformation in African fashion.

THE CHALLENGE OR OPPORTUNITY

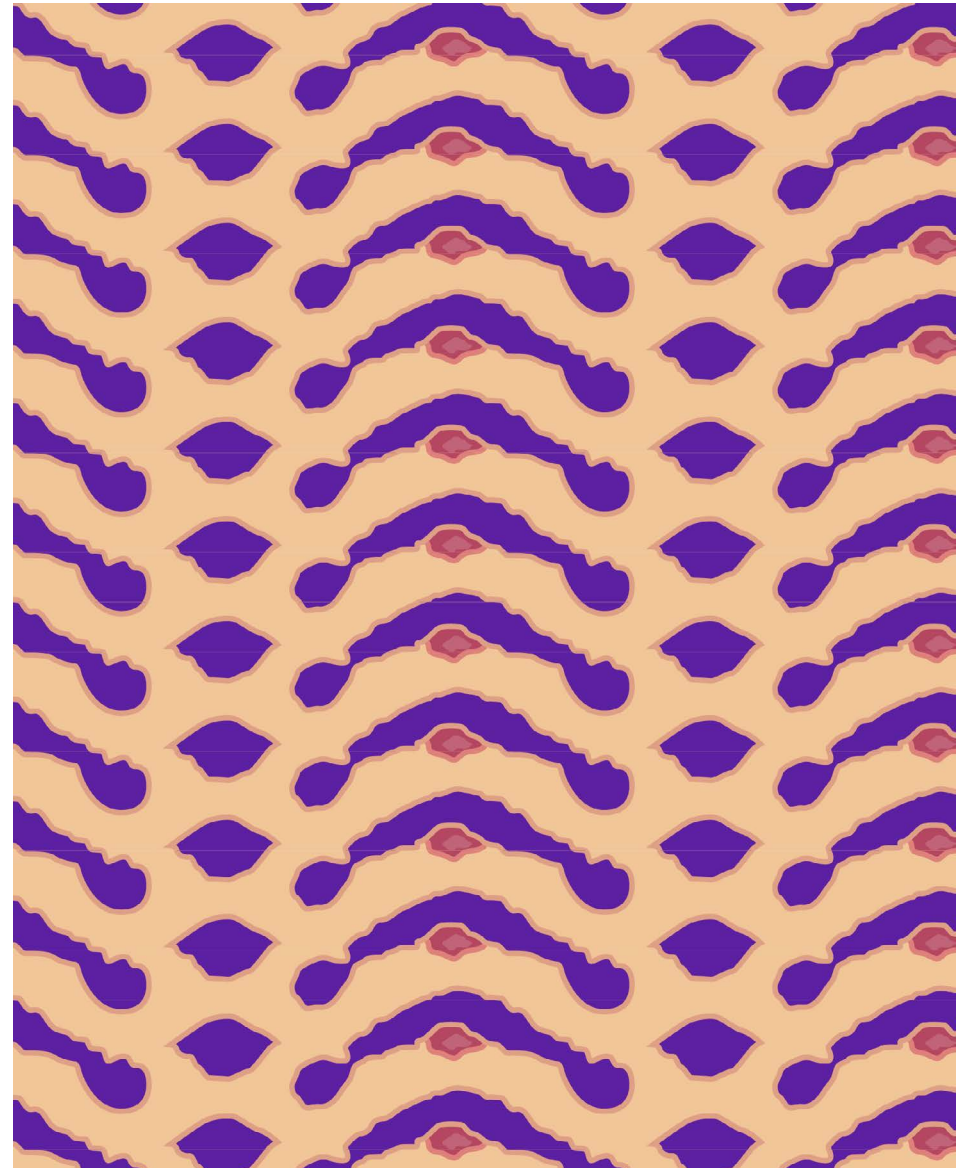
Our work explores the potential to harness generative AI as a tool for creative empowerment in fashion, facilitating new forms of collaboration among technologists, designers, and artisans. By integrating cutting-edge machine learning models into the design process, we explore how technology can expand creative possibilities, preserve and reinterpret cultural aesthetics, and bring innovation to fashion education and production.

THE PRACTICE IN A NUTSHELL

The AfricanWaxFashion project explores how generative AI can be used as a tool for creative collaboration in fashion design, bringing together technologists, designers, and artisans. We investigated the application of generative AI to create textile patterns inspired by African wax prints, textiles known for their geometric repetition, symmetry, and, at times, symbolic meaning. Our approach involved the use of StyleGAN2-ADA and Stable Diffusion to generate new pattern designs, starting with a curated dataset of 2,000 high-resolution (1024×1024) synthetic images produced using DALL•E 2. The models were trained and assessed through a combination of quantitative measures, including Fréchet Inception Distance (FID), and qualitative evaluations by textile design experts. Selected outputs were further developed in collaboration with African fashion designers, tailors, and artisans, who adapted the AI-generated patterns into physical garments and accessories.

LESSONS LEARNED

The combination of quantitative metrics and qualitative expert feedback has proven effective for evaluating AI-generated outputs, highlighting the importance of integrating technical evaluation with human judgment in creative fields.



Sample of generated print pattern



TECH2X FROM DEEP-TECH TO SPIN-OFF: CO-DESIGNING AN ENTREPRENEURIAL TRAINING PATHWAY



A program guiding research based deep-tech: from TRL 3/4 to spin-off creation. Integrating diverse stakeholders and methodologies for impactful innovation.



Clio Dosi

University of Bologna, OperSpace design factory
clio.dosi@unibo.it

Assistant Professor at the University of Bologna - Department of Management, Management Engineering. She is part of Oper.space, the Innovation Factory of the University of Bologna, where she coordinates Oper.lab (Open Innovation Observatory).



Arzu Gönenç Sorguç

Middle East Technical University

Arzu holds a Ph.D. in Mechanical Engineering from METU, with research experience at TU Delft (acoustics and noise control) and postdoctoral work at Tokyo Institute of Technology, where she continues to collaborate. She is currently a faculty member in the Department of Architecture at METU and serves as the Director of METU Design Factory.



Catarina Batista

CERN IdeaSquare

Educational Programs Co-coordinator at CERN IdeaSquare. With over 7+ years of experience, most of Catarina's career has been dedicated to fostering impactful and transformative innovation learning experiences.



Clara Drees

Technical University of Applied Sciences / inno.space Design Factory Mannheim

With a Master's degree in Medical Engineering, I work as a lecturer and research assistant at inno.space – Design Factory Mannheim. I'm dedicated to innovation that respects planetary boundaries and drives meaningful change.



Ettore Gorni

OperSpace, University of Bologna, Dep. of Management

Ettore is a Ph.D student in General Management, MSc in Management Engineering from the University of Bologna, his pre-program research explored the relationship between Psychological Flexibility and Open Innovation behaviors in Science. Ettore has worked for European projects in the field of youth.



Kirstin Kohler

Technische Hochschule Mannheim

Kirstin is Professor for User Experience Design and Design Innovation at the Technische Hochschule Mannheim. She is the coordinator of inno.space - Design Factory Mannheim and as such passionate about creating a learning environment that prepares her students for the complex and unforeseeable challenges of their future.



Laura Bellorini
Esade Business & Law School – Ramon Llull University

Laura is the Manager of Fusion Point, where since 2018 she has led educational innovation initiatives, with collaboration between academia and organizations for social impact. With over 15 years of experience managing international teams in EU-funded projects, she has worked at institutions including the European Parliament and European Commission.



Laura Wirtavuori
CERN IdeaSquare

Educational Programs Co-coordinator at CERN IdeaSquare. Passionate about shaping a better future for people and the planet.



Matteo Vignoli
OperSpace, University of Bologna, Dep. of Management

Associate professor, Matteo received his Ph.D. from the University of Padua and was a Visiting Scholar at Stanford University and Ryerson University. Member of the University of Bologna Open Innovation board and spokesperson of OPER.space, his research focuses on Design Thinking, Open Innovation, New Product Development and Impact.



Mireia Sierra Andrés
Fusion Point Esade

Background in sociology, Mireia is a passionate educator, researcher, and eternal learner who designs interdisciplinary innovation experiences at Fusion Point (Esade, UPC, IED). She loves exploring how technology and science can be used to spark creativity and social impact.



Nicole Monti
Almacube, UniBo incubator

Nicole holds a double degree in Business Administration and Innovation Management from the University of Bologna (Italy) and ICN Business School (Nancy, France). After four years in Luxembourg at Technoport Incubator, she has been leading the Startup & Spinoff Unit at Almacube.



Ole Werner
CERN IdeaSquare

Ole Werner holds a M.Sc. in Behavioral Change at Radboud Universiteit Nijmegen and is now co-coordinating Educational Programs at IdeaSquare



Victoria Cochane
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.

THE CHALLENGE OR OPPORTUNITY

This project aims to boost universities' capacity for deep-tech innovation and entrepreneurship by creating a structured, scalable, and transferable venture-building training program. It addresses the gap between scientific research and venture creation by integrating students, researchers, faculty, alumni and professionals in a journey from an initial selected technology without a clear market identified (TRL 3/4) to proof of concept (considering technology and market readiness level) and support start-up or spin-off creation.

The pathway, guided by DFs, tackles knowledge and organizational silos often found in academia, promoting a collaborative, systems-thinking approach for 4th generation universities.

THE PRACTICE IN A NUTSHELL

The teaching practice is a structured, multi-phase training program designed to transition deep-tech projects from research into viable ventures. It consists of three main phases:

1. From Lab to Proof of Concept (POC)

The University KTO / Teaching team selects the most appropriate technologies to start the process from the portfolio of technologies of the University/Research Institution. The methodology provides guidelines that maximise the fit between technology and process. Starting with a technology at TRL 3/4, multidisciplinary student teams are trained in methodologies like Design/Systems Thinking, Challenge-based Innovation, and CERN's I2Planet for tech-driven innovation. They identify potential application, viable market opportunities and validate a proof of concept with real users. Researchers (technology owners) receive training to improve collaboration and overcome silos. Hot topics: how to select the proper tech? How to prioritize business opportunities? How to evolve the concept responding to real insights?



2. From POC to MVP

Promising POC are supported through tailored mentoring, coaching, and deep-tech specific training. This includes actions to identify and support potential entrepreneurs and maintain researcher engagement. The aim is to define clear entrepreneurial directions and build fitting teams. Hot topics: how to identify the best team members? How to incorporate relevant stakeholders? How to involve potential customers?

3. From MVP to Company Creation

Mature initiatives receive intensive training to increase TRL and market readiness, preparing for spin-off creation. Connections to alumni networks and support for seeking capital are provided. Hot topics: How to prototype a tech driven Business Model? How to finalize the founding team? How to launch the company and attract investments?

The pathway is implemented by the TECH2X consortium partners: Esade, UNIBO, METU, HSMA, CERN, and Almacube. It draws on existing expertise and tested methodologies from the partners developed under the ATTRACT consortium.

LESSONS LEARNED

Integrating ATTRACT prior experiences into sustainable and appealing projects in Universities and Research Institutions.

Involvement of the whole University structure (KTOs, students, researchers..) in the valorisation of technology.

Setting expectations to onboard researchers and how to train them to engage with students evaluating business opportunities that might also be cognitively distant.

The importance of co-designing the program based on contingent factors to each Design Factory. This process will be tested during the demonstration of TECH2X.

FROM INSIGHTS TO ACTION

UnBoxed is about unboxing insights from across the world on how to collaborate effectively in higher education, organize design- and project-based learning for innovation, and leverage technology for greater impact. But sharing in itself is never the ultimate goal of the Design Factory Global Network, rather our aim is to inspire and support meaningful action. As you've browsed through the different contributions, **what do you want to add to your box of practices and insights?**



HUNGRY FOR MORE?

The Design Factory Global Network is all about sharing the passion for doing. Reach out to the contributors to learn more about their practices and get involved with the network – check out the Design Factory Global Network website at dfgn.org or get in touch with us at dfgn@aalto.fi

My UnBoxed Action Point:

