

## 3E CONFERENCE PROCEEDINGS

### Book of Abstracts

**3E Conference – ECSB Entrepreneurship Education Conference**

**2026**



3E CONFERENCE – ECSB Entrepreneurship Education Conference

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ECSB European Council for Small Business and Entrepreneurship

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# Preface

Dear colleague,

It is with great pleasure we welcome you to the 3E Conference - ECSB Entrepreneurship Education Conference 2026. This book presents the abstracts of the 3E Conference held on 20–22 May 2026 in Bodø, Norway. The Conference is organised by Nord University Business School & Engage SFU – Centre for Engaged Education through Entrepreneurship and the European Council for Small Business and Entrepreneurship (ECSB).

Through an innovative and unconventional format, the 3E Conference has established a new approach for entrepreneurship conferences. Unlike many conventional academic events, the Conference focuses on problems and questions rather than on ready-made solutions and presentations of research findings. It offers an exclusive and engaging opportunity for educators, researchers, practitioners and policy makers to debate and exchange experiences of the major challenges and advances in enterprise education.

The theme of 3E 2026 is “Developing Change Agents through Entrepreneurship Education”. There is an urgent need to empower individuals with the skills and mindset to drive positive change for a better future. This makes entrepreneurship education more relevant than ever. Now is the time to advance the research within this field and delve deeper into its transformative potential. By exploring entrepreneurship education across levels, disciplines, industries, and contexts, we can deepen our understanding of how entrepreneurship education can develop change agents who drive positive social, economic, and environmental transformation. This year’s 3E Conference, set against the Arctic landscape of Bodø, highlights the importance of these questions in regions facing depopulation and environmental change – where entrepreneurship education can play a crucial role in building resilient communities and enabling students to shape their own futures.

The 13<sup>th</sup> edition of the conference features 30 practitioner development workshops and 72 research papers. We wish to thank the authors and reviewers for their persistent efforts to improve entrepreneurship education as well as the conference content.

On behalf of the organisers, we thank all the presenters, discussants and session chairs for their important contribution and wish you an inspiring, exciting and stimulating 3E Conference.

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# **PRACTITIONER DEVELOPMENT WORKSHOPS (PDWs)**

## **BUILDING SDG-DRIVEN STUDENT SPINOUTS: A LEGO® SERIOUS PLAY® WORKSHOP FOR TRANSFORMATIVE ENTREPRENEURSHIP EDUCATION**

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### **Questions We Care About – Aim and Summary**

Entrepreneurship educators increasingly aspire to cultivate change agents capable of driving positive social, economic and environmental transformation. Yet many educators struggle to help students move from interest in global challenges toward the creation of viable, sustainable student spinouts. This workshop focuses on the practical challenge of designing learning experiences that activate students' pro-social values, deepen their engagement with the UN Sustainable Development Goals (SDGs), and stimulate early-stage venture development.

The session addresses three key questions:

1. How can educators translate SDG awareness into opportunities for entrepreneurial development?
2. What pedagogical practices help students imagine new venture pathways grounded in sustainability, justice, and impact?
3. How can LEGO® Serious Play® (LSP) be used effectively in entrepreneurship classrooms to support creative ideation, identity work, and the formation of mission-driven student spinouts?

The aim is to share and co-develop practice-based methods that support learners in moving from abstract concern for global issues to concrete entrepreneurial action. The session invites participants to experience LSP activities first-hand and adapt them to their own institutional and teaching contexts.

### **Workshop Approach**

This PDW is designed as a highly interactive, hands-on session that allows participants to experience, rather than only discuss, the pedagogical value of structured play for sustainable entrepreneurship. The workshop draws on three elements:

#### **1. Experiencing LEGO® Serious Play® as learners**

Participants will engage in short LSP exercises, including:

- Values in Brick Form: exploring personal motivations and alignment with SDGs through model-building;
- Challenge Mapping: constructing representations of global problems and identifying opportunity spaces;
- Future Spinout Prototyping: rapid construction and storytelling around potential student ventures addressing SDG-related needs.

These activities allow educators to reflect on the learner experience, understand facilitation techniques, and identify how LSP might fit into their teaching practice.

#### **2. Collaborative reflection on pedagogical design**

After each activity, participants engage in a guided discussion about:

- The mechanisms through which playful construction enables deeper opportunity recognition.
- How identity exploration and meaning-making can lead students toward impact-oriented entrepreneurial paths.
- Practical considerations for embedding LSP in modules, hackathons, extracurricular programmes, or incubation pathways.

#### **3. Application to participants' own contexts**

Educators will work in small groups to prototype a short in-class workshop or learning sequence that uses LSP to encourage SDG-driven student spinouts. Templates and facilitation guides will be provided.

Throughout, the workshop emphasises accessibility, transferability, and adaptability for different programme structures, institutional cultures, and learner communities.

### **Expected Outcomes**

By the end of the workshop, participants will:

- Have directly experienced LSP as a method for supporting reflective, impact-led entrepreneurial learning;
- Understand how SDG framing can broaden student opportunity perception and stimulate sustainable venture ideas;
- Gain practical knowledge on designing facilitated play sessions within entrepreneurship education;
- Leave with a draft activity or module element that can be immediately piloted with their own students;
- Connect with peers interested in sustainable entrepreneurship pathways and share challenges and solutions across contexts.

The workshop aims not only to inspire but to equip educators with concrete tools that can enhance the creation of purpose-driven student spinouts.

### **Details of Any Related Research**

The workshop draws on research and practice from three relevant domains:

- Sustainable entrepreneurship education, which demonstrates the role of values, identity development, and global challenge framing in motivating pro-social and pro-environmental venture creation.
- Student spinout formation, highlighting the importance of early identity work, opportunity recognition processes, and interdisciplinary problem-solving.
- LEGO® Serious Play® pedagogy, supported by empirical evidence showing that structured play enhances creative thinking, narrative development, psychological safety, and collaborative meaning-making.

While this research informs the workshop design, the session itself focuses on practice activation rather than academic presentation.

### **Takeaways for EE Teaching Practice**

Participants will leave the PDW with:

- A ready-to-use set of LSP activities for activating student engagement with sustainability challenges.
- Strategies for embedding SDGs meaningfully into entrepreneurship curricula and extra-curricular initiatives;
- A model for supporting mission-driven venture ideation and early spinout pathways;
- Facilitation tips for creating psychologically safe, playful, and high-engagement learning environments.
- A practical template for designing or enhancing modules, bootcamps, or incubation processes that aim to develop entrepreneurial change agents.

## THE IMPACT PUZZLE: CO-CREATING A FRAMEWORK FOR EXTRA-CURRICULAR EEE

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### Abstract

**Workshop Summary-** Extra-curricular enterprise and entrepreneurship education (EEE) plays an increasingly important role within higher education by providing students with opportunities to engage in experiential learning, venture creation, innovation activities, and entrepreneurial skill development beyond the formal curriculum. These initiatives include incubators, enterprise societies, competitions, mentoring schemes, and start-up support programmes. Despite their growing prominence, the impact of extra-curricular EEE remains poorly conceptualised and difficult to evidence within institutional contexts, particularly where traditional academic metrics dominate evaluation frameworks. This Paper Development Workshop addresses the challenge of understanding and articulating the value generated through extra-curricular EEE. Drawing on emerging research exploring the experiences of enterprise educators and students across multiple higher education institutions, the workshop introduces a developing framework designed to map the different forms of impact created through these activities. The framework considers the perspectives of multiple stakeholders and recognises the complex roles enterprise educators play as academics, practitioners, and institutional boundary-spanners. The workshop will explore key questions including: how the impact of extra-curricular EEE can be conceptualised, how value is generated for different stakeholders, and how this impact can be better recognised within higher education systems. Participants will contribute to the refinement of the framework through discussion and application to their own institutional contexts.

**Workshop Style-** The workshop will combine a short presentation introducing the emerging impact framework with facilitated small-group discussions. Participants will apply the framework to examples of extra-curricular enterprise education within their own institutions, critique its structure, and identify potential refinements. A plenary discussion will capture insights and inform further development of the framework.

**Expected Outcomes-** Participants will gain a practical framework for understanding and communicating the impact of extra-curricular enterprise and entrepreneurship education. The session will generate collective insights to refine the framework and identify future research directions. Participants will also exchange practices and ideas for strengthening evaluation and institutional recognition of extra-curricular enterprise initiatives.

**Details of any Related Research -** The workshop builds on an ongoing research project examining the impact of extra-curricular enterprise and entrepreneurship education (EEE) within higher education. Previous research has highlighted the growing importance of entrepreneurship education in developing entrepreneurial competencies, mindsets, and intentions among students (Nabi et al., 2017; Arranz et al., 2017). While much of this work has focused on formal curricular provision, there is increasing recognition that extra-curricular enterprise initiatives—such as incubators, enterprise societies, start-up competitions, and mentoring programmes—play an important complementary role in supporting experiential learning and entrepreneurial engagement. Recent studies have begun to explore the value generated through these activities and the challenges associated with evidencing their impact. For example, Preedy et al. (2020) highlight how extra-curricular enterprise activities can support the development of entrepreneurial capability and confidence, while also contributing to broader institutional and ecosystem engagement. Emerging work has also examined the roles and identities of enterprise educators in designing and delivering these initiatives and the ways in which they operate across academic, practitioner, and institutional boundaries (Beaumont & Preedy, 2024). The framework presented in this workshop draws on these insights as well as preliminary findings from focus groups conducted in 2025 with enterprise educators and students across several UK universities. These discussions informed the development of an emerging framework that will be critically explored and refined through this PDW.

## SERIOUS PLAY FOR COMPLEX SYSTEMS: THE TEEG ECOSYSTEM GAME IN ENTREPRENEURSHIP EDUCATION

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### Questions we care about – Aim and summary

Entrepreneurial ecosystems are now a dominant lens in entrepreneurship research and policy, yet in the classroom they often appear as static maps, lists of actors, or policy buzzwords. In reality, ecosystems are **loosely coupled systems of diverse stakeholders**, generating heterogeneous outcomes, shaped by nonlinear interactions and evolving in ways that are hard to predict or control. This creates a concrete pedagogical challenge: how do we help students go beyond “ecosystem as a picture on a slide” to grasp three core difficulties—**defining ecosystem boundaries, mapping functional dynamics, and measuring/forecasting ecosystem performance**—in an authentic but teachable way? This hands-on PDW responds to that challenge by introducing and critically reflecting on **TEEG (Tech-Entrepreneurial Ecosystem Game)**, a simulation-based business game built on data from the Campania region. TEEG allows students to take the role of policymakers, universities, corporations or investors, and to test alternative intervention strategies (e.g. STEM talent development, venture capital, incubators, corporate spin-offs) over time by competing against each others. Within this environment, students experience how definitions of the ecosystem shape what they see, how interventions trigger feedback loops and unintended consequences, and how different strategies perform over time under varying conditions. The PDW will demonstrate how the game can be used to (1) make ecosystem structures and archetypes visible, (2) explore non-linear dynamics and feedback in a safe “sandbox”, and (3) simulate and compare policy or strategy scenarios as a basis for reflection and discussion. We will jointly discuss how this format can be adapted to different entrepreneurship programmes and institutional contexts

### Workshop Approach

The PDW is designed as an interactive “learning lab” rather than a traditional paper session:

1. **MICRO-INTRODUCTION (10–15 MINUTES)**
2. Brief framing of entrepreneurial ecosystems and their key challenges for teaching: defining system boundaries, mapping functional dynamics, and measuring/forecasting outcomes.
3. **LIVE GAME EXPERIENCE (30–40 MINUTES)**
4. Participants, in small teams, will play a shortened TEEG session. Each team will choose an intervention strategy (free-intervention, student-startup, or corporate-startup oriented) and allocate resources across ecosystem levers. The software will then simulate multi-year outcomes in terms of startup creation, growth, and ecosystem performance.
5. **STRUCTURED DEBRIEF (20–25 MINUTES)**
6. We will compare strategy outcomes across teams and connect in-game decisions to core concepts such as path dependence, resource complementarities, bottlenecks, and unintended consequences.
7. **CO-DESIGN CLINIC (20–25 MINUTES)**

Participants will work in small groups to sketch how TEEG could be integrated into their own courses (learning objectives, assessment, group work design, online vs. in-class use). We close with a plenary synthesis of concrete “next steps” for implementation.

### Expected Outcomes

By the end of the PDW, participants will:

- Have first-hand experience of a data-driven entrepreneurial ecosystem game and its pedagogical affordances.

- Be able to articulate how simulation and gaming can complement cases and lectures in entrepreneurship education.
- Leave with draft designs for integrating ecosystem gaming into their own modules (e.g. new venture creation, regional development, technology entrepreneurship, or policy labs).
- Gain access to a basic TEEG package that can be tested in their own institutions, with options for customisation

#### **Details of any related research**

- TEEG is grounded in ongoing research on entrepreneurial ecosystems in Southern Italy and in collaboration with international partners within the MIT Sloan Global Programs network (Budden and Murray 2019).
- Methodologically, **TEEG adopts a bottom-up approach focused on tech startups**: starting from empirical cases and stakeholder configurations, we derive a set of ecosystem **archetypes** that are encoded in the game. An **archetype matrix** combines key assets (talent, capital, corporate engagement, support services, policy levers) and feeds three functional engines—**the tools engine, the event engine, and the startup engine**—which drive system evolution and player feedback during the game.
- The theoretical foundation of TEEG is grounded in the MIT stakeholder framework and the asset–resource perspective articulated in the Stanford studies on entrepreneurial ecosystems, which conceptualize ecosystems as configurations of key actors and resources that collectively shape entrepreneurial outcomes
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#### **Takeaways for EE teaching practice**

Participants will take away:

1. An actionable example of how to turn ecosystem theory into an interactive learning experience.
2. A set of design principles for developing or adopting serious games in entrepreneurship teaching (e.g. using real data, emphasising feedback loops, building in comparative scenarios and archetype-based modelling).
3. A practical roadmap for piloting ecosystem gaming in their own programmes, including ideas for evaluation and student assessment.

## DYNAMICS IN THE STAKEHOLDER FIELD: YOUR BATMAN MAY BE MY ROBIN

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### Workshop Summary and key questions to be investigated

Understanding the social context or playing field of any social challenge is pivotal for tackling it successfully. As (future) social change makers, students need to grasp not only the complexity of these challenges but also how to generate a strong support base for change. This requires recognizing that for effective collaboration each stakeholder in an ecosystem must have a stake in the process as well as a basic understanding of what drives the other.

Grasping the dynamics between stakeholders and how their various interests may enhance or hinder one another is far more complex than simply identifying these individual interests. Students may have limited knowledge of real-life social and entrepreneurial contexts. Yet mastering complexity of the dynamics within these contexts is key to them being effective in co-creating meaningful and sustainable social change.

To deepen awareness of how these dynamics work and to give students a sense of agency, we introduced a playful framework that was built around narratives they should be familiar with, such as fairytales, games and movies which show the interplay between hero, sidekick and nemesis. By using these familiar narratives as an entry point into systems and stakeholder thinking we aim to activate prior knowledge and so enhance motivation. Guided reflection helps transfer to real life challenges.

### Workshop approach

This PDW explores the interplay of personae in popular stories and transfers these dynamics to stakeholder fields. As a short introduction to the method, participants choose a representative of their own inner hero and with the aid of a specially designed canvas explore the interaction with a possible sidekick and nemesis.

### Expected Outcomes

This PDW offers participants

- New ideas for teaching about successful collaboration and exploration of a stakeholder field with students.
- Ready to use tools, with an avatar canvas template, and a facilitation protocol.
- Connect stakeholder understanding to change agent competence development.
- A narrative approach across diverse social challenges, levels and contexts.

### Related research

The underlying theory of this exercise mainly evolves around

- The use of avatar learning for experiential learning and motivation (den Heijer, 2020).
- The importance of understanding stakeholder fields for social change (Stacy, 2024)
- Narrative pedagogy and systems thinking. This workshop develops a bridge between abstract stakeholder theory and concrete social contexts (Bruner, 2006)
- Agency development through perspective-taking. This transformative learning shifts the mental models to recognize own actions with others (Yang, et al. 2022).

## **MAKING FRIENDS, BUILDING TEAMS: ENTREPRENEURIAL TEAM FORMATION THROUGH POP-CULTURE ROLEPLAY**

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### **Workshop Summary**

Entrepreneurship is widely recognized as a team-based endeavor, yet on many occasions, project teams are formed informally through convenience or existing ties rather than intentional design. Such processes often produce homogeneous groups that may lack complementary skills and perspectives, despite evidence that balanced teams are critical. This workshop introduces a structured yet playful pedagogical approach that turns team formation into a learning moment in entrepreneurship education. Using characters from the television series *Friends*, participants engage in a role-play exercise that highlights differences in communication styles, leadership tendencies, and collaboration preferences within entrepreneurial teams. The activity unfolds in three stages—character draws and swaps, speed conversations, and episode casting—allowing participants to experiment with different team roles in a psychologically safe setting. The workshop explores how educators can support more intentional team formation and use playful pedagogical design to stimulate reflection on collaboration and complementary capabilities in entrepreneurial teams.

### **Workshop Style**

The session combines a short introduction with an interactive role-play exercise. Participants experience the teaching method directly through three short activities: character draws, speed conversations, and collaborative scenario challenges. A facilitated reflection connects the experience to the formation of entrepreneurial teams and discusses how the exercise can be implemented in entrepreneurship classrooms.

### **Related Research and Expected Outcomes**

The workshop draws on research on entrepreneurial teams, experiential learning, and role-play pedagogy in entrepreneurship education. The PDW approach builds on experiential learning theory and research highlighting the value of experiential and interactive methods in entrepreneurship education.

Participants will gain a ready-to-use classroom activity, adaptable materials, and practical guidance for facilitating reflective team formation in entrepreneurship courses, helping students develop stronger collaboration skills and more complementary entrepreneurial teams.

## HOW TO WRITE AUTHENTIC, PRACTITIONER-INFORMED CASE STUDIES FOR ENTREPRENEURSHIP EDUCATION

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### Workshop Summary

We've all been charmed by innovative and experiential approaches to entrepreneurship education. They are effective and important role modelling for our learners who in turn must be innovative and adventurous (Schneider et al., 2025). BUT.. sometimes you just need a case study to illuminate entrepreneurial concepts, contexts, and decision-making challenges that lie beyond the reach of the classroom or any experience we can construct (Gibb & Price, 2019). This is great, except most cases feature high-profile global successes such as Apple or Google, or well-publicised failures such as Theranos or RBS (HBR, 2025). These cases rarely reflect the lived realities of typical new ventures or the experiences of undergraduate learners. Given the importance of authenticity and relevance for learner engagement (Huxtable-Thomas & Hannon, 2019), a pressing question emerges: ***How can educators create new entrepreneurial case studies that are both authentic and pedagogically effective?***

This Professional Development Workshop (PDW) will equip you with practical tools to develop such cases. By the end of the session, you will have drafted the foundation of an authentic "minimum viable case" that can be refined through collaboration with entrepreneurship practitioners. Novel contributions of the workshop include the introduction of *the minimum viable case concept*, a clear *nine-step case development journey*, and guidance on *co-production techniques* that enhance authenticity and contextual richness.

### Workshop style

This practical session integrates theory, practice, and reflection. After a brief orientation to the case method, participants identify an entrepreneurial concept their students struggle to contextualise and work through the nine-step model to design a case centred on a meaningful dilemma or decision point. An interactive discussion follows, allowing participants to share challenges, insights, and effective practices from their own case teaching experience.

### Expected outcomes

Every participant will take away their own case journey map, some idea-generation tools, and a one-page guide to writing effective entrepreneurial cases as well as an example case. Participants will also have the opportunity to submit completed cases for consideration in a forthcoming edited volume, *Cases on Entrepreneurship and Leadership* (Edward Elgar, forthcoming 2027), supporting continued engagement and collaborative development beyond the workshop.

### Related research

This approach is based on the process utilised and since developed, to produce two mini cases in the textbook *Leadership: A diverse, inclusive and critical approach*, in particular, Chapter 6: *Leadership in Crisis – What we can learn from Entrepreneurs and Entrepreneurial Approaches*. Having worked closely with the editor to design a mini-case template, the author of this PDW has gone on to develop the approach which is welcomed by entrepreneurship practitioners and students alike.

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## EMPATHIZING WITH STUDENTS' ENTREPRENEURIAL STYLE: A DIALECTICAL APPROACH AND INTERPRETATION

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### Workshop Summary

The workshop aims to propose a new conceptual tool to confront the escalating complexity of teaching entrepreneurship. Building upon Shane's individual-opportunity nexus, it employs the Hegelian dialectical method to contrast the indispensable entrepreneurial notions of knowledge and opportunity with their dialectical counterparts. The emerging interpretation (ASKO) suggests four complementary styles of entrepreneurial thinking. Through minimal quantification, educator's and students' styles can be measured and displayed. This approach is demonstrated during the workshop, step by step, revealing the participating educators' styles that can be conveyed, intentionally or unintentionally, through their teaching. Same approach can be pursued in classrooms before and after a course to identify changes related to its impact on entrepreneurial thinking, styles and mindset. Dialectical tensions between fundamental entrepreneurial notions are discussed and conceptualized through a five-step process without any other prior requirements or predispositions. The dialectical interpretation is then used to discuss the expected impact of different entrepreneurial methods and pedagogies. As with presenting a new approach, the PDW aims to promote collaborative reflection, critical thinking, and further synergies to develop new tools for entrepreneurship education.

### Workshop Style

The PDW follows presentation, workgroup, reflection and discussions. ASKO measurements will take place before the PDW. During PDW, (a) presenters and participants discuss and pose critical questions, (b) implement the Hegelian dialectic for the environmental dimension, (c) implement the Hegelian dialectic for the individualistic dimension, (d) map styles on the ASKO framework, (e) discuss educational implications.

### Expected Outcomes

- (a) understanding the Hegelian dialectical method in entrepreneurship,
- (b) enriching and refining the ASKO typology,
- (c) measuring own and students' entrepreneurial styles,
- (d) consistently interpret different entrepreneurial methods on the ASKO framework, and
- (e) discuss the possibilities of different entrepreneurship pedagogies to transform the students' thinking style in the complex context of entrepreneurship.

### Details of any related research

The Hegelian dialectical method has been largely overlooked in entrepreneurship education despite of its potential to lead to re-conceptualizations and reflection. Employment of this method in entrepreneurship can be found in Lackéus (2017) and in Kakouris and Bokeas (2025). Applications of the ASKO framework in educational settings can be found in Kakouris (2018). These works offer the theoretical background to ground the PDW and encourage the participating educators to take the lead in further developing this approach in a more practical and productive manner.

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## **EMPOWERING RESPONSIBLE ENTREPRENEURIAL MINDSETS TO ADDRESS SUSTAINABILITY CHALLENGES**

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### **Importance of the topic**

There is a growing social demand for educational systems to lead towards more sustainability-informed entrepreneurial education. However, this educational movement is somewhat at odds with the reality of traditional business sectors guided by profit motives. This dichotomy requires a reassessment of the best way to support and guide the development of an ethically responsible entrepreneurial mindset to address sustainability challenges.

### **Questions to be asked**

This PDW seeks to develop change agents through entrepreneurship education.

- a) How can educators help induce a responsible entrepreneurial mindset to address sustainability challenges in an ethically defensible manner?
- b) How can constructivist learning, grounded in models of moral development help?
- c) How can we successfully integrate ethical reasoning processes to responsible entrepreneurial mindset curriculum design?

### **Workshop summary**

We ask participants to complete an ethical dilemma as a pre-workshop exercise, developed specifically for this PDW. In the workshop, we will outline the principles of ethically defensible decision making, underpinned by Neo-Kohlbergian theory of moral development. We will divide participants into groups based on their individual dilemma decisions. We will discuss the sustainability development goals' wedding cake representation developed by the Stockholm Resilience Centre and participants will collectively explore and debate the interconnectedness of biosphere, society and economy to address sustainability challenges when seeking a collective decision relating to the dilemma. Following initial feedback on collective dilemma decisions, we offer alternative insights by introducing Water Europe's data management sector factsheet. Finally, we offer an opportunity for participants to reflect on their PDW experience.

### **Workshop style**

Interactive, with a combination of pre-workshop individual assignment, group work within the workshop, engagement with relevant educational resources, including a specially designed ethical dilemma, and engagement with a reflection tool.

### **Originality & newness of approach**

We will present our scenario-based approach to empowering responsible entrepreneurial mindsets, offering insight into our experience working with three cycles of postgraduate business students and underpinned by underpinned by Neo-Kohlbergian theory of moral development. Our goal is to provide participants with a set of skills and resources that will help them to both ground their professional practice in ethical value systems, and to use structured approaches to reason through ambiguity in an ethically defensible manner, to address sustainability challenges.

**Participant Profile:** Entrepreneurship educators, researchers and research students, and those interested in empowering responsible entrepreneurial mindsets to address sustainability challenges.

**Keywords:** Responsible Entrepreneurial mindsets, Ethical decision making, NeoKohlbergian theory of Moral Development, SDG Wedding Cake, Constructivist learning

## CO-CREATING LEARNING ENVIRONMENTS FOR TRANSFORMATIVE ENTREPRENEURSHIP EDUCATION THROUGH CREATIVE EXPERIENCES

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### Workshop Summary

The vision of this PDW is to let entrepreneurship educators experience how a leadership collective for transformative learning can emerge. The focus lies on educators as change agents first, because as Bürgener & Barth (2018, p. 822) state they are “the single most important factor when it comes to success in students' learning and it is the teacher's competencies that create learning opportunities with the greatest potential learning outcomes.” Therefore, the guiding question is how transformation can become a lived experience, which can then be shared with students. The importance of the co-creation of a trustful learning environment is stressed, where both educator & student can explore & step into new roles.

As entrepreneurship educators we do make a difference with the way we facilitate learning, the impulses we give, the experiences we offer, the reflections we guide, & the room for experimentation we open. We are key – & yet just a part. This PDW proposes the co-creation of a leadership collective in which everybody can develop ownership & be(come) a leader. It's a space for entrepreneurship educators to put a lens on themselves, their understanding of teaching, learning, & leading, while it is also a space to look ahead: How can I lead by example?

### Workshop Style

This exploration will be instigated through creative and embodiment activities. The workshop builds upon the pre-activity of crafting a visual showing one's status quo understanding of leadership, which can be reflected upon after the embodied activity, which includes music and movement.

### Expected Outcomes

Participants are envisioned to leave the session with a more nuanced understanding of leadership and the role it plays in both the creation of a transformative learning environment and experience, as well as in entrepreneurship overall. The workshop experiences can further be applied in one's own context, be it in one's classroom, organization, or institution.

### Details of any related research

This PDW is inspired by several sources, of academic and non-academic nature, and mostly by research of other disciplines than entrepreneurship education, particularly from the already interdisciplinary field of sustainability and particularly education for sustainable development. The facilitation approach is informed by my own doctoral research on key competency development in project-based sustainability settings, with a focus on interpersonal / collaborative competency (Konrad 2021). Wiek et al. (2011), and later Brundiers et al. (2021) gave orientation for course and curriculum design along change agent competencies. This session is also inspired by the Transgressive Learning research project (T-Learning 2026), which actively worked with arts-based methods. This PDW might lead to further investigation of how spaces for entrepreneurship educators can be created first, and who holds them, so entrepreneurship education authentically and appropriately responds to the time we live in.

## **SOCRATIC TEACHING FOR ENTREPRENEURIAL EDUCATORS - EMPOWERING EDUCATORS TO CO-CREATE LEARNING OPPORTUNITIES**

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Inge Elsmann, Saxion University of Applied Sciences,  
Robbert Wiltbank, Willamette University

### **Workshop Summary**

This workshop addresses a critical gap in entrepreneurship education: helping educators develop the confidence and practical tools to support students in fostering entrepreneurial mindsets, behaviours, and agency. Educators often hesitate to teach entrepreneurship due to its uncertain and complex nature. By combining Socratic questioning techniques with the Effectual ASK framework, this session empowers educators to shift from traditional instruction to coaching students in entrepreneurial discovery and co-creation. Participants will learn to categorise and deliberately practise questioning strategies, enhancing their ability to facilitate transformative learning experiences. Questions to be investigated include: How can educators overcome hesitation and insecurity when teaching entrepreneurship? How can educators co-create learning opportunities with students? This approach is particularly relevant for developing students as change agents, as it shifts the locus of control from the teacher to the learner, empowering students to imagine and shape their own futures.

### **Underpinning Theories, Models, and Pedagogies**

The workshop integrates principles from the Effectual ASK framework (Sarasvathy, 2021) and the entrepreneurship education model of Fayolle & Gailly (2008). It adapts Sarasvathy's deliberate practice approach for entrepreneurial expertise development to teacher training, meeting five criteria for purposeful practice: motivation for improvement, understandable tasks, immediate feedback, repeatability, and appropriate task design (Ericsson, 2021).

The approach recognises that entrepreneurship education requires diverse pedagogical methods (Fayolle et al., 2015; Gibb, 2008; Kyrö, 2018), depending on prediction and control contexts. Initial implementation suggests this framework helps educators develop confidence across multiple teaching approaches while recognising their individual strengths and when to seek collegial support.

### **Workshop Style**

This interactive session follows an unplugged, practice-based format. Participants will work through a condensed version of the Socratic Teaching framework using their own teaching contexts, including guided activities and peer discussions.

### **Expected Outcomes**

Participants will leave with: (1) A practical framework for categorising and practising questioning strategies, (2) increased confidence in facilitating student-centred, transformative learning experiences, and (3) strategies for shifting from teacher-led to student-focused pedagogy.

### **Details of Related Research**

This workshop builds on the research of the Effectual ASK (Sarasvathy, 2021) and the entrepreneurship education framework of Fayolle & Gailly (2008). It examines how teacher insecurity hinders the effectiveness of entrepreneurship education. By adapting Sarasvathy's deliberate practice approach for entrepreneurial expertise development to teacher training, the workshop offers a teachable, repeatable method meeting five criteria for purposeful practice: motivation for improvement, understandable tasks, immediate feedback, repeatability, and appropriate task design (Ericsson, 2021). The approach recognises that entrepreneurship education requires diverse pedagogical approaches (Fayolle et al., 2015; Gibb, 2008; Gibb, 2011; Kyrö, 2018), depending on the prediction-and-control context. Initial implementation suggests this framework helps educators develop confidence across multiple teaching approaches while recognising their individual strengths and when to seek collegial support. Integration with co-creation principles from effectuation theory further enriches the pedagogical toolkit, treating teaching relationships as collaborative design processes rather than unidirectional knowledge transfer.

## INTRODUCING AND TESTING THE REFLECTIVE DIDACTICAL COMPASS FOR EDUCATORS TEACHING ENTREPRENEURSHIP

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### Workshop summary

The theoretical foundations of entrepreneurship education (EE) remain weakly connected to pedagogical science, contributing to pedagogical fragmentation and limited pedagogical clarity in the field. As a result, educators often lack coherent guidance when navigating complex pedagogical decisions: Which competencies should students develop? How should theory and practice be balanced? Which learning theories meaningfully inform my teaching? What educator roles, learning activities, and assessment strategies best support these aims? Despite the growing maturity of EE research, educators often lack pedagogically grounded tools that enable systematic and coherent reflection on their pedagogical choices.

This PDW introduces and tests The Reflective Didactical Compass for Educators Teaching Entrepreneurship – a theoretically grounded and empirically informed didactical model developed as a structured reflective tool for pedagogical decision-making. The Compass structures reflection around four interconnected dimensions: Teaching Context, Learning Objectives, Pedagogical Orientation, and Didactical Decisions, operationalised through twelve guiding questions.

In this PDW, participants will apply the Compass to one of their own lectures, courses or programmes and collaboratively explore how the model supports or challenges their current practice. The session positions participants as co-developers contributing to the further refinement of the model.

### Workshop Style

After a short introduction of the Compass, participants individually map one of their own lectures, courses or programs using the model. Small-group discussions followed by plenary synthesis enable active professional reflection and engagement throughout.

### Expected Outcomes

Participants will gain greater clarity and confidence in articulating and justifying their pedagogical choices. The Compass can be directly applied to lecture design, course and programme redesign, internal quality assurance processes, curriculum discussions and staff development initiatives.

### Details of Any Related Research

The Reflective Didactical Compass builds on classical didactical traditions, including the Didactical Relations Model and the Didaktik Triangle (Hiim & Hippe, 2009; Klafki, 1997). Unlike generic didactical models, the Compass explicitly operationalises reflection for the distinctive context of EE: heterogeneous educator backgrounds, experiential and actionbased pedagogies (Neck & Greene, 2011; Thomassen et al., 2020), stakeholder-rich learning environments, and the dual ambition of student learning and value creation for others (Lackéus, 2017).

## STRENGTHENING DISCIPLINARY TEACHING THROUGH THE INTEGRATED ENTREPRENEURSHIP DIDACTICS MODEL

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### Workshop Summary

This workshop addresses a central challenge in higher education: how to integrate entrepreneurial action into disciplinary teaching without reducing academic depth. The session introduces the Integrated Entrepreneurship Didactics (IED) Model, a hybrid didactic framework that strengthens the link between disciplinary knowledge and opportunity-oriented, valuecreating learning processes. The model draws on established principles from university teaching and entrepreneurship education and shows how these can be combined into a coherent design logic that supports disciplinary progression as well as exploratory forms of student engagement. The workshop begins with participants addressing a large didactic matrix laid out on the floor. They locate both their current teaching practice and their intended future trajectory within this analytic space. This visual positioning provides an accessible diagnostic of how didactical choices shape students' possibilities for engagement, ownership, and confidence to act, linking directly to student agency and self-efficacy.

A short conceptual presentation then introduces the eight-phase IED structure and demonstrates how each phase supports different forms of student engagement—such as guided inquiry, opportunity-orientation, and iterative exploration—while remaining anchored in disciplinary aims. Throughout the session, participants will analyse their own teaching and collaboratively redesign an element of it using the IED Model.

### Workshop Style

Brief conceptual presentation combined with a large physical floor-matrix exercise, structured peer reflection, and collaborative design work. Participants place two markers (current and desired practice) on the matrix and then adapt one course element using the IED Model. The format is active, reflective, and directly tied to participants' contexts.

### Expected Outcomes

Participants will understand the IED Model, identify development opportunities in their courses, and produce a draft of a disciplinary anchored, opportunity-oriented learning activity aligned with disciplinary goals. They will leave with a usable framework, a concrete development trajectory, and practical steps for strengthening student agency and self-efficacy in disciplinary teaching.

### Details of related research

The IED Model is grounded in research within entrepreneurship education and higher education pedagogy. It integrates insights from value-creation pedagogy (Lackéus, 2015; 2020), opportunity-oriented learning (Sarasvathy, 2001; Nybye & Rasmussen, 2013), and major entrepreneurship-education typologies (Fayolle & Gailly, 2008; Neck & Greene, 2011; Jardim & Sousa, 2023). These strands highlight how learning is strengthened when students engage with authentic problems and generate value beyond the classroom.

In parallel, the model draws on research on student agency—students' capacity to influence, initiate, and take ownership of learning—and on self-efficacy as a predictor of effective action (Bandura, 1995). Agency aligns with entrepreneurship education's focus on initiative and judgement under uncertainty, drawing on broader sociological accounts of agency (e.g., Emirbayer & Mische, 1998), while self-efficacy is strengthened through iterative cycles of exploration, feedback, and action. The model also incorporates established principles from higher education pedagogy, including constructive alignment (Biggs & Tang, 2011), inquirybased learning (Healey, 2005), and authentic learning (Herrington et al., 2010). Combining these perspectives, the IED Model serves both as a reflective framework for evaluating existing teaching and as a practical design model that supports disciplinary depth and entrepreneurial competences, among which student's agency and self-efficacy are central.

## **TEAMBOOSTING & HTEAMCOMP: A TOOLBOX FOR EFFECTIVE NON-HIERARCHICAL ENTREPRENEURIAL TEAMWORK**

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Florence Courtade, Université Jean Monnet

### **Workshop Summary**

The massification of higher education and the development of programs based on learning-by-doing have led pedagogical teams to rethink training systems as well as course facilitation methods. The competency approach invites the development of individual technical but also transversal KSAs and competences through learning and evaluation situations often carried out in student teams.

Although research has shown that vicarious learning is an effective form of learning, very few pedagogical systems concretely integrate teamwork learning with specific activities assessing the evidence of teamwork/individual learning, and are limited to setting up project groups in which students divide up the tasks.

Two recurring challenges arise: 1/ simply placing students in a group does not automatically make them a team; 2/ how can we objectively as coaches/students assess individual KSAs through the lens of entrepreneurial projects and associated academic outputs?

After three years of action research, our toolbox has proven its value: teams stay cohesive, students engage in more reflective practice, and evaluations—from self, peers, coaches, and the team—provide a clear, fair picture of each individual's role and growth. The purpose of this workshop is to discover the 'Teamboosting' toolbox.

### **Workshop style**

The workshop engages the participants through an accelerated, isomorphic process, by focusing the activity of (1) building a team, (2) identify how students are solving a problem as a team and (3) assess individual KSAs developed through teamwork activities, using the HTeamComp framework —bridging theory and practice in teamwork.

### **Expected Outcomes**

Understand principles and challenges of entrepreneurial teamwork;  
Turn entrepreneurial student group into teams using learning situations supporting teamwork KSAs and competences applying various types of tools;  
Elaborate formal feedback for students regarding their individual entrepreneurial teamwork KSAs; Enhance teacher's professional growth working with entrepreneurial student groups/teams.

### **Detailed of any related research**

The methodology presented is developed based on the following elements (non-exhaustive list):

- Trust building (Breuer et al., 2020), Transactive memory -within teams (Lewis, 2003; Bachrach & Mullins, 2019; Lazar et al., 2022), and Assertiveness (Ward & Holland, 2018);
- Reflective Practice in Entrepreneurship (Toutain, 2010; Neck & Greene, 2011; Neck & Corbett, 2018; Hägg & Kurzkowska, 2020) and Assessment of reflective practice (Owens & Gavins, 2022);
- Verbalization of KSAs and competences (the authors, 2017; 2024)
- HTeamComp framework (the authors, 2026)

## ARTIFICIAL INTELLIGENCE AS A CURRICULUM DEVELOPMENT TOOL FOR ENTREPRENEURSHIP EDUCATORS

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Artificial intelligence (AI) is rapidly reshaping teaching and learning in higher education. For entrepreneurship educators, AI presents an opportunity to rethink how courses are designed, delivered, and adapted to students' evolving needs. Yet many educators remain uncertain about how AI can be meaningfully integrated into entrepreneurship curricula. This Professional Development Workshop (PDW) explores how AI can function as a practical tool for curriculum development and classroom innovation in entrepreneurship education. The workshop addresses key questions such as: How can AI support entrepreneurship curriculum design? How can AI tools be integrated into learning activities and assessments? What practical approaches exist for educators seeking to incorporate AI into their teaching practice? Participants will engage in a series of hands-on activities demonstrating the application of AI in entrepreneurship education. These include AI-assisted business ideation, the personalisation of course content for different learner profiles, and the exploration of a multi-stage AI-supported entrepreneurship education programme. By focusing on practical experimentation and reflection, the workshop aims to move the conversation about AI beyond speculation toward actionable teaching practices. The session highlights both the opportunities and challenges associated with AI adoption, including ethical considerations, bias, accessibility, and responsible use.

This interactive PDW combines brief framing inputs with hands-on activities that use AI tools. Participants will experiment with AI-driven ideation, curriculum personalisation exercises, and a live case demonstration of an AI-supported entrepreneurship education programme. Structured discussion and reflection will allow participants to share experiences and explore practical implementation strategies. Participants will gain practical experience with AI tools for entrepreneurship curriculum design, ideation, and personalisation of learning. The workshop will increase educators' confidence in integrating AI into teaching practice while highlighting ethical considerations and implementation challenges. Participants will leave with actionable ideas, prompts, and templates for immediate classroom use.

The workshop builds on emerging research exploring the impact of artificial intelligence on higher education and teaching practice. Recent scholarship suggests that AI can enhance curriculum development through adaptive learning systems, predictive analytics, and personalised learning pathways (Popenici & Kerr, 2017). Within entrepreneurship education, where creativity, experimentation, and problem-solving are central, AI tools offer new opportunities to support ideation, market exploration, and scenario development. Existing literature has examined AI's broader implications for education, including concerns around algorithmic bias, transparency, and inequality (O'Neil, 2016), as well as the transformative potential of AI in educational systems (Baker & Smith, 2019). However, relatively little work has explored the specific implications of AI for entrepreneurship education pedagogy and curriculum design.

This PDW contributes to that emerging conversation by translating conceptual discussions about AI into practical teaching applications. The workshop draws on the facilitators' experience in developing AI-supported entrepreneurship learning programmes spanning school-based entrepreneurship exposure, university entrepreneurship courses, and early-stage venture creation programmes. By combining research insights with practical experimentation, the session aims to bridge the gap between academic discussion and teaching practice, helping entrepreneurship educators understand how AI can be used responsibly to enhance learning design, curriculum development, and entrepreneurial skill formation.

## ENTREPRENEURIAL BY DESIGN: A CO-DESIGN APPROACH TO COURSE AND PROGRAMME DEVELOPMENT

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### Workshop abstract

This workshop explores how course and programme development in higher education can be approached through an entrepreneurial lens. Rather than focusing solely on teaching entrepreneurship to students, we propose examining how educators themselves can adopt entrepreneurial ways of designing courses and programmes. The workshop presents codesign as a practical approach for involving multiple stakeholders—such as students, practitioners, and educational specialists—in the early stages of course and programme development.

It draws on experiences from two professors working in different disciplinary areas (social entrepreneurship and music education) within a university offering fully asynchronous online programmes. In such contexts, opportunities to adjust courses in response to student feedback during the semester are limited. This constraint encourages educators to rethink how learners' perspectives and professional knowledge can be integrated earlier in the design process.

Through a combination of short presentations, discussion, and a collaborative activity, participants will explore how codesign can support a more deliberate and structured approach to course development. A practical design tool adapted from existing co-design frameworks will be used during the session to help participants experiment with collaborative course and programme design. The workshop addresses three key questions:

- How can course and programme development be approached as an entrepreneurial process in higher education?
- How can co-design support an entrepreneurial approach to course and programme development by engaging students and other stakeholders in the design process?
- How can the constraints of asynchronous online learning stimulate entrepreneurial co-design practices in course and programme development?

### Workshop Style

The session combines brief presentations with collaborative work in small groups. After introducing the facilitators' experiences, participants will engage in a short co-design activity using a structured canvas. The session concludes with a collective discussion on how such approaches could inform participants' own course development practices.

### Expected outcomes

Participants will leave with new ideas for integrating stakeholders into course and programme design and for approaching course and programme development through an entrepreneurial perspective. They will experiment with a practical codesign tool and reflect on how similar approaches could be adapted to their own teaching contexts.

### Details of any related research

The workshop is grounded in pedagogical experiments conducted by the facilitators in two distinct disciplinary settings. In the context of a social entrepreneurship course, a structured design process was implemented to involve students, community partners, and content experts and to ensure course better reflects real-world practice. Insights from this initiative were recently documented in a publication (Simard St-Pierre et al., 2025). A similar approach is currently being explored in the development of a music education programme delivered asynchronously. The process involves dialogue with students, school practitioners, and educational specialists, supported by an internal working group facilitating iterative exchanges during development.

**Keywords:** Entrepreneurial process; Co-design; Course development; Programme development; Entrepreneurship education; Asynchronous learning; Stakeholder participation; Higher Education

## DEVELOPING GROUNDED CHANGE AGENTS IN ENTREPRENEURSHIP EDUCATION: A SYSTEMS-BASED CULTIVATION APPROACH

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### Workshop Summary

Just as pulling on a carrot will not make it grow faster, learning cannot be accelerated by force alone. Growth occurs when conditions for development are carefully cultivated. Entrepreneurship education (EE) operates in complex environments where educators and students navigate uncertainty, rapid change, and competing demands. Educators often experience tension between flexibility and structure, supporting highly engaged students while managing institutional expectations and limited resources.

This workshop introduces the *Learning as Cultivation Cycle (LCC)*, a cyclical, regenerative framework drawing on permaculture, systems thinking, and organisational learning. Participants engage with real-life challenges from their own courses or projects, mapping systemic dynamics, reflecting on patterns and tensions, and designing small, practical micro-interventions. Through hands-on group work, participants explore how subtle changes can strengthen connection, resilience, reflection, and collective agency within learning environments. Guided by the principle of “education from within”, the session emphasises the development of reflective capacity and agency in educators, fostering change agents capable of navigating complex educational and societal systems.

### Workshop Style

Interactive small-group stations guide participants through five phases of the LCC: systems mapping, reflection on dynamics, co-designing alternatives, developing micro-interventions, and collective harvest. Visual tools and structured prompts support hands-on exploration while maintaining psychological safety. Participants actively engage with their own challenges, connecting theory to practice in real time.

### Expected Outcomes

Participants will gain a conceptual framework and practical tools to apply regenerative learning in their own contexts. They will design at least one micro-intervention, enhance awareness of systemic dynamics, strengthen resilience, reflection, and collective agency, and leave empowered to act as grounded, reflective change agents in entrepreneurship education.

### Details of Related Research

The LCC integrates insights from permaculture design (Holmgren, 2002), systems thinking (Meadows, 2008), and organisational learning theory (Argyris & Schön, 1996; Senge, 1990). Permaculture highlights observing patterns and designing enabling conditions rather than controlling outcomes, systems thinking illuminates interdependencies and feedback loops, and organisational learning emphasises reflection, questioning assumptions, and collective knowledge creation. Guided by “education from within” the workshop fosters awareness, attention, and intention as drivers of meaningful change. While the LCC has not yet been formally evaluated, pilot applications in small educational settings will test clarity, tool usability, and the effectiveness of micro-interventions. Reflections, observations, and feedback will inform refinement and contribute to a practice-based understanding of regenerative approaches that cultivate reflective, resilient, and empowered change agents in entrepreneurship education.

## CO-EDUCATION MODEL AND PEDAGOGICAL USE CASES FROM SCANDINAVIAN GROWTH CREATORS PROJECT

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This workshop examines key questions and challenges in co-education—collaborative learning involving students, higher education institutions, and regional companies. Introducing pedagogical use cases from the cross-national *Scandinavian Growth Creators II (SGC)* project, it explores how co-education can strengthen entrepreneurship education (EE) and stakeholder engagement. The central question is: **How can insights from pedagogical use cases on co-education inform the design of future EE programmes across Europe?**

The workshop adapts the concept of “use cases” to a pedagogical setting, demonstrating how concrete examples help identify challenges, highlight best practices, and support the development of innovative EE models. This focus is particularly relevant because EE increasingly requires translating and recontextualizing knowledge in close collaboration with industry (Planck et al., 2025). Research shows that insights on case-based methods remain dispersed (Henry & Foss, 2015; Ramsgaard & Thomassen, 2024), and updated understanding of live cases is still needed (Montrosse-Moorhead et al., 2021; Roth & Smith, 2009). Sharing pedagogical use cases therefore offers an effective way to consolidate best practices and clarify how co-education can create value for its users (Derntl & Botturi, 2006).

The workshop introduces a co-education model, followed by two rounds of guided exploration of pedagogical use cases. Participants reflect on onboarding companies, student–industry collaboration, and impact. Through interactive circles and a brief iterative technique, they share experiences and give feedback on the model and workshop.

Participants gain practical insights into co-education through SGC use cases, learn how pedagogical use cases can share project learnings, and exchange experiences that deepen understanding of co-education’s key dimensions. They leave with transferable perspectives to apply within their own HEIs.

The Scandinavian Growth Creators (SGC) project, funded by Interreg Öresund–Kattegat–Skagerrak, builds on several research-based phases (Nielsen et al., 2024; Ramsgaard & Thomassen, 2024). The current phase, SGC II (2023–2026), examines how smart specialization can be supported through co-education between higher education institutions and micro-enterprises. Earlier studies show that this approach enhances student learning innovation and entrepreneurship while strengthening micro-enterprise skills (Thomassen & Ramsgaard, 2022). Based on this research, the consortium has iteratively developed a co-education model refined across four versions, resulting in a practical framework with tools such as recruitment canvas, guidelines, an FAQ, and pedagogical use cases.

## **THE DO-GOODERY CHALLENGE: CULTIVATING IMPACT AND SELF-EFFICACY IN ENTREPRENEURSHIP EDUCATION**

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### **Workshop Summary**

How can we empower learners — and ourselves as educators — to experience self-efficacy while making a tangible, positive contribution to the world around us? This Professional Development Workshop invites participants to explore and co-create a format that makes this possible: the “Do Goodery Challenge” (in German: “Tu was Gutes”-Challenge).

Participants explore how learners can gain immediate feedback on their ability to make a difference by identifying a small opportunity for good, design a micro-action, and implement it. At its core, the Challenge is about transforming awareness into agency and intention into impact. Our experience from an experiential entrepreneurship education (EE) program, has shown how it sparks curiosity, courage, and community spirit — not only among students, but also among educators.

Join this workshop to experience the Challenge firsthand, share ideas, and codesign new ways to bring entrepreneurial impact and self-efficacy into your own classroom — one small, good act at a time.

### **Workshop Style**

The workshop is highly interactive and hands-on. Participants will become part of the Challenge themselves while reflecting on its pedagogical value and adaptation potential. Working in small groups, participants prototype ideas in real time - embodying entrepreneurial learning through courage, creativity, and care - before co-designing implementation plans together.

### **Expected Outcomes**

- Engagement in a mini "Do-Goodery Challenge," creating a tangible act of positive change
- Getting to know a small, high-impact intervention for educational settings
- Co-create learning experiences that make both students and the world around them grow
- Tools and facilitation tips to guide reflection and impact storytelling

### **Details of any related research**

In light of our local and global challenges, new formats that include capacity building to tackle these problems are necessary. The "Do-Goodery" Challenge has been piloted and refined over several semesters within a team-based EE program. Feedback loops and learning reflections show that participants report increased motivation, emotional engagement, and perceived agency in tackling real-world challenges. This aligns with evidence that challenge-based and experiential designs in entrepreneurship education measurably strengthen entrepreneurial mindset, skills, and readiness to act that experiential learning in EE has positive effects on intention and competences, and that teaching through entrepreneurship (experiential) is especially effective for developing self-efficacy, compared to teaching about entrepreneurship (case-based immersion). Furthermore, it has been argued that doing good can help to mitigate neoliberal tendencies in EE and establish an underlying mindset that positions the EE ‘students-as-givers’, instead of following the stereotypical image of the ‘heropreneur’.

Our format operationalizes these insights by embedding low-threshold micro-actions, interventions and guided reflection to turn awareness into agency and impact in everyday learning contexts. These reflections connect to key theories such as effectuation, transformative learning and self-efficacy development.

This PDW therefore invites the wider EE community to experience, adapt, and expand the Challenge together, exploring how Impact Entrepreneurship can start as a tiny spark in every study program.

## BUILDING ENTREPRENEURIAL SELF-EFFICACY THROUGH DEVELOPMENT SPRINTS

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### Workshop Summary

Entrepreneurship education often uses competence frameworks effectively, yet students still struggle to translate competence language into concrete developmental actions that feel meaningful, feasible, and authentic. This challenge is especially visible in personal entrepreneurial development, where portfolios may look polished without clearly showing genuine growth. This Professional Development Workshop presents a compact sprint-based approach that places entrepreneurial self-efficacy at the centre of the learning design. Self-efficacy is positioned not as a substitute for entrepreneurial skill development, but as a condition that helps students take action, persist when tasks become challenging, use feedback productively, and recognise their own progress over time. The workshop addresses one core pedagogical question: how can educators design a short, actionable development cycle that helps students turn EntreComp language into visible, coachable, and assessable growth? Participants work with one ready-made sprint example, analyse how it connects competence, action, feedback, reflection, and evidence, and then adapt it to their own teaching context.

### Workshop Style

Practice-oriented, interactive, and example-based. After a short framing, participants analyse one completed self-efficacy sprint, adapt it in pairs to their own course or module, and exchange structured peer feedback using one compact design template.

### Expected Outcomes

Participants leave with one adapted self-efficacy sprint, concrete feedback prompts to support reflection and dialogue with students about their entrepreneurial development, one evidence prompt, and one immediate implementation step. They also gain a clearer rationale for linking self-efficacy to entrepreneurial action, authentic development, and formative assessment.

### Details of Any Related Research

The workshop is grounded in self-efficacy theory (Bandura, 1997) and in entrepreneurship education research identifying entrepreneurial self-efficacy as a relevant and malleable construct for learning and action (Newman et al., 2019). EntreComp (Bacigalupo et al., 2016) provides the shared competence framework for articulating developmental goals and feedback conversations. The sprint-based approach builds on the premise that growth becomes more meaningful when competences are translated into short cycles of action, feedback, reflection, and evidence. The workshop also draws on practice-oriented guidance from Lans and Van Gelderen (2021), whose work helps educators translate EntreComp into usable learning activities, feedback prompts, and assessment interventions. Rather than adding conceptual complexity, the PDW offers a compact pedagogical design through which entrepreneurial self-efficacy can be made visible, discussable, and assessable in ways that support authentic learning and immediate transfer to practice.

## **BUILDING AN INTERNATIONAL START-UP ECOSYSTEM: CONNECTING STAKEHOLDERS THROUGH MULTI-LEVEL ENTREPRENEURIAL LEARNING**

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### **Workshop Summary**

Universities in post-industrial cities increasingly act as orchestrators of entrepreneurial ecosystems connecting students, start-ups, researchers, policymakers, and industry. This PDW explores how multilevel entrepreneurial learning—individual, team, and institutional—can strengthen ecosystem connectivity and innovation across European university alliances. Building on prior UNIC pilot work, the session introduces a process-oriented ecosystem assessment integrating structural, relational, and dynamic dimensions. Participants engage in an interactive simulation to identify leverage points for stakeholder engagement and transnational collaboration, designing targeted experimental interventions to address ecosystem bottlenecks. The workshop draws on research framing ecosystems as co-evolving multi-actor networks, empirical evidence linking ecosystem elements to entrepreneurial outcomes, and the role of stakeholder collaboration in entrepreneurship education. Practitioners build on prior UNIC pilots combining ecosystem assessment, Train-the-Trainers micro-pilots, makerspace exchanges, and blended intensive program design. Societal actors, including municipal innovation units, incubators, and makerspaces, contributed directly, ensuring relevance and external validation. Outcomes include actionable frameworks for multi-level entrepreneurial learning, experimental interventions, and transnational collaboration strategies.

### **Workshop Style**

Highly interactive simulation replacing a traditional World Café. Participants map actors, flows, and brokerage events, identify critical learning bottlenecks, and design experimental interventions. Small group exercises and plenary discussions facilitate rapid iteration, cross-institutional comparison, and peer translation of practices.

### **Expected Outcomes**

MVP of dynamic ecosystem mapping integrating structure and process, Multi-level entrepreneurial learning framework, Templates for micro-pilot interventions, Insights into transnational collaboration models, Enhanced peer connections across UNIC universities

### **Details of Related Research**

The PDW builds on a UNIC-supported pilot (RUB, Deusto, Malmö, April–Nov 2026). Key effects: (1) clearer education-to-start-up pathways, (2) identification of brokerage roles and missing connectors, (3) enhanced inter-institutional trust enabling sustainable collaboration and joint Erasmus+ development. Methodologically, the session integrates structural assessment frameworks (Meyer et al., 2020) with process-sensitive analysis capturing learning loops, stakeholder mobility, and critical events. Research on multi-actor networks (Hakala et al., 2020) and ecosystem dynamics (Stam & van de Ven, 2021) informs the design, alongside stakeholder collaboration principles (Bischoff et al., 2021), ensuring alignment between theory, practice, and pedagogical experimentation. Participants are expected to apply insights to strengthen connectivity in their ecosystems.

## THE STARTUP MATCHING GAME: A MULTIMODAL SIMULATION FOR ENTREPRENEURIAL SIGNALING AND STRATEGIC FUNDRAISING

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 Carmine Passavanti, University of Naples Federico II  
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### Workshop Summary

Often, entrepreneurship education has long struggled to move students from knowing about communication under uncertainty to practising it. The Startup Matching Game is a card-based multimodal simulation designed to close this gap. Participants take on the roles of start-up founders and investors in a compressed early-stage fundraising scenario, navigating information asymmetry, time pressure, and conflicting signals without a single dominant strategy.

The game is playable in three modes. In Team Mode, groups of four to six collaboratively assemble signal strategies, making visible how entrepreneurial communication is shaped by collective sensemaking. In Individual Role-Play Mode, participants engage in one-to-one speed-date pitches, foregrounding improvisation and identity performance. In Platform-Guided Mode, a digital facilitation layer introduces progressive clues and mid-round disruptions, replicating the turbulence that traditional exercises sometimes fail to generate.

The PDW addresses three questions:

1. which mode best activates which learning outcome;
2. how much of the learning derives from gameplay versus the structured debrief; and
3. how the tool transfers across disciplines.

### Workshop Style

Participants are players, not observers. After a brief introduction, each group selects a game mode aligned to their teaching context and plays immediately. A structured three-level debrief follows, connecting gameplay observations to theory and curriculum design. The session closes with a peer-sourced round of implementation ideas.

### Expected Outcomes

Participants leave with direct experience of at least one game mode, a three-level debrief protocol, and the full facilitation kit (card sets for all three modes, facilitator notes, scenario cards). Each group develops a peer-tested implementation strategy for their specific disciplinary context.

### Details of Related Research

The workshop is grounded in signalling theory and its application to entrepreneurial fundraising. Classic models treat signals as costly, observable actions that convey unobservable qualities under information asymmetry (Spence, 1973). More recent frameworks foreground the full signaller–signal– receiver–costs architecture and the conditions under which separating equilibria hold (Bergh et al., 2014; Connelly et al., 2025). In entrepreneurial finance, the theory explains how founders attract funding when verifiable information is scarce (Wesley et al., 2022), though it has been criticised for underweighting affect, identification, and cognitive bias as alternative mechanisms shaping investor responses (Bafera and Kleinert, 2023; Steigenberger et al., 2025).

The game operationalises these debates: participants observe, within a single round, when communication genuinely reduces uncertainty and when it activates emotional or heuristic responses instead. On the pedagogical side, the design draws on serious game research demonstrating that role embodiment, constraint mechanics, and collaborative gameplay independently predict entrepreneurial skill development (Fox, Pittaway and Uzuegbunam, 2018; Yang, Zhang and Lin, 2022). The game is also explicitly aligned with the EntreComp framework (Bacigalupo et al., 2016), targeting competences including *coping with ambiguity and risk*, *mobilising others*, *persuasion and negotiation*, and *taking initiative*, each of which is activated by a specific combination of game mode and mechanic.

## AI-AUGMENTED DESIGN SPRINT: FOSTERING INTRAPRENEURIAL SKILLS THROUGH A MULTIDISCIPLINARY LOOP

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Shirah Foy, Toulouse Business School

### Workshop Summary

This workshop explores how AI-augmented Design Sprints can foster intrapreneurial skills by bridging research, business, and pedagogy. We address the challenge of preparing students to drive innovative projects within organizations using a multidisciplinary loop that integrates AI tools, corporate partnerships, and experiential learning. Drawing on our pioneering course—engaging over 1,000 students across seven MSc programs—we share actionable strategies for aligning immersive learning experiences with real-world business challenges. The session focuses on three critical challenges: (1) scoping technically complex company briefs into manageable student projects, (2) providing structure for ethical and effective AI use in innovation, and (3) delivering theoretical concepts alongside fast-paced project work. Recognized with QS Reimagine and AACSB awards, our collaboration with Airbus demonstrates how Design Sprint methodologies paired with organization research and AI tools (e.g., ChatGPT) create a virtuous research-business-pedagogy loop. Participants will explore how to adapt these approaches to their own contexts, balancing student cognitive load, industry expectations, and pedagogical rigor.

### Workshop Style

A brief presentation will be followed by a guided group discussion. Polling will capture collective insights, while small-group discussions foster peer learning and actionable takeaways.

### Expected Outcomes

Participants will gain a problem-solving toolkit for rescoping projects, AI use guidelines, and theory integration strategies. They will leave with peer-generated insights on navigating industry relationships and student cognitive load, plus actionable ideas to adapt their courses based on collective experiences and real-world case studies.

### Related research

Our approach is grounded in Corporate Entrepreneurship Strategy (Kreiser et al., 2021), which emphasizes aligning strategic, technological, and identity fit in intrapreneurial projects. We build on drivers of innovation (Perry-Smith and Mannucci, 2017) to guide AI-assisted idea generation and legitimization, and Experiential Learning Theory (Kolb, 1984) to structure iterative, hands-on activities. Legitimacy Theory (Suchman, 1995) further informs how students build credibility for their projects within organizations. Finally, this course informs—and is informed by—our ongoing research, currently in R2 at the *Journal of Product Innovation Management*, which examines how alternative AI-augmentation structures for idea generation affect ideator's bias (Fuchs et al., 2019) in idea screening.

## PREPARING FOR THE PRESENT AND THE FUTURE – WHAT COMPETENCIES DO EDUCATORS NEED?

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### Workshop Summary

What competencies do we, as educators, need to effectively prepare our students to address today's complex social and environmental challenges? Social entrepreneurship (SE) educators face increasing complexity as they navigate evolving role expectations, diverse pedagogical approaches, and the growing urgency of global social and environmental issues. This PDW explores the competencies educators need today – and those they may require in the future – to teach effectively in this dynamic context. Drawing on research-based insights and a comprehensive literature review, the session engages participants in reflection, discussion, and guided imagination exercises to envision future learning environments and the corresponding competence needs of educators. Participants will map their own competencies, identify development needs, and formulate one actionable step for their professional growth. The workshop positions educators as facilitators of learning and agents of change who actively shape the future of SE education.

### Workshop Style

This practice-oriented session will begin with a short introduction and key insights on SE educator competencies in post-secondary education, drawing on the presenter's comprehensive literature review. Building on this foundation, participants will engage in guided imagination exercises, reflection, and discussion around the central question: What competencies are essential for educators in SE education today and in the future? The workshop concludes with participants reflecting on their own competencies and professional development. The workshop combines short research-based inputs with interactive exercises, discussions, peer exchange, and self-reflection to ensure active engagement and meaningful learning.

### Expected Outcomes

By the end of the workshop, participants will:

- Gain a deeper understanding of the multifaceted roles and competencies of SE educators as well as related challenges – today and in the future.
- Recognize their role as educators in contributing to institutional and broader societal change.
- Reflect on their own personal educator identity and professional development needs.
- Identify one clear and actionable step for their personal development as SE educators.

### Details of any related research

The workshop draws on the presenter's ongoing research into educator competencies in SE education and entrepreneurship education, as well as conceptual frameworks such as Tigelaar et al.'s (2004) five domains of teaching: the person as teacher, the teacher as expert on content knowledge, as facilitator of learning processes, as organizer, and as scholar/lifelong learner. While research-informed, the session focuses on practice, discussion, and reflection. Practical exercises in the workshop are inspired by futures thinking.

## ENTER THE GAME JAM: RAPID GAME PROTOTYPING FOR CHANGE-MAKING EDUCATION

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### Workshop Summary

Every educator knows the struggle of wanting to make class more interesting—but equally, we all struggle with overcommitment and lack of time. What if educators could design engaging learning games that actually support entrepreneurial competencies in under an hour? This Practitioner Development Workshop introduces the **Entrepreneurship Game Jam**, a rapid prototyping method that enables educators to collaboratively design, test, and refine educational games within a playful, high-intensity design sprint.

Using game design methodologies and constructive constraint, this highly interactive session enables entrepreneurship educators to cultivate experimentation, collaboration, and adaptive thinking, developing learners who can think creatively, navigate uncertainty, and act as change-makers in complex systems.

Participants work in small teams to create a playable game prototype using simple materials and guided prompts that link game mechanics to learning outcomes such as opportunity recognition, negotiation, systems thinking, and responsible innovation. The session then moves into an open playtesting environment where prototypes are tested, refined, and discussed by the teams and conference attendees.

The workshop addresses key questions including how educators can rapidly design meaningful learning games, how playful design can support the teaching of complexity and uncertainty, and how collaborative experimentation can stimulate innovation in entrepreneurship education practice.

### Workshop Style

This PDW is highly interactive and maker-oriented. Participants collaborate in small teams during a structured “game jam” design sprint to prototype educational games using simple materials. A second session enables rotating playtests where participants and conference attendees experience and critique each other’s games, generating rapid feedback, reflection, and shared learning.

### Expected Outcomes

Participants will experience a complete cycle of game-based learning design, from concept creation to playtesting and reflection. They will leave with a prototype educational game, practical design prompts, and a replicable game jam format that can be used to foster creativity, collaboration, and experimentation in entrepreneurship education.

### Details of Related Research

This workshop draws on research in entrepreneurship education, experiential learning, and game-based learning, emphasising action, experimentation, and reflection (Kolb, 1984) to constructively learn and teach entrepreneurial processes of iterative experimentation and adaptive decision-making (Gee, 2003). Through rapid prototyping and collaborative design, the game jam offers educators a practical way to develop playful learning experiences that cultivate creativity, systems thinking, and entrepreneurial mindsets.

## FROM COMPETENCE TO CONTEXT: UNDERSTANDING THE ENTREPRENEURIAL LIFE-WORLD

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### **Workshop summary**

This workshop explores how entrepreneurship education can better support the development of change agents by aligning with the lived experiences and real-time learning needs of entrepreneurial students and early-stage founders. Entrepreneurship education should be designed around the learner's context and timing, not predefined content. Educators should act as facilitators and coaches, supporting learners in navigating uncertainty and complexity. Learning outcomes should be flexible, co-created, and responsive to the evolving needs of students. Allan Gibb's Framework for Learning Outcomes in Entrepreneurship Education offers a practical tool for aligning educational design with the entrepreneurial lifeworld. Key questions for discussion include: How can entrepreneurship education reflect the real-time needs of learners in fragile or transforming regions? What does it mean to design education around uncertainty, timing, and personal context? How can educators become facilitators of transformation rather than transmitters of knowledge?

### **Workshop Style**

Based on 28 micro cases, participants are placed in the role of student entrepreneurs, each with their own issues. After analyzing these issues are placed in Gibb's Framework. We explore how the framework can be used to co-create flexible and context-sensitive learning trajectories. Finally we discuss what dealing with the life-world of entrepreneurial students means for them, for the teachers, and for the organization.

### **Expected Outcomes**

A shared understanding of the entrepreneurial life-world as a foundation for curriculum design. Practical insights into using Gibb's framework to support change agents in diverse contexts. Inspiration for developing adaptive, learner-centered entrepreneurship education that contributes to resilient communities.

### **Details of related research**

The workshop is based on a practice-based study conducted at HAS University of Applied Sciences and Koning Willem I College. The study involved entrepreneurial students and early-stage founders and resulted in the categorization of 292 learning questions using Gibb's framework. This research highlights the mismatch between formal curricula and the actual learning needs of entrepreneurial learners, and proposes a flexible, learner-driven approach to entrepreneurship education.

## ADVANCING INTRAPRENEURSHIP EDUCATION IN EUROPE

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Bettina Maisch, HM Munich University of Applied Sciences

### Workshop Summary

Entrepreneurship education has traditionally prioritized new venture creation, even though most graduates apply entrepreneurial capabilities inside existing organizations. This PDW addresses the education-employability gap by positioning intrapreneurship and corporate entrepreneurship as core outcomes of entrepreneurship education. The session convenes educators and practitioners to map ongoing initiatives, derive design principles, and seed a European collaboration network. Participants will co-create a landscape snapshot of intrapreneurship education across pedagogies, curricular structures, and industry-integration models. Through lightning sharing, mini-sprints, and plenary synthesis, we will generate an intrapreneurship education typology, key design principles, and a shortlist of promising cases. Outputs are structured for immediate transfer, including templates and prompts for redesign. Ultimately, the PDW positions intrapreneurship education as an emerging pillar in EE, strengthening employability and organizational innovation capacity.

### Workshop Style

Participatory micro-lab involving a 10-minute framing followed by 30 minutes of interactive work. Activities include lightning sharing, small-group design sprints, and plenary synthesis. All inputs are captured on a shared digital canvas and distributed after the session to support transfer and collaboration.

### Expected Outcomes

Participants gain: a European snapshot of intrapreneurship education; a typology of IE initiatives; pedagogical design principles; identified cases and collaborators; and access to a shared repository and working group. They leave with templates, prompts for experimentation, and concrete pathways for joint research and curriculum development.

### Details of any related research

The PDW builds on corporate entrepreneurship and organizational renewal (Zahra, 1991; Kuratko & Audretsch, 2022) and practice-based entrepreneurship education emphasizing learning-through-doing (Neck & Corbett, 2018; Alsos et al., 2023). Prior 3E contributions deepen this foundation: Ikävalko et al. (2024) show how student technological innovation can anchor corporate entrepreneurship education; Kraus & Hoffmann (2025) present the IntraXperience programme, developing intrapreneurial capabilities in public- and military-sector contexts via design thinking, agile teamwork and iterative problem-solving; Kampe & Wach (2025) identify core corporate innovation competencies, digital fluency, interdisciplinary problem-solving and organizational leadership, highlighting gaps in traditional EE; and Westerberg & Hoppe (2025) demonstrate how workplace-based, learning-by-doing approaches foster entrepreneurial behaviour and support sustainable transformation inside established firms. To frame intrapreneurship conceptually, we also draw on integrative reviews of corporate entrepreneurship and intrapreneurial behaviour (Urbano et al., 2022; Neessen et al., 2019). Collectively, these works reveal a rapidly evolving European IE landscape while underscoring the need for shared frameworks, pedagogical principles, and collaborative research structures that this PDW will help to articulate.

## MAKING AND PLAYING SIMULATION GAMES IN ENTREPRENEURSHIP EDUCATION AT SCALE

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### Workshop Summary

Entrepreneurship education often relies on venture-creation projects with external stakeholders. While engaging for some students, this format can overwhelm, for example, more introverted or neurodivergent learners. Simulation games offer an alternative pathway for developing an entrepreneurial mindset. In our large-scale online MSc course with 400–500 students per semester, we introduced entrepreneurial simulation games that allow students to experiment with decisions in a safe, low-stakes environment. More recently, students also design their own games, translating entrepreneurial concepts into mechanics and feedback systems. In this workshop, participants explore the pedagogical rationale of game-based learning and collaboratively prototype simple simulation games for entrepreneurship courses.

### Workshop Style

The workshop combines short presentations with interactive design activities. Participants work in small groups using a structured template to prototype an entrepreneurial simulation game. Groups briefly present their concepts and reflect on how game-based learning could be integrated into their own courses.

### Expected Outcomes

Participants will gain practical experience designing simulation-based learning activities and understanding the mechanisms that make games pedagogically effective. They will leave with a reusable game design template and strategies for integrating student created simulations into entrepreneurship education.

### Details of Any Related Research

Simulation and serious games support experiential learning and entrepreneurial mindset development by allowing students to explore decisions without real world risk. Research also shows that when students design games themselves, they translate theoretical concepts into rules and interactions, deepening understanding. Our approach builds on serious-game design frameworks that align game mechanisms with learning outcomes and define objectives, feedback, and win conditions. Drawing on four years of teaching in large online cohorts, we demonstrate how simulation and student created games can scale entrepreneurship education while supporting reflective and inclusive learning.

## DEVELOPING PITCHING SKILLS THROUGH PLAYFUL PEDAGOGY

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### Workshop Summary

This workshop introduces a playful, experiential pitching exercise designed to teach pitching as a transferable skill across different disciplines. While pitching is common in entrepreneurship education, students elsewhere are less exposed to it. Drawing on the theories of experiential learning, serious play, and psychological safety, the presented method emphasises skill development over idea quality. Participants create imaginary products from random word combinations (e.g., a “bird keyboard”), fostering a low-stakes environment that reduces fear of failure and encourage experimentation. Evidence from train-the-trainer courses shows that this approach helps educators view pitching not only as a presentation format, but as a way to develop creativity, opportunity recognition, and change agency. The workshop explores two key research questions: *How playful pedagogy reduce fear of failure and encourage experimentation? How can pitching be reframed as a tool for activating students as change agents across disciplines?*

### Workshop Style

The workshop is highly interactive and experiential, combining a brief theoretical introduction with hands-on pitching using random word prompts. Participants create playful, low-stakes pitches, exchange peer feedback, and engage in collective reflection to explore how the method can enrich their own teaching practice.

### Expected Outcomes

Participants can expect increased confidence in using playful, low-stakes pedagogy to teach pitching, along with practical tools for integrating entrepreneurship across disciplines. Prior testing of this pedagogical methods showed that through reflections, the participants gained a clearer understanding of entrepreneurial concepts, enhanced alertness to opportunities, and concrete ideas for applying pitching exercises in their own courses.

### Details of any related research

The workshop builds on research from experiential learning, serious play, and psychological safety. Using Kolb (2014) experiential learning theory to emphasise iterative cycles of action, reflection, and refinement—mirrored as participants pitch, receive feedback, and revise. While Schrage (2000) literature on serious play supports using playful, low-stakes tasks to encourage experimentation and creativity. Studies on psychological safety show that environments where mistakes are acceptable enhance learning, empowerment, and idea exploration (e.g. Tu, 2021; Han *et al.*, 2022; Soncini *et al.*, 2022).

## AWAKENING CHANGE AGENTS IN EE THROUGH THE 'WORK THAT RECONNECTS'

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**Workshop Summary:** This PDW aligns with the conference theme of developing entrepreneurship change agents by introducing a novel pedagogical application of Joanna Macy's Work That Reconnects (WTR) within EE. At its core, entrepreneurship is about creating value. By rethinking what we mean by value and what we truly care about, we can reflect on and consciously shift away from dominant models of exploitation, colonisation, and extraction toward approaches that support thriving for all within our planet's limits.

WTR offers an embodied, experiential, and systems-informed framework for strengthening this inner shift. Through the WTR Spiral (gratitude, honouring pain, seeing with new/ancient eyes, and going forth), participants explore how emotional literacy, courage, and relational awareness can enhance their ability to support regenerative EE practices. The PDW also introduces Macy's three stories of our time (business as usual, the great unravelling, and the great turning) and explores how integrating the 'Great Turning' into EE pedagogy can help educators challenge business-as-usual narratives and foster paradigm change.

The question we care about is: *How can embodied and relational practices from WTR deepen our sense of belonging, courage, and purpose, strengthening our capacity as change agents to take meaningful action in response to the polycrisis?* To our knowledge, WTR has not yet been incorporated into EE curricula, making this workshop a timely, experimental, and potentially transformative contribution to EE scholarship and practice.

**Workshop Style:** This double PDW is highly experiential, embodied, and relational, ideally taking place outdoors (weather permitting). Participants move through the WTR Spiral in pairs, small groups, and individually, combining reflection, storytelling, movement, dialogue, and facilitated emotional processing to create a psychologically safe and engaging learning experience.

**Expected Outcomes:** Participants will be introduced to WTR as a novel EE pedagogical tool and explore its potential value. They will deepen their thinking around the concepts of resilience, relational awareness, and emotional literacy, gain clarity on meaningful next steps as EE and change agents, and contribute feedback to inform the ongoing development of WTR-informed EE practices.

**Details of Any Related Research:** Grounded in Macy's established Work That Reconnects (Macy & Brown, 2014; Macy & Johnstone, 2022), a framework designed to help people respond to ecological and social crises with courage, compassion, and purposeful action. WTR positions "active hope" as a practice involving conscious engagement with reality, reflection on values, and intentional steps aligned with the Great Turning, the shift from extractive systems to life-sustaining ones. These foundations inform the workshop's embodied, affect-based approach, shaping activities that support emotional literacy, relational connection, worldview transformation, and agency.

Regenerative economic scholarship (Raworth, 2017; Hickel, 2021; Jackson, 2017; Hutchins & Storm, 2019; Parrique, 2025; Fullerton, 2025) provides a conceptual rationale for embedding WTR within EE by challenging dominant growth logics and articulating alternative pathways for entrepreneurial value creation within planetary boundaries. The workshop is further informed by transformative learning (Sterling, 2010; 2024; Wals et al., 2024), which emphasises experiential, relational and paradigmshifting pedagogies. Critical and sustainability-oriented EE research (Verduijn & Berglund, 2020; Dey et al., 2023; Brentnall & Higgins, 2024; Walsh et al., 2024; Freeman & Walsh, 2025; Walsh et al., in press) calls for approaches that challenge dominant assumptions, re-evaluate the purpose of EE, and support EE with tools to transition towards a society that ensures thriving for all within the means of the planet.

## RELEVANCE IN THE CLASSROOM – HOW DO WE CONNECT THEORY WITH LIVED EXPERIENCES?

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### Workshop summary

As entrepreneurship education embraces more student-led teaching, the experience-based learning also comes with its challenges. When students immerse themselves in their own projects – their ventures – their experiences and learning can vary, driven by different needs and activities. Some may prioritize certain aspects of their entrepreneurial work over others. With such diverse ventures and varying interest among students, how can educators ensure that courses content remains relevant and engaging?

Students who take part in start-ups as part of their own education, such as in venture creation programs, may find the work related to their start-ups as far more valuable and interesting than the content of the courses in the program. Not because the curriculum is not relevant, but because what might be needed in the venture at the time is something different. One of the challenges for educators when teaching entrepreneurship to students who are involved in action can be that the students do not see the relevance of something if it is useful for them later (Haneberg et al., 2022). The question we care about is therefore: *How do we connect students' actions to the educational offerings in the classroom?*

### Workshop style

Building on practices that engage students through varied activities – connecting their ventures to course activities via tools, frameworks, in-class discussions and teamwork – participants will explore new approaches and build on their existing practice to develop strategies for engaging venturing students. The workshop will focus on group discussion and build on a framework for student-centered and teacher-led learning approach.

### Expected Outcomes

Based on this workshop, participants will get an insight into the usage of tools and frameworks to bridge students' venturing activities to courses' contents and focus. They will experiment with creating own aids for their teaching and exploring ideas for implementing this practice.

### Details of any related research

The tension between venture creation and academic work has been found to be a challenge in venture creation programs (Haneberg et al., 2022). While some entrepreneurial skills can be developed through the experiential process of venture creation and action, students should also be able to reflect and relate to a theoretical foundation (Haneberg et al., 2022). Strategies to connect action and academic work can be related to how the educator structure the academic work and use reflections. Building Kolb's experiential learning model, and Svinicki and Dixon's (1987) adaptation for classroom activities, the workshop illustrates how different educational activities can bridge students' venturing activities and course content.

Kolb's (2014) experiential learning model emphasizes the learner at the center of the learning process and has become one of the central theories for learning and teaching in entrepreneurship education (Hägg & Kurczewska, 2016). Even with experience at the core of learning, classroom activities also serve as an important learning arena (Kolb, 2014). By leveraging this fact, educators can structure their designs to ensure students progress through the learning cycle stages – often multiple times – during a single lecture.

# RESEARCH PAPERS

## EMPOWERING DOCTORAL CANDIDATES AT THE HOMESTRETCH OF THE PHD

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### Questions we care about

PhD students at the homestretch of their PhD face structural and psychological barriers that hinders completion. The experience of impostor syndrome intensifies during the later stages of the PhD when the pressure to produce an original scholarly contribution becomes most acute. Despite this, doctoral support structures in many institutions remain front-loaded and the ques on we care about is therefore How do we facilitate the homestretch of PhD education?

### Approach

This paper draws on the entrepreneurial empowerment perspective (Santos et al., 2019) and experiential learning frameworks to examine how a three-day intensive seminar supports PhD candidates in completing their cover essay. We use evaluations from previous seminars and interviews based on pictures with participants from the most recent seminar.

### Results

Our findings suggests that intensive seminars function as empowerment environments: they provide structured occasions for candidates to test and revise their understanding of the completion task (competence), to exercise authorial judgment in response to peer and faculty feedback (self-determination), to reconnect with the significance of their scholarly contribution (meaning), and to observe the tangible progress produced by concentrated work (impact). Furthermore, becoming empowered to write the cover essay is also seen as part of becoming empowered to become a finished PhD and becoming empowered to become a finished PhD is simultaneously an important part of feeling empowered to write the cover essay.

### Implications

Writing the cover essay is something different than writing another paper since it is very much connected with transforming the PhD student into an independent researcher and the writing of the cover essay therefore needs to be facilitated in a different way, allowing for freedom and creativity within the boundaries of the format. The paper also shows the importance of not only empowering the PhD students for the task at hand, but also what comes after.

### Value/Originality

The paper points to the interrelationship between empowerment, communities of practice and safety with regards to empowering PhD students. Even though the analysis of the interrelationship is not fully developed with the limited data set there seems to be something there beyond the co-existence of the three.

**Keywords:** Doctoral education; empowerment; cover essay; seminar

## INTEGRATING AI AS PEDAGOGICAL SUPPORT IN ENTREPRENEURSHIP EDUCATION

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### Objectives

The objective is to determine how Artificial Intelligence (AI) tools can be meaningfully integrated into entrepreneurship education to enhance learning outcomes while maintaining pedagogical integrity and ethical standards. This study explores the integration of specialized AI support within the customer discovery process, which is traditionally time-consuming and challenging for novice entrepreneurs and teaching at university level. The central question is: How can specialized AI support student learning in customer discovery and customer validation in processes without replacing the essential human interactions necessary for developing core entrepreneurial competence?

### Approach

This empirical study employs an action research methodology within a real estate development course at a Swedish University, in collaboration with a work integrated learning approach with support of a Custom GPT AI application called MAIA.

### Results

The study shows significant pedagogical benefits. 1. Iterative depth & Time Efficiency: Customer research that traditionally requires considerable time investment was completed within a much shorter timeframe, while still maintaining high analytical quality. 2. Mitigation of Cognitive Bias through Objective Analysis: AI-assisted analysis helped students identify actionable patterns and mitigate confirmation bias. 3. Increased Engagement and Motivational Empowerment: Students reported high enthusiasm for conducting customer research when supported by specialized AI, which lowered psychological barriers, like high levels of uncertainty, common among first-time entrepreneurs and students. 4. Enhanced Learning Quality through Human-AI Synergy: The combination of AI-supported analysis and mandatory human interaction for data collection created a balanced learning environment where technology amplified, rather than replaced, entrepreneurial competence development.

### Implications

The following approaches contributed to the benefits, 1) Pedagogical design: The method offers a replicable structure for meaningful AI integration as pedagogical support 2) Ethical implementation: Using custom-trained AI with controlled sources proactively addresses concerns about data privacy, misinformation, and over-reliance, protecting educational integrity, 3) Scalability and access: The iterative approach enables more intensive learning experiences within existing time constraints, potentially democratizing access to high-quality entrepreneurial education, 4) Student agency: A specialized AI tools strengthen student ability to engage with authentic entrepreneurial tasks, such as customer discovery and validation that might otherwise be too time-consuming within the course time frame, 5) Collaboration: The partnership between the university and the practice-based actor in entrepreneurship education, training and innovation illustrates an effective model for cross-institutional collaboration in pedagogical innovation.

### Value and originality

With combining methodological innovation, Specialized, evidence-based AI design and practical implementation the study delivers concrete, replicable methods useful for entrepreneurship educators globally who struggle to teach and train students customer discovery and market validation processes, thereby fostering the development of their entrepreneurial competencies.

**Keywords:** AI tool, entrepreneurship education, pedagogical design, learning, action research.

## ENTREPRENEURIAL IDENTITY PROCESSES THROUGH VALUE CREATION PEDAGOGY

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### **Questions we care about/Objective**

Entrepreneurial identity is widely recognized as a developmental process shaped by interaction, action, emotion and social participation, yet entrepreneurship education often relies on narrow, venture centric representations of what it means to act entrepreneurially. Venture creation programs are widely regarded as strong arenas for developing entrepreneurial individuals and offer rich conditions for identity development. A stereotypical framing, focusing on venture creation may, however, unintentionally constrain the process of entrepreneurial identity development among participants.

### **Approach**

This conceptual paper addresses this challenge by integrating entrepreneurial identity development literature with social learning theory to explain how identities form through emotionally engaging action, -observation- and structured reflection in entrepreneurship education. Building on this integration, we introduce value creation pedagogy as a complementary framework for supporting identity development within more inclusive venture creation programs.

### **Contribution**

We propose a future research agenda examining entrepreneurial identity development in venture creation programs, with particular attention to: (1) how social learning mechanisms shape identity development in different temporal learning formats; (2) how emotional learning events and structured reflection contribute to identity negotiation; (3) how value creation pedagogy broadens the range of identity relevant experiences available to learners; and (4) how these processes operate across classroom and extracurricular contexts.

### **Value**

Together, these avenues advance a more inclusive, socially grounded- and pedagogically intentional understanding of entrepreneurial identity in entrepreneurship education.

**Keywords:** Entrepreneurship education, entrepreneurial identity, venture creation pedagogy, venture creation programs.

## BEYOND COMPETENCES: AN AXIOLOGICAL PERSPECTIVE ON SUSTAINABLE ENTREPRENEURSHIP EDUCATION

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### Questions we care about

In a context of socio-ecological transition, education is increasingly expected to move beyond a strictly competence-based approach and support value-oriented forms of engagement. While research in sustainable entrepreneurship education widely acknowledges the importance of values, little is known about how they emerge and are mobilized within educational experiences, particularly among younger learners. This study therefore asks: how are values mobilized in pupils' actions during sustainable entrepreneurship projects in primary school, and through which pedagogical situations do these values emerge and potentially evolve?

### Approach

The study combines Nathalie Heinrich's axiological sociology of values with Joas's processual perspective on the genesis of values in experience. Values are approached not as stable dispositions but as principles of judgment activated and negotiated in action. Empirically, the research draws on a multiple ethnographic case study conducted during the 2023–2024 school year in four primary school classes (ages 10–12) in Brussels participating in sustainable entrepreneurship projects linked to the Sustainable Development Goals. Data collection combined participant observations, semi-structured interviews with pupils, teachers, and program coordinators, pupils' reflective journals, and pedagogical documents. Data were analyzed through iterative within-case and cross-case analysis supported by inductive and abductive reasoning.

### Results

Findings show that the mobilization of value registers occurs within recurring pedagogical configurations. Four main types of situations emerge across cases: encounters with reality generating empathic experiences, reflective practices supporting narrative construction and collective discussion, the materialization of projects through collective action, and forms of civic engagement extending beyond the school context. Together, these configurations structure a dynamic process linking emotions, normative judgments, interpretation of experience, and collective action. In several cases, pupils extend the concerns addressed in class into everyday practices and forms of engagement with others. These experiences do not automatically produce lasting transformations, but they create conditions in which some pupils begin to integrate certain concerns and responsibilities into how they understand themselves and their role in relation to socio-ecological issues.

### Implications

The results suggest that sustainable entrepreneurship education should be designed as an axiologically rich learning environment that intentionally combines experiential encounters with real-world issues, structured opportunities for reflection, and opportunities for collective action directed toward real audiences. Teachers' pedagogical stance and the involvement of external actors appear particularly important in supporting these dynamics.

**Value / Originality:** By articulating axiological sociology with a processual theory of value formation, this study shifts the analytical focus in entrepreneurship education research from competences and intentions to the experiential dynamics through which values are activated and sometimes reconfigured. It provides an empirically grounded framework for understanding how sustainable entrepreneurship education can foster value-based engagement from the primary school level.

**Keywords:** sustainable entrepreneurship, sustainable entrepreneurship education, early childhood, axiological approach

## THE IMPACT OF STUDENT ENTREPRENEURSHIP ON ENTREPRENEURIAL ECOSYSTEMS

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Research on entrepreneurial ecosystems has largely overlooked the growing phenomenon of student entrepreneurship. This paper examines: (1) How student entrepreneurship affects entrepreneurial ecosystems beyond direct venture outputs? (2) Can these effects be systematically measured across ecosystem elements? The objective is to broaden the understanding of ecosystem dynamics.

We build on Stam and van de Ven's (2021) entrepreneurial ecosystem model, implying that student entrepreneurship can influence all ecosystem elements—directly through venture creation and indirectly through talent development, cultural change, and network formation. We propose indicators to assess these effects, covering venture performance, talent and leadership outcomes, financial flows, cultural visibility, and network engagement. We validate the framework using data from Ghent University, integrating a survey of 220 alumni student entrepreneurs, register data on venture performance, and media coverage. This enables a comprehensive analysis of direct and indirect ecosystem impacts.

Student entrepreneurship contributes substantially to entrepreneurial ecosystem outputs. Half of the student ventures remain active after graduation. Employment and turnover increased significantly and these ventures outperform comparable start-ups. Regarding resource endowments, former student entrepreneurs report strong development of entrepreneurial competencies. 51% continue as entrepreneurs; among employees, 62% act as intrapreneurs. Student entrepreneurship also stimulated co-working and makerspaces, later integrated into the broader ecosystem. Ventures contribute to local employment and service provision. For institutional arrangements, 1,143 media articles referenced student ventures, reinforcing the region's entrepreneurial identity. Engagement is high: 82% attended networking events and 28% maintain ties with the university as mentors, lecturers, or advisers.

Student entrepreneurship strengthens ecosystems far beyond start-up creation. For entrepreneurship education, they highlight the need to move from intention-based metrics toward behavioral and ecosystem-level outcomes. Universities and policymakers should recognize these indirect contributions when designing programs and allocating resources.

This study provides the first comprehensive framework and empirical evidence on the multi-level impacts of student entrepreneurship on entrepreneurial ecosystems. By revealing substantial indirect effects—in talent, culture, networks, and infrastructure—it challenges venture-centric perspectives and offers practical tools for ecosystem assessment.

**Keywords:** student entrepreneurship; entrepreneurial ecosystems; university entrepreneurship; venture development; talent development; innovation

## ENTREPRENEURING, LEARNING, AND PLAYING: EXPERIMENTAL GAMES FOR LEARNING INTRA(ENTRE)PRENEURSHIP

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### **Abstract**

Traditional entrepreneurship education often prioritizes theory over the practical application of concepts, leaving students unprepared for real-world risks. To bridge this gap, this paper explores how a corporate venturing game recreates a safe and entertained environment to learn new concepts associated with intrapreneurship and entrepreneurship. Using an experimental economics methodology, 57 undergraduate students participated in a market simulation involving large corporations, intrapreneurs, and independent entrepreneurs. Participants were required to navigate internal and external corporate venturing by pitching and acquiring solutions in a controlled, simultaneous-information environment. The results indicate that this interactive approach significantly improves knowledge absorption. While a control group relied on theoretical lectures, the "treated" group intuitively identified advanced concepts—such as "venturing" and "intrapreneurial capacity"—before formal introduction. Students reported high satisfaction, highlighting the game's ability to recreate market realities safely. This research contributes to entrepreneurship education by demonstrating that experimental games provide a superior framework for formative assessment and the intuitive incorporation of complex business categories into professional discourse.

**Keywords:** Classroom experimental games; Corporate Venturing, Entrepreneurship; Entrepreneurship Education; Intrapreneurship

## DESIGN THINKING MEETS AI-BASED FEEDBACK TOOLS: RECONSIDERING INCLUSION IN ENTREPRENEURIAL LEARNING

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Entrepreneurship education (EE) has long emphasised experiential learning environments where students develop entrepreneurial capability through experimentation, reflection, and iterative problem solving. Within this tradition, inclusion is not simply about access to educational resources but about whether diverse learners are able to participate meaningfully in entrepreneurial learning processes. However, research suggests that many programmes still reflect narrow assumptions about who the entrepreneur is and whose knowledge counts within entrepreneurial learning spaces.

Two developments are increasingly shaping contemporary entrepreneurship education: the use of design thinking as a structured approach to creative problem solving and the rapid adoption of generative AI tools as sources of feedback during idea development. Design thinking provides an iterative framework centred on empathy, ideation, prototyping, and testing, while AI tools are increasingly used by students to explore ideas, challenge assumptions, and generate alternative perspectives. Yet little research has examined how these two pedagogical resources interact in practice, particularly in relation to participation and inclusion in entrepreneurial learning environments.

This study investigates how the interplay between design-thinking activities and AI-generated feedback shapes participation dynamics in entrepreneurship education. The research draws on qualitative data from 64 undergraduate students enrolled in entrepreneurship modules at a UK university. Data sources included student reflective notes, AI interaction excerpts, workshop observations, and semi-structured interviews with 35 students. The data were analysed using thematic analysis.

Five themes emerged from the analysis. First, AI outputs frequently disrupted rather than accelerated the design process, prompting students to revisit earlier stages and reconsider assumptions. Second, students acted as critical interpreters of AI-generated suggestions rather than passive recipients. Third, AI provided a low-stakes space where students could privately test ideas before sharing them with peers. Fourth, iterative returns to earlier design stages helped normalise non-linear entrepreneurial learning. Finally, interactions with AI surfaced questions of identity and perspective, revealing how students' lived experiences could challenge assumptions embedded in AI outputs.

The findings suggest that AI tools can support wider participation in entrepreneurial learning environments when embedded within pedagogical structures that encourage critical engagement, experimentation, and iterative learning. The study contributes to entrepreneurship education by showing that inclusion in AI-mediated learning is not a technological outcome but a pedagogical condition shaped by how learners, tools, and learning environments interact.

## RETHINKING ENTREPRENEURSHIP EDUCATION: RISK-TAKING, FINANCIAL SATISFACTION, AND CAPABILITY

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### Questions We Care About – Objectives

Entrepreneurship education (EE) assumes that increasing financial literacy leads to resilient ventures. However, in Ghana, over 60% of micro-ventures fail within five years despite literacy efforts. This paper asks: Why do capable entrepreneurs—those possessing the requisite knowledge—fail to act?. We challenge the "literacy-as-silver-bullet" narrative by exploring how risk-taking propensity (behavioral) and financial satisfaction (affective) shape the link between financial literacy (cognitive) and performance.

### Paper Approach

Grounded in human capital theory, prospect theory, and dual-process theory, we utilized an explanatory sequential mixed-methods design. Quantitative data from 415 Ghanaian micro-business owners were analyzed via PLS-SEM. This was followed by 12 semi-structured interviews and an in-depth case study of 'Delight Ventures' to provide mechanistic explanations for the statistical results.

### Results

Quantitative analysis revealed a counterintuitive negative effect of financial knowledge on performance. Risk-taking propensity partially mediated this relationship, while financial satisfaction acted as a complex moderator. Qualitative findings explained this "knowledge–action gap": entrepreneurs often feel emotionally overwhelmed (avoiding action) or, conversely, too secure due to high satisfaction (postponing investment). Structural barriers like inflation further misalign trained behaviors with reality.

### Entrepreneurship Education (EE) Implications

Entrepreneurship Education requires a paradigm shift from "information" to "activation." We propose a "Cognitive–Behavioral–Affective Triad" framework. Pedagogical shifts include (1) integrating risk-appraisal simulations; (2) treating financial satisfaction/stress as an educational input rather than a byproduct; and (3) embedding context-aware frameworks that account for socio-economic constraints like high rent and inflation.

### Value and Originality

This study contributes a multidimensional view of the entrepreneur as an affective actor, not just a cognitive one. By utilizing the Ghanaian context, it exposes the limits of universal educational assumptions and provides concrete pathways for designing transformative EE in emerging markets.

**Keywords:** Financial Literacy; Risk-Taking Propensity; Financial Satisfaction; Entrepreneurship Education; Ghana; Micro-business Performance.

**YOUR DEGREE "WITH INNOVATION":  
FACILITATING RADICALLY INTERDISCIPLINARY THINKING IN ENTREPRENEURSHIP EDUCATION**

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**Abstract**

Entrepreneurship education (EE) has expanded across academic disciplines, necessitating a deeper understanding of how interdisciplinary capability matures over time within radically diverse learner cohorts. This study evaluates the developmental trajectory of Interdisciplinary Understanding (IU) in a unique four-year Integrated Master's programme where students from 14 different disciplinary backgrounds collaborate on real-world innovation challenges.

Employing a convergent mixed-methods design, the research integrates quantitative data from the Interdisciplinary Understanding Questionnaire (IUQ) ( ) with qualitative insights from semi-structured interviews. Findings indicate that interdisciplinary competencies develop non-uniformly and in stages. While routine reflection and collaboration function as stable baseline competencies, critical reflection, the ability to challenge foundational beliefs, demonstrates the most continuous maturation across the four years. A significant "threshold surge" in interdisciplinary knowledge is discussed as project complexity shifts from exploratory ideation to consequential integration. Conversely, communication skills stall during the first two years as students face an "expert barrier", struggling to translate complex disciplinary theories for their teammates, and only consolidate during the professional positioning phase of the final year.

These findings offer important implications for the design of entrepreneurship curricula. The study argues that interdisciplinary understanding is most effective when it co-evolves with disciplinary grounding rather than replacing it, suggesting that programmes should maintain diverse, cohort-based environments over extended periods. To develop effective "change agents," EE must move beyond shallow collaboration by providing explicit pedagogical scaffolding for high-level integrative tasks: proactive resource seeking, engaging external expertise, and technical theory translation. The study provides a transferable framework for evaluating and designing EE programmes that make the maturation of integrative expertise visible and actionable.

## DESIGN SCIENCE RESEARCH: BRIDGING RIGOR AND RELEVANCE IN ENTREPRENEURSHIP EDUCATION

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### Question We Care About

Despite growing attention to experiential and practice-based pedagogies (Hägg & Kurczewska, 2019), entrepreneurship education (EE) is still often criticized for remaining disconnected from entrepreneurs' realities (Fayolle, 2013; Hägg & Gabrielsson, 2020). This reflects the broader rigor–relevance gap discussed in management research (Carton & Mouricou, 2017): research remains distant from practice, while practitioners innovate through trial-and-error without systematic knowledge accumulation. As a result, the field still lacks design principles that could guide the development of EE programs. We therefore ask: How can EE be designed to address entrepreneurs' real needs and context-specific challenges, and what design principles can guide their development? What is needed, we argue, is a design-oriented approach that treats educational interventions themselves as objects of inquiry (Mansoori & Dimov, 2025).

### Approach

The Design Science Research (DSR) paradigm offers a rigorous framework for this purpose. It focuses on developing useful artifacts—such as methods, models, or programs—through iterative cycles of design, evaluation, and theorization (Hevner et al., 2004; Gregor & Hevner, 2013). In EE, DSR shifts attention from measuring static outcomes (Nabi et al., 2017) toward designing and refining interventions that evolve with ecosystem needs (Dimov, 2021; Seckler et al., 2021). This study applies DSR to the co-design of *Going International*, a training program supporting startups pursuing international development. The initiative emerged from a collaborative research project involving researchers, incubators, and ecosystem actors within Québec's entrepreneurial support system. Problem exploration combined interviews with 23 local entrepreneurial support organizations (ESOs) and 24 internationally active startups, as well as benchmarking of five leading international incubators. These analyses revealed fragmented internationalization support practices and a need for structured capability-building. Based on these insights, the research team developed an eight-month training program structured around seven competency domains (e.g., market selection, regulatory compliance, market entry strategies, financing international growth, and intercultural negotiation). Each domain combines asynchronous learning, expert-led workshops, and individualized coaching. The program was piloted with fifteen startups supported by three partner incubators.

### Results and Implications

Following the logic of the DSR protocol, the analysis develops four CAMO (Context–Actor–Mechanism–Outcome)-formatted design propositions (Romme & Dimov, 2021) derived from the design and early implementation of the program. A general design proposition frames the need for a comprehensive training architecture co-created with ecosystem actors to address fragmented internationalization support. Three specific design propositions further identify key pedagogical mechanisms related to content orchestration, learning activity design, and the pedagogical coaching of field experts. These propositions emerge from triangulated data including participant feedback, trainer assessments, research team observations, and collaborative evaluation meetings.

### Value and Originality

The study demonstrates how DSR can support the co-construction of entrepreneurship training grounded in ecosystem needs while producing transferable design knowledge. Conceptually, it contributes to emerging efforts to treat EE as a design science (Dimov, 2021; Mansoori & Dimov, 2025). Practically, it offers adaptable design propositions for structuring entrepreneurship training programs within entrepreneurial ecosystems, derived from the context of internationalization support, illustrating how design-oriented research can help bridge the rigor–relevance gap in EE.

## HOPEPUNK AND ENTREPRENEURSHIP EDUCATION – AN INTERVENTION

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### Questions We Care About – Objectives

Existential threats from climate and ecological breakdown, democratic decline, genocide, war and rampant systemic inequality are re-shaping the backdrop for entrepreneurship education (EE). Despite this multi-crisis environment, many educators are stuck in business-as-usual practice because, we argue, the underlying social imaginary has calcified and needs replacing. Furthermore, teaching entrepreneurship has been severed from teaching capitalism, meaning that the relationship between entrepreneurship and the economic and social context in which it occurs, has been lost (Wadhvani, 2012). Addressing this, and re-connecting EE and capitalism, will involve more eclectic and humanistic research and more critical and creative teaching (Wadhvani, 2012). This task is vital as EE is now part of an *unsustainable* status quo; and its future lies in the ability to articulate a morally compelling social imaginary (Wadhvani and Viebig, 2021). In this context, we introduce hopepunk, a concept and literary movement borne out a reaction to dark and dystopian times. Questions we care about are: What is hopepunk and what are its implications for EE?

### Paper approach

This conceptual paper introduces a literary and artistic movement – hopepunk – to provide an alternative imaginary for EE. Emerging as a sub-genre of speculative futures fiction, hopepunk is about a fight for positive change, radical kindness and communal responses to dystopian social breakdown (Rowland, 2017). We ground the paper in the idea that EE is underpinned by a social imaginary that evolves over time, and in relation to the status quo (Wadhvani and Viebig, 2021). New imaginaries may help make real alternative worlds possible (Dey and Mason, 2018; Wadhvani and Viebig, 2021). In this paper we elaborate hopepunk at the ontological level of theory building, aiming to influence the logics underpinning practice and pedagogy. Focusing on shifting worldviews aligns with the idea that social and environmental crisis is also a crisis of imagination. With this in mind, we demonstrate the distinct imaginative and conceptual possibilities of hopepunk and set out its implications for EE.

### Results

The results of this paper are two-fold. First, by connecting hopepunk and EE, an alternative social imaginary is developed at a time when the field is grappling with how to evolve itself in the face of momentous social and environmental challenges. Hopepunk foregrounds survival, solidarity and the construction of alternative social systems. Related to this a set of logics is derived: confront the dark; imagine alternative worlds, build collective agency, cultivate radical empathy and resistance and practise solidarity over time. Linking back to Wadhvani (2012), this implies a greater focus on alternative forms of organising and institutional change rather than an obsession with sustainable entrepreneurship and start-ups.

### Implications for Entrepreneurship Education

As an imaginary, hopepunk can address the problem of EE's crisis of imagination under multi-crisis conditions because it embraces the darkness of this moment in time while elevating survival, solidarity, collective organising of alternative systems. This is a morally compelling, and frame-shifting, imaginary for dystopian times. A set of logics helps educators think through what this imaginary means in practice.

### Value and Originality

The value of this paper then is that it both imagines the end of the world (as we know it) and develops an alternative vision through hopepunk that can cope with this. This wildcard submission reframes 'change agency' through hopepunk as survival, solidarity and constructing alternative systems. Rather than heroic transformation, this means change making is about the power to endure – and collectively resist – what lies ahead.

## THE SIGNIFICANCE OF PLACE IN LEARNING ECOSYSTEMS: A CASE STUDY OF SKARP ÅRE

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### Abstract

This paper explores how an entrepreneurial education (EE) program, embedded in its local place and regional innovation ecosystem, shapes students' learning experiences and contributes to a higher innovation capacity of participating organizations. The program was designed to strengthen regional innovation by bridging academia, industry, and local community actors in a rural tourism destination. It builds on the assumption that practice-based, collaborative learning environments can accelerate competence development, foster cross-sector collaboration, and support sustainable and regenerative innovation at both organizational and regional levels. The program adopts an applied, explorative, and cocreative pedagogical model, structured around challenge-driven and participatory learning. Participants engage in real-world projects derived from organizational needs, combining lectures, workshops, field assignments, and peer-to-peer learning. The approach integrates principles from practice-based learning, innovation ecosystems, and collaborative knowledge creation. Participants work with business model innovation, service design, and sustainability, using design thinking and prototyping to iteratively develop and test solutions. The program is embedded in a triple-helix and, at times, quadruple-helix framework, involving companies, public actors, and researchers, with an emphasis on cross-sector collaboration and network building. Empirical data were collected through focus group interviews and surveys with participants, capturing both individual learning experiences and perceived organizational and regional effects. The findings indicate that the program generated impacts at multiple levels. At the individual level, participants reported increased competence in innovation-related skills, including service design, customer insight generation, and collaborative problem-solving, as well as enhanced confidence, creativity, and motivation. At the organizational level, the program supported strategic renewal, resulting in new service concepts, updated business models, and improved internal communication around innovation. It also strengthened organizations' capacity to manage change and collaborate across internal and external boundaries. At the regional level, the program contributed to network expansion, enhanced cross-industry collaboration, and the development of a shared understanding of key destination challenges. It also reinforced the relationship between the university and regional actors and contributed to a stronger innovation culture. The study demonstrates that entrepreneurial education can function as a strategic tool for regional development when grounded in real challenges and collaborative learning processes. It highlights the role of universities as intermediaries within innovation ecosystems and underscores the importance of place-based learning in shaping both learning outcomes and innovation dynamics. The findings contribute to research on entrepreneurial education by integrating perspectives on practice-based learning, innovation ecosystems, and place-based development, offering a model for how education can support sustainable and systemic innovation in regional contexts.

**Keywords:** entrepreneurial learning, place, innovation, triple helix

## THE CHANGECOMP COMPETENCE FRAMEWORK: METHODOLOGY, ASSESSMENT, AND USE IN ENTREPRENEURSHIP EDUCATION

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### Objectives

#### What Skills Underlie the Change Agents We Aim to Develop?

Entrepreneurship education (EE) has become widespread in higher education institutions, offering students learning environments designed for and by entrepreneurs and increasingly connected to entrepreneurial ecosystems. The challenge for European Universities is not only to teach impact entrepreneurship but also to empower students as change agents capable of reshaping existing conventions, transforming practices, and influencing the culture and values of an ecosystem. According to teaching engineering, the first step is to identify the expected qualities, capacities, and competences, through four fundamental questions: i. What kind of change agents do we want to raise?; ii. What knowledge should they acquire?; iii. What skills should they master?; iv. What transversal (soft) skills should they embody?

### Paper Approach

This article presents the methodology of building the **CHANGECOMP** framework. We combined and upgraded three validated European competence frameworks—EntreComp, GreenComp, and LifeComp. We enriched them by mobilizing a broader body of knowledge: teaching engineering methodology, scientific literature (Foliard, 2021, 2024; Bibeau & Texier, 2025), international guidelines such as the UNESCO Sustainable Development Goals (2030 Agenda), EU's priorities for inclusive, digital, and sustainable growth, as articulated in the Green Deal and the Digital Strategy, and explicitations of skills by field professionals. The resulting framework aims to remain robust, inclusive and adaptable to diverse educational and cultural contexts.

### Results: The CHANGECOMP Framework

The new framework is an outcome of the European EIT HEI B-Kinetic project, supporting entrepreneurs and change agents engaged in green and sustainable innovation. It is also based on a research project on impact entrepreneurs (REPEIRE). Validation occurred through a dual process: **Self-assessment** within the partner university community (with questioning grids on recognition and use of competences) and **External review** by specialists from EE, sustainability, and innovation fields with explicitation interviews (Vermersch, 2006). This dual validation process ensured both academic rigor and operational relevance.

The resulting competences of CHANGECOMP are grouped into three synthetic clusters of only ten competences each: i. **Implement an entrepreneurial project**; ii. **Commit to social and environmental responsibility**; iii. **Embody innovation**, a set of independent skills, distinguished from *entrepreneurship*, linked to the dynamic processes of creativity, openness to inspiration and lifelong learning.

### Implications for EE

Relying on **Scholarship of Teaching and Learning** approach and on a community-of-practice dynamic, reflections were conducted to align visions and expectations across institutions while maintaining flexibility in implementation. Once validated, the CHANGECOMP framework serves as a **guiding tool** for teachers, students, and partners and can contribute, using Biggs' (1996) **constructive alignment** model and the **three pillars of a course design process** (Courtade, 2025), to build other university training programs. These elements form the backbone of a competence-based approach and ensure pedagogical coherence throughout the training.

### Value and Originality

The value of this approach lies in its inclusive methodology which is part of an epistemology of an AVEC Research (Savournin & Pelletier, 2025). The process thus involves each stakeholder in the EE ecosystem—teachers, students, entrepreneurs, pedagogy engineers, and researchers from educational science and EE. CHANGECOMP stands as both a conceptual and practical contribution to designing educational programs that genuinely support sustainable innovation and cultivate the next generation of impactful change agents.

## EXPLORING LIFE DIAGRAMS AS AN EMERGING REFLECTIVE APPROACH TO SUPPORT METACOGNITION AMONG HYBRID ENTREPRENEURS

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### Questions we care about – Objectives

Hybrid entrepreneurship has become increasingly prevalent across countries and sectors. It forms a context-rich entrepreneurial experience in which the hybrid entrepreneur learns and develops entrepreneurial skills and abilities that eventually serve as a stepping stone into full-time entrepreneurship. Less clear is how this transformation of experiences can be translated into entrepreneurial knowledge and which tools and methods can be used to stimulate this process. This research draws on adult learning theories and metacognition theories, and explores the potential of Life Diagrams (LDs) to foster metacognition in the context of hybrid entrepreneurship.

### Approach

The study involves 16 hybrid entrepreneurs who completed individual LD interviews to elicit reflective insights. The LD consisted of a time (X-axis) and an emotional intensity (Y-axis) axis, narrating stories, identifying milestones, tensions, and decision junctures. LD principles were applied to an entrepreneurial learning context, emphasising reflective meaning-making rather than therapeutic aims.

### Results

The interviews were used to identify contextual conditions, critical incidents, and decision points shaping hybrid entrepreneurial trajectories. While the interviews generated rich contextual insights, participants also experienced them as reflective moments during the interview process itself. This suggests that the LD approach may function as more than a narrative research method and may stimulate participants' metacognitive awareness. In addition, LDs stimulated participants to reflect on and monitor their past entrepreneurial trajectories and strategic adjustments. Participants reinterpreted critical incidents as learning experiences and used hybrid entrepreneurship as a context of reflective learning.

### EE Implications

Integrating LDs into entrepreneurship education may support metacognition and the reappraisal of critical incidents among hybrid entrepreneurs. LDs could be implemented as a mechanism as a structured pre-program reflection tool, a mid-program developmental checkpoint, or even as an evaluation tool. It surfaces implicit assumptions, identity tensions, and learning needs that are often overlooked by traditional approaches. Building on this potential, it would be valuable to adopt LD reflective activities into entrepreneurial learning interventions.

### Value/Originality

The study addresses a critical gap in the hybrid entrepreneurship literature, in which learning-focused and reflective approaches have not yet been explored. It introduced LD as an emerging pedagogical mechanism rather than a therapeutic intervention and explored the alignment of LD with metacognitive processes. The study lays conceptual groundwork for future design, implementation, and evaluation of LD-based learning interventions in Hybrid entrepreneurship education.

**Keywords:** Hybrid Entrepreneurship; Entrepreneurial Learning; Metacognition; Adult Education; Life Diagrams

## WHY IT DOESN'T STICK: WHEN ADMINISTRATIVE SUSTAINABILITY MEETS ENTREPRENEURIAL PRACTICE

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### Questions We Care About – Objectives

EU funders and policymakers increasingly require sustainability across Entrepreneurship Support Organization (ESO) activities, yet it often fails to “stick” in early-stage entrepreneurship training. We know a lot about who sustainable entrepreneurs are, but less about how sustainability concepts are translated into day-to-day training. This paper asks: How are ESO actors translating sustainability concepts into entrepreneurial practice at technical universities across Europe? This paper argue that the challenge of implementing sustainability in early-stage entrepreneurship is that dominant concepts stem from the systems level or administrative logics built for stable organizations, which can misfit resource-constrained, uncertainty-driven venture building (termed the System-Practice Gap in this paper).

### Paper Approach

A practice lens is applied and specifically Schatzki’s practice theory to examine how sustainability is organized through practical understandings, rules, teleo-affective structures and general understandings. The study draws on 15 interviews with incubator staff and entrepreneurship educators at technical-university ESOs across Europe, year-long participatory observation in a sustainable entrepreneurship training, and 273 practitioner reflections. Findings are structured by Systems (sustainability concepts framed as macro goals) and Administrative Practice (concepts focusing on risk-reduction and compliance).

### Results

Administrative practice translations tended to produce compliance-oriented rules and measurement expectations, often experienced as premature burden when ventures are still changing - strong in Rules (what should be done). Systems framing led to student overwhelm and institutions dropping the sustainability label. Entrepreneurial translations reduced resistance by framing sustainability as opportunity and value articulation, but frequently remained at the level of language and signalling rather than reshaping operational and material decisions. Overall, sustainability became actionable when translated into practice-near know-how that supports iterative “building better” under uncertainty.

### EE Implications

The findings challenge entrepreneurship education to move beyond a “business-as-usual” critique: the issue is not only necessarily that sustainability is an add-on, but that many sustainability concepts were designed for organizational contexts fundamentally different from early-stage entrepreneurship. Effective integration requires translational work that bridges system-level challenges to entrepreneurial decisions. Rather than relying on abstract awareness-building (for example Planetary Boundaries), educators and ESO staff should provide practice-oriented tools that connect global problems to choices entrepreneurs can act on, including relevant challenge framing, material and production decisions. This also requires returning to entrepreneurship’s social, bottom-up character: leveraging collaborative experimentation to challenge the status quo, rather than importing corporate frameworks primarily designed to minimize harm.

### Value and Originality

This study shifts the conversation from making entrepreneurship “more sustainable” to examining sustainability concepts through an entrepreneurial practice lens. Rather than proposing new frameworks, it diagnoses a structural mismatch between existing sustainability concepts and early-stage entrepreneurship. It contributes a Systems-Practice analytical lens based on scale (system vs. entrepreneur) and logic (administrative vs. entrepreneurial), and shows how mismatches become empirically observable by tracing the know-how assumptions, explicit instructions, and organizing purposes that concepts carry into ESO practice. To our knowledge, this is among the first practice-based analyses to systematically examine how sustainability concepts are organized into practice in entrepreneurial training and support settings.

**Keywords:** Sustainable entrepreneurship, Entrepreneurship-as-Practice, ESO, System-Practice Gap

## WHEN INSTITUTIONS MATTER: RETHINKING HOW UNIVERSITY CLIMATE AND REGULATIONS TRANSFORM OPPORTUNITY IDENTIFICATION AND RESILIENCE IN ENTREPRENEURSHIP EDUCATION

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### **Abstract**

Entrepreneurship education (EE) equips students with critical competencies, including task-related capabilities such as opportunity identification and non-task-related qualities such as resilience. These abilities are cultivated through both elective and compulsory courses, yet their development may vary depending on the institutional context. Drawing on institutional theory, this study examines how a supportive university environment and entrepreneurship protection regulations influence the effectiveness of EE in fostering these competencies. We further explore the moderating role of course type, showing that participation in both elective and compulsory courses can maximize the development of resilience and opportunity identification. By integrating insights from human capital theory and institutional theory, this research provides a more comprehensive framework for understanding how educational structures and contextual factors jointly shape variations in EE outcomes, offering guidance for policymakers and educators aiming to enhance entrepreneurial capabilities.

**Keywords:** entrepreneurship education, resilience, opportunity identification, institutional theory, course design

## REFRAMING ENTREPRENEURIAL LEARNING IN SME CONTEXTS: INSIGHTS FROM THE S-IFF MODEL OF FACILITATION OF INNOVATION

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### **Abstract**

Entrepreneurial learning within small and medium-sized enterprises (SMEs) is increasingly recognised as essential for innovation, growth and resilience. However, much of the entrepreneurship literature focuses on entrepreneurs themselves, paying limited attention to the actors who support and structure innovation processes in practice. This study examines how facilitators of innovation perceive and enact their role within SME innovation environments. Using a qualitative multi-method design, data was generated through reflective mind mapping, LEGO® Serious Play® modelling, and narrative-based semi-structured interviews with twenty facilitators working in Science Foundation Ireland research centres and Technology Transfer Offices. Thematic analysis identified six interrelated dimensions of facilitation, leading to the development of the SME Innovation Facilitator Framework (s-IFF). The framework conceptualises facilitation as an evolving process comprising six roles: Process Architect, Effectual Facilitator, Networked Connector, Orchestrator of Collaboration and Resources, Knowledge Broker and Learning Catalyst, and Transition Enabler and Exit Strategist. The findings demonstrate that facilitators actively shape SME innovation processes by structuring collaboration, enabling learning, and supporting the development of entrepreneurial capabilities. The study contributes to entrepreneurship education by reframing entrepreneurial learning as a facilitated and relational process embedded within innovation ecosystems.

**Keywords:** Innovation in the SME; Facilitation of Innovation; Entrepreneurial Learning; Innovation Ecosystems; Entrepreneurship Education

## UNDERSTANDING RESPONSIBLE STUDENT ENTREPRENEURSHIP: IDENTITY, NARRATIVES AND DISCOURSE

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### Questions we care about

Across higher education, the growing emphasis on sustainability and responsibility has expanded entrepreneurial activity beyond traditional, commercially oriented models. Yet prevailing conceptions of entrepreneurship continue to center on a stereotypical, individualistic, deep-tech archetype, largely rooted in American entrepreneurship culture, which can limit identification and participation among students and faculty from diverse disciplinary backgrounds. This paper examines how identity, narratives, and discourse construct and constrain understandings of responsible student entrepreneurship within universities. The question we care about is therefore: *under which circumstances can university support systems offer a holistic understanding of responsible student entrepreneurship?* By addressing this question, the paper seeks to establish conceptual foundations for a more inclusive and coherent comprehension that can broaden participation and strengthen institutional support practices.

### Paper approach

The paper employs a mixed-methods approach. First, a bibliometric analysis of leading journals in business, engineering, education, and health examines how responsible entrepreneurship is conceptualized across disciplinary domains, and how these conceptualizations differ in emphasis, assumptions, and vocabulary. Second, the paper draws on qualitative interview data collected from students and faculty at two Scandinavian universities.

### Results

Preliminary findings indicate that universities lack a shared, institution-wide understanding of responsible student entrepreneurship. Instead, understandings are fragmented along disciplinary lines, with divergent expectations, vocabularies, and assumptions about responsibility, innovation, and the role of the student entrepreneur. Faculties in engineering and business tend to draw on traditional entrepreneurial discourses emphasizing innovation, growth, and technological solutions. In contrast, faculties in health, social sciences, and the arts more often articulate responsibility in relational, ethical, community-embedded, or care-oriented terms. These discursive differences, by shaping narratives, constrain the identities available to students. Across the cases, responsible student entrepreneurship appears less as a shared concept and more as a contested interpretive space shaped by faculty culture, disciplinary traditions, and (dominant) narrative differences between stakeholders.

### EE implications

Findings highlight the need for entrepreneurial education (EE) to more deliberately address disciplinary diversity and acknowledge multiple entrepreneurial identities when designing support structures and curricula. Without an explicit effort to bridge divergent collective narratives and, as a result, discourses, support systems risk reproducing narrow archetypes and inadvertently excluding students whose values, identities, or disciplinary backgrounds align poorly with dominant entrepreneurial images. By broadening up to a holistic comprehension, EE might become an (even) more inclusive driver for addressing grand societal challenges.

### Value originality

This paper contributes to the emerging field of responsible student entrepreneurship by advancing a novel conceptualization of responsible student entrepreneurship as multi-layered, culturally embedded, and discursively constructed, rather than a fixed set of practices or learning outcomes. Empirically, it brings forward cross-disciplinary insights from two Scandinavian universities, revealing how responsibility is interpreted differently across academic domains.

**Keywords:** Responsible student entrepreneurship; entrepreneurial identity; narratives; discourse

## TESTING A TRANSFORMATIVE MODEL OF ENTREPRENEURSHIP EDUCATION IN SOUTH AFRICAN TOWNSHIPS: INTEGRATING FREIREAN PEDAGOGY, DESIGN THINKING, AND STRUCTURATION THEORY

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### Abstract

Entrepreneurship education in marginalized communities often emphasizes technical skills while overlooking the structural and identity-related barriers that shape entrepreneurial action. This study examines the early stages of a transformative entrepreneurship education intervention in South African township communities, integrating Freirean critical pedagogy, design thinking, and structuration theory. Using a participatory action research (PAR) design, the study analyses longitudinal changes in participants' discourse, identity narratives, and emerging strategic reasoning across the six five sessions of the program. Data were collected from session video recordings, chat interactions, oral contributions via microphone, and WhatsApp group chats, providing a multi-modal perspective on participant engagement. Baseline analysis of the initial sessions captures preintervention discourse, including survival-oriented reasoning, external attribution patterns, and early entrepreneurial identity narratives. Subsequent sessions reveal the beginnings of discursive transformation, marked by emerging critical reflection, problem reframing, and early expressions of agency. Preliminary findings indicate that dialogical learning and design thinking activities facilitate early shifts in language from fatalism to agency, enhance structural awareness, and support the development of nascent entrepreneurial problem-solving skills. The study demonstrates how multimodal longitudinal analysis can trace the process of discursive transformation and identity reconstruction in entrepreneurship education, offering insights into the design of interventions that foster both individual agency and community-oriented strategic thinking.

**Keywords:** transformative entrepreneurship education, critical pedagogy, design thinking, structuration theory, entrepreneurial agency, South African townships, participatory action research

## CREATIVE INCUBATION: WHAT ENTREPRENEURIAL LEARNING LOOKS LIKE IN A VIDEO GAME INCUBATOR

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### Objectives

Most incubation models assume entrepreneurs are motivated by growth and scalability. In creative industries, motivation is artistic first and commercial second, generating tensions that mainstream incubation frameworks do not account for. The video game industry, where founders combine artistic ambition with technological complexity and volatile markets, offers a particularly instructive setting. This study asks how a long-established, sector-specific incubator tailors its learning activities to the needs of video game entrepreneurs and examine what effects incubatees perceive on their entrepreneurial skills and self-efficacy.

### Approach

The study adopts a qualitative single-case design examining Sweden's longest-running specialized game incubator, located in Skövde, one of the country's most concentrated game development clusters. Data collection consisted of 18 semi-structured interviews with incubatees across three venture stages (early, mid, near-exit), supplemented by staff interviews and event observation. Analysis followed the Gioia methodology, progressing from informant-centric first-order concepts through second-order themes to aggregate dimensions.

### Results

Three aggregate dimensions of entrepreneurial learning emerge. First, a self-sustaining peerdriven learning community functions as a stronger driver of learning than formal programming. A shared identity as game developers produces a culture of mutual care, and a pay-it-forward norm allows the community to regenerate its learning conditions across cohorts. Second, founders undergo substantial identity reconstruction through experiential cycles of doing, failing and learning as they integrate and develop artistic and commercial orientations. Third, the incubator's position within a sector-specific ecosystem pipeline plays a key role in enabling the peer learning environment through coaching, network and resource mobilization.

### Implications

The findings advance a more context-sensitive understanding of incubation by showing how sector-specific conditions shape both the mechanisms and forms of entrepreneurial learning. They suggest that sectoral proximity, strong ecosystem contexts and low competitive overlap provide structural conditions for unusually open knowledge exchange. In addition, incubators in creative industries serve an ecosystem maintenance function by reproducing collaborative norms across successive cohorts. Findings also show how experiential learning, driven by a community of peers, support the redefinition of identity and self-efficacy growth.

### Value/Originality

This study expands on provider-centric incubation models (Bruneel et al., 2012) by demonstrating that a self-sustaining peer community can function as the primary learning mechanism when the incubator provides entrepreneurial and infrastructural support. It extends experiential learning theory (Cope, 2005; Politis, 2005) to creative contexts where identity construction proves central to entrepreneurial development. For practitioners, co-location and shared physical space should be treated as strategic learning infrastructure. Sector-specific knowledge and experience among staff prove important for supporting creative entrepreneurs, and long-term ecosystem engagement, including alumni and established firms, reinforces the learning culture.

**Keywords:** entrepreneurial learning, incubation, creative industries, video game industry, learning community, self-efficacy

## “I AM BECAUSE WE ARE”:

### UBUNTU AS A FOUNDATION FOR ENTREPRENEURSHIP EDUCATION AND ECOSYSTEM EMERGENCE

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**Questions We Care About – Objectives.** For many years now, entrepreneurship education has been viewed as an important lever for combating poverty. The transplantation of content or teaching models of these Western programs generates significant challenges. This communication proposes a deeper understanding of territories and the philosophies that underpin entrepreneurial education and its role in the emergence of an ecosystem. In the specific context of Kindele, we focused on the cultural and social contexts to design an entrepreneurship education program.

**Paper Approach.** To design this action research project, we examined contextual elements), particularly the social context, and the Ubuntu philosophy. Ubuntu notably translates into a system of private solidarities, a set of mutual aid and assistance mechanisms based on family, community, professional, or village ties. We then conducted a mixed method study to better understand the resources potentially mobilized through private solidarities in entrepreneurial processes.

**Results.** Our objective is to design an entrepreneurship education and support system grounded in existing local practices. Mixed methods allowed us to identify key points:

- The actors are complex components that must be understood at several levels: as individuals, as members of collectives, and as participants in solidarity systems.
- Private solidarities provide financial and non-financial resources, but also advice, experience akin to mentoring, and various forms of psychological support. This shared responsibility also reduces the perceived risk for individuals.
- The functioning of private solidarities is based on a large number of interpersonal relationships, which can amplify simple inputs (education and training) into large impacts.
- However, these solidarities have limits in the resources they provide, particularly financial ones, and they highlight the strong need for training, especially in business management and commercial development methods.
- Private solidarities are based on moral obligations and call for reciprocity and sharing and exhibit some limits to entrepreneurial initiatives.

**Entrepreneurship Education Implications.** Our results allow us to envision an education and support program structured along two complementary dimensions: the “what” and the “how.”

- Content and training address the concrete needs in the fundamentals of business management, commercial development and innovation. "Train the trainers" modules can help facilitate the spread of information through the functioning of private solidarities
- Teaching and supporting entrepreneurial processes integrate the existing collective functioning and its limits. Our study highlights the relevance of a cooperative-type structure that enables direct involvement by one or several project leaders and indirect involvement by and for the members of a collective.

#### Originality

- The collective takes precedence over the individual.
- The program is designed based on the existing functioning of Kindele and its private solidarities.
- An ecosystemic logic aimed at diffusing entrepreneurial content, methods, and mindset to foster the emergence of an ecosystem dynamic supported by collective functioning.

**Key words:** Ubuntu, private solidarities, entrepreneurial ecosystems, communities, complexity.

## THE DRIVING ROLE OF ENTREPRENEURIAL SUPPORT ORGANISATIONS IN STUDENT VENTURE UNIVERSITY ENTREPRENEURIAL ECOSYSTEMS

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### **Abstract**

In university entrepreneurial ecosystems (UEEs), students represent the core human capital. However, while academic spin-offs have been extensively studied, student ventures, i.e., start-ups created by current university students, remain underexplored. This paper examines how UEEs for student ventures emerge and evolve, and how university-based entrepreneurial support organisations (ESOs) foster their creation and development. Drawing on a single case study of the University of Nottingham's Ingenuity Lab, an exemplar UEE anchored to a leading university incubator and accelerator in the UK, we reveal that ESOs tailored to student ventures operate entrepreneurially themselves, establishing a self-reinforcing dynamic whereby student ventures shape the ESO's evolutionary trajectory. Our findings contribute to the literature on UEEs and student ventures by presenting a conceptual framework categorising student venture-centred UEEs into cultural, material, and social dimensions. Moreover, we demonstrate that ESOs strengthen intra-university networks, however, they lack connections to the broader regional ecosystem. Hence, while they are creating a protected environment for student experimentation, they may also be constraining local growth opportunities for student ventures.

**Keywords:** student ventures, university entrepreneurship, entrepreneurial support organisations, university entrepreneurial ecosystems, venture creation

## CRITICAL QUESTIONING OF ENTREPRENEURIAL 'TRUTHS' THROUGH POSTSTRUCTURAL INTERVIEW ANALYSIS

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**Questions we care about:** Human-induced climate change, a global polycrisis, and the persistence of a neoliberal economic model are not separate threads but woven elements of the dominant business-as-usual story shaping our era (Lewis & Maslin, 2015; Hickel, 2021; Lawrence et al., 2024). This system prioritises short-term profit, accelerates resource depletion, widens inequality, and drives ecological harm; claims that growth can be fully decoupled from damage remain contested (Raworth, 2011; Hickel, 2021). Entrepreneurship sits uncomfortably within this landscape: it often reinforces growth-centric paradigms through its 'business-as-usual' paradigm, yet it also holds potential to rethink its purpose and cultivate regenerative mindsets (Raworth, 2011; Fullerton, 2025). Whether entrepreneurship education (EE) continues to perpetuate the 'business-as-usual' or become part of the solution (Walsh et al., 2026) depends on how deeply and critically we are willing to challenge the prevailing assumptions (Sterling, 2010) embedded in the current dominant paradigms. Our question is: *How can entrepreneurship educators harness critical-thinking pedagogical practices that empower learners to question dominant business-as-usual paradigms?*

**Approach:** In this paper, we examine critical thinking as a pedagogical area of interest within EE. Although frameworks such as EntreComp and GreenComp emphasise critical thinking competency, what it looks like in practice remains contested (Bacigalupo et al., 2016; Bianchi et al., 2022; Calma & Davies, 2020). We situate our approach in discourse studies (Fairclough & Wodak, 1991) and draw on Fairclough's reminder that "changing the world for the better depends upon being able to explain how it has come to be the way it is" (2013, p.10). To explore how entrepreneurship success is problematised in interview-based media, we use Carol Bacchi's Poststructural Interview Analysis (PIA), adapted from her 'What's the Problem Represented to be?' (WPR) approach. PIA treats interviews as discursive and political sites where meanings and subject positions become sayable and taken-for-granted rather than transparent accounts. Conceptually, we suggest this kind of "noticing" aligns with Sterling's (2010) transformative learning leading to third-order paradigm change of "seeing things differently".

**Results:** We purposively selected one publicly available podcast interview from *The Entrepreneur Experiment* (Episode 403), "From 10k Investment to Multimillion-Euro Beauty Empire: Aimee Connolly's Story." Using four extract-led sections drawn from different points across the transcript, we illustrate how PIA surfaces discursive logics including inherent drive, disciplined bootstrapping, scale/quantification as success, and wellbeing-as-performance. The analysis also highlights how interviewer prompts and endorsements help stabilise what becomes sayable.

**Implications:** We argue that a PIA exercise can offer an alternative to the dominant problem-solution pedagogies in EE by creating structured space for learners to slow down, surface assumptions, and interrogate business-as-usual meanings in everyday entrepreneurial media. In an educational landscape shaped by GenAI, an initial, facilitated manual application can support deep engagement with the text before later experimentation with GenAI-supported approaches.

**Value and Originality:** We offer a method-based demonstration of PIA for EE and show how interview-based media texts can be used as critical-thinking resources. By focusing on critical questioning rather than defaulting to problem-solving, the approach helps learners recognise how entrepreneurial "truths" and subject positions are produced and circulated, opening space for discussion around alternative purposes and possibilities within planetary limits.

**Keywords:** Entrepreneurship education; Critical thinking; Poststructural interview analysis (PIA); What's the Problem Represented to Be (WPR), Podcast interview

## EFFECTUATION IN PRACTICE: LEARNING GAINS FROM STUDENTS EXPERIENCING UNCERTAINTY TOGETHER WITH ARTISTS, DESIGNERS AND INDUSTRY STAKEHOLDERS

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### Questions we care about – Objectives

In this study, we combine effectuation and theory on learning gains to explore what students learn when engaging with effectuation in education through entrepreneurship. By bringing both theories together, we address the limited understanding of how effectuation contributes to individual learning processes in uncertain environments. We position this work within the broader ambition of educating students as change agents capable of addressing the uncertainties and value-laden character of grand societal challenges (GSCs). Accordingly, we investigate the following research question: What learning gains does effectuation foster in education through entrepreneurship?

### Paper approach

We conducted an exploratory multiple case study across two master-level courses in which engineering students created value together with artists, designers, and businesses. We examined how the five effectuation principles emerged in students' experiences: Bird-in-Hand (starting from existing means), Affordable Loss (acting within acceptable risk), Crazy-Quilt (co-creating with self-selected stakeholders), Lemonade (leveraging contingencies), and Pilot-in-the-Plane (exercising agency to shape outcomes). We analyzed the learning gains through four components: cognitive (e.g., critical thinking), metacognitive (e.g., lifelong learning), affective (e.g., emotions), and socio-communicative (e.g., societal engagement). Using interview data, we traced how effectuation principles related to learning gains and identified emerging patterns across students and courses.

### Results

Our findings show that the effectuation principles surfaced in diverse ways and led mainly to metacognitive, affective, and socio-communicative learning gains that often appeared combined. Cognitive learning gains were also present, although in a less pronounced manner. Our outcomes illustrate what effectuation in education through entrepreneurship can educate on, and show that such learning unfolds in unpredictable ways when students navigate uncertainty.

### Implications for entrepreneurship education

Our study highlights the potential of effectuation in education through entrepreneurship for preparing change agents capable to address the uncertainties and value-laden character of GSCs. It also raises questions about the suitability of curriculum design strategies that rely on predefined learning outcomes, given the unpredictable and emergent nature of learning in uncertain environments.

### Value and originality

We position our work in the context of educating change agents capable of addressing GSCs. Furthermore the transdisciplinary and experiential nature of the courses, combined with our approach to analyzing the learning gains related to effectuation, brings a unique perspective valuable for the community of entrepreneurial educators.

**Keywords:** Effectuation; Learning gains; Change agents; Grand Societal Challenges; Education Through Entrepreneurship

## SUPER-CHARGED OR SHORT-CIRCUITED? GENERATIVE AI IN EXPERIENTIAL ENTREPRENEURSHIP EDUCATION

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### Questions We Care About – Objectives

How does the integration of generative artificial intelligence (GenAI) impact experiential entrepreneurship education (EEE)? This study asks: Does GenAI “super-charge” entrepreneurial learning, or does it “short-circuit” the developmental gains that experiential education is designed to foster?

### Approach

We employ a quasi-experimental design in a large undergraduate EEE course, comparing sections where GenAI was integrated into assignments with sections where GenAI was not permitted. Both groups completed identical curricula, with the only difference being the use of GenAI for ideation, customer discovery, prototyping, and business model development. It is important to note that this data was collected in the fall of 2023, more than two years ago and prior to the ubiquitous use of AI. Academic performance was assessed via business model, business pitch, and final course grades. Regression analyses tested whether GenAI use moderated the relationship between these experiential learning constructs and student outcomes.

### Results

Our findings reveal a paradoxical effect of GenAI in EEE. On one hand, GenAI “super-charges” certain learning outcomes: students with higher entrepreneurial self-efficacy and perspective-taking benefited from GenAI, achieving better performance on business model assignments and final grades. GenAI also helped students with high empathetic concern manage emotional load, translating to improved academic outcomes. On the other hand, GenAI “short-circuits” key experiential learning gains: increases in creative self-efficacy and individual entrepreneurial orientation—traits typically associated with entrepreneurial success—were associated with lower performance when students relied on GenAI. In particular, GenAI use dampened the positive effects of creative confidence and proactive, action-oriented behaviors, especially in business model development and pitching.

### Implications

Our study challenges the assumption that advanced digital tools uniformly enhance experiential entrepreneurship education. While GenAI can accelerate ideation, provide diverse perspectives, and scaffold reflective observation, it may also compress or bypass critical stages of Kolb’s experiential learning cycle—especially hands-on experimentation, deep reflection, and the development of psychological ownership. Overreliance on GenAI risks reducing student engagement, originality, and resilience, as simulated experiences cannot fully substitute for real-world stakeholder interactions and the productive struggle of entrepreneurial action. Educators must therefore design curricula that deliberately blend GenAI-enabled simulation with authentic, human-centered experiences, ensuring that technology augments rather than replaces the core elements of experiential learning.

### Value and Originality

By integrating experiential learning theory with complementary perspectives—such as psychological ownership and cognitive load theory—we advance a more complex understanding of technology’s role in entrepreneurial capability development. Ultimately, we argue that the future of EEE lies not in choosing between human and AI learning, but in thoughtfully orchestrating their interplay to “supercharge” rather than “short-circuit” entrepreneurial education.

**Keywords:** GenAI, Experiential Learning, Entrepreneurship Education

## EVALUATING THE IMPACT OF EEGS ON ENTREPRENEURIAL KSA IN SECONDARY EDUCATION

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### Questions we care about (Objectives)

Entrepreneurship education is now viewed as an essential part of lifelong learning and is being introduced across different educational levels, including secondary schools. This broader approach, known as "broad entrepreneurship" (Lackéus, 2015), emphasizes building entrepreneurial knowledge, skills, and attitudes (KSA) valued by modern employers (Tushar & Sooraksa, 2023).

However, most research on entrepreneurship education focuses on universities, with little attention to secondary schools (Kim et al., 2020; Maleki et al., 2023). Yet, developing entrepreneurial KSAs early is especially beneficial for young people, fostering creativity, resilience, and problem-solving rather than just business creation (Bacigalupo et al., 2016; Handley, 2025).

Teachers face challenges teaching entrepreneurial KSAs, as these concepts are often abstract and difficult to assess in conventional classrooms (McLure et al., 2024; Goksen-Olgun et al., 2022). This underscores the need for research-backed, experiential learning strategies in secondary education (Kolb & Kolb, 2005; Lackéus, 2014; Moberg, 2014; Hadley, 2025).

This study addresses this gap by quantitatively evaluating educational escape games (EEGs)—a form of game-based experiential learning—using a pre- and post-test design (Seguí-Mas et al., 2024; Veldkamp et al., 2020). The research asks: To what extent do EEGs enhance entrepreneurial KSAs in ninth-grade secondary students?

### Approach

We conducted a quasi-experimental pre/post study with 528 ninth-grade students from 26 classes in 11 schools. Students completed validated questionnaires before and after the intervention. The experimental group played six EEGs targeting different KSA aspects, while a matched control group received traditional instruction. Multilevel modeling and factor analysis ensured robust measurement and analysis.

### Results

Preliminary analyses show that EEGs had positive effects on entrepreneurial KSAs. Knowledge, especially around value creation, improved most. Skills like problem-solving and collaboration, and attitudes such as perseverance, also developed modestly. Variance was mainly at the student level, and no subgroup experienced adverse effects, supporting the approach's suitability for diverse ninth grade learners.

### Implications

Secondary entrepreneurship education lacks proven experiential methods for developing KSAs. Our findings indicate that EEGs, by engaging students in challenge-based scenarios, make entrepreneurial learning tangible and practical. These results also provide actionable guidance for educators and curriculum designers seeking to incorporate game-based approaches and offer a scalable model for future evaluation.

### Value/Originality

This study demonstrates that EEGs can effectively enhance entrepreneurial KSAs in ninth-grade secondary education. It also shows that rigorous, design-based interventions can be evaluated through multilevel analysis, bridging theory and practice in entrepreneurship education.

**Keywords:** Entrepreneurship Education, Secondary Schools, Educational Escape Games, Multilevel Analysis, Effect Measurement

## **MORE THAN WORDS! TOWARDS LANGUAGE AND COMMUNICATION BASED APPROACH ON IMPACT ENTREPRENEURIAL COMPETENCE DEVELOPMENT**

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**Questions we care about.** Entrepreneurial education is on the move towards impact entrepreneurship. More than ever, skills in the areas of entrepreneurship and sustainability must be considered together (Vogel et al., 2025). Until date, it is not yet explored, how learning for impact entrepreneurship evolves over time. Therefore, the central question of this paper is: How can a language and communication based model towards impact entrepreneurial competence development be created?

**Approach.** Impact entrepreneurship is on the rise, and so is learning to become impact entrepreneurial (Vogel et al., 2025). In academia, integrated competence frameworks of competencies in sustainability and entrepreneurship are under discussion (e.g. Lans et al., 2014; Ploum et al., 2018; Planck et al., 2024). These frameworks might guide curriculum, module and methods development, but they currently do not answer, how entrepreneurial learning is processed. – Arguing from a second perspective, the lens of language and communication in entrepreneurship (e.g. Lounsbury & Glynn, 2001; Baker & Welter, 2018, 2020) and entrepreneurial education (e.g. Gossel, 2021a, 2021b) receives increased attention. Communicative processes, as they become visible in the context of dialogically guided reflection in entrepreneurial teaching and learning settings, can serve as a basis for making the change in competence development visible in a processual manner. – Recent developments in NLP (neuro linguistic programming) and GPT (Generative Pre-Trained Transformer) show the power of machine learning and its applications. However, even though a lot of data on individual competence development exist, e.g. in forms of reflection logs, it is not yet explored, how those emerging technologies might support the analysis of competence development and thus the individual learning process. - Bringing these arguments together, this research aims to unfold language and communicative textuality of the learning process for competencies in impact entrepreneurship.

**Results.** This paper is part of a work in progress. For a MA study program in sustainable entrepreneurship, weekly reflection logs of ~50 students in three cohorts were collected from 2021/2022 on with help of the LoopMe-App that included reflection parts for competencies in sustainability and entrepreneurship. Thus far about 2.500 reflection-loops exist. In a mixed methods approach, this paper elaborates on a model, how competence progress in the distinctive domains can be made visible through text-mining. Based on preliminary work, a specific line of sight is drawn through the data: Focusing on the self-assessed competences (I – ideas and opportunities, R – resources, A – Into Action) in relation to EntreComp, topics in data are extracted via topic modeling. Therefore, data was split into (a) three time periods and (b) reflection-logs in relation to tagged competencies. 45 topics are extracted and set into context. Based on these, a framing as entrepreneurship-education-as-communication approach is introduced as theoretical contribution.

**Implications.** This work can be seen as an important basis for methods debate in entrepreneurship education research. One implication is a contribution on understanding learning processes, not only in entrepreneurship, but in the context of competencies in both, sustainability and entrepreneurship. Since given literature is focusing more on competence frameworks, this research helps to understand how to methodologically explore the learning process for competencies. In addition, this paper brings in the options of emerging technologies, that during methods development usually are often overseen.

**Value/ originality.** This research challenges given assumptions in entrepreneurship education research by not researching competencies in sustainability and entrepreneurship in quantitative pre-post-settings, but by focusing and unfolding the learning process itself through reflection logs.

**Keywords:** entrepreneurial education; competencies in impact entrepreneurship; competencies in sustainability; text mining; machine learning

## UNIVERSITY–INDUSTRY COLLABORATION IN CORPORATE ENTREPRENEURSHIP EDUCATION: A SCOPING REVIEW

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**Questions We Care About (Objectives):** Collaborating with companies is highly appreciated among entrepreneurship students, but the scientific basis for such collaborations is scarce. Through this research, we want to help build a foundation for future research and contribute to improving corporate entrepreneurship education by developing knowledge regarding: 1) how student projects with companies should be designed and executed to enable and facilitate entrepreneurial learning, and 2) the organizational benefits of collaborating with students, which in turn could make more companies interested in engaging in student projects.

**Approach:** This scoping review is the first step towards building knowledge on how to improve corporate entrepreneurship education through integrating collaboration between students and companies. Scoping review was selected as the most suitable literature review method since the topic is under-researched with current literature consisting of limited and fragmented papers, often qualitative case studies. The purpose of the scoping review is to map, describe, and compare existing research, identify knowledge gaps, and suggest future research areas.

**Results:** Preliminary results from the 21 reviewed studies confirm that university–industry collaboration in corporate entrepreneurship education is an emerging research field dominated by qualitative and mixed-method case studies, with most studies published since 2011. Theoretical framings and reported benefits are diverse but heavily centered on student learning, primarily experiential and situated learning, entrepreneurial competences, and employability. Still, benefits for companies and universities are reported. Companies benefit from new perspectives, potential hires, and direct business improvements. Universities gain relevance, research opportunities, and enhanced educational attractiveness. Challenges of student–company collaborations include resource demands, scalability limitations, mismatches in expectations, and students' tendency to prioritize grades over innovation. Common success factors are leadership, supervision, expectations management, appropriate project scope, and authentic real-world challenges. Results presented in the paper are divided into study and characteristics (publication years, research methods, journals, and theoretical framings), contextual characteristics (regions, educational fields, educational levels, and industry actors), and collaboration characteristics (duration, intensity, benefits, challenges, and success factors of collaborations).

**Implications:** This research contributes theoretically to entrepreneurship education research by increasing the understanding of student–company collaborations in corporate entrepreneurship education, and highlights current research gaps. To practice, this research contributes to corporate entrepreneurship education by creating an understanding regarding: 1) how student projects in collaboration with established organizations should be designed and executed to enable and facilitate corporate entrepreneurial learning, and 2) the organizational benefits of collaborating with students, which could enable more companies interested in participating in student projects.

**Value/Originality:** This is the first review to synthesize research on university–industry collaboration specifically within corporate entrepreneurship education. It provides a comprehensive map of a developing but theoretically diffuse field, identifies gaps for future research, and clarifies how collaborations may be designed and executed. The review offers a foundation for advancing both academic research and practical educational design.

**Keywords:** Entrepreneurship education, corporate entrepreneurship, university–industry collaboration, experiential learning, situated learning, entrepreneurial competences

## CONCEPTUALISING FEASIBILITY STUDIES AS AN ENTREPRENEURIAL PRACTICE IN ENTREPRENEURSHIP EDUCATION

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### **Abstract**

Student ventures are essential for authentic entrepreneurship education such as venture creation programs (VCPs). Previous research has outlined different sources of ideas for student ventures, including students' personal experience, programme stakeholders, university technology transfer offices, and research institutions. Effect studies of VCPs indicate that such programs are well-suited to support students in "doing things right" in terms of new venture development, while we know less about how VCPs support students in "doing the right thing", in terms of choosing which ideas to develop. Previous research has had less focus on how students evaluate and choose which ideas to pursue as compared to how students work with their ideas once the evaluation is done and a choice has been made. Our research question is therefore: How do VCP students develop venture opportunities from externally sourced venture ideas? We address the research question by conducting an embedded case study of a feasibility study activity at NTNU School of Entrepreneurship, a two-year full-curriculum VCP at a Norwegian University, as our case, and have eight individual feasibility studies as embedded cases. Our primary data material are 323 pages of feasibility study reports written by the eight VCP student teams. Through our embedded case study, we find that the well-known dimensions desirability, feasibility, and viability are part of VCP students' feasibility study practices, but that a conceptualisation of feasibility study practice in VCPs should have a stronger focus on identity, ownership, and learning than what previous research relating to venture opportunity evaluation generally suggests.

## STRETCHING BOUNDARIES THROUGH ARTS-BASED PEDAGOGIES IN ENTREPRENEURSHIP EDUCATION IN HIGHER EDUCATION

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### **Abstract Questions we care about (objectives)**

Despite the increasing interest, research on arts based and embodied pedagogies in EE is still limited (Bureau & Komporozos Athanasiou, 201ti; Herzig & Renard, 2024), and their potential to enable transformative boundary stretching learning has not been fully examined. Therefore, this study aims to investigate how EE educators use an arts-based, embodied pedagogical intervention to encourage students to identify and stretch their boundaries and how students and educators experience such an intervention.

### **Approach**

Theoretically we draw from transformative learning (Mezirow, 199ti) and teachers' epistemological frames which shape the ways in which individuals process a particular situation based on their knowledge (Chakrin & Campbell, 2022; Ilonen & Heinonen, 2025). Empirically we focus on an entrepreneurship learning camp organized for university graduate school students in multi-disciplinary university during which an arts-based intervention and related exercise was introduced to the students.

### **Results**

Our study provides in-depth understanding on facilitators' experiences when applying their epistemological frames during the performative arts-business encounter and related exercise. Our study demonstrates that the arts-business encounter was a boundary breaking, affective experience for the facilitators during which they jointly gained understanding of the situation by relying on their mutual trust. Our findings reveal how an unexpected performance of a dancer and a professor triggered moments of reflection and perspective transformation among students and encouraged the doctoral students to identify, discuss and challenge their own existing boundaries such as deeply ingrained routines which shape their entrepreneurial behaviour. Our study enlightens how facilitators' approach shape student learning.

### **Implications**

The study has clear implications for EE educators who wish to experiment with arts-based pedagogies. Their implementation requires educators to engage in bold and intentional experimentation and to stretch their own thinking and comfort zones to be able invite students to such boundary stretching exercise. Such experimentation benefits from being grounded in robust theoretical guidance to ensure that interventions are not merely novel and entertaining but also pedagogically coherent and meaningfully connected to the learning objectives. Educators must also reflect critically on their own boundaries, assumptions and comfort zones as their willingness to confront uncertainty directly shapes the learning climate. Finally, the success of arts-based and embodied interventions rests on the presence of strong relational foundations.

### **Originality**

By building on transformative learning theory and the findings on teachers' epistemological frames in EE in HE this study contributes to the emerging conversation on how both students and educators experience arts-based pedagogics and how such an embodied pedagogical intervention can help learners recognise and stretch their personal and cognitive boundaries.

**Keywords:** entrepreneurship education, arts-based pedagogy, higher education, epistemological frames, transformative learning

## ENHANCING LEARNING FROM FAILURE THROUGH STUDENT SENSEMAKING ATTITUDES

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### Questions we care about (Objectives)

We examine how entrepreneurship education can build students' capacity to work productively with ambiguity and uncertainty by engaging with failure as a likely outcome of entrepreneurial activities. We ask: (1) How does exposure to four typical failure-learning narratives shape students' perceptions and attitudes toward entrepreneurial failure? (2) How does experiential learning based on Kolb's cycle and a type-informed pedagogy scaffold learning from failure in classroom settings?

### Approach

We combine an empirically derived typology of four failure-learning "mindsets" (developed via IPA-enhanced Q methodology) with a classroom intervention structured by Kolb's experiential learning cycle. The intervention was implemented in a Swedish Master's Business Development module across two cohorts (2024: N = 36; 2025: N = 44). Data sources comprised poster-persona artefacts and structured classroom observations, post-lecture feedback sheets (2024: n = 18; 2025: n = 23), and module assignment reports (total N = 51).

### Results

In both cohorts, teams interpreted type-linked statements and constructed persona posters that externalised different failure-learning orientations; the revised 2025 format supported more consistent integration of statement material. Post-lecture feedback in 2025 showed early alignment with failure as a learning input, strong attention to individual coping (confidence, resilience, reflection), and sensitivity to stigma and societal perceptions shaping risk-taking. In end-of-semester reports, students elaborated these initial reflections into sector-specific analyses of business development in the gaming industry, emphasising (a) the need to convert failure into learning through disciplined analysis, (b) enabling team conditions (psychological safety and communication), (c) emotional and cognitive sensemaking as a prerequisite for learning, (d) routines such as iteration cycles and postmortems, and (e) ecosystem dynamics and ethical tensions.

### Implications

For the "Teaching Complexity and Uncertainty" track, findings suggest that type-informed experiential learning can make uncertainty teachable by requiring students to practise interpretation under ambiguity, compare alternative sensemaking logics, and translate insights into actionable routines and support conditions.

### Value/Originality

The study integrates a Q-derived typology with Kolb-structured experiential pedagogy and provides cross-time evidence (feedback → assignments) that immediate sensemaking can be elaborated into organisational and ecosystem-level failure-learning mechanisms in a sector-specific context.

**Keywords:** failure; sensemaking; experiential learning; entrepreneurship education; psychological safety; Q methodology

## SHAPING CHANGE AGENTS THROUGH PRACTICE: LEARNING PATHS IN TRANSDISCIPLINARY EDUCATION

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**Questions we care about (objectives):** Higher education institutions are increasingly expected to educate graduates who can act as change agents capable of addressing complex societal challenges. In response, entrepreneurship and change agent education have adopted authentic and experiential pedagogies, such as challenge-based learning, transdisciplinary education, and work-integrated learning (Van Rijnsoever et al., 2023; Wiek et al., 2011). While these pedagogies aim to expose students to real-world complexity and stakeholder collaboration, it remains unclear how students actually learn within these environments. Existing models largely focus on pedagogical design, yet learning often unfolds through students' interactions with peers, educators, and external stakeholders in ways that are not fully captured by intended learning outcomes (Gulikers et al., 2025; Van der Rijst et al., 2019). This study therefore asks: *How do pedagogical design features and student characteristics shape students' learning paths and perceived learning gains in change agent education?*

**Approach:** The study adopts a qualitative comparative design based on semi-structured interviews with students participating in six stakeholder-engaged courses in two national contexts: Canada and Australia (n = 35). Interviews explored students' motivations and backgrounds, experiences with pedagogical design features such as stakeholder interaction and task authenticity, and perceived learning gains. The analysis draws on the concept of learning paths, defined as coherent sets of learning activities actively shaped by learners across formal and informal contexts (Poell & Van der Krogt, 2010). Learning outcomes were analysed using the learning gains framework distinguishing cognitive, metacognitive, affective, and socio-communicative domains (Vermunt et al., 2018).

**Results:** The findings show that students construct distinct learning paths within the same pedagogical environment. Students' motivations and prior experiences strongly shape how they engage with learning opportunities and what they ultimately learn. Stakeholder interaction plays an important role in creating authenticity and accountability, although its intensity and quality vary across courses. Educators emerge as important stabilising actors who facilitate reflection and compensate when stakeholder involvement is limited. Across cases, students report learning gains beyond cognitive knowledge, particularly in socio-communicative skills, professional identity development, and metacognitive abilities related to navigating complex situations.

**Implications:** For entrepreneurship and change agent education, the findings suggest that pedagogical design alone cannot explain learning outcomes. Instead, educators should design learning environments that provide diverse authentic learning opportunities while allowing space for student agency. Structured stakeholder engagement, reflective activities, and educators with practice-based experience can help support meaningful learning paths.

**Value/originality:** This study contributes to entrepreneurship and change agent education by introducing learning paths as a process-oriented lens for understanding how learning emerges in complex, stakeholder-engaged pedagogies. By showing how student characteristics and pedagogical design interact to produce heterogeneous learning outcomes, the study advances a more dynamic understanding of learning in experiential entrepreneurship education.

**Keywords:** Change agent education, learning paths, experiential learning, stakeholder engagement, transdisciplinary learning

## AGENTIC-AI IN ENTREPRENEURSHIP PEDAGOGY: EVALUATING AND SCALING THE GENESIS PROJECT LEAD

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**Questions We Care About (Objectives):** In South Africa, where youth unemployment remains among the highest in the world, universities face increasing pressure to graduate individuals capable not only of seeking employment but of creating employment through entrepreneurial activity. Consequently, entrepreneurship programmes that develop genuine entrepreneurial capability have become a strategic priority within higher education. Research increasingly shows that venture-creation programmes are more effective at building entrepreneurial capability than traditional classroom-based approaches. However, these programmes are inherently complex. Venture creation unfolds through experimentation, team dynamics, failure, and real market feedback. While this creates powerful learning environments, it also makes programmes difficult to evaluate, improve, and scale—especially in resource-constrained contexts. This study explores whether agentic artificial intelligence can help address this challenge. For the purposes of this study, agentic artificial intelligence can be understood as AI systems capable of autonomously analysing complex environments and generating context-sensitive responses while operating in collaboration with human oversight. Using data from the UCT Genesis Project, we examine whether AI can analyse programme artefacts to generate insights that strengthen programme evaluation, improve pedagogy, and support scalability.

**Approach:** This study analysed data from ten cohorts of the Genesis Project (2016–2025) and two township pilot programmes (2023–2024), covering 565 student entrepreneurs and 11 startup ventures. A mixed-methods approach combined qualitative analysis of learner reflections and venture artefacts with quantitative indicators of venture progress and learner development. AI-assisted tools—including ChatGPT, Google Gemini, NotebookLM, and Perplexity—were used within a human-in-the-loop framework to detect patterns, synthesise insights across large document sets, and support analytical verification.

**Results:** Entrepreneurial learning in venture-creation programmes follows clear developmental patterns marked by experimentation, failure, and resilience. Structured reflection and strong peer accountability emerged as key predictors of venture progress. Across cohorts, roughly 25% of Genesis ventures generated revenue and short-term employment during the programme. AI-assisted analysis helped synthesise patterns across large volumes of programme artefacts, revealing recurring pedagogical bottlenecks—including weak customer discovery, stalled prototyping, and gaps in financial literacy. However, AI did not function autonomously; all insights required human interpretation to ensure sound pedagogical judgement.

**Implications:** AI-assisted analytics can significantly extend the evaluative capacity of experiential entrepreneurship education. By analysing reflections, venture data, and programme artefacts across cohorts, AI can reveal learning bottlenecks, track entrepreneurial development, and provide educators with clearer diagnostic insight into how venture-creation programmes function in practice. This capability enables more targeted pedagogical intervention, continuous programme improvement, and more scalable models of entrepreneurship education.

**Value / Originality:** This study shows how AI can help educators interpret the rich artefacts produced by venture-creation programmes, particularly in resource-constrained contexts. Rather than replacing educators, AI acts as an analytical partner, revealing developmental patterns and programme bottlenecks often missed by conventional evaluation. The findings provide an early foundation for integrating emerging agentic AI systems into experiential entrepreneurship education.

**Keywords:** Agentic Artificial Intelligence; Venture-Creation Pedagogy

## SAVING OURSELVES FOR THE BETTERMENT OF OTHERS – A REFLEXIVE METHODOLOGICAL APPROACH FOR NURTURING “PEDAGOGICAL (RE) CONNECTEDNESS”

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### Questions we care about (Objectives)

This paper explores how entrepreneurship educators can respond to the growing imperative for sustainability and ecological responsibility in business education. It asks: What do educators value in entrepreneurship education? How is the entrepreneur conceptualised? And how might educators teach responsibly in the context of ecological urgency?

### Approach

The study adopts a collaborative autoethnographic inquiry, drawing on reflexive diaries and dialogic exchanges developed over a twelve-month period. Informed by Bernard Lonergan’s concept of interiority, the analysis engages in iterative reflection on educators’ lived experiences to interrogate underlying pedagogical assumptions.

### Results

The findings reveal tensions between dominant externalist pedagogies and the need for deeper ethical and ecological engagement. The analysis highlights the importance of educator reflexivity and subjectivity as critical resources for rethinking entrepreneurship education.

### Implications

The paper argues for a paradigm shift in entrepreneurship education that foregrounds reflexive, ethically attuned pedagogical practices. It suggests that educators must critically engage with their own assumptions and responsibilities to foster meaningful sustainability-oriented learning.

### Value/Originality

This research contributes to the scholarship of activism by positioning educator subjectivity as a legitimate and valuable source of insight. It offers an alternative to externalist approaches by advocating a more philosophically grounded and reflexive pedagogy.

**Keywords:** Entrepreneurship education; sustainability; reflexivity; collaborative autoethnography; ecological responsibility; pedagogy

## ADDRESSING CHALLENGES AND PROPOSING SOLUTIONS FOR PRACTITIONER INTEGRATION IN ENTREPRENEURSHIP EDUCATION

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### Questions we care about

As universities aim to bridge theory and practice, initiatives such as Entrepreneurs in Residence (EiR) have emerged to connect academic knowledge with real-world entrepreneurial experience. This study investigates the challenges and solutions for Practitioner Integration (PI) within higher education institutions (HEIs), focusing on the underexamined EiR initiative.

### Approach

Recognising the limited understanding of the unique challenges entrepreneurs face in academia and how these affect institutional outcomes, we position EiRs as boundary spanners who navigate and connect the distinct worlds of practice and academia. To capture their lived experiences, we employed an innovative approach to Interpretative Phenomenological Analysis (IPA) and conducted semi-structured interviews with seven purposively selected EiRs. The data was analysed following an innovative analysis method informed by IPA.

### Results

Our findings reveal structural challenges and academic-practitioner tensions. The lack of readiness of entrepreneurs, academics, and HEIs appears to inhibit their performance and leave entrepreneurs disconnected from institutional strategies.

### Implications

The findings emphasise the importance of encouraging mutual respect and a purposedriven approach to PI. Our findings highlight the importance of institutional and collective boundary spanning for enhancing their effectiveness.

### Originality

Challenging boundary discourses can be a significant step forward for strengthening collaboration and helping challenge differing ontologies on practice-theory relevance and understanding boundary objects such as communication, structure, and policies that hinder collaborations.

**Keywords:** entrepreneurship education, practitioner integration, entrepreneurs in residence, higher education

## BRIDGING THE RIGOR-RELEVANCE GAP: A SYSTEMATIC REVIEW OF ENTREPRENEURSHIP EDUCATION RESEARCH FROM A CENTER OF EXCELLENCE

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**Questions We Care About (Objectives):** Entrepreneurship education (EE) research increasingly aims to inform educational practice, yet scholars have repeatedly noted a persistent rigor–relevance gap: research often generates conceptually rich insights but provides limited actionable guidance for educators and other stakeholders. This study examines how EE scholarship translates research findings into pedagogical guidance, conceptualizing this process as pedagogical knowledge translation. Using the cumulative research output of Engage, a Norwegian Centre for Excellence in Education, as an empirical lens, we analyze how EE research articulates pedagogical implications and communicates relevance for practice. The study addresses two research questions: (1) To what extent and depth does EE research articulate pedagogical implications for practice, and how does this vary across research orientations, publication types, and phases of the center’s development? (2) How actionable are these implications, and which stakeholder audiences are they intended to address?

**Approach:** We conduct a systematic literature review (SLR) of 104 entrepreneurship education publications produced by Engage-affiliated researchers between 2011 and 2026. Each publication was coded using a multidimensional framework capturing (1) the presence of pedagogical implications (none, implicit, explicit), (2) the degree of actionability (low, moderate, high), and (3) the intended stakeholder audience (e.g., educators, program designers, institutional leaders, policy actors). This center-level review allows us to examine how a cohesive community of EE scholars accumulates and communicates pedagogical knowledge over time.

**Results:** The findings reveal a notable gap between practice-oriented research intentions and actionable pedagogical guidance. Although 58.1% of publications articulate practice-oriented research aims, only 45.1% provide highly actionable recommendations that could directly inform course design or teaching practice. Theoretically oriented studies can still generate meaningful pedagogical insights, although these are typically communicated at a higher level of abstraction. Pedagogical implications have become more explicit over time, increasing from 38.5% in the first phase of the center (2011–2021) to 61.5% in the second phase (2022–2026), suggesting that translating research into practical guidance develops as a capability within research communities. Educators constitute the primary audience of pedagogical implications and receive the most actionable guidance, while recommendations for institutional leaders and policy actors remain comparatively general.

**Implications:** The findings suggest that bridging the rigor–relevance gap in EE research requires deliberate practices of pedagogical knowledge translation, including clearer articulation of pedagogical implications and more explicit specification of how research findings can inform educational design and decision-making. For educators, the reviewed research offers evidence-informed insights for designing experiential learning environments that emphasize reflection, peer interaction, and disciplinary contextualization.

**Value/Originality:** By examining the cumulative output of an EE center, this study provides insight into how EE scholarship produces and communicates pedagogical knowledge over time. The study introduces a center-level systematic review as an analytical lens for examining pedagogical knowledge translation and offers a transferable framework for assessing the presence, actionability, and audience of pedagogical implications in EE research. In doing so, it contributes to ongoing debates about the rigor–relevance gap by demonstrating how sustained engagement between research and educational practice can strengthen the translation of scholarly insights into actionable pedagogical guidance.

**Keywords:** Entrepreneurship education; rigor-relevance gap; pedagogical implications; knowledge translation; systematic literature review; center-level analysis

## VALUE CREATION PEDAGOGY AND THE MAKING OF THE ENTREPRENEURIAL PHD STUDENTS

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**Objectives:** Cultivating entrepreneurial orientation among PhD researchers is essential for developing entrepreneurial universities and translating research into societal impact. However, entrepreneurship education (EE) for this specialized group remains underdeveloped. PhD candidates often experience tension between their scientific identity and the perceived demands of entrepreneurship. This presents an urgent challenge: how to design EE that is theoretically grounded, psychologically congruent, and capable of enhancing the societal return on doctoral investment. As EE initiatives expand, little is known about their effectiveness in shaping entrepreneurial orientation. This study addresses this gap by investigating: How does an entrepreneurship education course informed by Value Creation Pedagogy influence the entrepreneurial orientation of PhD students?

**Approach:** We designed and implemented an intensive PhD course, Research-Based Innovation, grounded in Value Creation Pedagogy (VCP). The course was structured around VCP's three stages: understanding what constitutes value, identifying value for whom, and learning how to realize value, explicitly linked to participants' ongoing research. Two cohorts participated (N=44): Cohort 1 from the Faculty of Information Technology and Electric Engineering (n=21) and Cohort 2 from a crossdisciplinary group (n=23). Using a mixed-methods approach, we collected pre/post-course surveys, daily reflections, post-course interviews, final reflective essays, and observation notes. This paper reports on reflexive thematic analysis of reflective essays from 32 consenting PhD students.

**Results:** Thematic analysis revealed three interconnected themes: (1) negotiating scientific and entrepreneurial identities, (2) applying VCP as a bridge between research and practice, and (3) navigating institutional and structural conditions. Students engaged in identity work ranging from viewing entrepreneurship as a conditional future possibility to crafting integrated scientist-innovator hybrid identities. Pedagogical tools (stakeholder mapping, Innovation Readiness Levels, pitching) applied directly to their research enabled students to articulate societal value and identify beneficiaries, providing a concrete bridge between laboratory work and impact. Students also developed strategic agency, learning to navigate ecosystems (TTOs, industry partners, funding structures) and understanding entrepreneurial progress as dependent on relational networks. The findings culminate in a conceptual model illustrating how VCP fosters entrepreneurial orientation through interconnected mechanisms.

**Implications:** The findings offer crucial implications for EE design targeting PhD researchers. Effective PhD EE should not seek to replace scientific identity but expand it, using frameworks like VCP that legitimize value creation as part of scholarly practice. EE must provide conceptual and practical tools

PhDs can directly apply to their ongoing research. Courses should explicitly address institutional realities (IP, funding, partnerships), equipping students with strategic literacy to navigate these structures.

**Value and Originality:** This study introduces VCP as a novel theoretical foundation for PhD EE, specifically addressing identity integration. It contributes a conceptual model illustrating how VCP shapes entrepreneurial orientation and extends VCP application into doctoral education, demonstrating its utility in fostering a context-aware, identity-congruent entrepreneurial mindset.

**Keywords:** Entrepreneurial orientation, value creation pedagogy, PhD students, entrepreneurship education

## AFFECTIVE LEARNING OUTCOMES OF ENTREPRENEURSHIP EDUCATION IN HIGHER EDUCATION

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**Questions we care about (Objectives):** Entrepreneurship education (EE) uses diverse pedagogical approaches that generate varied learning outcomes (LO). Bloom’s tripartite taxonomy distinguishes cognitive, psychomotor, and affective domains (Bloom et al., 1956). While cognitive outcomes have dominated higher education (Shephard, 2008), affective learning has gained increasing attention amid a broader “emotional turn” in educational theory (Bachler et al., 2023) and entrepreneurship research (Portocarrero et al., 2025). Affective LO relate to motivation, engagement, participation, and commitment, core elements of entrepreneurial action, which extend beyond knowledge and skills to encompass attitudes and values. Without affective learning and shifts in thinking, motivation, and commitment, the translation of learning into entrepreneurial behaviour remains uncertain. Previous research has identified affective outcomes among university students (Ilonen & Heinonen, 2018) and highlighted interconnections between cognitive, skill-based, and affective domains (Mets et al., 2011; Kozlinska et al., 2020). The research questions guiding the study are: What kinds of affective learning outcomes do students express during an entrepreneurship course, and how are these outcomes linked to the pedagogical approaches of EE?

**Approach:** This paper draws on qualitative data collected from a multidisciplinary higher education EE course. The dataset consists of 10 student interviews. Teaching responsibilities were shared by two instructors from different universities and an external expert, and a mentor. Students worked in teams to develop business ideas, which they pitched in the final session. Data analysis was conducted using interpretative phenomenological analysis (IPA), which seeks not to generate generalizable results but to provide insight into how students in this particular context made sense of the course and their learning outcomes.

**Results:** The findings show diverse affective learning outcomes shaped by students’ personal, career-related, and pedagogical experiences. Students reported strengthened self-confidence, emotional growth through empowering and stressful moments, and the emerging leadership identities alongside occasional disappointment or disengagement. Career orientations shifted as new entrepreneurial interest were developed or future possibilities reframed. These outcomes were closely intertwined with the course’s experiential design, where teamwork, practical tasks, diverse collaboration, structural demands, and purposeful uncertainty created emotionally charged learning environments. Both positive and challenging emotions played meaningful roles in how students interpreted entrepreneurial tasks and their own developing agency.

**Implications:** The study highlights the importance of recognising affective outcomes as a central yet under-addressed element of EE in higher education. While practice-based approaches have increased attention to skill development, affective outcomes remain less visible despite their connections to behaviour, resilience, and long-term student development. A more intentional focus on affective LO can enhance course relevance, pedagogical coherence, and students’ perceived value of EE. The findings underscore the need to design learning environments where emotions support meaning-making, motivation, and identity work. As affective outcomes are context-dependent, their role should be acknowledged when evaluating EE initiatives.

**Value/Originality:** Understanding affective LOs enables more meaningful and effective EE practices. Beliefs, attitudes, values, feelings, and interests form an essential part of learning and deserve closer examination.

**Key words:** entrepreneurship education, affective learning outcomes, entrepreneurial methods

**FROM ARTISTIC INTEGRITY TO ENTREPRENEURIAL IDENTITY: A QUALITATIVE STUDY OF VALUE  
NEGOTIATION AND TRANSFORMATIVE LEARNING AMONG ART STUDENTS IN A BUSINESS  
DEVELOPMENT COURSE**

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**Questions we care about:** Governments all around the globe ask for more entrepreneurship. Entrepreneurship allows people to start and run their own business, earning their own money, serving the population with needed goods and services, and employing others in the process. As means for fueling the entrepreneurial spirit among the population, governments offer entrepreneurship education. Many entrepreneurship education textbooks explain and emphasize the path toward high growth and wealth accumulation on the entrepreneur's hand. Education in entrepreneurship seeks to enhance the needed skills and knowledge in order to succeed among the potential entrepreneurs, urging them to take the leap and become entrepreneurs. Despite the promised benefits, not all perceive this business gospel as suited for themselves. The guiding research question is:

*How to teach entrepreneurship outside the business realm*

**Approach:** Employing an action research approach, the study investigates a collaboratively designed and implemented art entrepreneurship course involving three universities in Northern Europe. The empirical material comprises art students' entrepreneurship business plan concepts, pitches, and qualitative student feedback. The thematic analysis investigates how cross-disciplinary learning can be facilitated between art and business students and how entrepreneurship education can support artists' identity transformation, allowing them to see entrepreneurship as a viable tool for them in their art-work.

**Results:** The thematic analysis indicates that art students do not simply adopt entrepreneurial logic when introduced to business model tools. Instead, they engage in processes of value negotiation and identity reconstruction. Four overarching themes emerged: (1) value tension between artistic and market logics, (2) transformative identity work, (3) translation mechanisms that bridge artistic integrity and entrepreneurial practice, and 4) connecting and reaching out to people.

**Implications:** The findings offer practice-based insights for designing culturally sensitive, place-based entrepreneurship education tailored to the specific socio-economic and cultural conditions of the Arctic. Our approach referred to in this paper might inspire entrepreneurship educators in other settings where high growth and monetary success are not the obvious goal for the business actor.

**Value/originality:** A central question concerns how the core principles of entrepreneurship education, traditionally grounded in business excellence, can be meaningfully expanded to academic fields that do not primarily focus on business excellence. We chose the art industry as some actors within this industry might feel a mismatch between economic success and artistic success. If succeeding businesswise equals following orders from others, the market, then the fear is that artistic quality is traded away. We then investigate how fruitful learning could be facilitated in a cross-disciplinary course between economics and the visual arts. Moreover, the study is situated in an Arctic context.

The approach referred to in this paper might inspire entrepreneurship educators in other settings where high growth and monetary success are not the obvious goal for the business actor. There are many more professionals who focus more on the professional results than the monetary outcome of their engagement. Still, one needs to secure an income higher or equal to the costs to sustain the activity.

**Keywords:** entrepreneurship education, artists, entrepreneurial identity, entrepreneurship as a tool, value tension, transformative identity work

## ENTREPRENEUR, EMPLOYEE, AND EVERYTHING IN BETWEEN: A MULTITUDE OF VCP ALUMNI CAREERS SHAPED BY BACKGROUND AND EXTRACURRICULAR ACTIVITIES

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### Questions we care about

This paper explores the career trajectories of entrepreneurship education graduates, and how educational background, previous experience with entrepreneurship, and extracurricular activities influence these trajectories

### Approach

Career trajectories and background information is gathered from open LinkedIn-profiles of graduates from a Venture Creation Program at a major Norwegian University. The data is analyzed with a QCA-method.

### Results

The careers are mapped and labeled within four broad types of careers: entrepreneurship career, employee career, ecosystem career and hybrid career. The QCA analysis revealed several different conditions and combinations that led to the different career trajectories.

### Implications

EE appears to generate heterogeneous career outcomes, with graduates pursuing a mix of entrepreneurial and non-entrepreneurial paths over time. The EE courses designer may increase EE impact by offering support, continuing education opportunities, and mechanisms that help graduates re-engage with entrepreneurial learning at various career stages. Second, since extracurricular activities and play an important role in shaping aspirations and identities, educators should integrate these activities into the course design

### Value/originality

The paper makes several important contributions. Extant studies of careers of EE graduates have largely been cross sectional, missing the different career changes and nuances that characterize the careers. By examining the long-term career trajectories of EE graduates, this study captures the diversity and evolution of their careers. Secondly, the paper also explores how background and extracurricular activities influence the career trajectories of the graduates.

**Keywords:** Entrepreneurship education, venture creation program, graduate careers, entrepreneurial careers, hybrid careers, extracurricular activities.

## MAPPING PEDAGOGICAL AND ASSESSMENT TOOLS IN ENTREPRENEURSHIP EDUCATION A SYSTEMATIC FRAMEWORK FOR BRIDGING THEORY AND PRACTICE

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### **Abstract**

Entrepreneurship education (EE) tools and methods have proliferated across institutions, yet educators struggle to systematically access, compare, and select from available resources. While competency frameworks like EntreComp define what students should learn, practitioners lack navigable guidance on how to implement effective pedagogical approaches. This research develops an empirically grounded, two-dimensional organisational framework that categorises EE tools along two critical axes: (1) narrow versus wide entrepreneurship, and (2) tools targeting student entrepreneurs versus educator facilitators. Drawing on 55,563 longitudinal student records, ti20 surveys, and qualitative interviews, we selected and documented 16 evidence-based EE tools within this four-quadrant matrix, each explicitly aligned with EntreComp competencies. The framework enables institutions to audit tool ecosystems, align selection with curriculum objectives, and recognise educator professionalisation as foundational to student success. This practitioner-centred approach bridges the persistent gap in accessibility between theory and practice in entrepreneurship education.

**Keywords:** entrepreneurship education, pedagogical tools, curriculum design, EntreComp, framework, educator development

## THE BACKPACKER SCHOOL: AN EMPIRICAL INVESTIGATION OF WHAT IT MEANS TO BE AN ENTREPRENEURIAL SCHOOL

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### Questions we care about (Objectives)

What does it mean for a school to be entrepreneurial? While entrepreneurial education (EE) research has largely focused on classroom practices, less attention has been paid to institutional conditions across whole organisations. This study addresses a critical implementation gap: knowledge about how to make people more entrepreneurial exists, but is rarely adopted broadly across entire institutions. We investigate a large K–12 school organisation widely recognised for its entrepreneurial culture to develop an institutionally grounded understanding of entrepreneurial schools.

### Approach

We studied Frida Education, a family-owned private school organisation employing 800 people across seven preschools, seven primary schools and two secondary schools. Using Designed Action Sampling (DAS), we collected 451 written reflective dialogues from 100 randomly selected employees through the digital platform Loopme, generating ~100,000 words of reflection data. Participants reflected on what they perceived as valuable, meaningful and distinctive about their workplace, without ever being exposed to the term "entrepreneurial". Data were coded and analysed using Dedoose through iterative inductive analysis. We then conducted deductive analysis using a literature-based framework of nine entrepreneurial dimensions to examine how entrepreneurial practices are embedded in everyday work.

### Results

A seven-part framework describes key features of an entrepreneurial school: guiding ideas, view of humans, view of knowledge, and four cultures – workplace, leadership, education and development. Findings show how entrepreneurial dimensions become institutionalised through shared vision, trustful relations, flexibility and distributed agency. Deductive analysis reveals that this entrepreneurial school is grounded less in market-oriented logic and more in people-positive organising, mobilising fundamental human capacities – being passionate, positive, developmental, reflective, pragmatic, flexible, relational, resourceful and collaborative. We also identify a critical tension: a strong entrepreneurial culture does not automatically translate into strong entrepreneurial pedagogy for students.

### Implications

For research, this study demonstrates the need for institutional-level analysis in EE, emphasising organisational structures over individual teacher heroism. It suggests fruitful connections between EE research and Rosa's resonance theory. Entrepreneurial organising can support more resonant relationships and better quality of life. For policy, findings highlight the crucial role of school leadership. For practice, the study offers insights for principals seeking to cultivate entrepreneurial schools, without necessarily using problematic terms like "entrepreneurial". Methodologically, the study demonstrates DAS as a powerful approach for studying organisational culture at scale.

### Value/Originality

This study contributes novel empirical insights into what it means to be an entrepreneurial school from an institutional perspective. It reframes "being entrepreneurial" as fundamentally about organising around core human capacities rather than market-oriented business logic. By studying how those inside an entrepreneurial school articulate which dimensions help them in everyday work, without imposing entrepreneurial terminology, we provide authentic insights into entrepreneurial organising in education. The study bridges EE research with broader organisational theory on people-positive organising and sociological theory on resonance, offering new theoretical perspectives on entrepreneurial schools.

## **LEARNING WITH, NOT ABOUT: HOW INDIGENOUS PRACTICES CHALLENGE EUROPEAN ENTREPRENEURSHIP EDUCATION**

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### **Questions We Care About**

This research examines the Alternative Doctorate in Popular and Transformative Economies (ADPTE), a self-managed educational initiative led by Indigenous and Afro-descendant communities in Latin America. We address fundamental questions about epistemic justice, power, and the purpose of entrepreneurship education by exploring: (1) What epistemological foundations underpin ADPTE's commitment to cognitive justice? (2) How does its organizational model embody self-management, horizontal participation, and intercultural translation? (3) What role do decolonial pedagogical tools play in generating embodied knowledge? (4) How do participation mechanisms challenge conventional academic gatekeeping? (5) What transferable insights can ADPTE offer for transforming Entrepreneurship Education in Europe toward collective, inclusive, decolonizing practices?

### **Approach**

Grounded in Latin American popular education, decolonial epistemologies, and critical entrepreneurship scholarship, this qualitative study employed participatory methodology prioritizing reciprocity over extraction. Methods included conversational dialogues with ADPTE founders, six semi-structured interviews, participant observation across twelve sessions, and document analysis. As European researchers from a former colonialist country studying Indigenous practices, we maintain critical reflexivity about positionality and epistemic extraction risks.

### **Results**

ADPTE demonstrates three transformative dimensions. (1) Epistemologically, it centers ancestral, territorial, community-based knowledge as legitimate without institutional validation. (2) Organizationally, it operates through self-managed structures where participants rotate teaching, translating, and moderating roles; curricula emerge collectively, without academic prerequisites to access, accepting alternative payments to money. (3) Pedagogically, it deploys decolonial tools: Aulas Vivas (Living Classrooms) situate learning in open and public spaces; Tongas integrate intergenerational dialogue and comprehensive ethical-relational training; Systematization of Experiences transforms lived practice into shareable knowledge through participatory inquiry.

### **Implications**

For European Entrepreneurship Education facing a polycrisis, ADPTE offers concrete pathways beyond reform toward transformation. From Aulas Vivas: non-hegemonic perspectives into curriculum; entrepreneurship as a collective endeavor for ecological-social goals; liminality as a pedagogical asset. From Tongas: autoethnography/oral histories exploring entrepreneurial identities through intergenerational memory; radical inclusion via participatory co-creation; educators as relational facilitators. From Systematization: practice slow, embodied, experiential learning; employ alternative literacies (sewing, audiovisual media, music) for knowledge production. This is not about transferring Global South models wholesale, but imagining alternative ways to organize entrepreneurship education by opening academic boundaries for social actors beyond profit-generating frameworks.

### **Value and Originality**

This paper presents a comprehensive analysis of a self-governed, community-led program operating outside conventional academia while maintaining rigor through alternative legitimacy frameworks. It documents an initiative that embodies decolonial practice at every level (epistemological, organizational, pedagogical), demonstrating that transformative entrepreneurship education requires learning with rather than about communities, a process grounded in epistemic justice and territorial commitment.

**Keywords:** Decolonial pedagogy, Popular education, Indigenous epistemologies, Transformative economies, Territorial knowledge, Cognitive justice

## CHATBOT AS MIRROR, CHALLENGER, AND COACH: A CONCEPTUAL MODEL FOR AI-SCAFFOLDED METACOGNITIVE LEARNING IN ENTREPRENEURSHIP EDUCATION

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### Question we care about – Objectives

Reflective thinking (Dewey, 1910) is a cornerstone of experiential learning in entrepreneurship education (Hägg, 2021; Neck & Greene, 2011), reflection can transform students' experience into knowledge. However, structured reflection remains difficult due to uneven students' capabilities, metacognitive skills, or limited educators' support. With the rise of GenAI in recent years, an untapped potential has emerged in mitigating the above mentioned difficulties, which leads to the guiding question "*How can entrepreneurship educators leverage AI chatbots to scaffold students' reflective learning process?*".

### Approach

This conceptual paper integrates existing literature on scaffolding, experiential learning in Entrepreneurship Education (EE) and metacognitive learning. By anchoring in Lewin's action research spiral model (1946) and classroom-based observations of AI-facilitated reflective practice, the paper develops four propositions and introduces typologies of GenAI chatbot roles in scaffolding reflection in EE.

### Results

This paper proposes a spiral reflective model in which an AI chatbot functions as 1) Mirror that prompts awareness of metacognitive knowledge, 2) Challenger that shapes metacognitive knowledge, and 3) Coach that scaffolds metacognitive regulation. Along the spiral, scaffolding fades gradually when students move to the later cycles. This aims to encourage self-directed learning and reduce potential cognitive load when reflecting.

### EE Implications

This paper highlights the emerging roles of GenAI and how it can support educators in managing complexity and uncertainty in experiential entrepreneurship education. With the proposed archetypes of chatbot use and the reflective learning model, educators can target specific reflective skills and metacognitive development. As a temporary scaffold, GenAI offers personalised support while encouraging students to assume greater responsibility over time. Acknowledging the limits of scaffolding is crucial for sustainable learning design. This spiral model offers educators a new reflection design logic, which moves beyond 2D cycles by conceptualising reflection as a cumulative development of metacognitive capacity. Educators can use this model to design AI-facilitated reflection assignments that deepen students' learning without increasing instructional burden and time spent. The paper calls for more research and discussions on how to leverage GenAI and strengthen reflective practice in uncertain and complex learning contexts.

### Value and Originality

This paper introduces the AI-scaffolded reflective learning model, a novel model for embedding GenAI in entrepreneurship education to strengthen students' metacognitive reflection. Unlike 2D cyclical models such as Kolb's experiential cycle (Kolb, 1984) or Zimmerman's SRL (Zimmerman, 2002), the spiral model conceptualises reflection as a developmental trajectory instead of a repetitive loop. This spiral model explains how an AI chatbot can support cumulative development across iterations, and fades scaffolding gradually across cycles to foster metacognitive autonomy. This paper's contribution offers a conceptual foundation for future research that addresses the growing gap in the pedagogy of AI-integrated classrooms. It also provides actionable design principles for educators experimenting with GenAI-enabled reflective learning design.

**Keywords:** reflection, GenAI, metacognition, experiential learning, chatbot scaffolding

## AI-ENHANCED PITCH TRAINING THROUGH SELF-AVATARS

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### Questions we care about (Objectives)

Pitch training traditionally focuses on preparing entrepreneurs for discrete funding events, emphasizing short-term performance rather than the development of enduring self-regulatory skills like self-efficacy and motivation. Recent research, however, highlights its broader value for long-term entrepreneurial success by fostering these skills. At the same time, advances in generative AI enable novel training approaches using self-representation, such as voice-cloned feedback or virtual self-avatars. Self-avatars provide feedback through visual self-resemblance, preserving the learner's appearance while presenting an improved version of their pitch performance. Such appearance-based similarity constitutes a powerful self-relevant cue that activates self-referential processing, increasing cognitive engagement and strengthening feedback internalization. Building on these insights, this study investigates whether observing self-resembling avatars enhances entrepreneurial pitch performance by activating SRL processes. We hypothesize that self-avatar training increases SRL engagement (e.g., emotion regulation), which in turn improves pitch performance.

### Approach

We will conduct a controlled lab experiment with entrepreneurial novices (target N = 128). Participants will first record an initial pitch. They will then watch their recording and be randomly assigned to one of two conditions: observing either a generic avatar or a self-avatar delivering an AI-enhanced version of their pitch. After the intervention, participants will record a post-training pitch. Pre- and post-measures assess SRL mechanisms, including self-efficacy, task value/motivation, emotion regulation, metacognitive monitoring, self-reaction, and self-judgment, alongside control variables (e.g., prior pitching or AI experience). Pitch performance will be rated by independent experts. Data will be analyzed using (parallel) mediation models with bootstrapping techniques.

### Results

We expect that observing idealized self-avatars will lead to higher post-intervention pitch performance than observing generic avatars. This effect is anticipated to be driven by stronger activation of multiple SRL mechanisms. Together, these processes transform observation into regulatory action and behavioral refinement. Comparing self-avatars with generic avatars will clarify whether learning gains primarily result from identity alignment and SRL activation, and provide insight into how observing one's own enhanced self versus a generic avatar affects pitching performance.

### Implications

Traditional pitch training, particularly video-based self-review, can be emotionally straining and increase performance anxiety. Self-avatars, representing an idealized future self, offer a promising alternative by shifting attention from current shortcomings to aspirational potential. This reduces defensive reactions, fosters positive upward comparison, and supports SRL processes. The findings contribute to emerging research on AI-supported learning by demonstrating how visual self-resemblance shape emotional and cognitive engagement. Practically, the study informs the design of scalable, psychologically aligned training tools that enhance entrepreneurial learning.

### Value/Originality

This research introduces visual self-resemblance as a mechanism for learning in entrepreneurship education, examining underlying psychological processes beyond performance outcomes, and advancing theory on identity-aligned AI interventions. It highlights how AI-generated self-avatars can enable deeper, more personalized, and emotionally supportive learning experiences.

**Keywords:** Self-avatars; self-regulated learning; pitch training; AI in education

## GRADUATE HYBRID ENTREPRENEURSHIP: WHEN TECH SKILLS DON'T TRANSLATE TO GROWTH

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### Questions we care about (objectives)

Universities face growing pressure to prepare students for entrepreneurial careers. Yet, the effects of different higher education specializations, entrepreneurship education in particular, on post-graduation opportunity exploration, venture growth, and performance remain underexplored. A key question is, therefore, not only whether entrepreneurship education encourages entrepreneurship entry, but also how it shapes the management and performance of entrepreneurship over time. Drawing on real option theory, which suggests that entrepreneurial entry creates value through active opportunity exploration, rather than merely holding the option of entrepreneurship, this study examines the longitudinal performance of graduate hybrid entrepreneurs, a growing yet neglected group of individuals who pursue entrepreneurship shortly after graduation alongside employment building on their recent education rather than extensive work experience. In doing so, we explore the role of higher education in managing the entrepreneurship option and achieving entrepreneurial outcomes.

### Approach

We distinguish between 38,892 graduates who completed either a (i) master's in entrepreneurship, (ii) a master's in technology, (iii) a master's in engineering, or (iv) another master's program from the same technical university. We specify performance outcomes as (i) duration as a hybrid entrepreneur, (ii) founding an innovative firm, (iii) venture growth, (iv) being a portfolio entrepreneur, (v) venture's income, and measure them three years after graduation

### Results

This is a registered report: we motivate and theorize the phenomenon, derive theory-grounded hypotheses, and pre-specify research design, sampling, and analysis before conducting the data analysis. This format minimizes publication bias and increases transparency by committing to a predefined research plan. The registered report undergoes a double-anonymized review identical to other papers. If accepted, the study can be conducted as outlined. The final full-length paper is submitted for final double-anonymized review.

### EE implications

This study aims to provide longitudinal evidence of the effects of entrepreneurship education. In addition, by drawing attention to hybrid entrepreneurship as a viable pathway among university graduates, this study reshapes our understanding of early career development and entry into entrepreneurship after graduation. In doing so, this study shifts the focus away from graduate rates of selfemployment as an indicator of entrepreneurship education success. This has implications for the type of training universities could offer to better prepare students for flexible careers in times when more graduates enter the gig economy and portfolio careers.

### Value and originality

The distinction between graduates' master programme specializations allows us to move beyond the broad claim that education raises productivity and instead ask which educational background is more effective in activating exploration of entrepreneurial options and supporting business performance outcomes among graduate hybrid entrepreneurs. The findings will provide pioneering longitudinal evidence that will either support current entrepreneurship education or call for a shift toward more domain-specific competencies.

**Keywords:** entrepreneurship training, performance outcomes, hybrid entrepreneurship, venture creation programs

## **NOT FOR SUCCESS BUT FOR PROGRESS – TEAM ORGANIZATION FOR COLLECTIVE DECISION-MAKING IN VCP PRE-VENTURES**

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### **Questions we care about – Objectives**

In the context of action-based entrepreneurship education, the pre-venture team is often used as vessel for learning. However, the dual emergence of team and venture in the pre-venture phase is complex, and hard to study (Lazar et al., 2019). Therefore, team process is often disproportionately considered less, or not developed at all, as part of models. Arguably though, effective teamwork is just as important in the nascent stages of venture development – one needs a team that is able to make decisions together to formulate and operate the emerging venture. Models for entrepreneurial decision-making have been developed and discussed, with the theory of effectuation (Sarasvathy, 2001; Sarasvathy et al., 2008) at the core of dominant models. Effectuation, a theory of decisionmaking logic, is inherently individual, and built from empirical study of experienced entrepreneurs. We therefore aim to expand on this work to explore decision making across the emergent venture team process. We care about how teams actually organize in the pre-venture stage – and how this enables them to collectively make decisions under uncertainty. We therefore ask: *How do pre-ventures organize to collectively make decisions?*

### **Paper approach**

We draw from literature on entrepreneurial and team decision-making. As a primary lens, we use effectuation (Sarasvathy, 2001) to explore decision-making in the pre-venture phase. As discussed, effectuation is a theory of individual decision-making logic. Therefore, we use Ben-Hafaïedh and Ratinho (2019) effectual conceptual model of entrepreneurial team formation as a secondary lens, and apply it empirically, showing how the cases studied followed the effectuation process (or how they failed to). Based on a larger study, we use two contrasting, extreme cases of pre-venture teams, Angular and Constellation, to show the difference between proactive organization of the process and a reactive, low-structured process. We discuss how this enables (or fails to enable) collective decision-making.

Our study is based on 30 interviews, conducted throughout the first 12 weeks of shared work on the venture idea. Interviews were conducted on a rotating basis with each member of the two cases (pre-venture teams). Set in a venture creation programme (VCP), the cases are both working with cutting edge technology, attempting to commercialize it.

### **Results**

We employ a process perspective, showing the efforts made by members over time to organize work in the pre-venture. Using effectuation principles, we show how the process of case Angular enables collective decision making, whereas case Constellation struggles to make decisions for venture development. We highlight conscious practices focused on accountability, communication and reflection, as well as the management of interaction with external stakeholders and use of tools, as these differ on an inter-case level. Angular features clear structures around communication and functional task distribution, shaping an iterative process and improving both their outcomes and process satisfaction along the way – ensuring high accountability and consistency. In contrast, Constellation made inconsistent attempts to structure their team. They failed to have functional communication, and role setting was made for power, not for function. There are distinct differences in how the two cases interact with external stakeholders. Angular illustrates structured planning, conducting and reflection on stakeholder interactions, whereas Constellation takes meetings haphazardly with “who comes up”, which then generates an unstructured pivot. The structure Angular consciously chose and maintained, enabled them to make a confident choice to leave the technology behind and refocus their energy.

### **EE implications**

Our work has strong implications for entrepreneurship education. While team-based entrepreneurship is common within entrepreneurship education, specialized coaching for the entrepreneurial team process is not

always provided. And although there exist methods to structure venture idea validation, such as lean start-up, business model canvas, and design thinking, frameworks tend to fail to account for the role of organizing the process in a team as it relates to team decision-making.

Our work shows the link between team decision-making and pre-venture process. Our work enables practitioners to better understand pre-ventures and address the complexity of their process. Educators need to recognize the criticality of collective decision-making, as also distinct from individual decision-making, and have means to facilitate and support teams through this process. Teaching should move from linking team process loosely to venture idea validation to an integrated view of the two.

### **Value and originality**

Our work contributes to the literature on effectuation and entrepreneurial team formation, providing more knowledge about an under researched context of entrepreneurship (education): pre-venture teams. Our work provides novel insights into how aspiring entrepreneurs organize as a team – and how they fail to do so. We explore the complexities of collective decision-making processes through investigation of everyday practices of pre-venture teams. Thereby, we are able to show actionable ways in which teams organize for venture development.

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## SUSTAINABLE ENTREPRENEURSHIP EDUCATION IN THE MAKING: EDUCATORS' MEANING-MAKING AND PEDAGOGICAL ENACTMENTS AS MICRO-FOUNDATIONS OF AN EMERGING FIELD

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**Abstract** Sustainable entrepreneurship education (SEE) is gaining attention as higher education seeks to develop graduates capable of acting as change agents in response to pressing social and ecological challenges. Beyond venture creation skills, SEE emphasizes systemic thinking, ethical reflexivity, and the capacity to design solutions that generate social, environmental, and economic value. Despite this expansion, SEE remains conceptually fragmented, characterized by diverse and often competing interpretations of sustainability and its role within entrepreneurship education. This study examines how such fragmentation is produced and sustained by focusing on entrepreneurship educators' lived experiences and meaning-making processes. Drawing on Interpretative Phenomenological Analysis (IPA) of in-depth life-story interviews with nine educators across Swedish universities, we identify four analytically distinct meaning-practice configurations through which sustainability is interpreted and enacted: *critical-transformative*, *pragmatic-balancing*, *structured-operationalizing*, and *developmental-processual*. These configurations integrate educators' understandings of sustainability, their positioning of entrepreneurship, pedagogical approaches, and ways of navigating tensions. Building on these findings, we develop a process model showing how educators' situated meaning-making translates into divergent pedagogical enactments that coexist without convergence, contributing to the ongoing formation of SEE as a loosely structured field. Rather than moving toward a unified paradigm, SEE emerges through distributed and locally enacted practices that sustain plurality. Our study contributes to entrepreneurship education research by foregrounding educators as active constructors of educational meaning and practice. It further advances understanding of how emerging academic domains develop through micro-level processes, offering a practice-based perspective on field formation. Implications are discussed for curriculum design, educator development, and institutional support in advancing sustainability in entrepreneurship education.

**Keywords:** Sustainable entrepreneurship education; Sustainability; Interpretative Phenomenological Analysis (IPA); Educator sensemaking; Pedagogical enactment; Field formation/emerging fields

## TRANSFORMATIVE OR INSTRUMENTAL? UNPACKING EDUCATOR FACTORS SHAPING SUSTAINABILITY INTEGRATION IN ENTREPRENEURSHIP TEACHING

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**Objectives** Sustainability integration in entrepreneurship education (EE) ranges from instrumental, content-focused approaches to transformative, reflective, and values-driven pedagogies, a distinction widely discussed in sustainability education (Mezirow, 1991; Sterling, 2004; Tilbury, 2011). Understanding what drives this variation is vital because deeper, transformative practices foster students' critical thinking, ethical awareness, and capacity to engage with sustainability challenges (Biberhofer & Rammel, 2011; Stubbs & Cocklin, 2008). Building on research showing that educators' beliefs and identities shape teaching practice (Berglund & Verduyn, 2018; Fayolle & Gailly, 2008), this study examines how educators' sustainability consciousness (Olsson et al., 2016) and sustainability-oriented professional identity (Sveningsson & Alvesson, 2003; Wright & Nyberg, 2011) influence their tendency to adopt either instrumental or transformative sustainability integration in EE. We further investigate whether EE educators' self-efficacy in teaching sustainability mediates these relationships (Bandura, 1991; Tschannen-Moran & Hoy, 2001) and whether institutional support strengthens these indirect effects (Lozano et al., 2015; Scott, 2014).

**Approach** To tackle the overarching research question “*What educator-level factors enable transformative, rather than instrumental, sustainability integration in entrepreneurship education?*”, this study draws conceptually on transformative learning theory (Mezirow, 1991, 2000) and identity work perspectives (Ibarra, 1999; Sveningsson & Alvesson, 2003), which propose that educators' meaning frameworks, professional identities, and efficacy beliefs shape their pedagogical enactment. Using survey data from 221 entrepreneurship educators who teach sustainability across higher education institutions internationally, we apply regression models to test direct effects, mediation via sustainability teaching self-efficacy, and moderated mediation by perceived institutional support. Key constructs include sustainability consciousness, sustainability-oriented professional identity, sustainability teaching self-efficacy, institutional support, and two distinct forms of sustainability integration: instrumental and transformative.

**Results** Analyses conducted in Stata 18 show that sustainability consciousness ( $\beta = 0.42, p < .001$ ) and sustainability-oriented professional identity ( $\beta = 0.38, p < .001$ ) strongly predict transformative integration, with weaker effects on instrumental integration ( $\beta = 0.26$  and  $0.21, p < .01$ ). Self-efficacy mediates these relationships, explaining 32-38% of the effects for transformative integration and 21-25% for instrumental integration ( $z = 3.24-3.86, p < .001$ ), consistent with prior research on teacher self-efficacy shaping pedagogical choices (Tschannen-Moran & Hoy, 2001). Institutional support significantly strengthens these mediated pathways, particularly for transformative approaches (interaction  $\beta = 0.18, p < .05$ ), echoing the literature on institutional enablers in sustainability-oriented teaching (Lozano et al., 2015).

**EE Implications** The findings highlight that meaningful sustainability integration requires more than curriculum revision; it involves educators' identity, values, and efficacy beliefs, embedded within supportive institutional environments (Barth et al., 2001; Fayolle & Redford, 2014). Faculty development initiatives that cultivate sustainability consciousness, reinforce sustainability-oriented professional identity, and build pedagogical self-efficacy, supported by institutional mechanisms such as leadership commitment, recognition systems, and communities of practice, are key to fostering transformative, values-driven sustainability teaching in entrepreneurship education.

**Value and Originality** This study provides one of the first empirical examinations of how personal, professional, and institutional factors jointly shape sustainability integration in EE. By linking identity, self-efficacy, and institutional support to both instrumental and transformative teaching approaches, it advances theoretical understanding of educator agency in sustainability pedagogy and offers actionable insights for designing faculty development and institutional strategies that promote deeper forms of sustainability learning.

## UNFOLDING SOCIETAL IMPACT: STUDENTS' CHANGEMAKING PATHWAYS FOLLOWING SUSTAINABLE ENTREPRENEURSHIP EDUCATION

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### Questions we care about – Objectives

Entrepreneurship education is increasingly recognized as a space not only for founding startups but also for developing an entrepreneurial identity. As urgent societal challenges intensify, entrepreneurship education is expected to help students form identities that equip them across diverse sustainability-oriented careers. Yet we still lack an integrated understanding of sustainable entrepreneurial identities, tensions involved in their development, and the role of entrepreneurship education in managing them. Thus, we ask: How are students navigating tensions as they form their identities as changemakers, and how does sustainable entrepreneurship education support this journey?

### Approach

To address this question, we conduct a longitudinal, four-round interview study, enriched with secondary data, with graduates of a one-week sustainable entrepreneurship course from a leading European technical university. Collecting 4x15 and 4x10 semi-structured, online interviews, we gain rich insights into students' identity development. We triangulate this final dataset of 108 interviews with LinkedIn profile information to cross-validate their work experience, education, and skills.

### Results

Our findings reveal a five-step process through which students move, from responsibility awareness to the realization of wide societal impact. During this process, students confront six tensions – responsibility, passion, expectation, effort, finance, and health – that they navigate in different ways. These tensions shape their identities as Self-focused, Undecided, Future, and/or Committed Changemakers. Sustainable entrepreneurship education helps students manage these tensions by providing a range of resources throughout.

### Implications

By showing how students, through a process of realizing societal impact, develop four sustainable entrepreneurial identities, we contribute to research on broad and sustainable entrepreneurial identities (De Bernardi & Sydow, 2022; Killingberg, 2024). Second, we contribute to research on tensions in identity development (Cesinger et al., 2022; Sugiyama et al., 2024) by exploring six different tensions students experience along their sustainable entrepreneurial paths. Third, we advance research on the role of sustainable entrepreneurship education in helping students manage these tensions (Hytti & Heinonen, 2013; Thrane et al., 2016) by identifying specific learning and psychological resources.

### Value/ Originality

Our research provides rich qualitative insights into how sustainable entrepreneurship education can better support students in managing and resolving tensions in their identity development.

Keywords: Sustainable Entrepreneurship, Entrepreneurship Education, Identity Development, Tensions, Changemaking Pathways

## THE LONG-TERM IMPACT OF EARLY ENTREPRENEURSHIP EDUCATION

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- *Research in Progress* -

**Questions we care about – Objectives.** Entrepreneurship education (EE) programs have proliferated globally, reflecting a growing consensus on the critical role of entrepreneurship in fostering sustainable economic development and innovation. However, most initiatives target adolescents or university students, while comparatively little research examines EE in primary school contexts. This gap is particularly relevant because early exposure to entrepreneurial thinking and behavior may shape capabilities during a formative stage of development. Beyond developing individual competencies, early EE may also contribute to a more entrepreneurial culture in society. The present study investigates the long-term impact of early EE on the entrepreneurial mind- and skillset of elementary school children using a quasi-experimental design.

*Q1: What short- and long-term impacts does early entrepreneurship education have on the entrepreneurial mind- and skillset of elementary school children?*

*Q2: How effective are brief, resource-efficient early entrepreneurship education initiatives?*

**Approach.** We conduct a longitudinal quasi-experimental field study comparing pupils exposed to an EE program with a control group without program participation. Outcomes are measured at baseline and across multiple post-intervention timepoints.

The sample consists of approx. 800 third- and fourth-grade children from Austrian elementary schools. Participants take part in a project-based EE program offered annually by a public university. The program follows a standardized structure to ensure consistent delivery across classrooms. The intervention consists of two workshops delivered by trained university students, followed by a one-month project phase in which pupils develop and implement their own product or service ideas. The program culminates in a sales event where pupils present and sell their creations.

To measure changes in the entrepreneurial mind- and skillset, the study captures entrepreneurial intentions, attitudes toward entrepreneurship, and entrepreneurial skills such as creativity, initiative, and opportunity recognition. Demographics and entrepreneurial experience are included as controls. Data are triangulated to increase measurement reliability between pupils completing paper-based questionnaires in the classroom, and parent surveys.

**Results.** The research questions will be analyzed using longitudinal multilevel models that account for repeated observations over time and the nested structure of the data (pupils within classes and schools). We expect a positive interaction between program participation and measurement timepoints, indicating stronger improvements in entrepreneurial mind- and skillset among pupils exposed to EE.

**Implications.** From a practical perspective, the findings provide guidance for policymakers and educators on how to design entrepreneurship education initiatives that balance impact and efficiency. Many existing programs require substantial time and resources. Understanding whether shorter initiatives can generate measurable and lasting developmental effects is therefore important for designing scalable programs that can be implemented across school systems.

**Value/Originality.** The study contributes to the literature by examining the long-term impact of entrepreneurship education in an elementary school setting. Prior research has largely focused on adolescents or university students and often relied on cross-sectional self-reports. By employing a longitudinal field experiment with a large sample and multi-informant data collection, this study provides new insights into whether early and relatively short EE interventions can generate sustained developmental effects.

**Keywords:** Early Entrepreneurship Education, Longitudinal Quasi-Experiment, Entrepreneurial Mindset Development

## ENTREPRENEURSHIP EDUCATORS AS STEWARDS OF REGENERATION: A TRIADIC FRAMEWORK

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**Questions we care about (Objectives)** - This paper addresses concern that entrepreneurship education (EE) remains tied to venture creation, growth and competitiveness, even when sustainability is introduced. It asks how EE can cultivate regenerative entrepreneurs as change agents who enhance the integrity and resilience of local social–ecological systems. The paper has three objectives: to clarify the conceptual foundations of a regenerative turn in EE; to develop a four-layer framework linking regenerative purpose, entrepreneurial outcomes, learning principles and pedagogical means; and to illustrate how this framework can be enacted through biomimicry-based interventions in undergraduate entrepreneurship modules.

**Paper Approach** - The paper develops a conceptual framework by bringing into dialogue sustainable entrepreneurship education, regenerative entrepreneurship, transformative sustainability learning and biomimicry. It argues that sustainable entrepreneurship education, while valuable, remains limited by anthropocentric, competence-based and additive approaches. In response, it proposes regenerative entrepreneurship education (REE) as a four-layer architecture linking regenerative purpose, outcomes, learning principles and pedagogical means. The framework is illustrated through exploratory pedagogical experiments in three undergraduate modules at Munster Technological University.

**Results** - The vignettes show how the framework materialised through three developmental axes. Guided walks and sensory prompts supported inner transformation by fostering relational awareness, biosphere-focused emotions and regenerative mindsets. Ecological metaphors and biomimetic analogy work supported guiding heuristics by translating ecological strategies into regenerative principles. Prototyping and regeneration-focused assessment supported enactment by encouraging students to refine venture ideas against criteria derived from Life's Principles. Across the vignettes, students began to see, think and act in ways consistent with regenerative entrepreneurship.

**EE Implications** - The framework positions entrepreneurship educators as stewards of regeneration rather than neutral transmitters of venture creation techniques. It offers design heuristics for articulating learning outcomes, structuring activities and aligning assessment with regenerative aims. More broadly, it suggests that EE can move beyond additive sustainability content by integrating cognitive, practical and affective dimensions of learning within place-based, relational and more-thanhuman contexts.

**Value and Originality** - The paper contributes to EE in three ways. Conceptually, it offers a coherent four-layer framework for REE. Pedagogically, it advances biomimicry as pedagogical praxis rather than merely an innovation tool. Practically, it provides educators with a scaffold for designing and evaluating regenerative entrepreneurship education. In doing so, it brings together literatures that have largely developed separately and reframes EE as a site for cultivating regenerative change agents.

**Keywords:** regenerative entrepreneurship education, biomimicry, transformative sustainability learning, pedagogical praxis

## ENTERPRISE EDUCATION IN PRIMARY SCHOOLS: A SYSTEMATIC LITERATURE REVIEW OF PEDAGOGIES, COMPETENCY CLAIMS, AND EVIDENCE PRACTICES

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### Questions we care about

Enterprise education (EE) is increasingly promoted as a way of helping children develop as future change agents who can create social, cultural, and economic value (Lackéus, 2015). Yet EE in primary education remains far less studied than in secondary and higher education, and UK primary schooling is only weakly represented in the literature (Liguori et al., 2019; Marques et al., 2012; Seikkula-Leino et al., 2023). This study aims to clarify how primary EE is understood in the literature and to use these insights to inform a later empirical study in UK primary schools. Specifically, it examines how EE in primary schooling is conceptualised, what pedagogical approaches are reported, which entrepreneurial competencies are emphasised, and how those competencies are evidenced.

### Approach

The paper presents a PRISMA-informed structured literature review of studies on EE in primary schools published between 2015 and 2026. Studies were identified through Web of Science, Scopus, and ProQuest. The search was conducted using the keywords “enterprise education” and “pedagogy” and “competencies” and “primary school”. After screening, the final sample comprised 29 studies. To improve methodological transparency, studies were coded across five dimensions: conceptualisation of EE, pedagogical approach, competency emphasis, evidence or assessment approach, and value orientation.

### Results

First, EE is conceptually broad but inconsistent, spanning entrepreneurial attitude formation, personal development, social value creation, soft-skills education, and preparation for future economic participation (García-Rodríguez et al., 2018; Floris and Pillitu, 2019; Pantazidis and Tsismalidou, 2026). Second, pedagogical approaches are consistently active and participatory, including mini-companies, project-based learning, STEM integration, design thinking, social campaigns, mathematics integration, and garden-based learning (Dooly et al., 2021; Acharya, 2025). However, links between pedagogical approaches and competency clusters are often implied rather than systematically demonstrated. Third, creativity, problem-solving, and learning through experience are emphasised. Fourth, the evidence base is promising but uneven, ranging from structured quantitative designs to qualitative and locally interpreted evidence (Pepin and St-Jean, 2019; Jardim et al., 2023; Pantazidis and Tsismalidou, 2026). Based on these patterns, the paper develops a review-derived framework linking pedagogical forms, competency clusters, and evidentiary practices in primary EE.

### Implications

Primary EE appears pedagogically rich but conceptually fragmented and evidentially uneven. This points to the need for clearer alignment between pedagogical forms, competency claims, and evidence practices, and for more explicit, age-appropriate ways of designing and evidencing entrepreneurial learning in younger children.

### Value/Originality

The paper moves beyond broad claims that primary EE is beneficial and that the field remains under-researched by showing, through structured synthesis, where the field is conceptually diverse, where pedagogical innovation and development are most visible. The proposed framework connects conceptualisation, pedagogy, and evidence more explicitly for young learners. This responds to wider calls for more nuanced and multidisciplinary approaches to entrepreneurial competency development and assessment (Penaluna and Penaluna, 2021).

**Keywords:** Enterprise Education, Pedagogy, Entrepreneurial Competencies, Primary Education

## THE PARADOX OF ENTREPRENEURSHIP CAMPS: SHORT INTERVENTIONS FOR COMPLEX LEARNING

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### Objectives

Entrepreneurship camps have become a popular and widely adopted format in higher education, promising creativity, innovation, interdisciplinary collaboration, and entrepreneurial competence within 24–72 hours. This raises a central pedagogical paradox: How can such short interventions deliver complex learning goals that require time, uncertainty, and deep engagement? Existing research offers little clarity on whether camps genuinely foster transformative entrepreneurial learning or simply reproduce a standardized, policy-driven format with limited pedagogical grounding.

### Approach

The manuscript follows a conceptual approach by integrating liminality theory with an analysis based on the Didactical Relational Model (DRM). Liminality provides a lens for understanding entrepreneurship camps as potential “in-between” learning spaces where ambiguity, instability, and identity shifts may occur. DRM enables a systematic examination of goals, content, learning activities, assessment practices, contextual factors, and learner prerequisites. Together, these frameworks reveal how camps may simulate the outer conditions for liminality while simultaneously restricting deeper learning processes through compressed time structures, predefined tools, and outcome-oriented assessment.

### Results

Our analysis shows that entrepreneurship camps do create separation from everyday academic routines, but their scripted progression, reliance on linear templates, and competitive pitching formats limit opportunities for ambiguity, sensemaking, and collective exploration—central mechanisms of liminal learning. As a result, camps often fall short of supporting the complex cognitive, emotional, and identity-related processes they claim to promote.

### Implications

We propose reframing entrepreneurship camps as intentionally designed liminal learning spaces. This requires aligning goals with realistic learning outcomes, strengthening reflective and sensemaking activities, structuring post-liminal reintegration, and adapting camp design to disciplinary contexts and learner prerequisites.

### Value/Originality

The paper contributes a novel conceptual synthesis by combining liminality theory with didactical analysis to illuminate why camps often underdeliver—and how they can be redesigned to unlock their transformative potential.

**Keywords:** Didactics, Entrepreneurship camp, Entrepreneurship education, Innovation camp, Liminality

## DEVELOPING BUSINESS-AWARE EARLY-CAREER RESEARCHERS AND TECHNICIANS OVER 30 YEARS

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### Questions we care about (Objectives)

Universities are increasingly expected to operate across the Triple Helix of academia, industry, and government, placing new demands on researchers and technicians to engage in activities beyond traditional academic roles. While entrepreneurial learning is known to enhance self-efficacy, stakeholder engagement, and innovation potential, there is limited longitudinal evidence on how such training shapes sustained cross-sector mobility. This paper addresses this gap.

### Approach

This study presents a longitudinal evaluation of the YES (Your Entrepreneurs Scheme), an entrepreneurial training programme operating for over 30 years with more than 10,000 participants. Drawing on entrepreneurial competence and workforce mobility literature, and informed by boundaryless career theory, the study examines how participation influences competence development and long-term career trajectories among early-career researchers and technicians. A multi-stakeholder design is employed, combining retrospective survey data, cohort interviews, and an employer survey capturing industry perspectives on skills gaps.

### Results

Findings are preliminary and based on pilot data. Early insights indicate that entrepreneurial competences—particularly stakeholder engagement, opportunity recognition, and commercial awareness—support individuals in navigating organisational boundaries and contributing to innovation activity. The findings also highlight how cross-sector mobility is enacted and how it strengthens knowledge exchange capability.

### Implications

The study provides insights for the design of researcher and technician development programmes, particularly in supporting mobility and engagement across sectors.

### Value/Originality

This paper offers early longitudinal evidence on the role of entrepreneurial learning in shaping cross-sector mobility, incorporating technicians as a critical yet under-examined group, and applying a boundaryless career lens to understand mobility within the Triple Helix.

**Keywords:** Entrepreneurial learning; Cross-sector mobility; Triple Helix; Boundaryless careers; Knowledge exchange; Technicians

## CAN WE EQUIP STUDENTS FOR AN ENTREPRENEURIAL INTERNSHIP ABROAD: THE ROLE OF PRE-ENTRY PREPARATION

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**Questions we care about (Objectives)** Globally, universities invest in cross-cultural entrepreneurial experiences abroad to equip students with adaptable skillsets to perform in foreign contexts. More, entrepreneurship scholars advocate practice-based learning in internships as gainful for students. In internships, students perform entrepreneurial tasks in close interaction with various organizations and connect with local communities and economies. By observing real entrepreneurial practice and performing work tasks in foreign organizations, students can develop entrepreneurial mindsets, skills and competences. Moreover, students must cope with the foreignness in culture and behaviour, forcing them to behavioural experimentation, trying out new attitudes and behaviours, influencing students' entrepreneurial self-efficacy, confidence and personal growth. Even though entrepreneurship scholars see the value of providing students with the experience of internships abroad, they tend to underestimate the importance of cross-cultural intelligence and fail to prepare students. Besides, it can be challenging to develop cultural intelligence among students before traveling. Hence, we ask if educators can prepare students for the cross-cultural entrepreneurial learning experience before they travel, and how preparation can influence students' learning?

**Approach** The study explores Norwegian students' entrepreneurial and cross-cultural learning during a 3-month internship in social enterprises, in Cape Town, South Africa. *Social entrepreneurship* is about developing innovative solutions to societal problems. We argue social enterprises in countries characterized by high social inequality, poverty and social problems represent a stimulating but also emotionally challenging learning arena for Norwegian students. The internship experience is expected to induce transformative learning experiences. The research design is qualitative, longitudinal and uses group interviews to compare two different student cohorts of Norwegian students, placed in similar internships, one being exposed to *high* preparation, whereas the other had *low* preparation before traveling.

**Results** Pre-departure preparation shaped students' entrepreneurial and cross-cultural learning trajectories during internships in South Africa. While both cohorts participated in comparable social entrepreneurship placements, the empirical material reveals systematic differences in how students interpreted, navigated, and later reflected upon their experiences. The findings show that preparation intensity influenced the tempo and structure of learning processes, particularly in relation to ambiguity, emotional regulation, participation, and reflective integration. Four interrelated dimensions emerged inductively from the data: (1) contextual interpretation of ambiguity, (2) emotional regulation in cross-cultural engagement, (3) proactive participation and role construction, and (4) reflective integration and meaning making. These dimensions unfolded dynamically across the internship period and in post-return reflection.

**Implications** Universities are advised to equip students for the international internships providing some form of preparation, e.g. cultural framing and reflexive dialogue. Preparation can strengthen students' learning abroad, making them better apt to immerse and perform in a foreign context.

**Value/Originality** The research provides new empirical insight into the overlooked dimension in entrepreneurship education, namely cultural intelligence and how preparation can shape students' entrepreneurial and cross-cultural learning in an internship abroad. It contributes to EE research by linking preparation depth with differential outcomes in real-world learning abroad.

**Keywords:** Internships abroad, entrepreneurial learning, social enterprises, cultural intelligence, cross-cultural learning

## THE END OF ENTREPRENEURSHIP EDUCATION? SPECULATIVE THEORIZING OF IM|POSSIBLE FUTURES FOR ENTREPRENEURSHIP EDUCATION

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### Questions we care about

Why is it easier to imagine the end of the world than alternative futures for entrepreneurship education? While scholars increasingly call for reimagining EE beyond growth-oriented, neoliberal paradigms, daring alternatives remain scarce. We argue this reflects not lack of will but a crisis of imagination. This paper asks: (1) how can speculative design facilitate the imagination of alternative futures for entrepreneurship education? (2) what kinds of alternative futures for entrepreneurship education are made imaginable through speculative design?

### Approach

Following recent discussions of speculative theorizing (Gümüşay & Reinecke, 2024; Dimov & Munoz, 2023), we employ a speculative design (Dunne & Raby 2013) approach, which is already more established in Design and Human Computer Interaction research. Eleven entrepreneurship educators from Munich's entrepreneurship ecosystem engaged in structured speculation using time-travel, futures wheels, and prototyping techniques, producing material artifacts representing alternative EE futures. We triangulated three data sources: ethnographic observation during the workshop, post-workshop researcher reflection interviews, and collaborative transformation of artifacts into design fictions through iterative narrative development with participant feedback.

### Results

Four distinct imaginary data sets emerged: (1) Living Systems Lenses - mandatory ecological consciousness through augmented reality glasses creating cognitive overload; (2) Value Calculators – algorithmic quantification of ethical decisions through state-mandated formulas; (3) AI Simulation Labs - virtual pitch simulations replacing human mentorship with algorithmic gatekeeping; (4) Deep Connection Devices - technologies that create meaningful connections in AI-generated virtual worlds. Observational data showed materialization forced concretization while structured extrapolation enabled radical thinking. Notably absent: commons-based, degrowth, indigenous, or low-technology futures, revealing entrenchment operates even within deliberate speculation.

### Implications

For theory, we extend speculative theorizing by offering a case study of how to generate imaginary data. Connected to this, we show how speculative design operationalizes prospective theorizing, generating preempirical data for futures scholarship. For practice, our four futures serve as provocations challenging assumptions about entrepreneurship (must it involve ventures?), education (are there still entrepreneurship educators?), and value creation (must growth be the goal?). The futures reveal how proposed "solutions" (technology, regulation, quantification) create new problems, suggesting transformation requires conceptual not just structural change.

### Value/Originality

This paper makes three original contributions: (1) introduces speculative design to EE scholarship offering one way of theorizing the future and creating imaginary data (2) operationalizes speculative design as rigorous methodology for entrepreneurship research, bridging design fiction and management theory; (3) generates four concrete alternative EE futures as theoretical resources for reimagining the field.

**Keywords:** futures studies, speculative design, entrepreneurship education, prospective theorizing, design fiction

## ENTREPRENEURIAL ECOSYSTEM: WHAT ABOUT LEARNING?

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**Introduction - Questions We Care About.** Learning is an important process for the growth and development of both individuals and organizations (ElAwad 2019). While much focus on learning has been placed on students and new ventures within various contexts, such as formal education, extracurricular activities or other educational settings, there remains significant oversights of how these learning processes connect to entrepreneurial ecosystems surrounding them.

Entrepreneurial ecosystems (EEs) provide a useful lens for understanding the complex and dynamic interplay of diverse actors and factors that contribute to economic growth and social development (Clark et al., 2021). Within this complex system, learning is expected to play a crucial role (Mai and Nguyen, 2023). However, discussions of learning within EEs remain fragmented and are still in their infancy. This paper aims to investigate how learning is conceptualized and addressed within the EE literature, identifying emergent themes that illustrate the interactions among different dimensions and levels of learning within the ecosystem.

**Approach.** The methodology for this study adheres to established practices in systematic literature reviews outlined by Tranfield et al. (2003). Initially, a comprehensive search was conducted using the search string: "entrepren\* ecosystem\*" OR "entrepren\* system\*" AND learn\*. This search was executed across three databases: Scopus, Web of Science, and Business Source Complete. The search yielded a total of 465 hits (from 2008 to 2024). Duplicate entries were removed, resulting in 319 unique papers. We then applied stringent exclusion criteria. The screening process resulted in a final sample of 114 articles suitable for title and abstracts analysis. The papers then underwent a blind evaluation by our researcher team, leading to the exclusion of 100 papers according to specific elimination criteria. This process resulted in a sample of 14 articles suitable for full-text analysis. Ultimately, the full-text evaluation based on the relevance of the papers and quality of their contributions for the research question, resulted in a final sample of 58 papers for in-depth content analysis, which is well-suited for systematically interpreting textual data (Krippendorff, 2018).

**Results.** Our findings illustrate how learning has been addressed in EE research primarily at the individual and organizational levels. We capture and present an analytical framework for each level, starting from the main learners identified in the literature and offering a perspective on their learning processes that includes their learning conditions, learning mechanisms, and outcomes. We then explicitly address the tensions and dominant assumptions at the individual and organizational levels, as well as at the interplay between them. Building on these results, our discussion concludes by proposing a conceptualization of learning within EEs as a multilevel and interlevel phenomenon. We discuss the need for a learning paradigm in EE research and highlight the potential application of learning trajectories as a key concept for further developing our understanding of learning within EE. Finally, we summarize emerging research opportunities and establish a research agenda for future work in this area.

**Implications.** The results from this review offer valuable insights for entrepreneurship education programs and educators. By providing a comprehensive framework, we outline the learning mechanisms and outcomes available to entrepreneurs throughout their venture creation journey within EEs. Furthermore, our findings emphasize that universities and ESOs serve not only as providers of entrepreneurial education but also as organizations that actively learn through their program's execution and relational dynamics within the ecosystem. By pinpointing research opportunities, we create avenues for scholars to further develop empirical evidence and enrich our knowledge about learning within EEs.

**Value/Originality.** This literature review synthesizes various conceptualisations and empirical studies within EE research. It identifies existing theoretical, empirical, and methodological gaps while proposing a comprehensive research agenda aimed at enhancing our understanding of learning as a fundamental component in shaping ecosystem dynamics. The research agenda serves as a roadmap for future research into this critical area.

**Keywords:** Entrepreneurial Ecosystems; Learning

## SAFE ENOUGH TO FEEL UNCERTAIN

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### Questions we care about (Objectives)

This conceptual paper investigates the pedagogical paradox of designing learning environments where students feel “*safe enough to be uncertain*” - or, in entrepreneurial terms, “*safe enough to embrace uncertainty*.” We ask how psychological safety can enable students to develop the entrepreneurial capability to engage with and manage uncertainty, and how educators can intentionally cultivate such a learning environment.

### Approach

The paper synthesises theoretical perspectives from entrepreneurship education, experiential learning, and person-centered theory. We draw on experiential learning theory to argue that encountering and reflecting on real-life uncertainty is essential for developing entrepreneurial competence. At the same time, we examine how experiential approaches often evoke emotional learning events that require pedagogical sensitivity. Person-centered theory provides the conceptual lens for understanding how educator behaviours - acceptance, empathy, and congruence - can support psychological safety during emotionally charged learning processes.

### Results

The paper suggests that psychological safety is not merely a desirable condition but a prerequisite for students' ability to productively engage with uncertainty. The analysis shows that the educator's relational competence plays a central role in transforming emotionally challenging learning moments into valuable developmental experiences. The synthesis leads to a conceptual model outlining how pedagogical practices grounded in person-centered principles can help students navigate uncertainty in constructive ways.

### Implications

The model offers guidance for educators on how to design learning environments that combine authentic uncertainty with supportive relational practices. This contributes to a more nuanced understanding of how emotional processes shape entrepreneurial learning, and how educators can facilitate a climate that fosters exploration, resilience, and deeper engagement with uncertainty.

### Value/Originality

The paper advocates for a *pedagogy of uncertainty* by integrating psychological safety, experiential learning, and person-centered theory into a coherent conceptual framework. This synthesis provides novel insights into how educators can support students' emotional experiences while preparing them for the unpredictable nature of entrepreneurial practice.

**Keywords:** psychological safety, experiential learning, uncertainty affects, person-centered theory, entrepreneurship education, pedagogy of uncertainty

## ASSESSING THE EFFECT OF ENTREPRENEURSHIP EDUCATION ON STUDENT VENTURE PERFORMANCE

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**Questions we care about – Objectives.** Universities increasingly invest in Entrepreneurship Education (EE) to foster entrepreneurial mindsets, stimulate innovation, and support student venture creation. While prior research has examined how EE influences entrepreneurial intentions, motivations, and skills (Bae et al. 2014; Nabi et al. 2011; Cui et al. 2021), less attention has been given to its impact on the performance of student-founded ventures. This study addresses this gap by investigating whether participation in EE courses improves both business and socioeconomic performance. Specifically, it examines effects on sales growth, market share growth, profit growth, job creation, and innovativeness.

**Approach.** The study uses data from the Global University Entrepreneurial Spirit Students' Survey (GUESSS), an international project on student entrepreneurship. The analysis focuses on Italy using data from 2016, 2018, and 2021 collected in more than 40 universities. Firm performance is measured through five subjective indicators: sales growth, market share growth, profit growth, job creation, and innovativeness. The main explanatory variable is participation in at least one EE course. A key methodological challenge is the potential selection bias arising from the fact that students who participate in EE may differ in important ways from those who do not. To address this issue, the study employs Propensity Score Matching.

**Results.** The results indicate that participation in EE has a generally positive effect on several performance measures. Concerning business performance, EE significantly improves sales growth and market share growth. Students who attended EE courses report sales growth levels approximately 4.1% to 5.9% higher than their matched counterparts. Market share growth shows an even stronger effect, with improvements of around 9% to 10%. By contrast, the effect on profit growth is not significant, and the estimated effect is slightly negative, though not statistically meaningful. The effects on socio-economic performance are more pronounced. Participation in EE significantly increases job creation by approximately 8% to 9% and innovativeness by about 6% to 8%. These results suggest that EE not only strengthens students' managerial and strategic abilities but also enhances their capacity to generate value for society.

**Implications.** The findings have several implications. For universities and educators, the results indicate that EE strengthens both business and socio-economic performance of student entrepreneurs. The strongest effects emerge for innovativeness and job creation, key dimensions of entrepreneurship's societal contribution (Audretsch et al. 2006; Zahra et al. 2009). EE programs should therefore foster creativity, opportunity recognition, leadership, and problem-solving, promoting not only venture creation but also sustainable and socially impactful initiatives. For policymakers, the positive effects highlight the value of supporting EE, particularly in regions facing youth unemployment or limited innovation-driven growth. Student ventures can stimulate local development through job creation and innovative solutions, reinforcing entrepreneurial ecosystems and broader economic transformation.

**Value and originality.** This study contributes to EE literature by shifting attention from entrepreneurial intentions to venture performance. By examining both business and socio-economic performance indicators, and by using a multiyear dataset combined with PSM techniques, the study provides evidence that EE enhances several critical dimensions of entrepreneurial success. Its contribution lies in demonstrating that EE not only motivates students to engage in entrepreneurship but also equips them with the capabilities needed to build innovative, job-creating ventures that produce business and socio-economic value.

**Keywords:** Entrepreneurship Education; Student Entrepreneurship; Venture Performance

## **“THE MOST EXPENSIVE BAR JOB TRAINING OUT THERE”: CULTURAL ENTREPRENEURSHIP EDUCATION AND THE PREPARATION FOR PRECARIETY IN DUTCH FINE ART HIGHER EDUCATION**

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**Questions we care about (Objectives):** This paper examines how competency-based Fine Art higher education in the Netherlands shapes graduates’ professional self-understanding and how this relates to the precarious, hybrid labour conditions they encounter after graduation. It asks, first, how the competency-driven Dutch Fine Art programs align with the logics of cultural entrepreneurship education (CEE), and second, what remains of the ideal of the autonomous artist working independently from commercial or institutional constraints – or artistic ‘core’ in Throsby’s famous cultural economic category – when graduates’ labour trajectories are organised around multiple jobs, unstable income, and fragmented professional identities.

**Approach:** The study draws on a qualitative research design based on 22 in-depth interviews with Fine Art alumni who graduated between 2015 and 2025 from Dutch state-funded higher education institutions offering Fine Art programmes. To contextualise graduates’ accounts, 18 additional interviews with CEE educators and Fine Art (co-)heads of department were used as triangulating material. The analysis was abductive and interpreted through three analytical lenses: market-driven governmentality, professional identity construction in cultural fields, and the artistic ‘core’ as a structural, ideal-type – the autonomous artist.

**Results:** The findings show a strong formal coherence between competency-based Fine Art higher education and the conditions of contemporary cultural labour. Graduates described practices that closely match the national competency framework and the orientations promoted in CEE: selfmanagement, networking, opportunity recognition, adaptability, and professional positioning. Yet these same graduates also reported abrupt post-graduation withdrawal of institutional scaffolding, time poverty caused by multiple-job holding, and increasing difficulty sustaining artistic work as something recognised as professional rather than as a ‘hobby.’ The ideal of the autonomous artist persisted symbolically, but in practice artistic production often became intermittent, secondary to wage labour, and dependent on uneven access to time, money, space, and networks. The paper therefore argues that the artistic ‘core’ persists less as an occupational reality than as an aspirational identity.

**Implications:** The study suggests that competency-based Fine Art education is not in tension with contemporary labour markets but structurally aligned with them. Produced within state-funded institutions, competency frameworks do not simply reflect professional realities – they actively prepare graduates to accept and navigate precarity by normalising adaptability, resilience, and selfmanaged professionalism as core artistic dispositions. This has implications for how CEE is understood: not only as a set of discrete entrepreneurship modules, but as a broader educational logic embedded in the competency architecture of art higher education itself.

**Value/Originality:** The paper contributes to debates on cultural entrepreneurship, creative labour, and the restructuring of art higher education by empirically linking national competency frameworks, graduates’ labour experiences, and the unstable status of the artistic ‘core.’ It also offers a critical perspective on how Fine Art higher education simultaneously sustains the symbolic ideal of autonomous artistic practice while preparing students for hybrid and precarious labour conditions. It advocates for a reorientation of Fine Art higher education toward the cultivation of collective selforganisation as a structural alternative to the individualising, and survivalist logic of current competency frameworks.

**Keywords:** cultural entrepreneurship education; Fine Art higher education; higher education institutions (HEIs), competencies; precarious labour; precarity; artistic identity.

## WHAT CAN HORSES TEACH US? DEVELOPING RESPONSE-ABLE ENTREPRENEURIAL LEADERS THROUGH EQUINE-ASSISTED INTERVENTIONS

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### Questions we care about (objectives)

As we have entered the Anthropocene era, educators in entrepreneurship are asked the urgent question of how we educate a next generation of entrepreneurs who co-enact ethical, nature-based solutions. In response, there is a growing chorus of calls to transform entrepreneurship education (EE) such that it becomes response-able (Haraway, 2016) and more relevant vis-à-vis our contemporary poly-crises and grand challenges. The answer we propose is the development of multispecies (pedagogical) approaches and therefore this study focuses on equine-assisted interventions (EAI) to explore how response-able entrepreneurial leaders can be developed.

### Paper approach

This paper reports on a qualitative study in which students participated in a day-long EAI excursion. This excursion is part of an interdisciplinary, international, 4-week summer course focused on Entrepreneurial Leadership taking place in Berlin (Germany). Students were asked to engage with trained horses and complete various leadership exercises, such as guiding one or two horses through a trail of bars, tarpaulins, and pylons. Upon consent, the exercises were video-recorded. After the excursion, students wrote reflection essays, and conversations about the experience continued throughout the summer course.

### Results

Consistent with Haraway's notion of response-ability, our findings indicate that entrepreneurial leadership capacities are not fixed traits but emerge through attentive engagement, ethical consideration, and adaptive responsiveness within relational environments. Horses, as nonverbal partners, provided students with immediate, embodied feedback that made relational dynamics visible and salient in ways that classroom exercises or lectures may not replicate. Students' reflections reveal the multidimensional nature of response-ability, encompassing attentiveness, relational awareness, adaptive responsiveness, ethical sensitivity, reflexivity, care-oriented action, and the use of metaphors to support learning transfer.

### Implications

The training of educators and the availability of facilities are two key components for the further development of EAI in EE. While there is a pressing concern to bring students closer to nature and incorporate nature-based pedagogies, there is also the challenge of organizing such interventions feasibly. This paper offers practical examples addressing the call for more radical action and for multispecies approaches in EE that accommodate human-more-than-human interaction. The main takeaway for EE is to equip educators with nature-based training and create facilities that promote meaningful interaction with nature.

### Value and originality

Whereas EAI have been taken up in management and leadership education as a means to develop future business leaders who comprehend and consider ethical, social, and environmental issues in their decision-making, to our knowledge they have not been brought into relation with EE.

**Keywords:** entrepreneurship education, multispecies pedagogy, response-ability, equine-assisted interventions

## MOMENTS THAT MATTER: EXPLORING TRIGGER EVENTS IN EXPERIENTIAL ENTREPRENEURSHIP EDUCATION\*

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### Questions we care about (Objectives)

Entrepreneurship education (EE) has traditionally focused on fostering entrepreneurial intentions. Recent research increasingly highlights the development of entrepreneurial mindsets as a key educational outcome. However, relatively little is known about how such mindsets emerge within experiential learning environments. This study explores how entrepreneurial mindsets develop in such contexts by examining determinants of Individual Entrepreneurial Orientation (IEO), a construct capturing innovativeness, proactiveness, and risk-taking. The study particularly investigates the role of trigger events — emotionally intense and personally meaningful experiences that stimulate reflection and potential mindset change.

### Approach

The study uses an exploratory mixed-methods design within an experiential EE bachelor's program in Germany. Data was collected from 40 undergraduate students engaged in long-term entrepreneurial projects. Quantitatively, seven hypotheses examined relationships between IEO and experiential variables such as number of projects, leadership roles, pitch participation, project success, project duration, and trigger events. IEO was measured using the 10-item scale by Langkamp Bolton and Lane (2012). Qualitatively, students reflected on significant learning moments. Narratives were coded inductively to identify recurring trigger event categories.

### Results

Quantitative analyses revealed no statistically significant correlations between experiential variables and IEO. In contrast, qualitative findings identified five recurring trigger event categories: teamwork experiences, interpersonal inspiration, leadership experiences, failure and setbacks, and project or idea development. Across cases, emotional intensity rather than the frequency of activities appeared to shape students' learning experiences and self-perception as entrepreneurs.

### Implications

The findings suggest that entrepreneurial mindset development in experiential may be driven less by the quantity of activities and more by emotionally meaningful experiences that stimulate reflection. Educational implications include structured reflection formats, mentoring support for leadership challenges, normalization of failure, and peer-learning environments.

### Value/Originality

By linking IEO with experiential trigger events, the study connects trait-based and process-oriented perspectives in entrepreneurship education and conceptualizes entrepreneurial mindset development as a non-linear learning process.

**Keywords:** Entrepreneurship Education; Entrepreneurial Mindset; Venture Creation Programs; Trigger Events; Experiential Learning; Entrepreneurial Learning

Langkamp Bolton, D., & Lane, M. D. (2012). Individual entrepreneurial orientation: Development of a measurement instrument. *Education + Training*, 54(2/3), 219–233. <https://doi.org/10.1108/00400911211210314>

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\* This paper builds upon a bachelor's thesis of the lead author completed in 2025 and has been further developed for the conference in collaboration with the two co-authors.

## ARTIFICIAL INTELLIGENCE-MEDIATED PYGMALION EFFECTS IN ENTREPRENEURSHIP EDUCATION: THE TOOLBOARD GPT CASE STUDY

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### Questions we care about (Objectives)

Entrepreneurship education is increasingly shaped by generative artificial intelligence (AI). While prior research has mainly framed AI as a cognitive support tool, less attention has been paid to its psychological effects on learners.

This study examines whether AI influences entrepreneurial learning not only by improving task performance but also by shaping entrepreneurial self-efficacy (ESE). Building on social cognitive theory and the Pygmalion effect, we explore whether interaction with AI may reinforce perceived capability.

The objective is to analyse whether AI serves as an expectancy-shaping mechanism that enhances self-efficacy and, in turn, indirectly affects entrepreneurial intention.

### Approach

The study adopts a quasi-experimental design conducted in an undergraduate entrepreneurship course structured around a design-based learning approach. Students developed entrepreneurial projects using a structured methodology (ToolBoard), either with or without AI support.

The sample consists of  $N = 101$  students across two cohorts with equivalent pedagogical design. The experimental group interacted with a conversational AI system integrated throughout the learning process, providing iterative feedback and structured guidance. The control group followed the same process without AI. Pre- and post-course surveys measured entrepreneurial self-efficacy and entrepreneurial intention using validated scales. Change variables ( $\Delta ESE$  and  $\Delta EI$ ) were computed to capture learning dynamics. The analysis included group comparisons, regression models, and mediation testing.

### Results

Results show that students using AI experience a significantly greater increase in entrepreneurial self-efficacy compared to the control group. While both groups improve over time, the effect is stronger in the AI-supported condition.

Changes in entrepreneurial intention follow a similar pattern but are not directly significant between groups. However, regression analysis confirms that self-efficacy is a strong predictor of entrepreneurial intention.

The combined results support an indirect effect: AI enhances self-efficacy, which in turn drives changes in intention. This pattern is consistent with a Pygmalion-like mechanism, where feedback and perceived expectations reinforce individuals' beliefs about their own capability.

### Implications

The findings suggest that AI should be understood not only as a productivity tool but as part of a feedback-rich learning environment that shapes psychological drivers of learning.

For educators, this implies that the value of AI lies in its ability to sustain continuous feedback loops that reinforce students' perception of progress. Effective integration requires embedding AI within structured pedagogical frameworks rather than using it as an isolated tool.

More broadly, entrepreneurship education may need to incorporate human–AI collaboration as a core competence, including the ability to interpret, evaluate, and leverage AI-generated feedback.

### Value/Originality

This study introduces the concept of the AI-mediated Pygmalion effect in entrepreneurship education, extending expectation-based theories to human–AI interaction.

It provides empirical evidence that AI can influence learning outcomes through psychological mechanisms, particularly by reinforcing self-efficacy over time. The work contributes to a shift in understanding AI from a purely cognitive support tool to an active component of the learning environment.

**Keywords:** Artificial intelligence; entrepreneurship education; self-efficacy; Pygmalion effect; design-based learning

## ENHANCING CAREERS PRACTITIONERS' CONFIDENCE IN ENTERPRISE AND ENTREPRENEURSHIP EDUCATION

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British universities increasingly promote entrepreneurship as a core graduate capability linked to innovation, economic growth, and diverse career pathways (Bell, 2026). However, the staff expected to support student entrepreneurship within these institutions are not always adequately prepared for this role. While entrepreneurship educators and incubator staff have received scholarly attention, less research has examined the role of careers professionals, despite their growing responsibility for supporting entrepreneurial pathways (Hook, 2023). Recent sector evidence suggests that 11% of UK students already operate a business and 26% are considering starting one during or shortly after their studies. Despite this demand, only around half of careers professionals report confidence in advising students about entrepreneurial pathways, with confidence plateauing at just over 50% in recent years (Hook, 2020; 2023; 2024).

**Questions we care about.** This study considers how targeted training resources can strengthen careers practitioners' confidence and capability in enterprise and entrepreneurship education. It investigates the barriers careers practitioners face and whether targeted training can improve their perceived confidence and capability. The questions considered are:

1. What are the key barriers faced by careers practitioners in fostering enterprise and entrepreneurial confidence in students?
2. How can targeted training materials enhance the confidence and effectiveness of careers practitioners?

**Approach.** The project adopts an action research design led by insider researchers and uses a mixed-methods approach combining diagnostic research with practitioner-focused resource development. Data collection included a survey of 92 UK careers practitioners examining responsibilities, confidence levels, and perceived knowledge gaps in entrepreneurship support, building on surveys from 2019 and 2023 (Hook, 2023;2024). 14 participants who identified themselves as low in confidence and had not previously engaged with training were then invited to a focus group which further investigated their role, barriers to advising entrepreneurial students and expectations from training. Findings informed the development of 4 prototype training resources tailored for careers practitioners, including short explainer videos, key concepts and practical guidance tools designed for use in one-to-one guidance and employability programmes.

**Results/implications.** Findings indicate that responsibility for supporting entrepreneurial pathways within careers services has increased significantly with student enquiries relating to self-employment, freelance and start-up creation now forming a growing component of the role of careers practitioners. Despite this expansion, confidence levels remain relatively low, with just over half of respondents reporting confidence in enterprise and 68% reporting particularly low confidence in advising students about the practical aspects of entrepreneurship. Qualitative findings highlight barriers including limited time, competing priorities, language barriers, and access to resources. Early engagement with prototype training materials suggests that concise, practice-oriented resources help improve conceptual clarity and provide accessible language for guidance conversations.

**Value/originality.** These findings highlight the importance of professional development for careers staff within the broader entrepreneurship education ecosystem. By foregrounding the underexplored role of careers practitioners and developing targeted training resources, this research offers an emerging model for strengthening institutional capability to support entrepreneurial student pathways.

**Keywords:** entrepreneurship education; careers practitioners; enterprise education; employability; professional development; higher education

## THE IMPACT OF MINI-COMPANY PROJECTS ON YOUTHS IN ENTREPRENEURIAL ECOSYSTEMS

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### Questions we care about – Objectives

Entrepreneurship education (EE) targeting youth is widely promoted to stimulate entrepreneurial intentions and venture creation. However, empirical research shows weak links between intentions and subsequent entrepreneurial behaviour. This paper asks: How do young people construct meaning of entrepreneurship education experiences within entrepreneurial ecosystems during the transition from school to early adulthood? By shifting attention from short-term outcomes to meaning-making, we seek to understand how EE shapes entrepreneurial career-making over time.

### Approach

The study draws on open-ended, in-depth interviews with 14 young adults who participated in Junior Achievement (JA) mini-company projects during upper secondary school in Sweden. Guided by career construction theory, we analyse participants' narrated accounts using Gioia-style, informant-centric inductive analysis. This approach allows us to theorise from lived experiences while preserving sensitivity to process, temporality, and ecosystem embeddedness.

### Results

The analysis identifies three interrelated modes of meaning-making. First, EE as experimentation captures how young people test and reframe ideas in the face of uncertainty. Second, EE as socialising in ecosystems shows how meaning is co-produced through interactions with teachers, peers, and other actors. Third, EE as a future resource demonstrates how experiential and social learning stabilise over time and become narratively available for positioning entrepreneurial possibilities. Rather than producing immediate entrepreneurial action, EE experiences function as narrative reference points through which young people interpret experiences, negotiate legitimacy, and position entrepreneurial possibilities in relation to their evolving lives.

### EE implications

The findings suggest that the impact of youth EE lies less in immediate entrepreneurial outcomes and more in supporting existential and temporal positioning during a formative life transition. EE may thus be most consequential in helping young people interpret experiences, navigate legitimacy, and reflect on timing as they move from school into early adulthood.

### Value and originality

This study contributes a non-teleological, process-oriented understanding of entrepreneurship education. By conceptualising EE as a set of meaning-making modes embedded in entrepreneurial ecosystems, the paper moves beyond intention-centric and outcome-focused models and advances a richer account of how entrepreneurial possibilities are shaped, deferred, and re-entered across the transition from school to early adulthood.

**Keywords:** Entrepreneurship education; Youth entrepreneurship; Entrepreneurial ecosystems; Career construction; Meaning-making; Mini-company projects

## BUSINESS AND ARTS STUDENTS AS CHANGE AGENTS IN SUSTAINABLE ENTREPRENEURSHIP EDUCATION: THE ROLE OF THE INTERDISCIPLINARY, INTERCULTURAL LEARNING CONTEXT

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**Questions we care about (Objectives):** Designs from Sustainable Entrepreneurship Education (SEE) are used to develop education for sustainable development (ESD). Interdisciplinarity is a key to these developments. Despite the promising potential interdisciplinary ESD is credited with, not much is known about how exactly the learning inside such programmes can benefit students' competence for sustainability. This paper investigates whether an intensive interdisciplinary, intercultural education programme on sustainable innovation can enhance students' action competence for sustainability. Specifically, we explore: how does students' self-perceived action competence for sustainability (ACS) develop during the programme, and how does the learning context affect students' ACS after completing the programme?

**Approach:** This research is based on the Business & Arts Innovation Lab (BAIL) Erasmus+ blended international programme, which brings together students and staff from music academies and business schools in an immersive learning environment with nine partner universities and conservatoires from across Europe. Quantitative and qualitative data were collected using a pre and post programme survey in 2023, 2024 and 2025, with 161 out of 184 participants completing both.

**Results:** Quantitative results from 148 paired pre and post surveys show significant increases across all components of students' self-perceived action competence for sustainability (ACS), knowledge of action possibilities, confidence in one's influence, willingness to act, and an overall ACS score. Reliability tests confirmed strong internal consistency for both the ACS competence framework and the Sustainable Entrepreneurship Competence Framework (SECF) which measures personal competences of individual's need to act entrepreneurially toward sustainability goals.

Regression analyses reveal that most sustainable entrepreneurship competences do not predict changes in ACS. However, interpersonal competence shows a significant positive effect. From the Portrait Values Questionnaire, which measures general motivations and personal values of the students, three higher order values influence ACS development: self-transcendence and conservatism positively, and self-enhancement negatively. These findings indicate that students' value orientations matter more than their initial entrepreneurial competences for explaining ACS growth. No significant differences were found between arts and business students. Qualitative findings from 180 respondents emphasise that students attribute transformative learning primarily to interpersonal, intercultural, and collaborative experiences, including team-based work, social interactions, real-world tasks and coaching educators. These learning context elements, rather than disciplinary background, most strongly shape students' reflections on sustainable innovation.

**EE implications:** The findings underscore the potential of short, intensive, interdisciplinary and intercultural programmes in SEE to develop change agents for sustainability and regeneration. We argue for designing EE around learning context, collaboration, and educator facilitation, rather than content delivery alone, and call for integrating such short programmes within broader institutional structures to develop future change agents. Learning in these environments is the result of a complicated blend of participant characteristics, programme elements, and educator interventions.

**Value and originality:** This study contributes to the emerging literature on sustainable EE, addressing a critical gap identified by Fayolle and Klapper (2022) regarding the implementation and impact of ESD within SEE programmes. By empirically examining the role of interdisciplinary and intercultural learning contexts, the paper offers actionable insights for designing educational interventions that prepare future entrepreneurs as sustainability change agents.

**Keywords:** Sustainable, Entrepreneurship, Education, Learning Context, Change, Agents, Interdisciplinarity, Intercultural

## FROM LEARNING SPACES TO LEARNING TRANSFER: MOVING ACROSS THE ENTREPRENEURIAL ECOSYSTEM

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### Questions we care about – objectives

Entrepreneurship education (EE) has undergone a significant transformation over the past decades. What began as a topic embedded in business studies has evolved into dedicated courses, full-degree programs, and initiatives focused on venture creation (Rasmussen & Sørheim, 2006; Hägg & Gabrielsson, 2020; Ramsgaard et al., 2025). Alongside this evolution, the entrepreneurial learning contexts at universities have become increasingly diverse, ranging from various structured EE courses, constituting ‘scaffolded learning spaces’ (Crosina et al., 2024; Higgins & Elliott, 2011; Macpherson et al., 2022) to incubators, accelerators, mentoring, and extracurricular entrepreneurial activities representing an ‘open learning spaces’ (Fauchald et al., 2022; Preedy et al., 2020; Wraae et al., 2024). This rich array of settings fosters entrepreneurial learning, which is crucial for entrepreneurial behavior. Despite the richness of these learning contexts, research in EE often treats learners (students in HEIs) as relatively static participants within predefined settings. Much of the literature describes how entrepreneurial learning occurs within spaces but rarely examines how learners move between them. These movements are not only spatial but also represent transitions in cognitive framing, social context, and experiential engagement. Understanding learners' movements is crucial, as emerging findings (Middleton et al., 2019; Wraae et al., 2024) suggest that learners actively construct their entrepreneurial learning pathways by navigating across multiple spaces. As learners move, they carry knowledge, skills, and attitudes developed in one context and apply them in another. This process constitutes the transfer of learning, which is particularly significant in EE, as positive transfer can reinforce learning and lead to behavioral changes (Blume et al., 2010; Casper, 2005) and foster an entrepreneurial mindset, a central objective of EE.

In educational psychology, transfer of learning occurs when experience in one setting influences performance in another (Perkins & Salomon, 1992). While transfer is foundational to all forms of education, its occurrence is neither automatic nor guaranteed (Baldwin & Ford, 1988). Given the diversity of scaffolded and open learning spaces within EE learning contexts, students' transfer of learning can occur along multiple dimensions, shaping their entrepreneurial learning and actions. Despite the significance of this process, understanding learning transfer across different EE learning contexts remains largely unexplored. Therefore, we seek to answer:

### *How does learning unfold as students navigate between diverse learning spaces within the entrepreneurial ecosystem?*

More specifically, we aim to conceptualize how learning transfer operates within the EE learning contexts, to distinguish and juxtapose the mechanisms of reflexive (low-road) and mindful (high-road) transfer, as well as transfer in open (providing little or no guidance) and scaffolded (providing structured support), and to identify the boundary conditions that shape learning across entrepreneurial spaces.

### Paper approach

Our conceptual paper integrates the transfer-of-learning framework from educational and cognitive psychology (Perkins & Salomon, 1992; Thorndike & Woodworth, 1901) with the entrepreneurial learning literature (Corbett, 2005; Politis, 2005; Rae, 2006). We begin by reviewing how EE has evolved to identify learning spaces that form the university's entrepreneurial ecosystem. We then synthesise literature on learning transfer, in particular, we are inspired by the distinction between low-road and high-road transfer. We apply these concepts to the context of entrepreneurial learning (Perkins & Salomon, 1992) and develop a process–distance framework for learning transfer.

## Results

Following Perkins and Solomon (1992), our framework suggests that the transfer of learning within EE operates through two complementary *processes*:

1. reflexive (low-road) transfer, occurring when entrepreneurial routines are automatically applied across similar contexts (a student who develops pitching skills in a classroom may adapt these skills in a startup competition). Reflexive transfer relies on repeated practice and contextual similarity.
2. mindful (high-road) transfer, involving deliberate abstraction and recontextualization of learning (learner reflects on experiences from a scaffolded setting, like mentorship sessions) to derive generalizable insights that can be applied in a more uncertain, open learning space. Mindful transfer thus requires metacognitive awareness, reflection, and a conscious search for analogies and connections.

Additionally, drawing from cognitive psychology (Thorndike & Woodworth, 1901), we argue that the *distance* between the learning contexts determines transfer, we use the scaffolded and open learning spaces as near and far contexts. This represents the different context that exists in the entrepreneurship education ecosystem and enables us to integrate the concept of transfer:

1. scaffolded – the learning in a space where the students learn through mentoring and guidance from an educator and an entrepreneurship expert.
2. open – students engaged in learning on their own without any mentoring or guidance outside the academic and credit-based structure.

As a result, we develop the entrepreneurial learning transfer framework (a matrix) that considers how transfer occurs (*process*) and the degree of similarity between contexts (*distance*). Furthermore, we identify boundary conditions influencing successful transfer, including pedagogical design, learning context diversity, social networks and mentoring, and learner identity.

Further, we identified the movement of students between spaces and their influence on transfer and learning, followed by key gaps that hinder such transfers.

## EE implications

We suggest that the effectiveness of EE should be assessed by learners' ability to transfer their learning across contexts. Educators should design programs that encourage movement between scaffolded and open spaces, integrate structured reflection to promote transfer, and provide sustained mentoring. HEIs can strengthen entrepreneurial ecosystems by building transfer bridges, such as peer-learning networks, connecting formal EE activities with informal practices.

## Value and originality

Our paper offers three theoretical contributions. First, it enriches the entrepreneurial learning literature by incorporating the concept of transfer of learning, thereby extending current understandings of how entrepreneurial knowledge and skills are applied and transformed across contexts. Second, it challenges the assumption of the learner as a static participant, offering a dynamic view of learners instead as navigators of learning spaces who transfer and reconstruct their learning. Third, it expands the discussion of EE effectiveness by highlighting transfer as a critical mechanism that determines EE quality.

**Keywords:** learning transfer, learning spaces, entrepreneurial learning, entrepreneurial ecosystem

## EXTENDING COGNITION IN ENTREPRENEURIAL LEARNING

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### Questions we care about (Objectives)

The present article seeks to address questions relevant to the study of entrepreneurial learning, which is the underpinning of entrepreneurship education. Indicatively: (a) Are there recent developments in learning theory that call for an extension of traditional cognition? (b) What is the 4e cognition framework? (c) Which aspects of 4e cognition are less developed in the literature of entrepreneurial learning? (d) How can the dimensions of 4e cognition be associated with forms of entrepreneurship education? (e) What are the implications of adopting 4e cognition in educators' practice?

### Approach

The conceptual article follows bibliographic search. It draws upon the 4e cognition literature to establish connections with entrepreneurial learning and education literature. As part of the approach, the article provides a brief bibliometric representation. It mainly presents arguments in favor of adopting 4e cognition and its dimensions in a holistic way in entrepreneurial learning research. This allows for the derivation of insights for entrepreneurship education.

### Results

The results of the present analysis show that all 4e cognition dimensions (embodiment, embeddedness, enaction, extension) have been discussed to varying degrees in the entrepreneurship literature. The less developed dimension is the one of embodiment which points to the need for further incorporation of somatic approaches. In this regard, a specific description for the role of the body in learning is provided. Extension dimension has recently been studied extensively due to the rise of online tools and artificial intelligence in education. However, it has to be associated with the other 4e cognition dimensions for entrepreneurial learning to be holistic. Comparatively, adopting 4e cognition in entrepreneurship education appears to support more its experiential forms ("for" and "through") compared to the "about" one.

### Implications

The implications for entrepreneurial learning research and the practice of entrepreneurship education pertain to the following: (a) adoption of somatic approaches to enhance embodied entrepreneurship and its relation to well-being, thereby making entrepreneurship education more authentic and effective; and (b) combination of embeddedness, enaction and extension to pursue the recent perspective of entrepreneurship as a method that relies on design and the science of artificial.

### Value/Originality

The 4e cognition framework is a cutting-edge theoretical approach to explain modern learning. Although it was developed in the fields of biology and neurology, it informs cognitive science, psychology, philosophy as well as informatics and artificial intelligence. This article is the first to discuss 4e cognition in relation to entrepreneurial learning. Once clarified and adopted, the holistic perspective of 4e cognition promises to support the different forms of entrepreneurship education, rendering them more effective.

**Keywords:** entrepreneurial learning; 4e cognition; somatics; embodiment; entrepreneurship education

## EDUCATORS AS CHANGE AGENTS: INNOVATING ASSESSMENT WITHIN CONFLICTING INSTITUTIONAL LOGICS

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### Questions we care about

Entrepreneurship education (EE) has experienced significant developments in pedagogical approaches, emphasizing experiential and student-centered learning, while assessment methods have not evolved at a comparable pace. This raises the question about why entrepreneurship educators face challenges in innovating assessment practices alongside teaching innovations. Entrepreneurship educators operate within the context of higher education institutions (HEIs). From an institutional perspective, HEIs are viewed as long-standing institutions with well-established norms and traditional rules that ensure continuity of academic culture and legitimate academic behaviour. In contrast, entrepreneurship education is grounded in a pedagogy that embeds uncertainty, innovation, and action-based learning. In this paper we explore the question: How do entrepreneurship educators perceive and negotiate coexisting institutional logics when designing and implementing assessment methods?

### Approach

We conduct a multiple case study of three entrepreneurship program, that focus on teaching for venture creation, in different stages of the program establishment. By utilizing the concepts of institutional logics the study illuminates the differences and similarities of traditional university logics and entrepreneurial pedagogy logics, and how entrepreneurship educators balance these two logics. Institutional work emphasises entrepreneurship educators as actors within their context, who employ deliberate efforts on a day-to-day basis to create, maintain, or disrupt their institutional context.

### Results

The study found that entrepreneurship educators face both a traditional university logic characterized by grading rules, standardized methods, formal criteria and mostly are expressed through institutional structures and regulations. Entrepreneurial pedagogy logic is characterized by experience-based learning through authentic approaches, pedagogical development, real venture development and mostly are expressed by educators themselves. Though there are some tensions between these two logics, educators are pragmatic and able to adapt through institutional work.

### Implications

The study provides several insights for entrepreneurship educators and education directors. First, entrepreneurship educators act as key figures in the process of deciding how students are assessed. Second, colleagues and teams who support each other are key in collective development of assessment methods. Because pushing change and boundaries are a resourceful and sometimes risky task, implementing support structures for educators and education teams may improve the conditions for driving innovation in teaching and assessment in higher education.

### Value

The study contributes to the concept of assessment, where assessment can be seen as a process of institutional work, not merely as a pedagogical activity. It furthers the understanding of institutional work in the context of entrepreneurship education in HEIs, where advocacy, normative networks and adapting to set practices are all present in the institutional work of entrepreneurship educators when working with assessment. By utilizing institutional work, the study highlights educators as institutional actors who can balance coexisting logics.

**Keywords:** Assessment, Institutional work, Program Establishment, Institutions

## LEARNING ENTREPRENEURSHIP IN CURRICULAR CROSS-NATIONAL HYBRID COURSE SETTINGS

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### Summary

This paper examines how students experience entrepreneurial learning in an international, interdisciplinary entrepreneurship course delivered in a hybrid format. The course brought together bachelor students from business and creative-technology programs at two universities in Germany and Spain. Over one semester, students worked in cross-national teams to develop entrepreneurial business ideas and prepare a final pitch. While all participants collaborated virtually throughout the course, a selective short-term mobility component enabled the two top-performing teams to engage in reciprocal visits and gain first-hand exposure to local start-up ecosystems.

The study follows a primarily qualitative research design. It combines post-course survey data collected from all participating students with focus group interviews conducted exclusively with those who took part during the short-term visits. The survey serves a descriptive and contextualizing function, while the focus group interviews provide the main basis for in-depth qualitative analysis. Rather than aiming to measure causal learning effects, the study focuses on students' perceptions, interpretations, and sensemaking of their learning experiences under conditions of uncertainty, interdisciplinarity, and international collaboration. In doing so, it highlights how students describe what they learned and how they explain why particular course elements mattered to them.

The findings indicate that students mainly associate their learning outcomes with core aspects of an entrepreneurial mindset. They described becoming more comfortable with uncertainty, gaining confidence in dealing with open-ended tasks, and developing a more action-oriented approach to problem solving. The results suggest that these perceived developments were mainly linked to experiential and project-based work, repeated iteration, and structured opportunities for reflection, rather than to the acquisition of predefined business knowledge.

Cross-national and interdisciplinary teamwork emerged as a central driver of learning throughout the course. Students described challenges related to communication, coordination, and differing expectations, particularly during the early phases of team formation. Notably, these challenges were rarely interpreted in explicitly cultural terms. Instead, students emphasized differences in disciplinary backgrounds, working styles, and interpretations of tasks. This suggests that many tensions were experienced as team-related rather than culture-specific, with intercultural learning occurring implicitly within broader collaborative processes.

Differences in experiential intensity also shaped students learning experiences. Virtual collaboration enabled sustained international teamwork over time but required ongoing effort to build shared understanding and interpersonal relationships. Students who took part in the short-term visits described face-to-face interaction and exposure to local start-up ecosystems as particularly valuable for communication, reflection, and team cohesion. Importantly, these experiences were perceived as deepening and contextualizing learning processes that had already developed during the virtual phase, rather than replacing or fundamentally transforming them.

Overall, the paper contributes to entrepreneurship education research by offering a deeper perspective on entrepreneurial mindset development, intercultural learning, and experiential intensity in hybrid international settings. It illustrates how carefully designed hybrid courses can foster entrepreneurial learning at scale, while also reflecting critically on the role and implications of selective, performance-based experiential opportunities.

## STUDENT TECHNOLOGY ENTREPRENEURS: A JOURNEY INTO THE ETHICAL DILEMMAS

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### **Abstract**

Today, the rapid diffusion of emerging technologies (e.g., AI, software engineering, computer science) has increased the societal impact of tech businesses, raising new questions about entrepreneurial responsibility. This brings future technology entrepreneurs into a novel dimension in which ethical dilemmas are overlooked. Many entrepreneurs begin their journey without fully recognising the ethical challenges they are likely to encounter along the way. Consequently, ethical concerns are emerging faster than ever before. This article examines the hidden dilemmas faced by student technology entrepreneurs (STE) in the early stages of tech ventures and start-ups. The purpose is to provide relevant insights concerning ethical dilemmas faced by a new generation of entrepreneurs, the STE. In doing so, our methodology involves students from an Immersive Software Engineering education program with panel interviews.

*(Findings: working in progress)*