

## **3E CONFERENCE PROCEEDINGS**

### **Book of Abstracts**

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

**2023**



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* 2023. This book presents the abstracts of the 3E Conference held on 10-12<sup>th</sup> May 2023 in Aarhus, Denmark. The Conference is hosted by local organisers who are: the Research Centre for Innovation and Entrepreneurship, VIA University College Aarhus, the Entrepreneurship Research Group at the Department of Management, and the Centre for Educational Development (CED), Aarhus University (AU), supported by the European Council for Small Business and Entrepreneurship (ECSB).

Just ten years ago, the iCARE group of entrepreneurship education researchers at Aarhus University Business School discussed the idea of hosting a European Entrepreneurship Education conference. Not only did they want to bring together European entrepreneurship educators, but they wanted to provide a conference format that would nurture deep discussion of ideas, methods, and concepts, and inspire educators with innovative ways of teaching entrepreneurship. They brought the idea to ECSB which was more than happy to include the conference under their umbrella and the first 3E conference saw the light of day in May 2013 in Aarhus. Since then, the conference has taken place in Turku, Lüneburg, Leeds, Cork, Enschede, Gothenburg, online, and Dijon. The conference format we have today reflects the initiatives of these pioneers and we return to Aarhus to celebrate the anniversary of the first decade of 3E. The strong research and practitioner network and the continuous rise in the number of delegates attest to the success of this conference format and the strong ties that have been developed throughout the last ten years. The conference takes as its starting point 'the questions we care about', questions to which we do not yet know the answer. Indeed, such questions have always been a significant part of entrepreneurship, and the conference seeks not necessarily to answer these questions, but to arrive at new questions that arise from the original questions.

This year, with its theme *Back to the Future of Entrepreneurship Education*, the conference seeks, once again, to provide an opportunity for researchers and practitioners to share their ground-breaking ideas in a collaborative yet critical setting. With a broad approach to entrepreneurship, this book of abstracts demonstrates how far we have come and what are the important questions that we need to ask for the future. In an ever-increasing, unpredictable world, there will be even more need for people able to solve difficult problems, collaboratively and across disciplines. As entrepreneurship educators, we are aware of the importance of introducing students to entrepreneurship through the research and practices that are presented at this year's conference.

Central themes for this conference focus on mindset and identity, the role of the educator, the dialogue between theory and practice, and the importance of being interdisciplinary to name but a few. However, we see new themes emerging such as the power of eco-systems, the ability to create value, and agency and authenticity. It is great to see how the field is evolving to capture new trends in entrepreneurship education.

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

*Conference chairs*

**Michael Breum Ramsgaard** (Co-Director),

*(Research Centre for Innovation & Entrepreneurship, VIA University College)*

**Helle Neergaard** (Co-Director)

*(Department of Management, Aarhus University)*

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# **PRACTITIONER DEVELOPMENT WORKSHOPS (PDWs)**

## CARE TO LEARN AND LEARN TO CARE

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### Summary

The starting point of the PDW is a peer learning exercise where the students acted as consultants for each other's start-ups in a venture creation program. In this exercise, the students were encouraged to apply their knowledge to helping another start-up in the same program. The challenging part of the facilitation was to get the students to care and empathize enough with each other to contribute to the learning by engaging enough with the exercise. The question we care about in this PDW is therefore: *How can we facilitate a learning environment where students care?*

If students become used to caring about, and learning from, the experience of other student entrepreneurs in their class their experiential learning will become richer compared to only focusing on their individual learning process. This PDW explores how caring and empathy can be taught and developed through the involvement in other students' start-ups. The participants will discuss facilitation of caring and empathy in groups using a deck of picture cards.

### Workshop Style

Each group of participants gets a deck of cards consisting of pictures. The groups group pictures into categories associated with the concept of caring and derive ways of facilitating the elements of caring that they have identified. The suggested ways of facilitating caring are shared between groups.

### Expected Outcomes

The participants will have derived ways of facilitating that students care, and they will also have heard the suggestions from the other groups. They will therefore take away concrete activities to use to get their students to care about each other and their collective learning from this PDW.

### Details of any related research

The peer learning exercise has elements of live case (Woodward & Schnarr, 2022) in that the students are applying their knowledge to an authentic, dynamic and ongoing situation. Furthermore, the exercise has elements of learning from observing others (Lévesque et al., 2009) since the students get to interact with other student entrepreneurs in their cohort and make in depth observations about the entrepreneurial actions and experiences of their peers. It is possible to take a broad perspective on caring and facilitation of caring, thus tapping into the movement of transforming entrepreneurship education in the direction of sustainability, social justice, and hope (see further Dodd et al., 2022). It is also possible to employ a narrower view on caring. 'Actively engaging', has been used for instance in the context of students actively engaging with social entrepreneurs (Fernhaber, 2021). Empathy, includes understanding, being aware of, and being sensitive to the feelings of others and is an important part of design thinking. In entrepreneurship education, Hannon (2018) discussed that an educator is someone that help others to learn and that an important trait is to be able to develop empathy with the learner.

## HOW TO SCALE ENTREPRENEURIAL PEDAGOGY? A CLINIC EXERCISE ON A LARGE-SCALE INITIATIVE IN MEXICO

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### Workshop Summary

How to scale entrepreneurial pedagogy is a vexing problem on all levels of education. Educational reform initiatives fail for many reasons, for example protective measures among management staff, lack of incentives and teacher resistance to change. The paucity of successful large-scale implementations of entrepreneurial pedagogy in compulsory schools illustrate just how difficult educational reform is in general, and in entrepreneurial education in particular. Recommendations on how to succeed include establishing normative structures around good teaching, support and encouragement to teams of teachers, and providing strong evidence for effects on student learning of any proposed approach. Entrepreneurial pedagogy is currently being implemented in thirty compulsory schools in Mexico through an initiative run by a Mexican non-profit organization. This initiative leans on an emerging change model, consisting of the three guiding principles: character education, entrepreneurial education and freedom education. The overall aim is to develop young agents of change who learn to generate well-being and social value for their community, making them more able to take responsibility for the future of their country. The initiative has so far reached three of the projected thirty schools.

### Workshop Style

A clinic approach of a real-world situation will be staged at the workshop. The initiative serves as a practical setting aimed at eliciting new ideas among participants on how to scale entrepreneurial pedagogy. First, the example is described through a ten-minute presentation of specifics around the current phase of the project, the challenges encountered, and current strategies for how to scale from three to thirty schools. Then, participants are split up into smaller groups and are invited to give advice. Finally, the workshop leader will attempt to synthesize some patterns in the advice given. After the session, the advice given will be compiled and distributed to all participants.

### Expected Outcomes

We seek to generate an experience-and-theory-based inventory of possible applicable recommendations when aiming to scale entrepreneurial pedagogy. A list of lessons learned from others that could potentially be implemented at the Mexican compulsory schools.

### Details of any related research

The project managers opted for a teacher training approach aimed to embed value creation pedagogy into the curriculum, i.e. students creating value for others. Due to the rise and popularity of project-based learning, this was deemed a good fit with class subjects. Pedagogical training was carried out in three public middle and high schools, involving 26 professors. 13 self-guided tasks introduced entrepreneurial pedagogy into their subjects. A digital tool was used to deploy the tasks and the reading around value creation pedagogy, to collect empirical reflection data from teachers and to provide teachers with feedback. The activity lasted for fifteen weeks. Preliminary results were surprisingly positive; increased student motivation was a recurring effect.

## MEASURING AND ACTIVATING THE ENTREPRENEURIAL MINDSET IN YOUTH

Stephanie Alvarado, Network for Teaching Entrepreneurship  
Elizabeth Kim, Network for Teaching Entrepreneurship ([Elizabethhk@nfte.com](mailto:Elizabethhk@nfte.com))

### Workshop Summary

In many entrepreneurship education frameworks, students are taught what it means to have an entrepreneurial mindset, but don't learn the discrete skills that comprise it. This is a problem because every student needs to recognize the non-cognitive skills they are developing so they can apply them to their chosen career whether they go on to work for themselves or someone else.

NFTE (Network for Teaching Entrepreneurship) is an international non-profit that annually works with 100,000 students in low-income areas to help youth develop entrepreneurial skills. Through engaging demonstrations of NFTE's experiential approaches, along with a look at pioneering efforts around its scientifically valid Entrepreneurial Mindset Index (EMI), NFTE will deliver a session to inspire fellow educators to recognize and cultivate an entrepreneurial mindset in their students.

Questions we will address through experiential activities include:

- What does it mean to have an entrepreneurial mindset and how is it applicable in the real world?
- How can I measure the natural entrepreneurial strengths in students and build on them?
- How can I utilize entrepreneurial mindset domains as a framework to provide strengths-based instruction to my students?

### Workshop Style

The session will describe NFTE's EMI in the context of its theory of change, development, and validation. Participants will have an opportunity to take the EMI and through interactive activities, learn how NFTE integrates the process of activating a student's entrepreneurial mindset into its pedagogical instruction and evaluation.

### Expected Outcomes

Participants will gain a better understanding of the importance of having an entrepreneurial mindset on secondary, postsecondary, and career paths.

They will have the opportunity to take the EMI assessment before the session, engage in experiential activities, and view digital learning interactives and other resources to deepen the entrepreneurial mindset.

### Details of any related research

Working with researchers at the Educational Testing Service, and with signature support from EY, NFTE designed the Entrepreneurial Mindset Index (EMI) to measure mastery in eight core domains we have identified as critical to entrepreneurial thinking. Early validation analyses (including tests of model fit, reliability, internal consistency, and convergent and discriminant validity) conducted with a sample of approximately 4,000 students demonstrated the EMI's psychometric soundness and indicated that it is a reliable and valid instrument to measure entrepreneurial mindset.

NFTE's robust and innovative approach to workplace learning translates to real-life employment gains. NFTE's 2017 alumni study found that 86% of students that completed the program were employed, earning 50% more than their peers and 25% of NFTE alumni reported starting their own business. This is over ten times the national average for youth businesses in the United States and more than twice the overall national average. Furthermore, 89% of alumni reported that NFTE contributed to their knowledge, skills, and/or personal development and growth in key areas such as becoming independent, speaking clearly/effectively, and working as a member of a team. Finally, through a quasi-experimental [study](#), our programs have led to higher mindset growth over other students in general CTE programs.



## **BENEFITS OF ENTREPRENEURSHIP DIDACTICS IN TEACHING DIGITAL LITERACY AND CREATIVITY**

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Louise Krobak Jensen, VIA University College

Anette Bavnshøj, VIA University College

In this workshop we will convince you that the utilization of entrepreneurship didactics is a benefit in the teaching of digital literacy, using XR technology as an example of a specific digital technology the students may encounter in their professions. Digital literacy covers arenas as digital empowerment, computational insight, digital design and the ability to innovate and exploit technology.

It is our intention to provide profession bachelor students with competencies to be curious, creative and critical and to act upon the technological challenges, they meet in their professions. Furthermore, it is our intention to develop student self-confidence and eliminate uncertainties which otherwise can hold back the students in acting intraprenant and innovative when working with various technologies.

In the workshop we will show you and make you first-hand experience, how we, in a safe but challenging learning environment, induce self-efficacy and adaptation of an entrepreneurial mindset.

We have chosen to develop our learning environment on XR technologies and the coding program CoSpaces, which very few students have previous experience with before the workshop.

You will experience:

- How we have used entrepreneurship didactics involving about, for and through methods
- How we facilitate courage to fail and grow from it
- How we facilitate curiosity, creativity and along the way autonomy and enterprising behaviour

Participating in this workshop does not require any previous experience with XR technologies, but we do require you to be curious and have courage to fail. Furthermore, we advise you to bring a smartphone and/or a computer.

## BACK TO ENTREPRENEURIAL COMPETENCES TO THE FUTURE OF ENTREPRENEURSHIP EDUCATION

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 Florian Bratzke, Univations GmbH  
 Pronay Szabolcs, University of Szeged

### Workshop Summary

The development of student entrepreneurial competences is a key goal of entrepreneurship education (EE) programs. The scope of EE, however, is diverse. It can prepare for becoming an entrepreneur, an employee that thinks and acts entrepreneurially, or even an individual that is better able to cope with the challenges of life. Therefore, understanding what competences belong to EE and finding ways to assess them are crucial cornerstones for educators when designing and implementing entrepreneurial learning interventions. The aim of the workshop is to engage educators and researchers into a discussion, practice, and reflection of entrepreneurial competences. The questions we care about are:

1. What is the theoretical conceptualisation of entrepreneurial competence?
2. What are the entrepreneurial competences identified in the literature?
3. What are the most common frameworks of entrepreneurial competences?
4. How can we assess the entrepreneurial competence portfolio of the students?
5. Can all entrepreneurial competences be taught/learned?
6. How to design (transformative) learning experiences to develop entrepreneurial competences?

The workshop provides a walk-through these questions by unfolding a Digital Platform (entitled EICAA DP) for the assessment, diagnosis, and tailored teaching of entrepreneurial competences, with EntreComp as the underlying framework.

### Workshop Style

Active participation and engagement of participants is promoted through:

1. Before the workshop, participants fill in the entrepreneurial competence self-reflection survey: <https://platform.eicaa.eu/start?assessment=baOhrbQePxqgsTCwx-usmA>
2. Introduction: EntreComp and EICAA DP.
3. Diagnosis: Presentation of assessment results.
4. Co-Creation: Participants are invited to jointly develop a teaching intervention for one competence.
5. Pitch: Participants present their ideas.
6. Wrap-up.

### Expected Outcomes

- Comprehension of entrepreneurial competences and its theoretical conceptualisation.
- Practical use of a survey to assess entrepreneurial competences.
- Enhanced creativity of how to facilitate students' learning of entrepreneurial competences.
- Design and development of tailored teaching interventions.
- Networking and co-creation with like-minded entrepreneurship instructors.
- Inspiration, fun, and enhanced motivation for EE.

### Related Research

The workshop is built upon EntreComp framework (Bacigalupo et al., 2016), which has been revised, validated and operationalised through the so-called EICAA-Digital Platform (Teodoro et al., 2022). This platform allows the assessment of entrepreneurial competences of a group of learners and offers tailored recommendations of EE teaching interventions.

## COLLECTIVE DEVELOPMENT IN EEE - THE CASE OF COMPASSIONATE CLIPS

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Dave Stanbury, University of Huddersfield.

### Workshop Summary

The development of confidence and skills in Higher Education settings generally, and Enterprise and Entrepreneurship Education (EEE) specifically, has been critiqued for focussing on individualised approaches where personhood is achieved by out-competing others (Skeggs, 2011; Bunn and Lumb, 2019; Hytti, 2018, Brentnall, 2020). Indeed, EEE is implicated in encouraging individualised cultures and institutionalising winners and losers (Dodd et al, 2022). Engaging with alternative philosophies and practices may counter this, as well as acting as an antidote to taken for granted approaches which damage EE's legitimacy and limit its positive impact (Berglund and Verduijn, 2018; Loi et al, 2021; Dodd et al, 2022). In this PDW, such an *alternative mode of practice* is introduced and modelled. The workshop illuminates an approach taken by two 'third space' practitioners, (McIntosh and Nutt, 2022), working in an *enterprise unit* and a *careers and employability service*. The authors have responsibilities for developing the 'Graduate Attributes' and enterprising skill sets of students and ask: how can such development happen inclusively and collectively? This PDW will introduce a rationale for, and practice related to, blending two approaches - **Compassionate Pedagogy** (Gilbert, 2016), with **CLIPs** or Cooperative Learning Interaction Patterns (Werdelin and Howard, 2021) - to support students' collective development.

### Workshop Style

The workshop will be organised in 3 parts. First there will be an introduction to the rationale for blending Compassionate Pedagogy and CLIPs. Then some Compassionate CLIPs will be modelled. Then workshop participants will reflect and consider where this approach could support students' collective development in their setting/practice.

### Expected Outcomes

Participants will understand the motivation for blending compassion and cooperation in enterprise/entrepreneurship pedagogy and how these approaches support *collective* development. By practically experiencing the approaches participants will have a greater sense of how/where they could apply them in their own setting.

### Related Research

The tensions and contradictions between the emancipatory potential of EEE and the homogenised ways it is enacted have been expressed persistently and for some time (Fayolle, 2013; Fayolle et al, 2016; Hytti, 2018, Loi et al, 2021). Calls to *revitalise* the field require persistent engagement with alternative modes of practice (Berglund and Verduijn, 2018), and these calls are more urgent in light of social and environmental challenges which require new pedagogies of hope and social justice (Dodd et al, 2022; Klapper and Fayolle, 2023). As enterprising and entrepreneurial skill-development work aims to influence educators and the curriculum the concern for inclusivity is intensified, as all students are expected to participate (rather than volunteer for an extra-curricular activity), and therefore a 'do no harm' approach in practice and research (Labaree, 2011) is important. The blending of **Compassionate Pedagogy** (Gilbert, 2016), with **CLIPs** or Cooperative Learning Interaction Patterns (Werdelin and Howard, 2021), offers an approach which can be integrated into curricula to increase confidence, support productive group interactions and generate a spirit of collective development.

## **NURTURING ENTREPRENEURSHIP EDUCATION – TOWARDS A MULTIDISCIPLINARY MODEL USING STAKEHOLDER THEORY**

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Peter McLuskie, Keele Business School

Track Dinning, Liverpool John Moores University

### **Workshop Summary**

Entrepreneurship education (EE) has been seen by higher education institutions (HEIs) as a centre stage by which to foster graduate enterprise provision, students' competencies and entrepreneurial mindsets recognised as essential to employability, self-employment, and business venture creation (Davey et al., 2016; Pittaway and Cope, 2007). Despite developments in the field, understanding of stakeholders' influence on EE is still lacking. The aim of this Practitioner Development Workshop (PDW) is to present participants with a Stakeholder Engagement Methodology (SEM) (Interest-influence Matrix) (Mendelow, 1981) that support the nurturing of a multidisciplinary EE, involving teaching entrepreneurship to a wide range of programmes/disciplines, students' backgrounds, capabilities and competencies (Fiore et al., 2019). We explicate our novel approach in applying a two-step stakeholder process involving *scanning* internal environment and *positioning* stakeholders according to interest and influencing power within the University of Liverpool. This will also provide participants with opportunities to open up debates around the issues of developing a multidisciplinary EE, what are the current difficulties? How can these be overcome? And what does this look in practice?

### **Workshop style**

Presentation of the SEM (Interest-influence Matrix) (Mendelow, 1981), and suggest some of the challenges/levels of complexities in nurturing a multidisciplinary EE. Besides, this PDW provides participants with opportunities to share their experiences, and to help shape and develop future agenda and a collective opinion in regards to what should be the critical steps in developing a multidisciplinary EE.

### **Expected outcomes**

Opportunity for academics and practitioners to: Gain insight into how SEM can be applied to EE, including challenges and complexities, to have shared examples from across institutions of nurturing a multidisciplinary EE, and takeaway practical ideas to inform their own curriculum development and remove organisational blocks to facilitate change.

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

Two broad research streams have been identified within Stakeholder Management Theory (SMT). Research focused on the descriptive and behavioural nature of the firm (e.g. Brenner and Cochran, 1991; Clarkson, 1995) in managing stakeholders defined as '*any group or individual who can affect or is affected by the achievement of the firm's objectives*' (Freeman, 1984: 25) and normative perspectives concerned with the corporate social responsibility of the firm (e.g. Donaldson and Preston, 1995; Jones and Wicks, 1999; Phillips et al., 2003). SMT has therefore provided organisations including HEIs the basis by which to consider the role of stakeholders like educators, researchers, management and support staff, and wider institutional ecosystem (Davey et al., 2016) play in supporting students' entrepreneurial journey (e.g. Fayolle and Gailly, 2008; Rae, 2010). This PDW builds on existing EE research (e.g. Fayolle and Gailly, 2008; Grammond, 2019; Pittaway and Cope, 2016; Hynes, 1996) by applying SMT highlighting the relevancy of internal stakeholders' influence on nurturing a multidisciplinary EE.

## **SUPPORTING ENTREPRENEURSHIP EDUCATORS TO USE LEGO SERIOUS PLAY (LSP) TO ENABLE REFLECTIVE PRACTICE IN ENTREPRENEURSHIP EDUCATION**

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Pauric McGowan, Ulster University

Entrepreneurship education has become a national priority for many governments worldwide, as it is seen as an essential component in developing entrepreneurial thinking and design skills among students and the younger generation (OECD, 2004; Blenker et al., 2011; Mamun and Rajennd, 2018). While the primary purpose of introducing entrepreneurship education was to create start-ups and commercialise innovation, it is now associated with more than just a business creation. Being entrepreneurial is not only concerned with acquiring business-specific skills, but also involves the development of an entrepreneurial mindset, attributes, intentions and self (entrepreneurial identity) (O'Dwyer, 2021).

In order to support the development of an entrepreneurial mindset, educators should first encourage reflective practice (Jones et al., 2013; Kirkwood et al., 2014; Bozward et al., 2020) and influence the student's entrepreneurial behavioural attributes (namely the concept of self, internal drivers and concept of others) (O'Dwyer, 2021). Intentionally, the focus of entrepreneurship education must be to empower, enable and encourage the student to explore and develop their entrepreneurial attributes, intentions and competencies as well as their capacity for entrepreneurial actions. This can be achieved by role innovation, where the educator acts as a facilitator of the learning process, which enables the student to embark on the journey of self-discovery through questioning, probing, obtaining feedback and reflecting (Assen, 2022).

To support this reflective learning process, this workshop will focus on using Lego SERIOUS Play (LSP) to facilitate reflective practice. This will be achieved through the application of the LSP method, which will support the current reflective practice models such as the reflection-in and reflection-on action (Schön, 1991), the reflective cycle by Gibbs (1998), 'what' model by Rolfe, Freshwater, & Jasper (2001) and Kolb's (1984) experiential learning model. Participants will be divided into groups, with one or two facilitators delivering the process. The workshop will begin with warm-up exercises using LSP to understand the process and its application in reflective practice. Once completed, participants will be required to reflect on their understanding of and role in facilitating reflective practice and build a model representing a student work placement experience, where participants undertake the activity as a facilitator and a student.

By the end of the workshop, participants will gain a better understanding of reflective practice and how to use the LSP to explore ideas, reflect on own practice and to encourage collaboration and reflection. The aim of this workshop is to encourage the role of reflective practice as a growing pedagogy when promoting the development of an entrepreneurship education. It will also identify how the LSP method can be used in a traditional and non-traditional education setting. The facilitator/s will provide key takeaways from the workshop for the participants, which will enable them to understand their reflective competencies and skills. Moreover, the workshop will also enable the educator to fulfil a role innovation, where s/he becomes a facilitator who prepares and delivers the learning journey for the participants and also leads the process. Overall, this workshop will provide a valuable experience for educators and will be experienced from the perspective of an educator and a student. It will enable the educators to develop an understanding of different perspectives and viewpoints (Farrokhnia et al., 2022), and gain a better insight into the concept of reflective practice.

## **IF ENTREPRENEURSHIP IS THE ANSWER, WHAT IS THE QUESTION? AN INVESTIGATION ON SOME OF THE DILEMMAS.**

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 Hanne Duedahl Nørgaard, VIA University College  
 Birgitte Woge Nielsen, VIA University College

We are three educators with backgrounds in the field of entrepreneurship including curricular, co-curricular and extra-curricular activities. In this workshop we investigate some of the dilemmas arising from the past 10 years' experience with developing and facilitating entrepreneurship education. According to the Danish Foundation of Entrepreneurship the number of students receiving entrepreneurship education has more than doubled over the past 10 years. But in regards to the development within contextual as well as structural areas we see some significant and new challenges. In the workshop we have narrowed down six questions derived from dilemmas we experience as educators working with entrepreneurship in education and in the student incubator environment.

The six questions are:

- Are there ethical challenges associated with funded projects and external partnerships, when we tweak the way we work with the project's goals locally?
- What didactic and pedagogical challenges are we facing, facilitating entrepreneurial processes?
- Are educations obliged to teach sustainable entrepreneurship?
- Do all students need to be entrepreneurial?
- If all students learn how to be entrepreneurial in curricular courses, which kind of activities does it call upon in the student incubator?
- Do we know how to make entrepreneurship interesting for women?

In the workshop, participants will have the opportunity to engage in reflections within minimum two of the questions through a joint venture between participants and workshop keepers. The workshop invites participants to engage in reflections and activities using the entire room, after a brief introduction to the dilemmas.

In the workshop we raise questions from different existing practices such as the activities in a student incubator, curricular and co-curricular courses, and strategic agendas. We expect the different perspectives thus contributes to reflections as well as actions for each participant.

In 2010 VIA University College decided to have a strategic focus on entrepreneurship education (EE) and began to implement EE in all programs combined with building up Students Incubators at all campuses.

The existing experience and evidence are based on different evaluations we have been involved in since 2010. Including data from a research project that took place in 2022 based on a large-scale educational project funded by the Interreg – The Scandinavian Growth Creators. Based on the existing evidence, it can be difficult to engage students. It can be rather demanding to educators, activities in the Student Incubator are challenged on how to attract the students, and if it's about curricular activities you have to convince the students of all the benefits they gain from EE.

## COME AND BUILD A PRACTITIONER'S COMMUNITY WITH US!

Klaus Greve, VIA University College ([klgt@via.dk](mailto:klgt@via.dk))  
 Martin Storkholm Nielsen, VIA University College

### Workshop title

Bootstrapping: Building a community for game-based learning tools for teaching entrepreneurship through a game-based approach

### Workshop Summary

In our practice, we have noticed a keen interest in active knowledge sharing across institutions as well as countries. Specifically, we have seen conferences such as 3E 2022 and NordSEnt 2022 become the petri dish for taking the first steps towards building a community around knowledge sharing on the use of co-creation and -design as well as design games in teaching entrepreneurship. However, what happens after conferences?

Building on the notion of Effectual Entrepreneurship (Read et al., 2016), we propose a PDW that takes the means of the participants into the process of developing a community of entrepreneurship educators for active knowledge sharing on and co-development of game-based learning tools for teaching entrepreneurship. To do so, we create and facilitate a design game that draws out the means of the participants, helps them co-create goal setting and act on them.

Further, given new developments in the educational sector in Europe like new 2021-27 Erasmus+ charter, we see an increased external support in facilitating cross-institutional networking and collaboration.

### Workshop Style

Given the game-based approach, focus will be on interaction between participants, setting affordable losses and making commitments for knowledge sharing and/or collaboration.

As one cannot attend all PDWs, attendees miss out on relevant input. To alleviate this, our participants can share *Ambassador Cards* with other attendees of the conference during informal conversation as an invitation to join the community.

### Expected Outcomes

Participants will leave with a network of colleagues with similar goals and hopefully commitment on collaboration. During the workshop, we aim on developing a structure for action and following up on commitments helping us move from crazy quilt to established community.

### Details of any related research

We might assume that as entrepreneurship educators, our primary goal is to create the best learning opportunities for our students. In teaching entrepreneurship, we see that effectuation (Read et al., 2016) has gained popularity over the last decade, which resonates with the *Creative View* of the individual-opportunity nexus as articulated by Blenker and Thrane (2010). So why do we often end up as isolated islands (aka. the *Individual View* (ibid.))?

To initiate a change in our practices, we draw on the notion of Communities of Practice (Lave et al., 1991) as well as co-creation (Vaajakallio & Mattelmäki, 2014).

We aim at establishing a community for educators to share experiences and ideas for entrepreneurship education, thus opening up for inspiration and collaboration across institutions and countries. We hope that as a result, it will allow them to develop, qualify and share game-like teaching methods, tools and concepts. Additionally, we see the workshop as an example and reminder of how we might apply the entrepreneurship theories that we teach our students into our own practices—in short, taking our own medicine.



## BEYOND BUZZWORDS: HOW TO TEACH CRITICAL THINKING ABOUT DISRUPTIVE TECHNOLOGIES

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### Workshop Summary

Technology is a buzzword. Business and entrepreneurship students cannot afford to ignore technologies that are fundamentally changing the way things are being done. As digital natives, students embrace and use technology every day, but often don't have the distance to critically reflect on it. Our role as educators is to ensure that students are aware of these technologies, understand their current impacts, and the effects they will have on future business.

Innovation is predominately seen as a "good thing". However, the 'coolness factor' of many new technologies often leads to unquestioning acceptance. For example, biometrics, VR, digital assistants, AI and phone apps are often wholeheartedly embraced by students. Yet the current crypto winter recently prompted a European Central Bank to write, "The belief that space must be given to innovation at all costs stubbornly persists."<sup>1</sup>

The aim is to encourage critical thinking about innovation. How do we balance the hype surrounding a technology with a deeper assessment of its pros and cons? How do we convey to students that any technology can be used for good or ill? How do we enable future entrepreneurs and businesspeople to make sensible decisions for our planet and society?

Participants will examine scenarios and discuss:

- common student attitudes to technology (unquestioning, superficial, uninterested)
- positives and negatives of technologies
- how students can be encouraged to think more critically
- new approaches based on learning theory, especially given the disruption that ChatGPT presents to traditional teaching methods.

Participants will:

- gain a clearer picture of commonalities in perspective among university business students
- have a stronger grasp of technologies most likely to affect entrepreneurs
- acquire a better understanding of the promise - and drawbacks - of these technologies
- discover effective strategies to encourage critical thinking about technology.

Drawing from my experience teaching disruptive technology to entrepreneurship students, For the past four semesters I have taught a class to business students that provides students with a general overview of key disruptive technologies that are not just on the horizon, but already in use. Earlier in my career, I spent eight years working in Silicon Valley as a technology marketer - at both a life science software startup, and a Fortune 500 technology company.

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<sup>1</sup> (Nov 30, 2022 <https://www.ecb.europa.eu/press/blog/date/2022/html/ecb.blog221130~5301eecd19.en.html>)



## IF VIDEO KILLED THE RADIO STAR, WHAT ABOUT THE LECTURER?

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 Zoë Blackler, Cardiff Metropolitan University

### Workshop Summary

Does virtual lecture delivery mean that we are now performers and students merely our audience? Changes forced upon us by macro-environmental conditions beyond our control led to an emergency transfer to VLEs. We are now living through the 'hangover' and trying to navigate through delivery choices which will please the student whilst still achieving the learning outcomes of a module. As academics, we are seeing a wave of attendance issues across the sector, with empty lecture hall seats and ghost profiles on TEAMS lectures. If our focus is asynchronous, online or recorded delivery, when does the responsibility for engaging students cease to be ours if they can just turn on and tune out? How do we, as lecturers, take back the 'remote control', especially if we now cannot get the students back in the classroom? This workshop will explore the issues faced by educators when trying to engage students in the physical and virtual blended classroom and discuss how assessment can still be innovative when navigating these delivery challenges.

### Workshop Style

Delivery is a combination of practice-informed debate and evaluation of pedagogical theory application. Facilitated by two Enterprise Educators, contributing opinions into the optimum mode of pedagogical delivery of an example module descriptor will be sought, along with the co-creation of innovative formative and summative assessment.

### Expected Outcomes

There are two main anticipated outcomes from the workshop:

1. Provide a platform for cross-institutional discussion and dissemination of experience, drawing from an international HE perspective.
2. Evaluate the importance of the educator's own mindset and teaching philosophy in relation to the delivery and assessment choices of the module.

### Details of any related research

Research in this area is emerging following the pandemic, the emergency transfer to VLE and the various approaches to blended learning now being seen within HE. Online delivery lends itself more towards a didactic approach to teaching, which would be regarded as a traditional approach to teaching 'about' entrepreneurship (QAA 2018). It can be argued that it is more difficult to apply the more impactful approach of teaching 'for' entrepreneurship (QAA 2018) and the adoption of pedagogical techniques that favoured 'learning by doing' to stimulate entrepreneurship (Neck and Corbett 2018) within the VLE. This supports work presented by Curtis, Moon and Penaluna (2021) which presents empirical evidence that deeper student learning occurs with innovative and experiential pedagogical approaches to enterprise education – including assessment design. Indeed, students highlighted the connection between assessment authenticity with deeper learning. Zhang and Price (2020) outlined that this approach creates a new role for the academic to an active agent within the student's journey, applying experiential and action-oriented learning.

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## RISKY STORIES – APPLICATION OF STORYTELLING IN RISK MANAGEMENT

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Jens Hirt, Hochschulen Fresenius

Thomas Henschel, Hochschule für Technik & Wirtschaft Berlin

### Workshop Summary

The importance of risk management as one of the unique competencies of the entrepreneurship discipline is well established and the subject is addressed in most curricula in entrepreneurship education. However, teaching practices often focus on processes and routines rather than the psychological underlying of risk perception, attitudes, and behavior. Therefore, a question we care about is the enhancement of risk management training by addressing personal risk preferences and impact on decision making in a motivating and playful way. During the PDW session, we introduce a concept that combines students' development of entrepreneurial identity and their ability to plan and take decisions under risk and uncertainty in accordance with the standards of enterprise risk management procedures. Key questions are (1) discussion of content (risk attitudes, preferences in decision-making) and design (storytelling, gamification) and respective interrelations; (2) exchange of experience with similar or complementary concepts, and (3) discussion of the suitability of the proposed format for virtual and hybrid classroom settings.

### Workshop Style

Participants will be introduced to (1) development of risk management stories, and (2) application of Lego Serious Play™ in risk management. After 20 minutes of interaction, a debrief including a reflection on the suitability of both approaches for increasing understanding of the psychology of risk will take place.

### Expected Outcomes

The PDW session introduces a combination of innovative methods to engage students to better understand attitudes toward risk and uncertainty and to experience the emotional power of storytelling. Participants will collaborate on discussions about the impact of learning via stories and gamification on the entrepreneurial identity.

### Details of any related research

We propose a gamified learning experience, that is designed to promote learning by application of a narrative drawn from an entrepreneurial setting. Previous research suggests that entrepreneurship students see gamified formats as a worthwhile exercise extending knowledge about entrepreneurial activities (Huebscher & Lendner 2010). Schönbohm & Jülich (2016) show positive effects from gamified risk management workshops for starting up risk management in small firms. Furthermore, storytelling is adopted as an effective method in entrepreneurship education to promote individuals' entrepreneurial intentions (Liu et. al, 2019). Also, Erskine & Sablinski (2016) recommend the application of Lego Serious Play™ for teaching management skills.

## THE PECULIAR SENSATION OF CREATING VOICE - SCHOLARLY WRITING / INSTITUTIONAL NORMS/EXPECTATIONS

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Trudie Murray, Munster Technological University

### Workshop Summary

The ability to write and publish scholarly papers; is presented in many academic discourses as a rational and structured activity. Yet when it comes to writing about teaching practice, many academics struggle with this form of engaged self-reflexive writing. The aim of this PDW is to provide a more comprehensive method for how we engage with self-inquiry by drawing connections between teaching practice and teacher identity. The PDW draws inspiration from the complementary viewpoint of social philosophy helping us explore the nature of teacher inquiry and the conditions under which it has the possibility of becoming “authentic”; situating this perspective to include concepts of “being”, “ideas of communicative action”, “power”, “reflexivity” and “engagement”. The PDW will pose questions that form a self-reflexive embodied understanding of self as teachers in EE such as:

1. *How do teachers narratively construct their own development?*
2. *What value could authenticity bring to pedagogical practice?*
3. *How do I enact and embrace my teaching practice through self-inquiry?*

The PDW seeks to explore how teachers’ main characteristics, such as their practical knowledge and wisdom (*phronesis*) form the notion of their practice, (Beijaard, *et al.*, 2000; Stenberg *et al.*, 2014).

### Workshop Style

The PDW is focused on creating space and offering the freedom to be open and receptive to new encounters. Participants will engage in a process of collaborative ‘free-writing’ exercises with emotive prompts to generate ideas, designed to focus participants on the expressive act of writing itself.

### Expected outcomes

Participants will benefit from:

- Space to reflect on, and re-engage with one’s own teaching practice
- Critical and reflexive discussion on teaching and professional development
- Networking with other scholars
- ‘Planning for action’ – suggested steps forward
- To grow collective learning and capability in EE

### Details of existing evidence

A fundamental issue in entrepreneurship education is the need to focus on the nature of the foundations that underpin its delivery (Hannon, 2006; Seikkula-Leino *et al.*, 2010). How we engage with methods of teaching entrepreneurship and our understanding of what should be taught remain ambiguous. Inspiring entrepreneurship in all its forms is dependent on the methods we use as educators, but to date much of the research has focused on such issues as student learning, methods of assessment, the rate of business start-ups, etc (Fayolle 2008; Fayolle *et al.*, 2016; Mwasalwiba, 2010; Pittaway and Cope, 2007). There are few theoretical insights about the role of the teacher (Folliard *et al.*, 2019; Toding and Venesaar, 2018) and what shape our teaching practice takes to enable learning. Teacher identity; our professional needs and expectations (Zepeda *et al.*, 2014), is based on personal needs and motivations (de Vries *et al.*, 2013). Conceptually, teacher identity can describe what a teacher thinks and how they practice their skills / knowledge in the context of their professional status (Badia & Iglesias, 2019). A research focus on these theoretical constructs seeks to explore how teachers’ main characteristics form their practice (Hägg and Gabrielsson, 2020).

## EXPERIENCING ENTREPRENEURSHIP EDUCATION IN METAVERSE THROUGH SPATIAL

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Aki Leung, Hong Kong University of Science and Technology

### Workshop Summary

The pandemic significantly sped up the development and adaptation of virtual learning and collaboration. With the support of education technology, our entrepreneurship courses stayed fully experiential, interactive and team-based throughout the pandemic. Spatial is a metaverse platform offering core functions in virtual exhibitions and meetings. It is a mature tool widely used by metaverse users. The team has 2 years of experience of using Spatial in virtual, hybrid and offline classes. Previously, we had also shared our experience with other educators in Asia and received positive feedbacks. Through this workshop, we hope to empower other practitioners and invite conversations about how to better entrepreneurship education.

### Importance of the topic for entrepreneurship education practice:

The development of virtual tools for entrepreneurship education will help provide quality education despite interruptions such as pandemics, social unrest, wars or other unforeseen circumstances. While this workshop will not be able to answer these needs singlehandedly, it serves as an invitation to educators to collaborate to generate creative solutions.

### Questions, challenges and problems to be asked and addressed:

- How is metaverse actually used in the entrepreneurship education setting?
- What are the obstacles and opportunities brought by these tools?
- What are the best practices pedagogically and logistically when planning to use Spatial in a class?

### Workshop Style

The workshop is designed to be interactive and hands-on. It encourages active participation.

### Expected Outcomes

Participants will experience metaverse first-hand through spatial, learn ways to incorporate metaverse in teaching and learning, and explore possible roles of how metaverse can enhance entrepreneurship education at tertiary level.

### Details of any related research

Research on metaverse and education is a growing field but still at its preliminary stage. This is especially true when it comes to metaverse in entrepreneurship education. From the research and our experience, metaverse plays the following roles in enhancing entrepreneurship education:

1. *Enhanced experiential learning*: it creates immersive experiential learning opportunities that would be difficult or impossible to replicate in the real world.
2. *Personalized learning*: metaverse enhances active learning compared to lectures in-person or on zoom (Almahasees et al., 2021).

With the emergency of generative AI in the public use, there is a greater potential to the existing practice in incorporating technology, specifically Web 3.0 related technologies, into entrepreneurship education.

## USING A “LOCAL HERO” STARTUP CASE STUDY: PROMOTING EXISTING LOCAL STARTUP SUPPORT MECHANISMS IN AND AROUND OUR UNIVERSITY

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Hannah Brakelmann, Technische Hochschule Ingolstadt

Martin A. Bader, Technische Hochschule Ingolstadt

### Workshop Summary

Many of our discussions with fellow entrepreneurship educators focus on the common challenges of creating awareness for entrepreneurial career paths and advertising the vast collection of startup support mechanisms, programmes, and events available at most European universities. To address these issues at our mid-sized university in Germany, we have turned to the well-established case teaching method, albeit with two twists. Instead of turning to one of the many available entrepreneurship cases, we decided to design our own localised case study. Our protagonist is a well-known alumnus of our university. He and his team used many of the different funding programmes and support mechanisms available to our students. They slowly build their business from the ground up. We think these “local heroes” make for more relatable and approachable protagonists than fictitious or anonymised characters.

Although our case study has the traditional “look and feel” of similar cases, we mainly designed it to advertise available startup support mechanisms in and around our university.

### Workshop Style

We set the stage by introducing selected problems and challenges of our case study. The audience is then encouraged to work through one of these challenges in small groups. This will be followed by a debriefing and moderated reflective discussion with all workshop participants.

### Workshop Outcomes

We hope to spark each session member’s thinking about who could be featured in their own “local hero” case study. We also expect the final peer discussion to introduce many other “non-traditional” strategies for increasing awareness of available local startup support mechanisms.

### Related Research

Case method teaching has endured many decades of success at business schools worldwide (Bailey, 2002) – especially in graduate and executive education programs (Bridgman et al., 2016). The case method allows educators to bring a variety of real-life scenarios into the classroom and tie them to current management research (Christensen & Carlile, 2009). Despite the prevalence of teaching business concepts via cases, we are unaware of existing case studies specifically designed to introduce students to the local entrepreneurship ecosystem in and around their universities.

## QUALIFYING VALUE CREATION IN ENTREPRENEURIAL TEACHING AND EDUCATIONAL DEVELOPMENT

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Helle Meibom Færgemann, Aarhus University

### Summary

The aim of this workshop is to explore the potentials of value creation models for entrepreneurial education (EE) and other learning processes with entrepreneurial elements in higher education (HE). We present a new value creation model based on empirical research and analysis of existing models tying in with recent research on material artifacts to bridge theory and practice (e.g. Berglund, Bousfiha & Mansoori, 2020). We want to:

- explore the value creation model's usefulness in teaching
- spark inspiration for integrating the value creation perspective in entrepreneurial processes and education

The model is a response to an identified interest in value creation related to EE among teachers and educational leaders at the university; but also, to an identified need for help and guidance in how to introduce and nurture value creation processes in teaching. An earlier model was presented and discussed (Hyldegård & Færgemann, 2022) demonstrating potentials, but also challenges regarding its application as a didactical and pedagogical tool. At this workshop, the participants are invited to experiment with the new model in relation to a real-life case addressing students' value creation during project work and negotiation of values with stakeholders. Participants leave the workshop with inspiration and ideas for how to get started supporting their students in creating value in educational settings.

### Style

After a theoretical overview of value creation in entrepreneurial teaching and education, the new model for value creation is introduced. The participants test out the model on a provided case. Potentials and challenges/obstacles of the model and value creation in EE practice are discussed for collective reflection.

### Expected outcomes

The workshop contributes a deeper insight into the diversified value creation concept and reflections on its employment in teaching. For example, how value creation models can stimulate and nurture students' focus on value in project work involving external stakeholders. The intention is to spark reflections on different approaches to value creation.

### Details of any related research

The proposed value creation model is based on the work by Martin Lackéus (2018), Jones et al. (2020) and Ouden (2012). An earlier version of the model was presented at 3E in 2022 (Hyldegård & Færgemann, 2020), leading to a revision emphasizing 'actors', 'context' and 'time' in value creation processes. This model was discussed at a webinar in November 2022 and during 3 focus groups in January 2023 with academics (N=16) across different disciplines at 6 Danish universities.

## PEDAGOGICAL NUDGING OF AN ENTREPRENEURIAL IDENTITY THROUGH DESIGN GAMES

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Klaus Greve True, VIA University College

### Workshop summary

During the workshop, we will show how the design game can lead students through a transformative learning process. They will discover, experiment, and reflect on cognitive, emotional, and social dimensions that create one's entrepreneurial identity. This happens by facilitating the participants through a process of playing a "design game", the Push-game. It is a dialog-based game developed by the VIA Student Incubator and designed to create spaces of opportunities for the students and their transformative learning process.

Developing the students' entrepreneurial identity is especially a challenge for the teachers in certain educational programs that does not already implement entrepreneurship.

### Workshop style

The participants will get 'hands on' experiences with the design games methods, the Push-game and reflections for using design games in own teaching practice. The structure is:

- An introduction to the design games methods possibility for creating transformative learning processes
- Facilitation of the participants' practical experiences with design games through playing the Push-game
- Reflections on the potential use of design games in own teaching practice

### Expected outcome

Our vision is that the participants will leave the workshop with knowledge of the design games method and its potential for the entrepreneurial teaching that can lead to transformative learning processes. We also envision that we create new perspectives on how to utilize the Push-game in own teaching practice.

### Details of any related research

Entrepreneurship is an everyday practice; it is known as an individual-opportunity nexus (Shane & Ventakataraman, 2000). Entrepreneurship is connected to the part of teaching that centers in social, practicebased communities that contain a reflective interaction between the cognitive, emotional, and social areas. An entrepreneurial professional identity is interconnected to the transformative learning process that happens in a social and practical community (Schön, 1983; Dewey, 1916; Illeris, 2013).

Design games are methods used for creating a practical community about research, experimentation, and reflection. It creates a 'third space' where a common language occurs based on exchanging, challenging, and discussing one's knowledge, opinions, perspectives, and ideas. (Muller & Druin, 2003). The method, in its practical use, is a pedagogical nudging which " ...in the hands of a reflective professional stimulates awareness and provides students with the opportunity to explore their own entrepreneurial identity" (Neergaard et al., 2020).



## THE NEXT BIG CHALLENGE FOR EE - ARE EDUCATORS READY TO EMBRACE SUSTAINABLE EE?

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Helen McGuirk, Munster Technological University

Mukesh, H.V. Manipal Academy of Higher Education

### Workshop Summary

Institutes such as United Nations set ambitious global targets to ensure the world is prepared for dramatic changes in climate, population and inequalities (UNSDG, 2022). Commonplace in the entrepreneurship literature is the value of key competences needed for personal development, social inclusion, active citizenship and employment, exemplified by those set out in the *Entrecomp* framework (Bacigalupo et al. 2016) and the recently published *Greencomp* framework (Bianchi et al 2022). In designing programmes and modules to reflect such principles and ensuring entrepreneurship students are ready for a dramatically changing world of work, environment, and society, we ask the very pointed question: are educators ready? Specifically, in context of business schools, we ask if entrepreneurship educators are aware, prepared and willing to embrace principles such as the UN supported initiative 'Principles for Responsible Management Education' (PRME). PRME is now cited as the largest organised relationship between the UN and management-related higher education institutions and Moon et al (2022) posit that PRME can be adapted for or a specific reference to entrepreneurs rather than managers in a general sense. This PDW explores the potential for existing competence frameworks to address the challenge of embedding sustainable entrepreneurship education (SEE) for globally aware and responsible graduates while supporting PRME principles across entrepreneurship education (EE) curriculum, engagement, and research.

### Workshop Style

The workshop will facilitate mutual learning and knowledge sharing across the two domains of EE and SE by recapping on established competence frameworks and theories. The workshop adopts a challenge-based learning (CBL) approach that actively engages participants in relevant real-world problems that require a solution. The CBL process will adapt a serious play dimension through the use of Lego and inspired by the i5 programme with PRME [The Impactful Five \(i5\) | UNPRME](#) to explore how EE /3E community can apply these.

### Expected Outcomes

Mapping established frameworks, identify potential gaps and introduce a challenge based sustainable entrepreneurship education activity which can be used with students. Insights into how EE educators can engage in the principles of SEE in the design, delivery, assessment, and feedback of entrepreneurship focused modules/programmes.

### Details of any related research

This PDW is based on several strands of theory such as entrepreneurship education, sustainability education or education for sustainability (ESD), sustainable entrepreneurship, and responsible management education (RME). However, according to Fayolle and Klapper (2023), there is still little research or scholarly attention given to the implementation and impact of Sustainable Entrepreneurship Education. In terms of the relevant competence frameworks, we explore works by Penulana (2022) and Moon et al (2022) on the relationship between *Entrecomp* and the more recent *Greencomp* framework. Together, the literature will provide a theoretical grounding to the value of a holistic approach to implementing responsible entrepreneurship education in a sustainability context.



## THE EDUCATION OF TEACHERS AND STUDENTS TO BECOME ENTREPRENEURS IN THE CIRCULAR TEXTILE DOMAIN. COMBINING ACTION-BASED LEARNING AND EFFECTUATION AS THE PHILOSOPHY.

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Marlies Koers-Stuiver, Saxion University

Lisanne M. Bouten, Saxion University

### Workshop summary

This PDW sets out to develop an outline for developing an entrepreneurial education program for textile teachers and students aimed at enhancing circular business. For this, we use the effectual principles to articulate the design requirements for developing entrepreneurial education for students and staff in the circular textile domain. To get in line with the effectual principles the effectual process will be used twice, where the outcomes of the first cycle will be used to expand the resources and therefore enrich the second cycle.

### Workshop style

The underlying assumption is that effectuation is a suitable method to achieve the goals of developing circular textile entrepreneurship as stated by some research (Uzhegova and Torkkeli, 2022, Bocken and Coffay, 2022). This workshop is therefore organized around the effectual approach. This means that participants will be active during the workshop in sharing their knowledge and as committed stakeholders, they can also get informed of further developments.

### Expected outcomes

The desired outcome of this PDW is to develop an outline for an entrepreneurial education program for teachers to let them help textile students become more circular entrepreneurs using effectuation principles.

### Related research

Recent literature suggests that entrepreneurship education and training are particularly effective when action-oriented (Neck & Greene, 2011; Walter & Dohse, 2012). In entrepreneurial education, active education methods and practices positively influence the outcome (Melyoki & Gielnik, 2020), and a constructivist teaching method positively contributes to action-based learning (Mathews, 2007). This also is seen as effective in entrepreneurship that is not only focusing on monetary benefits (Bocken and Coffay, 2022, Uzhegova and Torkkeli, 2022).

### Takeaways

We demonstrate how the context influences the choice of teaching method by combining the philosophy of action-based learning and adaptive learning (effectuation) with entrepreneurial education in the textile and circular industry. We also formulate concrete pointers to incorporate into the training content to be developed. In doing so, we contribute to making entrepreneurial education future-proof and fitted to society's challenges.

BOCKEN, N. & COFFAY, M. 2022. The Circular Experimentation Workbench - a Lean and Effectual Process. *Circ Econ Sustain*, 1-23.

MATHEWS, M. 2007. Constructivist Pedagogy For The Business Communication Classroom. *Journal of College Teaching & Learning (TLC)*, 4, 99-106.

UZHEGOVA, M. & TORKKELI, L. 2022. Business responsibility and effectuation in internationalized SMEs. *International Entrepreneurship and Management Journal*.

## HOW TO DESIGN AN EDUCATIONAL PROGRAM FOR FIRST-TIME STARTUP FOUNDERS

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### Workshop Summary

The workshop is based on two educational courses of mine for first-time startup founders or students studying entrepreneurship: “Idea to Product: Successfully Selling to Both Investors and Customers” and “Entrepreneurial Finance for Startup Founders”. Each day in class is a mentoring session built upon my experience as business angel and mentor and strong academic background.

Typically, any teacher encounters very uneven level of knowledge of entrepreneurial-related matters and understandably little relevant practical experience within the class in such setting. To facilitate rapid knowledge transfer, the education course is built along the typical life cycle of a startup to enable students to “live” through the 3-year span of a startup’s life in three weeks.

Entrepreneurship is multidisciplinary endeavor and as such it needs an integrative approach when it comes to studying it. The aim of the workshop is to share the practical experience and takeaways, validate which methods work better, provide an opportunity for hands-on training and co-creation. It can serve as an example of academia and practitioners’ communities working together to deliver comprehensive educational experience, embracing both theoretical foundations and practical knowledge.

### Workshop Style

The workshop is a service design event beginning with a brief introductory part when the structure of the workshop and the curriculum of the existing courses are explained. Then the participants will co-create a plan for an educational course for first-time startup founders.

### Expected Outcomes

Participants will design their optimal course structure and choose fitting content, using service design ideation techniques such as role-based personas, bad ideas, brainwriting etc., with a touch of PM2 project management methodology. The participants of the workshop will pick up new educational tools, new ideas shared by colleagues, new approaches on how to increase their students’ engagement using gamification and interactive digital media.

### Details of any related research

My current research is focused on how does mentoring first-time start-up founders influences performance of their early-stage startups. Mentoring is key enabler of entrepreneurial education. To increase its effectiveness though, we still need to understand:

- what exactly startup mentoring is and what makes it different from coaching, training, advisory etc., and
- what is the reason for mentoring paradox, which is defined as multitude of omnidirectional outcomes from markedly bad to overwhelmingly good, to exist?

The research design consists of:

- systematic literature review of the papers pertaining to the research question (in the process of publication),
- multiple case study of the mentoring dyads by semi-structured interviews on how the venture had been developing over the period of the mentoring relationships, main challenges they faced, business performance metrics achieved, and the perceived role of mentor and mentee in the success or failure of the venture, and
- teaching case based on the data obtained from the interviewed dyads and the methods to be used in the workshop, including service design and PM2 project management methodology.

## HOW INCLUSIVE ARE THE ASSESSMENT PRACTICES OF OUR ENTREPRENEURSHIP CURRICULUM?

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Christine O'Leary, Sheffield Hallam University

### Workshop Summary

Our classrooms are increasingly diverse thanks to efforts to widen participation and improved recruitment of students from non-traditional backgrounds. An inclusive EE means ensuring all students from any socio-economic and cultural demographic, geographical location, gender, disability and ethnicity have equal opportunity to experience EE and access entrepreneurial learning opportunities (Anne et.al., 2017). Developing inclusive assessment for learning is key to meeting the range of needs of an increasingly diverse student body (Kaur et.al., 2017). However, research shows that students' experiences of assessment are rarely positive for non-traditional students (Tai et.al., 2021). For instance, students who are linguistically diverse (Kaur et.al., 2017) and self-identified with additional learning needs (Morris et.al., 2019) are more likely to feel unsatisfied with current assessment methods often with a perceived focus on testing skills in a particular mode of assessment rather than knowledge and comprehension. These negative experiences can lead to disaffection and poor learning.

The question that we care about is this: *how do we design and deliver inclusive assessment methods which are fit for purpose, cost-effective and enable all students to demonstrate to their full entrepreneurial potential?*

### Workshop Style

The PDW is centred around the following activities:

1. Using Empathy Map, participants discuss the assessment barriers which may be experienced by minoritised students and reflect on their assessment methods.
2. Exploring how assessment may be designed to be more inclusive.

The workshop concludes with a summary of key themes.

### Expected Outcomes

Participants will develop a more emphatic understanding of the assessment barriers which may be experienced by the minoritized students in their course/module. There will be fruitful discussions that draw upon the assessment practices of participants. Participants will get ample opportunity to exchange good ideas that can inform their assessment design.

### Details of any related research

Assessment has become an important focus of university business today. There is generally a lack of discussion in the literature on assessment practices in EE. Given the importance of the role of assessment in higher education, questions remain as to how educators should assess students to deliver optimum entrepreneurial learning. Students from non-traditional backgrounds are more likely to face assessment barriers but are most likely to benefit from the benefits of EE. Key themes which have emerged from related literature include inclusive assessment, Universal Design Learning, assessment choice, assessment literacy, feedback and feedforward, assessment for learning, authentic assessment, culturally sustaining pedagogy and so on.

## **TEACHING PORTFOLIO'S - SUPPORTING THE CONTINUOUS PROFESSIONAL DEVELOPMENT OF ENTREPRENEURIAL EDUCATORS.**

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### **Workshop Summary**

The professional development of entrepreneurial educators is a constantly evolving phenomenon. It is important for the development of the entrepreneurial education practice, educator identity and student learning. This workshop explores the development of evidence-based teaching portfolios as an authentic and continuous professional development tool for educators in the field of entrepreneurship. Teaching portfolios can assist educators in exploring their Scholarship of Teaching and Learning (SoTL) and a growing body of literature highlights the use of portfolios to support academic professional learning activities and reflective practice (Hamilton, 2018; Hoekstra and Crocker, 2015; O'Farrell, 2007; Pelger and Larsson, 2018). Evidence based teaching portfolios are an authentic form of teacher continuous professional development (Hamilton, 2020), and can be used in difference contexts and in different career stages (Berrill and Addison, 2010, Hamilton, 2018). In this workshop participants will examine the elements of a teaching portfolio and actively develop lements of their own teaching portfolio. This workshop bridges the gap between education theory and entrepreneurial education practise and raises the question: How can teaching portfolios support the continuous professional development of entrepreneurial educators?

### **Workshop Style - Facilitated Peer Sharing:**

- Introduction to Teaching Portfolios for entrepreneurial educators
- Reflection on development of personal teaching philosophy – Use of Mind Map tool
- Adapting a lesson plan for “microteaching” & providing constructive feedback

### **Related research**

The aim of this workshop is to explore the concept of a teaching portfolio as a vehicle to critically reflect on the scholarship of teaching and learning among entrepreneurial educators (Schön, 1984;1987). The rationale and content of this workshop is practitioner led, the process of developing a teaching portfolio in entrepreneurial education at one university is outlined, so that other educators are enlightened to the potential benefits of this activity as a tool for continuous professional development.

### **Anticipated Workshop Outcomes**

- Understanding the elements of a teaching portfolio and how they can be adapted to participants own practice.
- Peer sharing of ideas on teaching portfolio design and development.
- Take way techniques and methodologies to enhance continuous professional development through documenting a teaching portfolio

## LIMITLESS POSSIBILITIES: PERMISSION AND FREEDOM THROUGH CAPABILITIES

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 Adriano Di Prato, LCI Melbourne | Art and Design Education

### Workshop summary

Advocated through government educational policies, entrepreneurial education is growing momentum nationally in Australia. These policies highlight the need for students to develop entrepreneurial mindsets and skills. Successfully employing a system-wide approach to entrepreneurial learning requires methodologies which enable teachers to implement new pedagogical approaches (Hardie et al., 2022). For this to occur, teachers need to acquire self-efficacy and utilise their agency to design and facilitate entrepreneurial learning which is responsive to their students’ needs.

Many factors impede teachers from successfully facilitating entrepreneurial learning, which we have aimed to address at Catholic Education South Australia in partnership with education consultancy *a School for Tomorrow*, through the creation of Limitless Possibilities, a model for social entrepreneurial learning. This model utilises an innovative knowledge architecture, developed from the Australian Curriculum Capabilities which correlate directly to entrepreneurial mindsets and skills.

In this workshop, we will unpack ways we employed a capability centric framework and resources to empower teachers to reframe ways they can be designers of entrepreneurial learning, aiming to address the question: How might a capability-driven model increase teacher agency to facilitate entrepreneurial learning?

### Workshop style

Participants will work in small groups to co-construct a learning progression continuum aligned to a selected enterprising capability. Participants will be guided to construct this continuum, utilising a taxonomy framework which increases in complexity from novice to innovator. The organising elements of know, do, be and learn will be applied to discern the knowledge, skills, dispositions and habits related to each capability.

### Expected outcomes

- Awareness of approaches which empower teacher agency to facilitate entrepreneurial learning
- A process which can be applied, in any context, to design a learning continuum which are capability-centric, increasing cognitive complexity
- Critical discussion on aspects of teacher agency in the field of curriculum design.

### Details of any related research

The research used in the development of the Limitless Possibilities model drew from the theories of cultivating capabilities and fostering teacher agency.

Delivering a system-wide approach to entrepreneurial learning required a framework teachers could draw upon for clarity and a shared vision. Using the existing Australian Curriculum General Capabilities as the foundation, foregrounded entrepreneurial mindsets and skills. Although most Australian states are not required to assess the capabilities, Lucas (2017) suggests that they could be used as a measure of both success and growth. Drawing on this concept, the Limitless Possibilities Learning Progression Continuums were developed to measure ways students grew in their ability to act and think entrepreneurially in Years 1-12.

A teacher’s self-efficacy and agency are intertwined with their professional practice and ability to make choices, take action and have influence (Eteläpelto *et al.*, 2013). We aimed to create a model and associated resources which permitted teachers to view themselves as change agents, enabling them to be adaptive, innovative and take risks in ways they design curriculum (Imants and Van der Wal, 2020; Rodriguez and Lieber, 2020). Using a capability-driven framework and measurement tools created the impetus for teachers to rethink ways they could approach entrepreneurial learning.

## ENTREPRENEURSHIP FUTURES: WHAT ENTREPRENEURSHIP EDUCATION CAN LEARN FROM DESIGN FUTURING.

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Eileen Mandir, Munich University of Applied Sciences

Benedikt Groß, Hochschule für Gestaltung Schwäbisch Gmünd

### Workshop Summary

In our interactive PDW we introduce participants to Design Futuring as a methodology that integrates essential competencies that are missing from traditional entrepreneurship curricula. Radical innovation and futures thinking have been gaining momentum in design and other disciplines. Until now, they have only been sparsely integrated into entrepreneurship education, even though its potential to further develop entrepreneurial competencies more holistically, creatively and critically is promising. The proposed PDW contributes to the sub-themes of 3E of offering a new bold account of where entrepreneurship education both research and practice might be heading in the future as well as offering new methods to improve and develop existing entrepreneurship education. Participants will learn about how Design Futuring offers a potential to further strengthen important entrepreneurship competencies as, for instance offered by EntreComp (particularly in the 'Ideas and Opportunities' realm) while it furthermore offers an integration of GreenComp competencies that are missing from EntreComp especially in the realms of 'Embracing complexity in sustainability' and 'Envisioning sustainable futures'.

### Workshop Style

In this interactive, immersive (and hopefully entertaining) workshop, participants will experience what we call 'entrepreneurship futures' hands-on with experiential exercises. Through different methods like STEEP analysis, mental time travel and future wheels, participants will explore economical, political, social and environmental alternative futures. Through consequence mapping and futures prototyping, participants will create probes that materialize their imaginative venturing.

### Expected Outcomes

Participants will immersively experience 'entrepreneurship futures' and its potential for a new way of teaching entrepreneurship. By attending the workshop, participants take home new methods, tools and practices to integrate into their entrepreneurship education curricula. They will learn how to use narrative and storytelling in their workshops, how to deal with uncertainty as well as develop their creative and synthetic competencies.

### Related research

Tony Fry's seminal book *Design Futuring: Sustainability, Ethics and New Practice* (2009) has raised important questions about the future of the Design practice in the Anthropocene. So far, Design Futuring and speculative design have been mainly integrated into Design education (cf. Mitrovic et al. 2021); a productive yet critical integration within entrepreneurship education has not been systematically approached so far. The Design Futuring process and its toolbox are strongly inspired by related fields such as futures research, foresight, and various design disciplines such as Speculative Design, among others. While not substituting Design Thinking, Lean Startup or other methodologies as innovation frameworks, Design Futuring raises new questions and methodologies that are important for the education of future entrepreneurs. By offering a new set of tools, methodologies and practices to develop critical innovation and futuring competencies that can combine EntreComp and GreenComp (Moon et al. 2021), it might offer some solutions to the crucial question on how to integrate entrepreneurship education with sustainability (Spanjol et al. 2022).

## THE ASSESSMENT CANVAS TEMPLATE (ACT): MONITORING DECISION-MAKING PROCESSES IN ENTREPRENEURIAL EDUCATION

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 Annelies Bobelyn, Eindhoven University of Technology  
 Yvette Baggen, Wageningen University and Research

### Workshop Summary

In entrepreneurial courses, assessment is often entailing an end-product and a reflection report. However, this is a counterintuitive way for assessing the entrepreneurial learning process that is typically characterized by uncertainty: reflections are curated versions of the students' reality and the end-products need to be good enough to pass – but the end-product does not necessarily represent the learning process, which can be very rich despite an insufficient end-product. Therefore, students are nudged to take less risks and brush over decisions that didn't work out. Also as teachers, we are not monitoring or helping to adapt students' learning processes by using end-products and reflection reports as main assessment tools. This is why we have developed the Assessment Canvas Template (ACT). A tool based on the effectuation theory to visualise all actions made in groups by using ACT cards. In foresight students describe their next Action and Assumption. Then, after the action took place, they describe their Conclusion and To do. By doing this for every step of the way, students create their own learning journey – represented by different ACT cards including the Actions, Assumptions, Conclusions and To do's – and thereby get insight in their decision-making processes, learning surprises and meaningful failures.

### Workshop Style

We start working in groups on a challenging task – inviting participants to use the Assessment Canvas Template (ACT) cards and experience themselves the iterative entrepreneurial learning process. Then we use the participants' expertise to further co-create the tool, so that it is ready to use in any teaching practice.

### Expected Outcomes

At the end of the workshop, participants 1) Have new ideas with regard to assessing the iterative, dynamic entrepreneurial learning journey of their students, 2) Have an understanding of the ACT, including the ACT cards and 3) Are ready to use the ACT methodology in their teaching practice.

### Details of any related research

The ACT has been derived from Sarasvathy's Effectuation Theory and Lean Start Up of Eric Ries. Pushing students to put down their next action, helps to set manageable goals. Then, by thinking about their assumptions, students are helped to formulate why this action is important – for instance to test assumptions in relation to the problem-market fit. When engaging with others, they learn in interaction and realise that, by doing so, they immediately receive feedback on new goals or means. Next to that, the canvas gives clear cues to use the five principles of Effectuation Theory (Sarasvathy, 2001).



## EXPANDING THE HORIZON OF NOVICE ENTREPRENEURS

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### Workshop Summary

A lot of approaches in entrepreneurship education try to reduce the gaps between real-world entrepreneurship and the experiences that students can gain in the classroom. Some of these gaps are hard to overcome: entrepreneurship courses by their nature have a limited timeframe and the entrepreneurial teams consist of students that have enrolled. This workshop focusses on another gap: a first step in the entrepreneurial process is arguably the opportunity recognition step. Research has shown that novice entrepreneurs (like most students) have problems identifying high-potential opportunities, due to the fact that they miss work experience and domain expertise. This very often leads to the identification of opportunities that are convenient but not very innovative (Cohen, 2021).

In literature, a number of approaches have been described to overcome this lack of work and domain knowledge. The workshop starts with a few examples: our own, based on identifying business opportunities for a specific team determined target group, building on the empathize stage of design thinking, and two related but different approaches that have been proven to be valuable. During the workshop the participants will discuss these approaches, add their own experiences and approaches to this and define best practices.

### Workshop Style

After a brief introduction of the topic and existing approaches, we will challenge the participants to form small groups and supplement these approaches with their own experiences. Pros and cons as well as implementation challenges will be discussed. The workshop ends with a synthesizing summary.

### Expected Outcomes

The main outcomes of the workshop will be an overview of approaches that are applied in practice together with their advantages and disadvantages and a set of best practices that can be used by the participants in their own education programs and can be communicated within the entrepreneurship education community.

### Details of any related research

Research shows that novice entrepreneurs (like most students) have problems identifying high-potential opportunities, due to the fact that they miss work experience and domain expertise (a.o. Hägg and Kurczewska, 2018). Literature describes a number of approaches to overcome these problems. St-Jean et al (St-Jean, 2011) show the benefits of learning with a mentor, who brings domain knowledge to the students. Cohen et al. (Cohen, 2021) present an active search approach based on introducing trends and societal challenges and challenging the entrepreneurship students to build on these to identify their opportunities.

Design thinking and its focus on empathizing with the client or target group has been shown to offer great benefits when it comes to the creative phase of the entrepreneurial process (Lor, 2017). However, Sarooghi et al. (Sarooghi, 2019) have recently shown that, although aspects of design thinking are adopted into entrepreneurship education programs, problem definition and empathy research are less prevalent. In the workshop we address this issue and present as well as explore practical ways to include these aspects in an entrepreneurship education program.



## TOGETHER WE CAN MOVE MOUNTAINS: TEAMWORK SKILLS FOR ENTREPRENEURSHIP EDUCATORS

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Håvard Engen, Norwegian University of Science and Technology (NTNU)

### Workshop Summary

Train-the-trainer initiatives are cost-effective and efficient ways of disseminating entrepreneurship knowledge and competence to students from a broad range of disciplines and thereby increasing the number of students with entrepreneurial skills and mindset. Educators who are able to develop entrepreneurship education in accordance with their own disciplinary context can allow for context-sensitive and relevant entrepreneurship education, adjusting the content and the methods to the audience.

In this PDW we will share our experience from a basic course in entrepreneurship for educators across disciplines. Based on requests from participants we are developing an advanced course. In this process, we are searching for methods that can foster learning and self-efficacy for educators, and inspiration to deliver context-sensitive entrepreneurship education to their students.

Teamwork skills are regarded an important factor for entrepreneurial success, and following from this, helping students to enhance their capacity regarding this skill should be an essential part of entrepreneurship education (Brattström et al., 2020; Pazos et al., 2022; Steira, 2022;). In this workshop, we seek to explore methods for strengthening teamwork skills among educators, in order for them to facilitate the development of teamwork skills among their students. The question we care about is: *How can educators from different disciplines enhance their teamwork skills and the capacity to teach teamwork skills to their students?*

### Workshop Style

In this PDW we will briefly share our experience from hosting basic courses in entrepreneurship education open for university educators from all disciplines at NTNU. We will explain our rationale behind working specifically with interdisciplinary skills and challenge the participants to solve a task in teams and reflect on their experience.

### Expected Outcomes

Through this PDW the participants will hopefully be inspired and enabled to facilitate educational processes in which their students can develop their interdisciplinary skills, whether their students are educators in train-the-trainer programmes or 'regular' students.

### Details of any related research

This PDW is particularly related to a research project where entrepreneurship educational initiatives at all campuses and across all faculties and disciplines at NTNU have been mapped. The report shows that few courses in the university use the terms entrepreneurship or innovation in their course descriptions, and other findings show that the perceptions and discourses around the term entrepreneurship seems to prevent educators, students and PhD candidates from identifying with entrepreneurship, personally and in terms of their disciplinary identity. Train-the-trainer initiatives thus seem like an adequate way of developing entrepreneurial knowledge and competence across disciplines. The research project includes data that consist of interviews with 51 educators, students and PhD candidates, a survey answered by 68 educators, and quantitative analyses of more than 7000 university courses.

## **KNOWING, BEING, BECOMING: EFFECTUATION PROCESSES FOR LEARNING AND IDENTITY DEVELOPMENT**

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Sarah Robinson, Aarhus University

### **Summary**

This workshop offers new insights into how effectual processes of reflection and knowing oneself are critical for not only student's identify development of being and becoming resilient but also are relevant to educators themselves (Neergaard et al., 2020; McCormack et al., 2022). Here we include the facilitation practice of TATAL - talking about teaching and learning (Schonell et al., 2016) as a collaborative reflective practice is demonstrated with empirical data from educational practice (Ruge et al., 2021). Using the framework of the change-maker model (Robinson, 2020) it is possible for participants to deepen their awareness of self and how to position themselves (in teaching) and their students to actively engage in learning as process. This workshop explores key questions around 'knowing, being and becoming' as processes to uncover our personal values, preferred modes of practice and identity development. Being able to articulate and reflect on these junctures and interactions allows us to project forward for the future we want to create.

### **Workshop Style**

The workshop offers three collaborative reflective activities. First, establishing collaborative communications by sharing 'knowing' who we are, our mindset values and educational philosophies. Second, utilising the change-maker model activating our current 'being' in educational identity and context. Finally, imagining entrepreneurship education as 'becoming' with take-aways for practice and professional development.

### **Workshop Outcomes**

The participant, as a facilitator for learning, will develop a deep understanding and agency through self-reflection and collaborative articulation for action. This will support teaching for knowing, being and becoming and build resilience in times of change in educational and institutional contexts.

### **Details of related research**

In times of change and transition, the qualities of reflective practice allow facilitators to open dialogue with congruence and empathy (Marschall et al., 2022; Schönwetter et al, 2020). The importance of experienced guidance is widely acknowledged, but not sufficiently highlighted or shared, as the 'lifeworlds' of educators (Mårtensson & Roxå, 2021). While students are often excited about entrepreneurship education and seek to embrace effectuation a guided process is often needed as effectuation begins with who I am and what I can do. This starting point is not a familiar and indeed is often 'identity challenging' and causes frustration and anxiety (Lund Dean and Jolly, 2012). Managing these emotions and recognizing that they in fact are part of significant learning experiences (Shepherd, 2004) must be facilitated by teaching designs that are both student-centered and allow for iterative reflection and articulation by the learner and teacher (Robinson, Neergaard, Tanggaard & Krueger, 2016). Experiencing effectual decision-making as part of individual and collaborative being and doing allows for the imagination of 'new worlds' and 'becoming' of critical thinkers able to act to create value for others and authentic change.

## HOW CAN WE RE-THINK ASSESSMENT OF STUDENTS' WORK IN ENTREPRENEURSHIP EDUCATION?

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Dag Håkon Haneberg, Norwegian University of Science and Technology (NTNU)

Ole Andreas Alsos, Norwegian University of Science and Technology (NTNU)

Sølvi Solvoll, Nord University Business School

### Workshop summary

Entrepreneurship education has moved towards more action-based, experiential, and authentic pedagogical approaches, enabling students to apply themselves and act entrepreneurially. When we shift from students understanding, knowing, and talking to students acting, this can be seen as a challenge. How do we adapt and recreate the way we assess the students' work? It's now "two worlds" - the academic and the entrepreneurial. The shift in pedagogy increases the authenticity of the learning situation, but the combination of "two worlds" – the academic and the entrepreneurial – presents major challenges to entrepreneurship faculty in terms of how action-based entrepreneurship should be assessed and evaluated. *The overall aim of this PDW is to address this challenge and together develop new assessment methods that account for students' experiential learning through project or venture work.* Assessment types to capture the experiential aspect of the education could be borrowed from architecture and design education, aiding formative assessment for students' further learning, and supplying ideas for portfolio-based assessment procedures that suit a broader range of the students' preferred learning styles. *How can we draw on current practices in architecture and design education to organize and execute assessment practices that are more proper for students' projects or venture work?*

### Workshop style

Our PDW is the premiere and testing ground of our card-based tool *SUPER Evaluator*, which is developed to reflect upon and develop innovative assessment practices. Participants will interact with the tool in cross-institutional groups and will be engaged to take an active role to develop this tool further.

### Expected outcomes

We strive to inspire our colleagues around the world to think about the appropriateness of their assessment methods, exchange ideas and examples of assessment methods, and co-create ideas for assessment methods during the PDW. Every participant in this PDW should have a new idea for assessment practices to try out!

### Details of any related research

Our PDW builds on research on how action-based pedagogy in for instance venture creation programs (Lackéus and Williams Middleton, 2015) support a more authentic learning situation (Aadland and Aaboen, 2020). However, the developments in teaching practice require a rethink of our assessment practices and a research focus on how assessment practices for entrepreneurship education could and should be developed (Haneberg et al., 2022). We have used previous overviews (e.g. Pittaway and Edwards, 2012; Wenninger, 2019) as theoretical underpinnings as well as how assessment practices in design (e.g. Sarkar and Chakrabarti, 2011) and architecture education (e.g. Doheim and Yusof, 2020) can strengthen the assessment practices in entrepreneurship education.

## EDUCATORS CONTRIBUTING TO INCLUSIVE ENTREPRENEURIAL ECOSYSTEMS

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 Juanfra Alvarado Valenzuela, University for Applied Sciences Amsterdam

### Workshop summary

In this workshop we work together with the participants towards concrete steps that educators could take to promote inclusive entrepreneurial ecosystems. Nowadays, entrepreneurial ecosystems do not provide all entrepreneurs equal access to opportunities, resources, and support. Specifically, entrepreneurial ecosystems remain heavily male-dominated with women and other underrepresented groups facing challenges to access resources and grow their ventures due to a range of (institutional) barriers. This lack of inclusivity is problematic as it limits the release of untapped entrepreneurial potential necessary to maximize the societal and economic benefits of entrepreneurship. During this workshop we want to engage in discussions and propose actions to be undertaken by educators and HEI's to foster the inclusivity of their institutional and regional entrepreneurial ecosystem in which they are embedded. By using the '**inclusive entrepreneurial ecosystem framework**', we want to raise awareness of this topic and share actionable ideas that participants can implement in their daily practices.

### Workshop Style

Participants will work with a framework called '**inclusive entrepreneurial ecosystem**' which is based on ongoing research by one of the trainers. The framework provides a **structured discussion** in which participants compare different (institutional and regional) elements. We introduce the current state of inclusivity and the role EE can play. Next, participants discuss how the framework applies to their own context.

### Expected outcomes

The main objective is to create possible actions that educators can take to enhance ecosystem inclusivity. By raising awareness about inclusivity of entrepreneurial ecosystems, no matter their gender, age, ethnicity, health, or sexual identity, participants can identify opportunities for improvement and implement in their daily practices to enhance ecosystem inclusivity.

### Details of any related research

Based on current research about inclusivity for women entrepreneurs (Stoker et al., 2021), we extended this framework to more under-represented groups. And we zoom into one of the aspects of the framework, namely the role of Entrepreneurship Education. Since education is known to have a strong positive influence on the entrepreneurial performance (Liu et al., 2019, Robinson and Sexton, 1994) we think it is an important element to start changing entrepreneurial ecosystems into inclusive ecosystems.

### Takeaways for teaching practice

Participants get a framework to look at inclusivity in entrepreneurship and the role of (higher) entrepreneurship education can take to create a more inclusive environment for all students. The list of concrete actions from all the participants creates concrete steps and ideas how to engage with challenges in their own educational context and enables plus inspires them to replicate such initiative and solutions. Therefore, this workshop creates awareness on how inclusive the ecosystem is and serves as seed to make changes within their span of control in different European contexts.

## EMPOWERING STUDENTS WITH ENTREPRENEURIAL MINDSETS TO SOLVE SUSTAINABILITY CHALLENGES

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Olivia Freeman, TU Dublin

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### Workshop Summary

Human-induced climate change is the most pervasive threat to the environment and societies that we have ever experienced. How we teach, learn and think can lead to opening and shaping mindsets and transformative actions resulting in positive impact on our society, the environment and business. The focus of higher education is increasingly on developing entrepreneurial mindsets of our students, global citizens and future decision-makers, so they are ready to solve complex challenges such as those related to climate change.

The workshop aims to clearly establish the connections between entrepreneurial (EntreComp) and sustainability (GreenComp) competences frameworks and how they can be applied to solving sustainability challenges through innovative pedagogical approaches in teaching, learning and assessment (TLA).

Engaging in inquiry-based experiential and authentic TLA is also highly relevant in the context of the raising prominence of AI language-based models such as ChatGPT and the shift in what and how we teach.

### Workshop Style

During this interactive workshop, the participants will be able to learn from the authors' showcase of practice. More importantly, the participants will learn from each other and with each other through a series of discussions and activities.

### Expected Outcomes

By the end of the workshop, the participants will gain: 1) Clarity on the benefits of using EntreComp and GreenComp competency frameworks in their TLA practice, 2) practical ideas of creating engaging TLA and 3) establish future collaborations to share pedagogical practice & research.

### Details of any related research

Related research: [EntreComp](#) (McCallum et al., 2018), [GreenComp](#) (Bianchi et al., 2022), global citizenship (Horey et al., 2018), employability skills (Sokhanvar et al., 2021), authentic assessment (Villarroel et al., 2018), [Education for Sustainable Development roadmap](#) and [toolbox](#) (UNESCO); see references for authors' related research.

## **RULES OF ENGAGEMENT: THE ROLE OF THE EDUCATOR WHEN SETTING UP ENTREPRENEURIAL TEAMS**

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### **Workshop Summary**

The question we should care about is how to improve the teamwork/ collaboration skills of student-entrepreneurs we teach. In my experience, educators think students know how to work in teams and thus believe that setting up student teams in entrepreneurship courses works easily.

Unfortunately, teams sometimes have issues with students who do not do their fair share (free-riders), and with individual and collective issues concerning planning and scheduling. In practice this means that not all teams finish the way students had expected (not on time, lower quality final product) and/or students are disappointed in their peers and the course and blame educators for not organizing adequately.

How can educators improve the team formation process and thereby optimize the team results in entrepreneurial education? This is important when we realize that startups are often founded by a team and that the skills students learn in class can benefit the future success of startups they might found in later stages of their life.

In this workshop we will discover alternative ways to kickstart an entrepreneurial team using cooperation building exercises that focus on the four essential components of a team; *i.e.* setting goals together, developing and understanding interpersonal relations, solving problems, and clarifying team roles.

### **Workshop Style**

Participants will experience the value of using cooperation building exercises as part of the team formation procedure. We will use at least one exercise based on a simple question about entrepreneurship to facilitate the team forming process.

The teams will reflect on the team formation using a standardized evaluation form.

### **Expected Outcomes**

Participants will have experienced the added value of taking time to consciously setting up (student) teams. They will know the main problems students encounter when working with other students on a team project and understand how cooperation building exercises could diminish the issues team members have with each other.

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

Many startups are team-based startups (Forsström-Tuominen et al., 2017). We know that the individual members of a startup often already know each other or have found that the co-founder has complementary knowledge or skills (Lazar et al., 2022). The four components in the initial process of team building that then seem essential are setting goals together, developing and understanding interpersonal relations, solving problems, and clarifying roles (Klein et al., 2009).

Unfortunately, it seems that not a lot is known about how educators can effectively set up student-teams at the start of a course so that the team will perform effectively.

# RESEARCH PAPERS

## MAKING SENSE OF 'ENTREPRENEURS IN RESIDENCE' INITIATIVE IN HIGHER EDUCATION

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### Questions we care about

This paper investigates 'entrepreneur in residence' (EiR) initiative within UK higher education (HE) context. The EiR initiative has gained increasing popularity as a form of 'practice integration' which provides a systemised model to integrate entrepreneurs into academia. The aim of the initiative appears to link real-world practitioners to facilitate entrepreneurial development of the wider stakeholders of the university ecosystem. Despite the fact that EiRs are expected to play an active role in facilitating development of diverse communities within higher education institutions (HEIs), how they do so and whether they are trained to operate as educators remains a question. Furthermore, practitioner engagement in entrepreneurial education (EE) is conceptually regarded as vital, but the practice appears to lag. Therefore, deepening our understanding of EiRs and how they facilitate entrepreneurial development of the diverse university community is timely. In this study, we explore the experiences of EiR's to understand how they facilitate entrepreneurial learning and development from social learning theoretical perspective. We ask, "*how do entrepreneurs in residence make sense of their educational experience in higher education?*". Addressing this question leads to in-depth understanding of EiR's role in academia, and the related benefits and challenges of the intervention.

### Approach

Despite the perceived significance of EiRs' role, their voice is largely unheard within the HE/EE literature. By exploring the phenomenon qualitatively, we aim to bring their voice forward by facilitating them to interpret their experience of being an EiR within the context. We employ Interpretative Phenomenological Analysis (IPA) as our research methodology. Informed by IPA's philosophical positions and our research interest, we purposively select seven EiRs from seven different UK HEIs and conduct semi-structured interviews with each participant. The recorded interviews will be transcribed verbatim and subjected to a line-by-line analysis following IPA guidance.

### Results

This is a working paper, and we do not have empirical evidence at this juncture. However, our study presents some great potentials to deepen understanding of how the EiR initiatives help entrepreneurial learning and development of the university community. Our findings may also provide insights into possible complexities of 'practice integration' in EE and the challenges EiRs encounter within the context.

### Implications

EiR is an increasingly popular form of 'practice integration' in EE. However, our understanding of how this practitioner engagement helps entrepreneurial development is very limited. There are also dilemmas around clarity of EiR's role among wider university communities. It is unclear whether EiRs themselves understand their role fully and the expectations from them. The empirical evidence from our study will address these gaps in our understanding thereby improving EiR practice within HEIs and related policy developments.

### Value/originality

Current literature provides insufficient understanding of EiRs where their voice is underrepresented. Our study brings voices to EiRs and contributes to fulfilment of the identified need to understand the educator's perspective, and to share the know-how and educational experiences of EiRs. Practitioners can use the findings for the creation and advancement of EiR initiative and explore possibilities to engage EiRs more proactively for entrepreneurial development of the university stakeholders.

**Key words:** Entrepreneurs in residence, Entrepreneurial learning and development, IPA, UK HEIs



## TEACHING FUTURE TEACHERS ABOUT ENTREPRENEURSHIP: THE FOCUS ON ENTREPRENEURIAL COMPETENCES

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### Questions we care about (Objectives)

There is less literature about entrepreneurship education meant for future teachers in secondary schools. Using the input of future teachers and co-creating with them is a way to internalize entrepreneurship in their curriculum. By bringing the idea of a journey, we propose that the entrepreneurial process could greatly benefit from secondary teacher tilting their students to higher levels of expertise and competences over time.

Throughout this study, future teachers were asked to think of activities that would inspire competence development rather than business creation per se. This way there are class activities in schools encouraging secondary-level students to develop an entrepreneurial behavior, to think of creating a business as a means for social impact and to ideate products or services to help achieve sustainable goals. This change of behavior would help secondary students who go later into higher education to focus more in their competences. The main question we care about is: *how do future teachers put in practice the approach of entrepreneurial competences?* And as a supporting question: *which other consequences are being achieved in this process?*

### Approach

During the module, we asked the future teachers to build upon the work done by Lans and Van Gelderen (2021) where each of the EntreComp competences is applied to education. Activities for the class were developed and discussed as a group, with input from a real entrepreneur who were interviewed. Taking a qualitative approach and based on the reflection reports, we sought to establish whether and how they were able to draw lessons learned from the entrepreneur's experiences and whether they translated these lessons into class activities

### Results and implications

Future teachers in our study were capable of making their first steps to bring entrepreneurial competences to the level of secondary schools. Three main aspects were being considered: aligning teaching methods, addressing individual differences and keeping up with industry trends. By looking at the training of teachers from these aspects, there is much room to keep creating and testing activities in the class to encourage the development of entrepreneurial competence. Their learning process however also showed that each future teacher keeps struggling with the application of this framework, in part due to a lack of years of experience as teacher and in part due to shortage in competence trainings in other assignments of their training. s.

### Value/Originality

We contribute to the literature on EE shedding light in the role of future teachers and the way we are training them. The focus on competences could bring secondary students to start ideating more impactful entrepreneurial ideas and keeping their skills alert for opportunities. By starting early in secondary schools, there is a unique potential to prepare these students and show them that the entrepreneurial journey requires certain skills than can be learned and developed over time. And EE for secondary school can greatly benefit by having future teachers to learn from the life stories of entrepreneurs.

**Keywords:** secondary schools, entrepreneurial competences, teachers, teachers' training

## WHAT IS GOING ON IN A UNIVERSITY INCUBATOR? MAPPING OF LEARNING SPACES

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### Questions we care about

What exactly is going on in a university incubator? While university incubators are resourcerich places, and multiple activities takes place in a university incubator, surprisingly little research has been conducted on learning in incubators, and more specifically university incubators. Thus, we start by asking what archetypes of learning spaces are created in a university incubator?

### Approach

We present an exemplar case of a university incubator along the dimensions of *who/whom* are being taught, *what* is being taught *when* is it being taught, *how* is it being taught and *why*?

### Results

Four archetypes of learning spaces within a university incubator are presented.

### Implication

The mapping of archetypical learning spaces in a university incubator opens up for several interesting future avenues for further research as well as practical implications for incubator staff.

### Value/Originality

Surprisingly little research has been conducted on learning in incubators. This research contributes to this, as it takes one context – the university incubator – and explicitly suggest that this context consist of multiple learning spaces. This opens up for configuring multiple - and different - learning spaces in one context.

**Keywords:** Learning spaces, university incubator, entrepreneurship education,

## TEACHERS IN K-12 ENTREPRENEURIAL EDUCATION: A 10-YEAR SYSTEMATIC LITERATURE REVIEW

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### Questions we care about

Entrepreneurial education (EE) is now a policy priority around the world and can be found in most developed countries, from kindergarten to universities. This article examines the question of the “who” of entrepreneurial education. It presents an exhaustive and up-to-date synthesis of what is known about the teacher in K-12 entrepreneurial education and suggests avenues for future research.

### Approach

This article is based on a systematic review of the literature, based on an analysis of 124 scientific articles published between 2012 and 2022 and dealing with teachers in K-12 entrepreneurial education. A bibliometric (quantitative) analysis of the text corpus indicates the most prolific and influential authors on the subject, their country of origin, as well as the leading journals in the field. The descriptive (qualitative) synthesis of the field is organized around three main themes: pedagogical entrepreneurship, teacherpreneurship, and teacher training.

### Results

While still ongoing, our synthesis of the field shows that different bodies of literature convey different visions of the teacher in K-12 entrepreneurial education. A subject that seems to bring together all the conceptions conveyed refers to the theory of agency, that is to say the development of the agency of teachers to put in place the pedagogical conditions necessary to develop the agency of their students.

### Implications

This systematic review of the literature provides a state of the art of research on the teacher in K-12 entrepreneurial education in a rigorous, structured and reproducible way. In addition, it provides avenues and research themes for future research on the subject. On a practical level, this systematic review of the literature provides a basis for reflection to develop a tailor-made training for teachers in K-12 entrepreneurial education. It also informs policy makers and school managers by providing insight into what helps or hinders the implementation of EE in K-12 education.

### Originality/value

Teachers are the actors most involved and most concerned by the implementation of EE. Ultimately, any change or development of EE will go through the teachers. As such, this article offers valuable insight into what we know about K-12 teachers implementing EE.

**Keywords:** entrepreneurship education; entrepreneurial education; enterprise education; teachers; teacherpreneur, edupreneur, teacher training; K-12; education; kindergarten; primary; elementary; secondary; school; systematic literature review; research agenda.

## THE 3 E'S; ENTERPRISE, ENTREPRENEURSHIP, AND EMPLOYABILITY ACCORDING TO CAREERS PROFESSIONALS IN UK HIGHER EDUCATION

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**Questions we care about.** The terms Employability, Enterprise and Entrepreneurship are firmly established in the rhetoric and practice of the Higher Education (HE) sector and Higher Education Institutions (HEIs) in the UK and beyond. However, what *is* Employability, Enterprise and Entrepreneurship and what is the relationship between these terms collectively when referred to as the 3Es? More importantly how are they understood by key 'frontline' workers such as Careers Professionals giving information, advice and guidance to students within a HE setting?

**Approach.** The Association of Graduate Careers Advisory Services (AGCAS) Enterprise and Entrepreneurship Task Group aims to enhance professional practice in the area of student enterprise and entrepreneurship. It does so through its five pillars including the Research and Knowledge objective; to be experts in HE student career development and graduate employment. This group exists and operates in the murky waters where employability meets enterprise and entrepreneurship, providing them with a unique position from which to explore these concepts with Careers Professionals, the key stakeholders of AGCAS. Members of the AGCAS Enterprise and Entrepreneurship Task Group created a survey which was distributed online through relevant Careers Professional membership networks (e.g. Enterprise Educators UK and AGCAS). Through open questions, the survey explored the understanding of, and relationship between the 3 E's amongst Careers Professionals within UK Higher Education Institutions (HEIs).

**Results.** There were 95 responses to the online survey from individual careers professionals representing a cross section of the Careers Professional community and originating from 46 different HEIs in the UK. Respondents had a clear understanding of how to define employability. Overwhelmingly respondents intrinsically contextualised their definition of employability, suggesting Careers Professionals recognise the internal component of employability relating to perceptions of oneself, viewing employability through the lens of the student, rather than that of the employer. In contrast, definitions of enterprise and entrepreneurship were 'fuzzy' with some similarities such as the potential outcome of venture creation and shared skills, attributes and competencies, but no overriding clarity and distinction of either term existed. Nearly all respondents believed there was a relationship between the 3Es and indicated this relationship occurred through shared skills, attributes and competencies. It was suggested that addressing employability, enterprise and entrepreneurship collectively through shared skills, attributes and competencies was of greater value and potential impact than a definitional understanding.

**Implications for society.** Employability currently dominates HE rhetoric leading to a continual pursuit for a commonly accepted definition of the term employability, and by association enterprise and entrepreneurship. As definitions remain elusive and of little value to graduates, this study promotes taking a 3E approach and focusing on the shared and overlapping skills, attributes and competencies of employability, enterprise and entrepreneurship.

**Value/Originality.** From their unique position, the AGCAS Enterprise and Entrepreneurship Task Group have focused on a key stakeholder of CEIAG in HE within the UK; the Careers Professional. This study is the first of its kind to consider their understanding of employability, enterprise and entrepreneurship and the relationship they believe exists between these terms.

## ARE INCUBATORS GENDER NEUTRAL: FRONTSTAGE VS. BACKSTAGE OF AN INCUBATOR

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### Questions

There is debate amongst academics in the field of entrepreneurship about the role of incubators and their ability in promoting and supporting. This discussion is mainly focused on all entrepreneurs and the outcomes of the support provided, but is almost entirely gender blind. Earlier research shows that women entrepreneurs often face bias and receive -qualitatively- less support when starting a business. This is due, amongst other reasons, to the fact that entrepreneurship is presented as a neutral meritocratic context and generally perceived as a masculine activity. Previous research suggests that even in entrepreneurial contexts, specifically created to support entrepreneurs such as incubators, women may not benefit as much as men. This study explores a more non-traditional form of entrepreneurship education within the incubator. Specifically, we explore the way that incubators are integrating the concept of gender inclusivity to support women entrepreneurs. While most studies look at the individual level of women entrepreneurs and their shortcomings, we suggest to pay attention to the way that incubators embed gender inclusivity in their daily operations. We do this by using the front- and backstage analogy from Goffman's (1959) impression management theory.

### Approach

A single qualitative case study served as an exploratory case for this research. The case consisted of a Dutch incubator, who communicates gender inclusivity as a key performance indicator (KPI) of their activities. The data combined participant observations (20 hours), interviews with employees and entrepreneurs (n=10; t=60 minutes) and document analyses. All data was inductively analyzed and guided by the conceptual model of Stoker et al. (2021).

### Findings

Our research shows that the incubator struggles with embedding gender inclusivity both in front- and backstage of their daily operations. We found that getting the front- and backstage world connected in practice is a challenge for incubators. One of the issues is that all employees have a personal, based on experiences, and therefore different definition of what a gender inclusive incubator means. Second, an open and beneficial network for all entrepreneurs is advertised frontstage. Based on these preliminary results we identify the lack of practical tools for the incubator to adapt to the specific needs of women entrepreneurs.

### Implications for society

Raising awareness of gender inclusivity among startup support programs and offering them new ways to integrate gender inclusivity, this research is a first step towards gender inclusivity. Educators and trainers could use this tools and help them put in practice gender inclusivity in entrepreneurial programs. In this way, the key players within the ecosystem are not reproducing their programs as meritocratic when they are not.

### Value/Originality

This study opens the discussion of speaking about inclusivity and practicing inclusivity in incubators and other supporting programs, given that they play an important role in supporting entrepreneurs and have a potential to promote gender inclusivity. We show that these programs still struggle with implementing gender inclusivity within their daily activities. Using impression management theory, this research is a useful approach towards inclusivity of the support all entrepreneurs.

**Keywords:** Incubators, Impression Management, Front- & Backstage Analogy, Gender Inclusivity

## HOW TO EMPOWER WELFARE PROFESSIONALS' DIGITAL CREATIVITY

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In this paper, we present preliminary findings from a design experiment where students and educators participate in hands-on workshops about virtual- and augmented reality.

The aims of the workshops are to strengthen welfare professionals' digital imagination and entrepreneurial competences.

The reflexive thematic analysis of data collected in a series of design experiments, leads to some key elements that strengthen students' digital creativity:

The first one is about 'Language and Imagination'. We find, when the students develop a vocabulary about digital technology as they are developing their digital skills, it is enabling them to hack some impossibilities in reality. They use their vocabulary to hack some impossibilities in technology. Secondly, We also find that a playful learning atmosphere where it is acceptable to create stupid or silly products advances their digital courage. Courage is one of the most important elements in digital creativity. The third interesting finding is the physical placement of things and people at the workshops. Physical arrangements of tables, computers etc. plays a significant role when it comes to students' collaboration. And, not surprisingly, collaboration is key when it comes to advancing creativity. The fourth preliminary finding is connected to the fact that students are role-models for other students. Students teaching other students' way of being flawed and curious and their digital skills can help to indicate the next steppingstone for the students, in a more effective way than the teachers at the university.

## PACTIVE ENTREPRENEURSHIP EDUCATION? MAKING SPACE OF PASSIVITY TO TRANSFORM ENTREPRENEURSHIP EDUCATION

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### **Abstract**

The many, ongoing crises demand a reflection on what kind of entrepreneurial pedagogies could better prepare students for a leading role in mitigating pressing crises of the present and future. In this paper we suggest developing an EE pedagogical approach that rises to this challenge.

To problematize the action and activity focus of entrepreneurship and to reconstruct entrepreneurship education from a passivity perspective, we turn to Swedish philosopher Jonna Bornemark's proposition of 'pactivity'. There is neither pure activity, nor pure passivity, but the two are combined in a dialogical movement as 'pactivity'. Pactivity does not mean doing nothing, but following the waves that come from a place beyond consciousness; to surrender to such waves and become a more responsive follower. Bornemark's introducing the concept 'pactivity' suggests that human action is always in-between.

The purpose of this paper is to critically explore EE through the application of Bornemark's pactivity architecture, paying special attention to her conceptualisations of ratio and intellectus, and navigations through these. With the concepts of ratio and intellectus, we can discern how entrepreneurship education can be transformed when we experiment with EE in our different contexts. We suggest intellectus driven EE investigations along three themes where the 'map of EE' is rewritten through 1. Movement, 2. Conceptualization and 3. Technical devices.

We suggest that with the pressing challenges there is a need for less of the 'just doing' and 'quick fixes', but still a need to become active. Coupling entrepreneurship education with passivity offers new directions for entrepreneurial pedagogies to evoke 'other' kinds of activity. By decoupling and decolonizing EE from the status quo of activity, space is made for alternative knowledges and practices to be incorporated in entrepreneurial pedagogies. In so doing, EE can make a significant contribution to the wider embracing of critical pedagogy and a more just transition to a sustainable business school.

## UNCERTAINTY MANAGEMENT IN ENTREPRENEURSHIP EDUCATION: WHAT, WHY AND HOW?

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### Questions we care about

We are living in uncertain times. After slowly recovering from a recent global pandemic, we are facing new uncertainties related to the climate change, the energy and economic crises, and war and social conflicts, among others. Becoming more aware of uncertainty as an integral part of today's lives makes us rely on education and particularly consider how education can help individuals better cope with uncertainty. Entrepreneurship itself has inherently been characterised by uncertainty. It has been found that the perception of uncertainty and the ability to cope with it is related to entrepreneurial intention and the success of the entrepreneurial action. Therefore, uncertainty management is a key aspect in any education and especially in entrepreneurship education (EE). The questions we care about are:

1. Why is uncertainty management relevant to entrepreneurship education?
2. What learning experiences do the educators design to help students learn how to cope with uncertainty?
3. What sources of uncertainty do the students face?
4. How do the students cope with uncertainty?
5. What are the sources of uncertainty for educators?

### Approach

The paper reviews the *what*, *why* and *how* of teaching/learning uncertainty management in entrepreneurship education. To provide answers to these questions, we conducted in-depth interviews with entrepreneurship educators and analysed their contents using qualitative data analysis.

### Results

The main contribution of this study is a two-fold model of uncertainty teaching and learning in entrepreneurship education. On one side, the model summarises the main approaches and strategies used by educators to teach uncertainty under experiential based approaches, together with the identified barriers and uncertainties. The second part of the model focuses on students and depicts what uncertainties students face, how the students deal with them, and identifies potential underlying causes for such behaviours. The model sets the foundation for more rigorous approaches to teaching and learning uncertainty in entrepreneurship education and identifies future lines of research and practice.

### Implications

Dealing with uncertainty is a competence that helps any individual cope with an uncertain future. We have recently seen that intolerance to uncertainty caused by the Covid-19 pandemic led the general population to higher levels of anxiety and other mental health problems. Learning how to cope with uncertainty is not only beneficial within entrepreneurship education but also in any kind of education that is aimed at better preparing the next generations for an uncertain future.

### Value and originality

Coping with uncertainty has been largely studied in entrepreneurship research. However, there is not enough literature on how to teach students to operate under conditions of uncertainty. To the best of our knowledge, this is the first study in which entrepreneurship educators are interviewed about how they teach uncertainty and uncertainty management. The findings show that teachers are aware of the relevance of developing this competence in their students, but this often comes with great effort and perseverance on the educator's side. The realisation that uncertainty needs to be experienced is aligned with experiential learning approaches, but often students avoid or resist coping with it. While entrepreneurship education seems a natural scenario to teach uncertainty management, due to the intrinsic uncertain nature of entrepreneurship ventures, further investigations could reveal how to transfer the learnings acquired in teaching uncertainty management in EE to other educational settings.

**Keywords:** Entrepreneurship education, uncertainty, ambiguity, risk, experiential learning.



## ENTREPRENEURIAL IDENTITY IN NEW VENTURE TEAMS: UNPACKING THE PROCESS FROM I TO WE

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*\*this is a very first draft of the paper\**

### Questions we care about

The question we care about is how new venture teams form an entrepreneurial identity as part of an educational venturing community. The purpose of this paper is to unpack the process of how entrepreneurship education provides the arena for new venture teams to form an entrepreneurial identity on team level.

### Approach

The empirical setting takes place in seven new venture teams embedded in a venturing community of a venture creation programme in Scandinavia. We followed the teams longitudinally over 2 years, documenting their processes through interviews and observations. We applied an abductive approach to analyse the multiple cases.

### Results

Based on the preliminary data analyses we propose a conceptual framework that entangles the process in which new venture teams members jointly form entrepreneurial identity. The framework shows that new venture teams form entrepreneurial identity parallel to the process of team development on the three levels “frontstage”, “backstage” and “off stage”.

### Implications

Understanding how collective identity is formed among student new venture teams has important implications for entrepreneurship education, educators, and students in new venture teams, yet also for society, as it might influence the students' learning processes and how their entrepreneurial behaviour unfolds while partaking in entrepreneurship education. Moreover, developing such understanding has implications for how entrepreneurship education should be designed to ensure adequate use of public funding for education.

### Value/Originality

The reason we care about this question is that new venture teams' identity represents an important link to understand team behaviour and hence, team performance. With this paper we contribute to a deeper understanding of new venture team processes and expand the scholarly field of identity theory in entrepreneurship and entrepreneurship education research. This research contributes to close the knowledge gap in entrepreneurial identity research specifically when it comes to the understanding of how entrepreneurial identity forms on team level within new venture teams.

**Keywords:** Entrepreneurial Identity, New Venture Teams, Team Processes, Impression Management, Entrepreneurship Education

## HOW CAN WE FRUITFULLY DISAGREE ON SOME OF THE CONFLICTING TENSIONS IN ENTREPRENEURSHIP EDUCATION?

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### Questions we care about (Objectives)

Entrepreneurship education has not only grown in number of institutions involved, courses delivered, educators producing and students taught - but also broadened in terms a more heterogeneous set of educators, from a variety of disciplines, leaning on different understandings of entrepreneurship education. The heterogeneous “newcomers” arrive with different backgrounds, student groups and understanding of what entrepreneurship education is all about. This may produce a research situation with tensions between conflicting communities - or it may produce a situation of fruitful disagreement. This paper seeks to contribute to the latter by studying some of the tensions.

### Approach

A short review of the entrepreneurship education research is performed to describe the development and to identify a relevant set of tensions. Each tension is described and analyzed with a model describing the research area in terms of Axiology, Ontology-Theory-Didactics, Epistemology-Method-Pedagogy and System-Reality.

### Results

Based on the analysis a variety of solutions to the tension is discussed: to refuse the tension, to accept the tension, to dismiss one of the positions in the tension, to pragmatically seek a balance, or to transcend the current tension by reformulating the it

### Implications and Value

We contribute to some tidying-up and house-keeping. Through a loyal examination of the dominant tensions in the research field we seek towards a more enlightened situation of fruitful disagreement where we know why we disagree with each other, what we disagree on and what can be done with our disagreements.

**Keywords:** entrepreneurship education, tensions, dilemmas, conceptual

## EXPLORING STUDENTS' CONTRIBUTION IN AN INTERNSHIP COURSE – THE COMPANY PERSPECTIVE OF HAVING STUDENT INTERNS

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### Questions we care about (Objectives)

A core activity for universities is to develop students' knowledge and skills through educational services. A student internship during university education has gained momentum over the last decades. This paper raises the questions "What is the motivation for companies wanting student interns?" and "Why would firms repeatedly ask for student interns, despite the challenges of integrating them in their firms?" In this paper, we investigate companies' perceptions, experiences, and challenges of having students as interns in a 10-week internship in Bergen, Norway. Scholars just recently started to investigate student internship and its learning effects in the academic fields of innovation and entrepreneurship (Maaravi *et al.*, 2021). Overall, research on these collaborations is scarce and for the most part focused on the student perspective (Kubberød & Pettersen, 2018).

### Approach

The purpose of this paper is to gain insights into the process and outcome of student internship as seen from the companies' perspective. In the methodological part, we propose qualitative study, combining semi-structured interviews and document studies. Semi-structured qualitative interviews are used as a method through which we gained knowledge on actors' experience of different phenomena. The project aims to interview key employees (manager or assigned mentors for the student), responsible for integrating and mentoring the student during the internship. The research is ongoing and presents a preliminary analysis with data from eight interviews with firms located in the Western part of Norway. The scope is two internship courses with on Master's level with several common activities at Western Norway University of Applied Sciences.

### Results

Our data show three areas where student internship influence organizational outcomes. These areas are, learning, value creation and, regional development. The research findings reveal the complexity and organizational challenges in providing high-quality internships programs for students, adding to existing research on internships (Maraavi *et al.*, 2021). Findings reveal the significant value student interns provide to internship companies/start-ups, at the organizational level, as well as to the regional economy, highlighting the importance to also include the company side of internships in research.

### Implications

Internship programs as part of curriculums are even more important today as they offer real-world job experiences and opportunities to innovate, create, and learn 21st century skills (Maraavi *et al.*, 2021). Yet, to provide high-quality internship programs is challenging, requiring well-established and committed university-industry relationships.

### Value/Originality

First, this study adds new knowledge to the literature bringing in the company side of the experience and value of student internships, a view that has been overlooked in former research on student internships in entrepreneurship education. Second, the study gives valuable knowledge into the facilitation process of these student internship, seen from a company perspective, aiming at the best possible learning outcome for the student and firm, thus providing useful insights to actors involved in organizing internships.

**Keywords:** entrepreneurship education, internship, value creation, learning, regional development

## **“IN BETWEEN” STUDENT AND ENTREPRENEUR**

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### **Questions we care about**

Entrepreneurship education (EE) is expected to be transformational, in the sense that individuals undergo a change from being a student to also considering themselves as being an entrepreneur. Still, research on how entrepreneurial learning is transformed into entrepreneurial identity (EI) is lacking. Moreover, much of the EI literature rely on related theory perspectives (e.g. social identity theory, identity theory). The main objective of this study is therefore to introduce the concept of liminality as a new perspective to explore student experiences of uncertainty, ambiguity and confusion when being “in between” student and entrepreneur. The questions we care about is: 1) *How can liminality provide new understandings of students’ entrepreneurial identity processes* and 2) *How can teams and peers play a role in student entrepreneurial identity formation?*

### **Approach**

This paper uses a narrative approach to present an in-depth exploration of three students’ learning processes during a two-year venture creation program at a Norwegian university. The narratives are based on qualitative data (interviews, observations and team reflections) collected at several points during the two years.

### **Results**

Exploring the student narratives through the lense of liminality reveal that the students go through very different identity formation journeys. The students find different approaches to deal with the uncertainty and ambiguity by creating alternative identities, multiple identities and alternative arenas that act as supporting communitas. Feedback from peers, positive and negative team experiences contribute to a more authentic exploration of their role as an entrepreneur.

### **Implications**

Insight into the identity formation process and the role of teams, can improve how educators facilitate students learning in EE, to support students to find *their* entrepreneurial identity.

### **Value/Originality**

The concept of liminality and the related characterizations offers a new perspective to better understand the complex processes of identity formation in entrepreneurship education.

**Keywords:** Entrepreneurial identity, Liminality, Team, Peers, Narrative approach

## ENTERPRISE AND ENTREPRENEURSHIP EDUCATION IN AN AGE OF CLIMATE AND ECOLOGICAL BREAKDOWN – CREATING CONVERSATIONAL ACTION

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### Questions we care about

Enterprise and entrepreneurship educators are practicing in turbulent times. We are living in a *crisis society*, where communities are being depleted and planetary resources exhausted (Dodd et al, 2022). Poverty, inequality and *the unsustainability of development* require that educators find new directions in EE (Loi et al, 2021). Transformation is needed, where *sustainable entrepreneurial endeavours* become a key engine for social and environmental progress (Klapper and Fayolle, 2022). And yet, the practical and lived reality (from our point of view), is that many everyday enterprise and entrepreneurship educators are engaged in activities – supporting the start-up of make and consume businesses and teaching through business model frameworks which clash with sustainable development goals – that may work against sustainability. *How do we move on? What action can we take to develop our practice and our field?*

### Approach

This paper presents an action focussed account of a research project where an enterprise educator and an entrepreneurship scholar from two different universities aimed to create a process to influence their practice towards sustainability. The research project involved engaging local and regional stakeholders in a participatory workshop to explore the question of how EE might develop in light of the climate and ecological context. The experience of, and early outcomes generated through, this process are illustrated through three action based stories. These accounts are (re)interpreted in relation to *dialogic development* (Bushe and Marshak, 2014, 2016; Holman, 2013), where change emerges as a result of interactions between people and through processes, and disruptions to the status quo lead to new and more engaged ways of working. A qualitative research approach aims to create a vivid and readable interpretation of the project which inspires agency and action.

### Potential Findings

Whilst *transformation towards sustainable EE* is demanded of educators, there is a shortage of empirical examples about how this might be achieved (Klapper and Fayolle, 2022). This paper presents an example of such an effort and provides a perspective on how change happens when a dominant but dying system disintegrates and a new system starts germinating. Conceptualising climate change as action-based, not issues-based, is a crucial insight from

### Implications for Society

Enterprise Educators are living and working in a time of climate and ecological breakdown. Focussing on what people or groups are already doing, or could do, in specific contexts and practice communities, models action and develops agency. This paper provides an example of how enterprise educators might play a part, even if they are not experts in the area of sustainability or have limited resources.

### Value and Originality:

The paper offers a contribution to calls for transformation in EE in light of an unsustainable present, presenting achievable action and illuminating how change may happen through small groups of people with shared purpose becoming networks and networks becoming system influence.

## THE IMPACT OF FEMALE ROLE MODELS' EXPOSURE ON ENTREPRENEURIAL INTENTIONS AND ENTREPRENEURIAL SELF-EFFICACY

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### Objectives

The purposes of our article are essentially based on three main hypotheses. The first emerges from the research results that show that men have a greater predisposition to engage in entrepreneurial activity than women. The second stems from the results of a major stream of entrepreneurship education research. Indeed, several authors argue that access to entrepreneurship courses increases the likelihood of starting a business or increasing Entrepreneurial Intention (EI) and Entrepreneurial Self-Efficacy (ESE). The third is based on several works that invite the inclusion of female role models in educational environments to remove the negative effects of stereotypes and to increase the effectiveness of entrepreneurship courses. So, the paper aims to test whether males and females respond differently, regarding EI and ESE, to a prevalent male role model exposure versus a prevalent female role model exposure.

### Approach

We planned an experiment realized in an entrepreneurial course offered at the Management engineering program. The data collection has been realized in two different years: Class 1 and Class 2. Class 1 and Class 2 differ in one main aspect: 100% of seminars in Class 1 were performed by male experts, while in Class 2 were performed only by female experts. The data collected ex-ante and ex-post for each class were divided by respondent gender. Then, the ex-ante and ex-post responses for Class 1 and Class 2 were compared.

### Results

The results show us how the gender of role models plays a crucial role in influencing the EI and ESE of students of the same gender. Furthermore, these results test and support several authors' hypotheses, suggesting that young women's EI and ESE can be stimulated by including female role models. In this way entrepreneurship may not be seen as a "male-oriented" career, but rather the perceived barriers for women can be lowered. Therefore, using female role models within entrepreneurship courses challenges some findings supporting women's lower EI and ESE. Ultimately, our results demonstrate how an entrepreneurial career is not simply "male-oriented" but rather "gender-sensitive".

### Implication

Theoretically, comparing two similar classes with different role model exposure will add new knowledge about how role models strengthen EI and ESE. Furthermore, to the best of our knowledge, our work is the first attempt of research that tries to isolate the effect of female role model exposure in an entrepreneurial class of engineering students.

Practically, it can offer interesting suggestions for entrepreneurial educators during the program planning phase. In this way, entrepreneurial educators are aware that adopting a single role model leads to distortions in learning mechanisms when designing the course.

### Originality

This research contributes to understanding how to increase female students' interest in entrepreneurial careers through interventions based on female role models. The research findings show that the best way to encourage women to pursue high-growth emerging roles is to expose them to the professional and personal experiences of successful female role models. This study also helped reduce the effect of stereotypes on gender roles and increase the motivational factors critical to women's entry into entrepreneurship.

**Keywords:** Entrepreneurial Role Models; Gender; Entrepreneurial Intentions; Entrepreneurial Self-Efficacy; Entrepreneurship Education

## SO ENTREPRENEURIAL SKILLS DEVELOP THROUGH ENTREPRENEURSHIP EDUCATION, BUT HOW?

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### Questions we care about (Relevance and novelty)

In this paper we will investigate how entrepreneurial skills (limited to opportunity recognition) develop because of the individual's engagement in entrepreneurship education. Scholars suggest that entrepreneurship education can be defined as "developing the mindset, skill set, and practice necessary for starting new ventures" (Neck & Corbett, 2018). Various pedagogical approaches have been developed within the entrepreneurship field and education varies from action-oriented learning where students build their own ventures to more teacher-directed learning, with varying degrees of authenticity (Aadland & Aaboen, 2020; Rasmussen & Sørheim, 2006). Although, the various pedagogical approaches create foundation for learning, the entrepreneurial education field is lacking a comprehensive theoretical framework to explain **how** entrepreneurial skills develops within the frameworks (Neck & Corbett, 2018; Chell, 2013). Consequently, the question we care about is **how** does entrepreneurial skills and mindset develop within different educational approaches and levels of authenticity in entrepreneurship education?

### Approach

The paper is conceptual and will use existing theoretical frameworks in psychology and skill development to explain how entrepreneurial skills can develop in the entrepreneurship education context. Importantly, the theoretical explanations will take the pedagogical approaches (i.e Action-oriented towards more teacher-directed learning; Aadland & Aaboen, 2020) in which the education is based into consideration when creating a theoretical framework for how skill development happens due to different pedagogical approaches.

### Potential findings

In this conceptual paper we will build a theoretical framework in which entrepreneurial skill development within entrepreneurship education can be explained. Findings will provide a broader understanding on how individual learning behavior can influence the skill development from the context in which the individual learns from.

### Implications for society

Societal implications are related to a broader understanding of skill development in entrepreneurship education. Instead of arguing simply **that** entrepreneurial skills develop from entrepreneurship education, it could be possible to **explain how** skills develops because of the entrepreneurship education. Understanding the process in which the skills develop can contribute to developing the educator's role in forming educational activities.

### Value/Originality

Contemporary papers argues that skill develop because of entrepreneurship education (See; Neck & Corbett, 2018). However, without a theoretical framework, both empirical- and theoretical work lacks a model of explanation as to **how** this development happens. With this gap, the field of entrepreneurship education has a literature gap created by a "taken for granted assumption". Hence, the paper will give value by putting skill development into a theoretical framework based on the literature from the psychological field.

**Keywords:** Entrepreneurial Skills, Opportunity Recognition, Skill Development, Entrepreneurship Education



## SPARKING CREATIVITY IN ENTREPRENEURSHIP COURSES: THE EFFECT OF USING THE SCAMPER TECHNIQUE IN BRAINSTORMING SESSIONS

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### Introduction

Based on the passive search view of opportunity discovery, scholars argue that it is possible to increase the likelihood of discovering business opportunities by stimulating individuals' creativity (Ardichvili et al., 2003; DeTienne & Chandler, 2004). As such, various techniques have been employed to stimulate individuals' creativity in EE programs to improve their capability in identifying business opportunities (DeTienne & Chandler, 2004; Karimi et al., 2016; Promsiri et al., 2018). One of the most frequently used techniques is brainstorming (e.g., DeTienne & Chandler, 2004; Lindberg et al., 2017). The brainstorming technique was initially developed by Osborn (1957) based on the premise that generating more ideas increases the likelihood of coming up with a higher-quality idea (Clapham, 2003; Simonton, 1990).

However, the empirical findings show that in traditional brainstorming sessions, individuals often move too quickly to convergence or arrive at a point where no new ideas are generated, that is, where idea generation gets exhausted (Ritter & Mostert, 2018). In addition, the empirical findings in the entrepreneurship field indicated that for some individuals, there is a high tendency toward automaticity (i.e., Einstellung effect) in the brainstorming sessions which results in identifying fewer and less innovative business ideas by them (Sahai & Frese, 2019). The Einstellung effect hinders individuals' cognitive adaptability and flexibility (Wegner & Wenzlaff, 1996) and promotes fixation (Wiley, 1998) as one of the most common cognitive obstacles that obstruct creative idea generation (Aviña et al., 2018). To overcome these pitfalls, creativity scholars argued that brainstorming sessions should be supported by structured idea-generation techniques, such as the SCAMPER<sup>2</sup> technique (Ritter & Mostert, 2018). Many scholars showed the positive effect of using the SCAMPER technique on idea-generation outcomes in various contexts such as engineering design (e.g., Chulvi et al., 2013), fashion design (e.g., Kamis et al., 2020) and science learning (e.g., Rahimi & Shute, 2021). A few entrepreneurship scholars also employed this technique to support individuals' opportunity identification (e.g., Nab et al., 2013). However, there is still no empirical study exploring the effect of the SCAMPER technique on business idea generation outcomes.

### Study purpose

In response to the above-mentioned gap in the entrepreneurship education field, the primary purpose of this empirical study is to explore the effect of using the SCAMPER technique in entrepreneurship courses on brainstorming session outcomes, in particular, on the *comprehensibility, concreteness, flexibility, persistence, and originality* of generated business ideas.

### Approach

This study's research design is an experimental, posttest-only control group design. The study was conducted with 58 bachelor's and master's students who were enrolled in a course at a Dutch university in 2022. The students were randomly assigned to one of the following conditions: (1) *Traditional*, wherein students were only provided with the Osborn rules they needed to consider while brainstorming (n=29) and (2) *Supported*, wherein students were provided with Osborn rules first and then received guidance for using the SCAMPER technique while brainstorming (n = 29). An online platform (<http://ideation-hub.nl>) was designed and used in this study to provide participants with information about the task they were required to do, control the time they had for completing the tasks, and inform them about the rules they needed to consider while brainstorming.

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<sup>2</sup> The acronym for Substitute, Combine, Adapt, Modify, Put to other uses, Eliminate, Rearrange.



**Results**

The one-way multivariate analysis of covariance (MANCOVA) was used to explore the effect of using the SCAMPER technique on the quantity and quality of generated business ideas (i.e., comprehensibility, concreteness, flexibility, persistence, and originality) as the dependent variables, conditions (i.e., traditional and supported) served as the independent variable, and students' educational level was included as a covariate. The findings indicated that individuals in the supported brainstorming condition generated more concrete business ideas that were also more original than the traditional brainstorming condition. The flexibility (i.e., number of associated categories) of generated ideas using the SCAMPER technique was not significantly different from ideas generated in the traditional condition but the persistence (i.e., the number of ideas in a category) was increased significantly.

**Implications**

The current study's findings highlight the importance of supporting brainstorming sessions in entrepreneurship courses to improve the outcomes. Such findings can offer practical guidelines for entrepreneurship educators in designing effective brainstorming sessions that enable individuals to generate more quality business ideas.

**Value/Originality**

In line with the ongoing call, for more methodologically rigorous studies in the entrepreneurship education field to compare the effectiveness of different strategies to their alternatives (Pittaway & Cope, 2007), this empirical study provides new insight into designing entrepreneurship courses efficacious in developing students' opportunity identification outcomes using a robust empirical design. The use of the SCAMPER technique for fostering students' opportunity identification outcomes in a real educational setting with high ecological validity could be seen as the added value of this study.

## IT TAKES TWO TO BECOME A DYAD – UNTANGLING THE DEVELOPMENT OF ENTREPRENEURIAL COMPETENCIES IN PEER MENTORSHIP

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### Question we care about

The purpose of this study is to explore how dyadic entrepreneurial learning processes are interconnected to the peer relationship. There are still to our knowledge no studies that have explored how peer mentoring evolve through real time using longitudinal data from both sides of the dyad. As such, the study seeks to close the gap and answer to the question: How do mentoring dyads evolve and, as a result of the mentoring support, what knowledge, skills and abilities do these dyads contribute with to both sides?

### Approach

We adopted a mixed method approach, where we also took a process perspective relying on longitudinal data. Given our approach, the data qualitative data collected consists of reflecting interviews with both mentors and mentees after each mentoring meeting on how the mentoring process and idea generation developed and meeting logs. The quantitative survey instrument was employed to capture development of psychosocial and professional relationship between mentor and mentee. The data enabled us to identify how mentorship relations between the peers evolved and how the different styles of mentoring impact the relation as we were able to grasp mentor and mentees reflections on the process from interviews combined with their perceived experience of support as measured through the survey.

### Results

This study offers novel insights into how peer mentoring can foster entrepreneurial learning processes both for mentors and mentees. It shows how the development of peer relations are based on mentors and mentees engagement in the development of the venture idea, and the other way around; how the venture idea develops based on relational conditions in the peer relations. Further, the study outline how exchange of knowledge and competences are fundamental for development of motivation and trust, which are important conditions in peer mentoring relations.

### Implications

Mentoring and peer mentoring are of interest within both EE and entrepreneurial learning, but also beyond the field of entrepreneurship as in teaching and management studies. For mentoring to work, it is important to develop a trustful relation between mentor and mentee. We provide a conceptual framework for how a trustful relation can be developed through engagement and actions that builds on understanding the dyadic flow in the different phases of peer mentoring in entrepreneurship, previously only addressed from a one-sided perspective. Our findings provide another brick to develop prosperous opportunities for mentorship to reach its full potential when employed in the entrepreneurial learning process.

### Value/Originality

This study provides new insights into peer mentoring in EE and how peer mentoring dyads with an experienced and a novice student entrepreneur evolve based on the dyadic engagement and how both mentor and mentee learn from engaging in the process. Hence, we contribute to the literature by providing a conceptual framework on how to approach peer mentoring and insights on the mutually beneficial knowledge development that can be achieved through peer mentoring in entrepreneurship.

**Keywords:** Peer mentoring, Peer relations, Longitudinal study, Entrepreneurial competences

## WHERE IS LEARNING THEORY IN ENTREPRENEURSHIP EDUCATION? – COULD THERE BE PRE-PAVED ROADS TO THE FUTURE IN HIGHER EDUCATION?

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### Questions we care about

There is a need to tie Entrepreneurship education (EE) more closely to learning theory (LT) to the further legitimisation and development of EE itself (e.g. Walmsley and Wraae, 2022; Fayolle, 2013). EE as research field has developed from the field of entrepreneurship, which originates from business schools. What sets EE apart from entrepreneurship is the focus on education and learning. This intuitively making the field of EE related to principles that teachers can use for helping students to learn. However, we find LT very limitedly applied in EE research, aside a few apparently general appraised but arbitral used theories. Where is the basic LT building blocks that make up the foundation of EE research (Hägg and Gabrielson, 2020)? We set out to explore, if this is a figment of our imagination or are we constructing the field of EE without conversing LT principles?

### Approach

The authors first employ a systematic review of literature to enable an in-depth analysis of the literature in a process that is replicable and transparent (Pittaway and Cope, 2007). Applying an adapted search string from Hägg and Gabrielson (2020) combined with search terms from 31 major learning theories results in 204 included articles in our data-set. This enable us to map what learning theories are used in EE research in a higher educational context. However, to understand how the identified TLs are used we analyse the 204 articles in three iterations. Throughout the process, we raise critical questions based on our findings to raise awareness and find new research avenues.

### Potential findings

In the scarce literature focusing on learning theory in EE there is a wide spread in purpose and quality of usage. We identify similar and different trends between our data-set and EE research in general. Pertaining to the choice of learning theory we find, a current unexplained hyper-focus on experiential learning. However other schools of thought are represented. We find different trends relating to how learning theories are referred to. We see both direct and indirect referencing, high variation in the amount of times the theory is used, some articles lacking focus and finally fragmented use. Placement of learning theory in the text seems a good predictor of depth and purpose of use. Moreover, we identify 4 separate purposes in use of learning theory. Based in our findings we suggest critical introspection but also identify new opportunities.

### Impact for society

We take a critical view upon the existing practice of EE research pertaining to the use of LT. With our findings, we aspire to inspire critical introspection, but also raise new questions and thus a potential future research agenda. Questions to care about could be: 1: Why do we find these trends? 2: What are the consequences? 3: And finally, could the use of learning theory in EE be a new frontier in EE research?

### Value and originality

The development of EE pedagogy in practice is addressed in EE research (Hägg and Gabrielson, 2019) and suggestions for signature pedagogies proposed (Jones, 2018; Lackéus 2016; Ramsgaard and Blenker, 2021). However, this study contributes by mapping application of pedagogical theory in EE research, critically discussing the findings and proposing possible avenues to drive EE research and practice into the future.

## UNIVERSITY START-UP ACCELERATORS AS IDENTITY WORK AND PLAY SPACES

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### Questions we care about (Objectives)

How do students who seek membership in a university start-up accelerator engage in identity work and play processes facilitated and fostered in and by this setting?

In this study, which is still in an early phase, we are interested in understanding how the university start-up accelerator is experienced by its members as a holding environment for identity work and play and how the accelerator as a diversity oriented and inclusive university institution facilitates or calls for particular identification processes.

### Approach

We initialized a longitudinal fieldwork in the accelerator of a Scandinavian university, focusing on the practices and interactions of its members and their attitudes, environment and relations. The accelerator offers its services and relevance to a broad population across the academe with the goal of encouraging entrepreneurship and entrepreneurial learning, and facilitating start up opportunities for all university students and faculty. That makes it a particularly interesting case for examining the interplay of space, community and identification processes in entrepreneurial learning. We currently work to produce empirical material in terms of interviews with members and staff, documents, social media postings about and by the accelerator, as well as observations. We plan to analyse the empirical material following an inductive and grounded theory approach.

### Value/Originality

With this work, we aim to contribute to entrepreneurial identity research as well as research in accelerator programs by highlighting the micro dynamics of identity construction in an organizational setting, which explicitly seeks to be inclusive and embrace diversity. Additionally, the question we care about is and should be of practical relevance and importance to all universities and policymakers interested in promoting diversity in entrepreneurship and in building ecosystems and learning environments around university accelerators and incubators.

## DISCIPLINARY AND INDUSTRY CONTEXT: THE EXAMPLE OF ENTREPRENEURSHIP EDUCATION IN MEDIA.

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### Questions we care about

Entrepreneurship Education (EE) is increasingly relevant for all kinds of students, regardless of education level or subject area. While the content of EE is thought to be universally relevant, students might find EE more salient if it were adapted to their specific study sectors. In this paper, we contend that more contextual factors may need to be considered to inform sector adaptation, elaborating the example of EE in media, which is widely held to be distinct from other sectors in many ways. Our questions are, *'what unique sector dynamics should entrepreneurial education take into account in the media context?'* and *'how can this example disciplinary and industry context inform adaptations of EE to other specific sectors?'*

### Approach

EE is embedded in disciplinary specificities. Few students study entrepreneurship as a major, with most studying other disciplines where students become familiar with a specific discipline and associated unique culture that is developed in social contexts and differs between academic disciplines (e.g. Murzi et al., 2015; Wisker & Claesson, 2013). Such disciplinary specificities also continue after Higher Education, when students enter the labor market in specific industries. It can be assumed that the differences in disciplinary and industry contexts might be relevant to EE in the media field. – Focusing on media, a few studies on EE in media already exist (e.g., Buschow & Laugemann, 2020; Greybeal & Ferrier, 2021; Will, Gossel & Windscheid, 2020), providing important insights but lacking abstract conceptualizations to structure a systematic analysis of the unique characteristics of media entrepreneurship relevant for education. – We apply the theoretical lens of context, based on a structured literature review by Thomassen et al. (2020) on constituting context in entrepreneurship education. By taking that lens of macro, meso and micro contextual elements, this paper as work in progress documents relevant insights of the EU Horizon 2020 project (ScreenMe-net, 2021-2023). In a qualitative approach, we will analyse interviews with experts from the project and additional material, such as statistics, additional literature, meeting notes and deliverables.

### Results

This paper aims to uncover the distinguishing features of media EE, focusing on disciplinary and industry contexts and to lift the results to a level of higher abstraction to better understand how to adapt also other sector-specific entrepreneurship education courses.

### Implications

This work can be seen as an essential basis for theory debate in narrowed approaches to EE research, contributing to understand the relevance of context.

### Value/originality

This paper aims not only at providing insights for the narrowed perspective of media EE, but at generalizing from this case.

**Keywords:** *entrepreneurial education; screen media entrepreneurship; disciplinary context; industry context*

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## HOW TO UNDERSTAND THE ENTREPRENEURIAL LEARNING JOURNEY

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### Objective

Entrepreneurship education has become a new topic for many institutions of higher education. Understanding the entrepreneurial learning journey appears to be a less researched topic.

### Approach

The investigation is based on theoretical perspectives found in the literature in addition to the empirical insights, which had been collected from an entrepreneur startup program in the Southern region of Denmark. Thus, data collection stems from a Danish innovation incubator initiative with 38 participants, spanning an observational period of 3 years. The collected data had been processed with help of a thematic analysis in order to unveil the relevant themes and findings.

### Results

The entrepreneurial learning journey often takes a longer period of time compared to the time-boxed duration of the observed incubator initiatives. Lack of support often correlates with the decision of nascent entrepreneurs to pause the entrepreneurial endeavor or even to stop it entirely. Thus, educational institutions have been found to be in demand in order to train nascent entrepreneurs. Moreover, a multi-actor network setting has been found to be the locus of successful entrepreneurial learning.

### Implications

With regard to harness the effects of entrepreneurial learning embodied in practical actions and results, institutions of higher education might rethink the job profile required to teach and to engage in practice-enabling entrepreneurship education. Enabling innovative capabilities through both knowledge- and technology transfer within the business network appears to become a surfacing challenge for especially triple helix partners.

### Value/Originality

Institution of higher education are going to be most likely better equipped to offer educational services to entrepreneurs by acknowledging and by understanding the complexity of entrepreneurial learning journeys. Institutions of higher education and their research partners can help to provide tailored educational approaches in order to accelerate and to sustain successful venture set-ups. New insights stemming from conceptualizing the entrepreneurial learning journey might inform the discussion about, how to prioritize result-bearing efforts among a multitude of different collaboration partners.

**Keywords:** entrepreneurial learning, micro learning, innovation management, EU skill agenda

## THE IMPACT OF AN ONLINE LEARNING ENVIRONMENT ON ENTREPRENEURIAL AND ACADEMIC OUTCOMES

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### Questions we care about (Objectives)

Experiential entrepreneurship education integrates academic content with personal and emotional experiences to facilitate learning and ultimately develop our students into becoming reflective, creative, and responsible entrepreneurs. However, efforts to promote hands-on, interactive, and creative approaches in entrepreneurship education were challenged by the restrictions imposed by governments due to the COVID-19 pandemic. The question we are about is: *How has the transition from on-campus to online learning environment impacted the learning outcomes of experiential entrepreneurship education?*

### Approach

The study builds on data from a study of learning outcomes from an experiential entrepreneurship module in a mandatory course for third-year engineering students at a major university in Scandinavia. We collected data from students taking the module in January –February in 2020, i.e., before the COVID-19 restrictions were introduced, and from students taking the same module in August – September 2020, when the restrictions had moved teaching online. We surveyed both student groups pre- and post-module, as well as used two independent evaluators (an entrepreneur and a scientific assistant) to assess students' learning outcomes.

### Results

We find that evaluations done by the entrepreneur and the scientific assistant diverge when evaluating both business proposal quality and academic assessment. Therefore, we could not support our initial hypotheses. However, the findings lead us to reflect on the question of what is the most relevant learning outcomes of action-based entrepreneurship education, and, hence, on how entrepreneurial projects should be assessed.

### Implications

The results show that in the online learning environment, the academic quality is sustained while the entrepreneur perceives it as lower. This could be explained by seeing the entrepreneur as the practiceoriented one and the student as the academically oriented. Thus, the online learning environment may be sufficient for academic outcomes but not so much for the experiential ones, even in a classroom environment involving undergraduate students. Our next question to care about is therefore *how* and *why* the online learning environment can negatively impact the business proposal evaluations made by the entrepreneur while positively impacting the evaluations made by the student.

### Value/Originality

This is one of the first papers to study the outcomes of entrepreneurship education by using the evaluations from different perspectives (in this case an entrepreneur and a graduate student) and conducting a quasi-experiment with "offline" and "online" learning environments in entrepreneurship education. We provide insight into how the academic and the experiential dimensions of outcomes from entrepreneurship education may be assessed and that they are impacted differently by different factors. Also, we highlight that the quality of students' work may not be related to their entrepreneurial intentions.

**Keywords:** Assessment; Experiment; Online; Quantitative

## CREATING MEANINGFUL PATHWAYS BETWEEN PROFESSIONAL AND ENTREPRENEURIAL EDUCATION IN NURSING

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### Questions we care about

This paper takes its outspring in the following questions: *How can we as educators offer entrepreneurship teaching in ways that make sense at a nursing education? Is it possible to think entrepreneurship and the core of nursing together? Can there be values, ways of being or educational ideals in common between entrepreneurship and nursing?* Is it possible that some ways of entrepreneurship teaching could actually promote caring practices in nursing?

### Approach

The empirical basis is a two-year phenomenological action research project named 'Innovative and entrepreneurial formation (bildung) in professional bachelor education' where three teachers at three different nursing schools in VIA University College designed, tried out and inquired into three different teaching experiments. All experiments were designed as teaching through two educational ideals: Sensitivity and imagination. The aim of the study was to describe and discuss ways of being arising among the students while participating in the teaching experiments.

The theoretical approach to entrepreneurship teaching is broad, focusing on how to learn openness towards new opportunities. The approach to nursing is inspired by the care philosophy of Kari Martinsen.

### Results

A preliminary analysis shows two ways of being among the students during the teaching experiments. First, the preliminary analysis shows, that the students are brought to attention, described as *being there*. At the same time, the preliminary analysis shows, that the students also are a bit on guard, as the teaching experiments contains unpredictability.

### Implications, value and originality

In the paper we discuss whether being attentive and being on guard hold valuable potentials when it comes to nursing as well as entrepreneurship. Although both ways of being could hold potentials and possible value in nursing as well as in entrepreneurship, it becomes visible, that the students' experiences of being during the teaching experiments need to be very directly reflected. Otherwise, it is doubtful, whether the students will see how their experiences of being can be connected to nursing as well as entrepreneurship. Such reflection is missing in the present project. We find that it is a major limitation.

In spite of that, we see a potential when it comes to the combination of teaching nursing and teaching entrepreneurship, by teaching through educational ideals important for both.

**Keywords:** Nursing, entrepreneurship teaching, action research, phenomenology, educational ideals



## ACADEMIC THESIS PROCESS AS ENTREPRENEURIAL, SELF-NEGOTIATED PROCESS

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### Questions we care about (The objectives of the study)

How can students strengthen their entrepreneurial selves towards self-negotiated actors while producing their academic theses in higher education?

Is there enough space for students' training in autonomous decision making and creative solutions in a thesis formulated and written according to the certain rules typical in the methodologies and style in the research field of educational sciences?

### Approach

The study follows a case study methodology.

### Results

Despite such exact formula of the thesis and thesis process, it is able to find space in the process for the students' self-determination, which enables their growth towards entrepreneurial, self-negotiated actors.

### Implications

It is important to focus on students' participation and enable it in each course in the higher education.

### Value/Originality

There are plenty of researches carried out focusing on different educational contexts, but the thesis process has not been studied in depth. Especially in non-business studies, practicing entrepreneurialism is challenging, though its usefulness even in working life has been addressed in many previous studies. The present study needs more data to be considered, but the preliminary findings with one student case were encouraging.

**Keywords:** Entrepreneurship education, thesis process, signature pedagogy, andragogy, heutagogy, higher education

## DEVELOPING ENTREPRENEURSHIP EDUCATION FOR A CAUSE – FORMING TRANSFORMATIVE ENTREPRENEURS

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### Questions we care about

There is a growing interest in other aspects of entrepreneurship than business venturing and problem-solving. Hence, new means and ends are introduced as part of entrepreneurship education. Action competence for societal change is in general want, to lead the societal transformation towards sustainability. Therefore, we ask ourselves, how do we design the best possible transformative entrepreneurship education that does not involve business venturing?

### Approach

We have labelled our unit of study as “entrepreneurship for a cause” where our research is conducted as an explorative journey where we engage different target groups with our overarching question, but also questions of what competencies one will need to take on a transformative role. The journey metaphor also follows us into this paper.

### Results

There is an eminent need to emphasize the existential, ethical, and aesthetic aspects of human nature in our educational systems to balance current economic values. With this foundation, students could experience a deeper sense of meaning through engagement in authentic transformative tasks. Adding attention to their reflective capabilities, in and on action, students' action and entrepreneurial competencies are likely to increase, which is paramount if you intend to build capacity for societal change through educational means. However, today's students have difficulties in expressing what skill set they lack, why research in entrepreneurship education should venture into experimenting and probing its way forward.

### Implications

Entrepreneurship education for a cause can be used as a collective term for educational initiatives that aim to build action competence for transformative change. Gained experiences can then spread throughout society. Educational institutions, along with their professionals of all sorts, are encouraged to rethink what they teach and how they teach, but also engage in creating action learning for their students, customers, and others.

### Value/Originality

The paper suggests a new complementary perspective for understanding not only entrepreneurship education but entrepreneurship as well. This paper broadens the scope of entrepreneurship, as an inherent quality defining our humanity, and offers a new type of attached meaning to be explored, developed, and implemented through both research and education initiatives to come.

**Keywords:** Entrepreneurship Education; Transformative Entrepreneurial Selves; Education for Transformation; Sustainability; Compassion venturing

## **WHO IS THE ENTREPRENEURIAL EDUCATOR? A TRANSFERABILITY PERSPECTIVE TO TEASE OUT ANTECEDENTS NEEDED TO FORM A SIGNATURE PEDAGOGY**

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### **Questions we care about**

Entrepreneurial education has in many ways been addressed as a panacea or the white knight that should deliver the answer to how we prepare future generations for the world of work. Much attention has been allocated from scholars to push policies towards more entrepreneurship education initiatives and discussions have focused largely on the issue of how to teach and what students should learn. However, a missing piece of the puzzle that just recently has gotten a more prominent position in scholarly discussions has been: who is the entrepreneurial educator? In this paper our aim is two folded, first we seek to problematize who the entrepreneurial educator might be and what different roles these individuals have been assigned in the scholarly discussion to tease out how specific competencies could be transferable to find common ground in our domain. Second, based on finding a common ground we aim to discuss from an evolutionary perspective how both pedagogical content knowledge and signature pedagogies becomes a key to address the issue of capitalization rates, which in our view is “the elephant in the room”.

### **Approach**

We problematize the entry-level personas that have been addressed in prior literature by making use of the term transferability. Through the lens of transferability, we seek not to find an ideal type of educator but instead to discuss how to embrace the variability of starting positions that educators bring when entering and engaging in entrepreneurial education. Using the existing literature and our experience as entrepreneurial educators, we derive current archetypes of entrepreneurial educators and propose a potential model archetype, the mindful entrepreneurial educator, but with multiple roles that are needed in different teaching situations. Hence, not seeking the “one” ideal but rather trying to address the heterogeneity present in the field and embracing the openness to the variability seen throughout the field's evolution that create potential for transferability.

### **Results**

In our theorizing, we have recognized four archetypes of entrepreneurial educators that regularly teach different subjects and topics under the umbrella of entrepreneurial education. The experienced entrepreneur, the entrepreneurship scholar, the academic scholar, and the pedagogical expert. Together our problematization on the variance fuelling the field we then contemplate how these provide a fertile ground to engage in addressing “the elephant in the room” in entrepreneurial education, the capitalization rate of graduates and the problem space of developing signature pedagogy as acknowledged in other domains.

### **Implications for society**

Society puts a great deal of confidence in entrepreneurial education to prepare coming generation for the world of work. A main puzzle still to be resolved is who the educator is and, in the prolongation, how to cater for a potential signature pedagogy that could increase the capitalization rate of the domain.

### **Value/originality**

The paper provides a nuanced outlook on who is teaching in the entrepreneurial classroom and problematizes from an evolutionary perspective the potential future paths to continue staying relevant for society as well as justifying our presence as a legit domain in academia.

**Keywords:** Entrepreneurial educators, Evolution, Transferability, Signature pedagogy, Capitalization rate

## VALUE CO-CREATION PROCESSES IN HIGHER EDUCATION

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### Questions we care about (Objectives)

Business schools have traditionally taught entrepreneurship as separate programme (O'Brien & Hamburg, 2019) and focused on the outcomes of entrepreneurship, namely founding, and running a venture (Drucker, 1985). As a result, entrepreneurship was perceived as exclusive to business schools, leaving other disciplines behind (O'Brien & Hamburg, 2019). Considering the role of entrepreneurship in societal development and its complex nature, current pedagogical approaches need to prepare students for various and poorly defined conditions and uncertainty, thus enabling independent learning on how to recognize and exploit entrepreneurial opportunities (O'Brien & Hamburg, 2019). However, addressing and solving complex problems requires cross-disciplinary collaboration (Plaschka & Welsch, 1990; Garcia-Rodrigues et al., 2012). Co-creation is a central idea in entrepreneurship education, in which students work together and often with others (teachers, mentors, etc.) to create something novel. The aim of this study is to explore alternative settings for co-creation in education at higher education institution

### Approach

The paper applies a qualitative multiple case study approach to examine different co-creation processes within a higher education institution in Finland during 2021-2023.

### Results

The data suggest that value co-creation can take place in different learning contexts and environments. Students may co-create within one or several courses, simultaneously or in consecutive courses. A certain environment, physical or virtual, or a large project platform can also connect projects, courses, and people, thus giving opportunities to co-create not only planned tasks, but also something bigger. However, the more actors and different schedules are involved, the more advanced and facilitated form of co-creation is required. The results show six different value-co-creation situations in a higher education institution, which vary in length, width, and depth.

### Implications

One of the questions to be raised is would it be possible to utilize the innovative power of students to a greater extent. Our results seem to suggest that organizing better possibilities for students to innovate and, most of all, to develop these ideas further does not naturally mean a collision with the quantitative and qualitative goals of university degree production, or at least these points were not raised in the data. The main issue is: how can the processes be implemented into university's educational activities so that the outcome of better study motivation and results exceeds the costs of organizing more co-creation stages for students to work on their ideas?

### Value/Originality

The findings of the study contribute to the value co-creation, learning environment and entrepreneurial learning literature. This study provides new insights about the dynamics of value co-creation in university context by focusing on the nexus of value co-creation and learning environments. On the one hand, co-creation offers students a unique opportunity for learning in a sequential co-creation; however, it highlights student's responsibility on their own learning. The results also contribute to entrepreneurship education and learning literature by focusing on a specific element of entrepreneurial education, namely value co-creation.

**Keywords:** co-creation, university students, higher education

## HEATING UP ENTREPRENEURSHIP EDUCATION: A COOL WAY TO DEVELOP EXECUTIVE FUNCTIONS

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### Questions we care about

The impact of entrepreneurship education (EE) on entrepreneurial intentions is a key concept in entrepreneurial cognition. Studies focus mainly on cognitive faculties and skills that promote entrepreneurship, while neglecting how the entrepreneurial process affects cognitive development (Shepherd, 2015). We will explore links between executive functions (EFs), which are high-level cognitive processes, and entrepreneurship. EFs are particularly elicited in novel, nonroutinized, and uncertain situations. By memorizing, using, and processing information effectively to achieve goals, and by targeting and advancing the right goals at the right time, EFs enable goal achievement. This paper examines hot and cool EFs, their development, and their connections with EE. We will explore two questions: (1) what are the relationships between EFs and the entrepreneurial process; and (2) why and how could EE promote EF development to improve the entrepreneurial process?

### Approach

To relate the two fields and argue the relevance of EFs for EE, we proceed inductively. First, we define EFs conceptually and review the literature on entrepreneurial cognition to determine shared constructs with the entrepreneurial process. We then examine how EFs are involved in the entrepreneurial process to better grasp how EE can foster EFs.

### Results

We propose a schema that relates EFs to the entrepreneurial process. This schema highlights that EFs are involved in all the entrepreneurial process components: personal and environmental characteristics, entrepreneurial intentions, and new venture creation. Through experiential EE, students learn to set and achieve goals while developing EFs that promote growth as individuals and as future citizens and entrepreneurs. Finally, we suggest potential research avenues for EE.

### Implications

EF development through EE implies an educational approach that goes beyond academic knowledge. EE can be integrated into various pedagogical and academic contexts to meet individual students' needs. The proposed schema and potential research avenues can guide future research in the fields of entrepreneurial cognition and EE.

### Value/originality

This paper sheds new light on how EE can enhance cognitive aspects of entrepreneurship. A deeper understanding of the relationships between EFs and EE would inform a more effective integration of EE into elementary and secondary school curricula. EE offers a promising approach to optimize EF development while promoting entrepreneurial intentions and new venture creation. This could widen the scope of the empirical research on the effects of the entrepreneurial process on EFs, with beneficial implications for both entrepreneurial cognition research and entrepreneurship education.

**Keywords:** executive function, entrepreneurship education, entrepreneurship, entrepreneurial cognition, entrepreneurial process, emotion

## INVESTIGATING THE GENDERING OF STEM UNIVERSITY ENTREPRENEURIAL ECOSYSTEMS

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### Questions we care about

Contextualisation is considered key to understanding how, when and why entrepreneurship occurs, as it highlights a spectrum of factors, including situational conditions and the influence of stakeholder groups. However, context is often treated as a mere backdrop of place/space, rather than an integral fabric influencing all aspects of a phenomenon. In this conceptual paper, we focus on the complex context of university Science Technology Engineering and Math (STEM) Entrepreneurial Ecosystems. Despite different initiatives, and theoretical explanations, practice has not always produced what has been desired or expected of these ecosystems. We are curious to unpack potential layers of norms and traditions, practice and policy, by taking a feminist informed engaged scholarship approach, in order to identify why this may be, and develop relevant research questions to co-investigate this context with practitioners.

We do not assume that the lack of promise is a deficiency of practitioners, but rather as linked to the complexity of the context, including the potential for layered bias (explicit or implicit), and often unacknowledged tensions involved in emphasizing equality, diversity and inclusiveness. We subsequently call for close collaboration with practitioners, embedded in day-to-day practice, and an alternative (complementary) approach in the development and investigation of new (research) questions that support both theoretical and practical advances. In doing so our conceptual and methodological focus is on the micro level, to understand the experiences and challenges of individual and/or actor groups in practice. The question we care about is: *How could feminist informed engaged scholarship support us to ask co-created questions and develop solutions, which challenge the gendering of university STEM ecosystems and support inclusion, through collaboration with practitioners?*

### Approach

In taking a gender perspective on theory and practice within STEM university EEs, we enter an undertheorized field. We base our thinking on Van de Ven's engaged scholarship approach, which has been extended to include explicitly feminist aims. In focusing on feminist informed engaged scholarship we subsequently respond to calls to recognise the context-dependent nature of entrepreneurship research and theory development *and* to consider gendered social positionality within entrepreneurial contexts.

### Implications

We suggest that feminist informed engaged scholarship could guide new research agendas for processes and practices with STEM university EE. This approach has the potential to challenge traditional understandings by foregrounding the gendering of the STEM university EE context. We emphasize approaches that collaborate and co-create with practitioners, and explore the inherent challenges, tensions and trade-offs experienced in these contexts.

### Value/Originality

Understanding the day-to-day dilemmas and tensions between policy and practice, principles and pragmatism helps us understand how, and why, achieving gender equality in STEM university EEs continues to be a challenge. Exploring such contexts from the perspective of those involved (including the tensions that a focus on gender equality can bring), helps researchers to ask more relevant (and potentially new/different) questions. It also guides us to ask questions and do research which might be better appreciated, applied, and accessed by practitioners and policy makers.

## TOWARDS THE DEFINITION OF ENTREPRENEURIAL MINDSET: A SYSTEMATIC REVIEW

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### Questions we care about (Objectives)

This paper addresses the question what is an entrepreneurial mindset? The lack of a clear and commonly accepted definition of the construct inhibits theorising about its role in the entrepreneurial process and consequently measuring it and testing hypotheses. The term entrepreneurial mindset is prevalent in government, scholarly research, educational offerings, and the media. It is claimed to be beneficial in many different contexts, including social and commercial start-ups; established businesses; public sector organisations such as the military and universities; and regions and countries. As a result, there is a proliferation of educational programs, strategies and policies that claim to develop and enhance this mindset, reflecting a common belief that it can be developed and supported. However, attempts to empirically test this assumption and therefore the impact of these interventions are hampered by the lack of clarity in construct definition, theoretic understanding of its causal processes, and measures of the mindset.

### Approach

As a first step toward clarifying the entrepreneurial mindset construct, we undertook a systematic review of the related literature. For each publication descriptive information is coded that identifies the many definitions, constructions and dimensions of entrepreneurial mindset and coded them into themes related to their explicit or implied theoretic perspective. We established four themes reflecting theoretic perspectives a priori into which the definitions or constructions were coded: cognition, competence (knowledge, skills and attributes), personality, and predisposition (attitudes and behavioral).

### Results

This paper reports a systematic review of 427 scholarly publications that use the term. We find that authors are rarely explicit about the theoretic perspective implied by their choice of definition. Adopting the categorisation Hruby's (2016) thematic analysis of global mindset definitions, we find that competency and cognitive approaches are most common, but some papers imply mindset is a personality trait, predisposition, or combination of both.

### Implications for society

This paper contributes a deeper understanding of the conceptualisation, construction and characterisation of an entrepreneurial mindset, which is key to moving research on entrepreneurial mindset forward. A better evidence base will have particular implications for the design and delivery of entrepreneurial educational offerings and initiatives that seek to develop an entrepreneurial mindset, and importantly, facilitate the measurement of the impact of these offerings. More generally, this paper links entrepreneurial mindset to extant theoretical understandings of mindset from psychology, providing a stronger understanding of the possible theoretic underpinnings of this nascent construct.

### Value/Originality

To our knowledge, this is the first systematic literature review focused on the definition and theoretic construction of an entrepreneurial mindset.

**Keywords:** Entrepreneurial mindset, construct definition, entrepreneurship

## **HEAD, HANDS AND HEART AS SUPPORTING TRANSFORMATIVE LEARNING EXPERIENCES IN SUSTAINABLE ENTREPRENEURSHIP**

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### **Questions we care about (Objectives)**

The study explored how to create learner engagement and support transformative learning for sustainable entrepreneurship through sensory learning experiences.

### **Approach**

This work sets out a theoretical framework for an experiential and sensory approach to education at the interface between entrepreneurship, innovation and sustainability, which finds application in a transformational learning evaluation. The theoretical underpinnings of the research can be found in a) transformational learning theory and in particular Sipos et al.'s (2008) Head, Hands and Heart umbrella framework, b) literature on (sustainable) entrepreneurship education and c) literature that focuses on sensory experiences. The experiential and multisensory approach outlined here includes a) olfactory, b) audition (acoustics), c) vision (optical), d) haptic and e) taste parameters. Our hypothesis was that the different sensory stimuli students experience during a field trip will impact the phenomenological perception and interest of students for sustainability related issues in an entrepreneurial environment related to the production of wood-based products. An exploratory transformational learning evaluation took place as part of a module taught at the University of Natural Resource and Life Sciences (BOKU) Vienna, Austria. The module builds on a project-oriented rationale aiming to develop competences, skills and expertise with regard to developing innovative solutions related to wood science. Postgraduate students were asked to experiment with different natural materials as well as recycling material. Seminars about patenting, innovation management and entrepreneurship provided theoretical underpinning. A company visit complemented the educational program. A post-experiment learning survey tool, developed in line with Sipos et al.'s (2008) Head, Hands and Heart framework, was available on mobile phones to record these experiences. Out of 30 students participating in the course, 17 answered the questionnaires.

### **Results**

Most students reported they would prefer to work with materials as compared to only receive theoretical input or perform theoretical case studies. The majority of learners mentioned that they experienced various sensory aspects during the visit of production environment. Most often the smell of wood, and the haptic experience of material qualities of wood and metal were mentioned, but also the direct experience of the technical performance of the production machines. Noise was experienced as unpleasant. Students reported that the whole learning experience and the explanations of the companies got them interested and made them more sensible to sustainability related issues in the field of the production of wood products.

### **Implications**

The transformational learning evaluation provided first insights into the sensory experiences of a postgraduate learner audience. These initial findings will be used to develop propositions for further research with regard to fostering a positive phenomenological attitude towards sustainable entrepreneurship in other learner audiences.

### **Value/Originality**

We combined sensory entrepreneurship education together with Sipos et al.'s (2008) organizing principle of head, hands and heart in an innovative learning experiment.

**Keywords:** senses, sustainable entrepreneurship education, assessment, evaluation, transformative learning, phenomenological experience



## BALANCING FREEDOM AND STRUCTURE THROUGH GAMIFICATION IN ENTREPRENEURSHIP EDUCATION

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### Questions we care about (Relevance and novelty)

There appears to be a need for approaches that balance structure around what entrepreneurship students should be doing with sufficient freedom and ambiguity to ensure that students get an authentic taste of entrepreneurship. Gamification, the use of gameplay mechanisms in nongame settings, has been suggested as one approach that inspires engagement, motivation and hence resilience in the learning process over time. An intriguing research question is How do students experience a gamified entrepreneurship course? And what challenges and opportunities does the use of gamification create in balancing structure and freedom in an authentic learning design? The aim of this research is to build new knowledge on learning support in authentic entrepreneurship education, and in particular the use of gamification, its challenges and opportunities.

### Approach

The article has a phenomenological, qualitative approach that emphasizes understanding students' experience from the entrepreneurial learning process. In-depth interviews were conducted with a total sample of 18 students who took a gamified practice-based semester long course (4 group and 7 individual interviews). The exploratory problem made it natural to use thematic analysis.

### Findings

The findings highlighted four key themes that we have labelled: *The game elements create action orientation over time*, where the gamified elements created motivation and progress throughout the course; That the *'Scoreboard' triggers emotional exposure*, where the elements of the game created a sense of realism and emotional engagement; *The 'Team room' provided social calibration*, which acted as a social safety net for students to make decisions about how to proceed with their opportunity development; and *The static rules of the game interferes with team reflection and creativity*, which highlighted areas where the rules could be improved.

### Implications

The key implication is that learning through experience can be designed in such a way as to balance the need for structure, certainty, and safety in a learning environment up against what is often perceived as a counter perspective of freedom and ambiguity in ensuring that an entrepreneurial experience is authentic. The value of this is to provide educators with an additional perspective to consider when designing their own teaching interventions, and that they will therefore in the long run contribute to more effective learning environments

### Value/Originality

The gamified pedagogical approach presented is unique in entrepreneurship education and therefore represents an additional contribution in the academic conversation around how best to educate students in entrepreneurship.

**Keywords:** Entrepreneurship education, authentic learning, gamification, learning design

## **“COMING HOME TO KANSAS”: DESIGNED ACTION SAMPLING AS A NEW RESEARCH METHOD TO HELP BUILD ACTIVE EE COMMUNITIES**

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*“No matter how dreary and gray our homes are, we people of flesh and blood would rather live there than in any other country, be it ever so beautiful. There is no place like home.”*

*-Dorothy Gale in Wizard of Oz*

### **Questions we care about**

Entrepreneurial education (EE) is our dear home, just like Kansas was Dorothy Gale’s home in the children’s novel about Wizard of Oz. But ours is a homeland plagued by vexing issues that never seem to go away. Issues include unfocused impact studies, few pedagogical practices that “work”, infrequent scaling of good practice apart from McDonaldized Junior Achievement practices, and passive single-case reliant communities, e.g., the 3E community. These issues have a stagnant effect on EE. What if they all have a single root cause in common?

### **Approach**

A decade ago, a new design-based research method was created in the field of EE by combining action research, design science, experience sampling and critical realism. The resulting method – designed action sampling – lets teachers co-design action-oriented step-wise experiments that are then carried out by other teachers, who reflect in written form afterwards upon effects they see. It has so far been applied and developed mostly outside of EE. On its long journey “outside Kansas”, the new method has been used in many large-scale school development projects by around 4000 teachers and 36 000 students. In an attempt to get back to our cherished home field EE, we ask a homecoming question: What problems can be solved in EE through an increasingly mature innovative design-based research method?

### **Results**

The new research method has been used to establish large and active teacher communities in fields such as school development, vocational education and teaching in segregated areas. These teacher communities co-design, share, replicate and rigorously evaluate various pedagogical practices. In the article we explore how these results can be drawn upon to create more active EE communities that build cumulative progress in rigorous ways. Both opportunities and challenges have then been identified. Alluding to the Wizard of Oz novel, the new research method requires not only Tin Man’s strong heart of EE teachers helping each other, but also the Lion’s courage to dare opening up our classrooms and Scarecrow’s eminent Doctor of Thinkology (ThD) brain to analyse the resulting big data.

### **Implications**

Existing EE communities can adopt the new research method if they want to build more active communities. This will require funding to cover the time it takes for teachers to learn and integrate a new and quite different method into their teaching and assessment. It will also require established community leaders in EE, especially Junior Achievement, to lead the way.

### **Value/originality**

If EE communities become more active in co-designing, sharing, replicating and evaluating good teaching practices on a classroom level and in a rigorous way, it could reverse the stagnant effect that vexing issues currently exert on EE. Achieving this through research method innovation has not previously been proposed.

**Keywords:** Action research, design science, experience sampling, critical realism.

## THE JURY IS STILL OUT: HOW DOES ENTREPRENEURIAL EDUCATION FOSTER AN ENTREPRENEURIAL MINDSET?

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### Questions we care about (relevance and novelty)

This paper explores how entrepreneurship instructors fulfill their learning goal of fostering attributes of the entrepreneurial mindset (EM). Today, there is a fundamental and recognized need for graduates across campus who can navigate increasingly dynamic and uncertain contexts and environments, while concurrently initiating change and value-creating activities. To serve this need, entrepreneurial education (EE), advance students' knowledge, skills, and mindset. While some progress has been made in understanding how knowledge and skills are cultivated, cultivating EM remains to be understood. This represents a design challenge and a legitimacy issue. Therefore, this paper asks: How do aspects of entrepreneurial education pedagogy facilitate the development of the student's entrepreneurial mindset?

### Approach

This paper builds on insights from a single case study of one course for sixthsemester medical laboratory technician's students in a bachelor program at a Danish applied sciences university. The case-study database consists of a unique combination of (1) pre-post surveys to identify whether the course enhanced the students' EM; (2) field observations, student logbooks, and semi-structured interviews with students and instructors to explore how EM attributes were, or were not, developed. To guide the design and analysis of this database, theories of learning and educational psychology is used to capture and explore how certain learning experiences and situations facilitated the development or enhancement of specific psychological attributes associated with student's EM while others did not.

### Findings

Theory suggests that characteristics of EE pedagogy that foster entrepreneurial learning include combinations of stakeholder feedback, emotional triggers, shared understandings and interests in a community of practice, and experiences of failure and success. The findings of our study provide empirical evidence to support, question, and contextualize these dynamics. The findings suggest that the applied EE pedagogy in this case study enhances some attributes of EM, such as entrepreneurial passion, self-efficacy, and perceived controllability in a measurable way in the short term while other attributes did not change to the same extent.

### Implications

With the growing interest in EM in EE research, there has been an increased amount of impact studies, which aim to evidence that EE fosters students' EM. However, to make EE more effective when it comes to fostering the attributes associated with EM, we need to expand our knowledge about exactly how EE produces this outcome. This knowledge can be helpful for instructors to more purposefully design the educational intervention to foster the EM attributes of students for which society is calling. The knowledge will also help in resolving the legitimacy challenges that EE is facing.

### Value/Originality

Currently, many studies on EM in EE attempt to establish a causal link between the educational intervention and the development of students' EM. This paper takes the step further and focuses on exploring how the role of EE pedagogy in fostering the specific psychological attributes of EM can be understood. By studying a non-business setting, the paper builds on insights from an educational and disciplinary context where students have not previously been much encouraged to think and act entrepreneurially. Thus, the findings provide unique insights into how students respond to EE pedagogy regarding the EM. With this knowledge, we gain a more nuanced perspective on how such EE pedagogies facilitate or hinder the development of students' EM.

**Keywords:** Entrepreneurial mindset, Entrepreneurial education, Higher education, Causal mechanisms, Case study

## FEYERABENDIAN PERSPECTIVES TO CRITICAL ENTREPRENEURSHIP EDUCATION AND PHILOSOPHICAL REFLEXIVITY

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### Questions we care about (Objectives)

Researchers as well as practitioners of entrepreneurship education (EE) gradually realize the need to educate well-rounded entrepreneurs (Berglund, Hytti and Verduijn, 2021). Hence the growing reflection about “the appropriateness, the relevancy, the coherency, the social usefulness” of practices in EE (Fayolle, 2013, p.692) - a crucial exercise to undertake in order to enable (future) entrepreneurs to collectively comprehend and help address the issues the world faces today, when considering that “the ‘client’ of EE is the society in which it is embedded” (Fayolle, 2013, p.700).

### Approach

Drawing from Paul Feyerabend’s perspectives allows for a profound rethinking of EE in order to complement the ‘how’ with the critical ‘why’. This moving world requires a practical wisdom that is irreducible to the application of abstract rules. When actions get entangled in the viscosity of reality and the turbulence of the collective, one must be able to ask the right questions without sinking into ideology - in other words, to philosophise (Moreau, 2022).

### Results

The authors reinterpret Feyerabend's philosophy of science and philosophy of education in order to apply them to EE.

### Implications

In this paper, the authors shift the conversation on EE from an overly functionalist nature of an “education [that] (...) [presents] modern scientific culture within the context of the plurality of ways of conceiving of and comporting oneself within the world, faithful to both history and culture, and [ensuring], as best as possible, a capacity for informed engagement with it. (Kidd, 2016, p.127) This approach has implications for the EE literature, as bringing alternative perspectives into the classroom will entail a new way of thinking (Berglund and Verduyn, 2018)

### Value/Originality

The recipe book approach is still widely used in the field of EE (Berglund *et al.*, 2020), which opens the door for a normative discussion to be had as Berglund herself criticizes the idea of teaching entrepreneurship as a simple formula for achieving success, ignoring all its complex intricate nature and ethical considerations (Stockholm School of Entrepreneurship, 2021). Criticality, understood as “self-reflection and critical discourse as means to become aware of stereotypes and to adjust for dominant ideologies” (Kakouris and Liargovas, 2021, p.410) is still missing from EE approaches in most cases (Fayolle, 2013), all the more that “no research really focuses on ontological, epistemological and ethical issues” (Fayolle, 2013, p.695) of EE. Hence the value of this paper attempting to replace criticality and philosophical reflexivity at the center-stage of EE.

**Keywords:** entrepreneurship education, business studies, criticality, philosophical reflexivity, Feyerabend

## SEEKING OUT AUTHENTICITY: DEVELOPING AN ENTREPRENEURSHIP CURRICULUM AS A NON-ENTREPRENEUR

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### Questions we care about

Entrepreneurship education encompasses a variety of philosophical perspectives around “who is the entrepreneurship educator”. Among these, approaches which are of experiential nature emerge as popular among the student body. These often are reflected in positive appreciation from students for practitioners who have “lived it”. This, however, is not always in line with the profile of academic teaching staff at higher education institutions. In particular, higher education institutions are increasingly including PhD among the core requisite for hirings, also for the field of entrepreneurship (Kabongo, McCaskey, 2011). While being an entrepreneur and having an academic background are not mutually exclusive conditions, it is often the case that entrepreneurship educators have either one or the other. Given the author’s background, this study focuses on the latter.

Authenticity is a theme that has picked up momentum in the field of organizational research (Cha et al., 2019). Defined as an alignment between the perception of one’s self and the external expressions of it, it is also important as it relates to our performance at work and ultimately our well-being (Sutton, 2020). Lacking an entrepreneurial background while teaching entrepreneurship, in a context where having an entrepreneurial experience seems to be more in line with student expectations, risks creating individual dissonance between our identity and our practice.

This begs the question of: *how do entrepreneurship educators from a non-entrepreneur background include authenticity in their teaching practice?*

### Approach

This study relies on qualitative data from a sample of 12 entrepreneurship educators from a non-entrepreneur background. Data collected through in-depth interviews will then be analysed through inductive qualitative techniques. Core focus of these interviews is around individuals’ lived experience of teaching, their entrepreneurship teaching practices, curriculum development choices and reflections around one’s self and identity. The choice of narratives is in line with studies on identity work, which include elements of reflection and understanding of one’s development over time (Hannon, 2018).

### Findings

Findings from the data show that entrepreneurship educators navigate the tension around their identity through a reflective process which results in a revisitation of their pedagogical practice. More specifically, issues around authenticity are navigated within the curriculum through a focus on entrepreneurial mindsets as a core learning outcome. A second recurring theme is that of embracing practitioner voices in the classroom, often as case studies, guest speakers and examples by adopting a critical standpoint. A third connected theme is that of experiential learning and authentic assessment as a foundational pedagogical practice.

### Implications for society

The findings of this study examine the process of curriculum development and how the choices that determine the curriculum can be an empowering force for authenticity. The insights generated shed lights on potential avenues to reach a reconciliation between who we are and what we teach, in the pursuit of authenticity in our teaching practice.

### Value/originality

Recent studies have turned attention to the topic of role identity in entrepreneurship education (Wraae et al., 2021). However, an overlooked issue is that of differences and conflicts between one’s individual background and one’s teaching practice in the area of entrepreneurship. This study aims to contribute to this debate by identifying strategies around curriculum development that may bring back authenticity in teaching practice.

## LET'S PLAN IT! LET'S BUILD IT! – DIVERSITY IN DECISION-MAKING LOGICS WITHIN THE PRE-VENTURE TEAM PROCESS AND THE NEGOTIATION OF A SHARED MENTAL MODEL

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### **Abstract**

New Venture Teams (NVTs) have gained more research attention in recent years. However, while considered important to study, most research has focused on established teams or team formation. We study two teams as they undergo the pre-venture process. With a rich data set, consisting of 45 interviews, featuring both interviews conducted within the first three months as well as one year after team inception. We observe team dynamics critical to the process as members negotiate the process of venture creation under uncertainty with inter-team differences in decision making logics. We discuss friendship ties as an influencing factor, and team member exit as an outcome of these negotiations.

**Keywords:** Venture Teams; Entrepreneurial Teams; Causation; Effectuation; Shared Mental Model; Friendship Ties; Team Member Exit; Team Process; Venture Creation Programs; Entrepreneurship Education

## INSIGHTFUL CO-CREATION – A MECHANISM OF MORE SUSTAINABLE ENTREPRENEURIAL ECOSYSTEMS?

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### Questions we care about

At the core of an entrepreneurial ecosystem is the individual, whether he/she is an entrepreneur, aspiring entrepreneur, an innovator, a business angel, a venture capitalist, a service provider, or something else. How these individuals engage with each other matters. This is apparent in the most prevalent interpersonal mechanism of entrepreneurial ecosystems: an investor investing into an aspiring entrepreneur. Beyond that, there is also the well-known mechanism “pay forward” capturing a culture of giving free unconditional advice when asked. The question asked here is: are there other important interpersonal mechanisms enabling new value creation in entrepreneurial ecosystems – especially then more sustainable value creation?

### Approach

We introduce “insightful co-creation” as a new mechanism of entrepreneurial ecosystems. We introduce this mechanism while relating it to pay forward. We progress by providing two exemplary cases, illustrating the interpersonal mechanism being used in different contexts. The cases are derived from a spectrum of documentation, social media, and secondary data, as well as historical participatory accounts and observations. While we believe this works as ground for a conference paper, it does show the limitations of the current empirics relative to directed interviews investigating instances of insightful co-creation specifically, and from multiple stakeholders engaged in the venturing processes.

### Results

**The mechanism of insightful co-creation:** A sustainable entrepreneurial ecosystem arguably requires mechanisms beyond financial actors investing into an aspiring entrepreneur and/or pay forward. We argue for new terminology and meaning to symbolize this shift. We argue that insightful co-creation rather than pay forward can be seen as the main mechanism of a sustainable entrepreneurial ecosystem. Just like pay forward includes an action (pay), so does the new mechanism (co-create). Both mechanisms also have a perspective – ‘forward’ and ‘insightful’. However, the consequences from these different types of actions and directed perspectives are profound – demarcating ecosystems focused on economic development from those also concerned with other sustainable development. Co-creation builds upon an attitude of inclusion: involving others into the creation of solutions and seeing others as potential stakeholders not just in the moment, but for longer periods of time. It is a step towards a more team-based view of venture creation, which can deviate from a lead entrepreneur model. Instilling insightfulness requires a contract among the actors co-creating that one can ask questions, request reflection, and enact change while still co-creating and delivering solutions.

### Value/originality

Entrepreneurial ecosystems basically have been seen environments that enable individuals to succeed with their startups economically. Entrepreneurial ecosystem research rarely seeks explanations on the level of mechanisms used by individuals in the ecosystem. We revise this economic view and claim that sustainable entrepreneurial ecosystems rather are places for societal engagement through entrepreneurship. We argue for the value of appreciating core interpersonal mechanisms in an entrepreneurial ecosystem, if more sustainable development is what is asked for. We need much more study of how individuals adopt ecosystem mechanisms – such as insightful co-creation – that allow them to have self-directed life-long learning as sustainable entrepreneurs – whether in sustainable startups, in more corporate settings, or in more civic and public roles.

**Keywords:** entrepreneurial individuals; entrepreneurial ecosystems; mechanisms for sustainability



## DOES ENTREPRENEURSHIP PEDAGOGY INFLUENCE NASCENT ENTREPRENEURSHIP? SCOUTING FROM AN ENTREPRENEURIAL PROCESS PERSPECTIVE

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### Objectives

Scholars have extensively debated whether entrepreneurship education (EE) has promoted students' entrepreneurial attitudes and intentions, skills and competencies, and start-up behaviour. This debate has been fuelled by inconsistent results yielded from EE impact studies where the EE effectiveness appears to be positive in some cases, whilst in other cases, it remains negative. Scholars argue that the contradictory effects may be attributed to neglecting the heterogeneous nature of EE pedagogy. The entrepreneurial process occurs when people are determined to undertake entrepreneurial opportunity discovery (OD) and opportunity exploitation (OE). Shane (2000) asserts that knowledge asymmetry is the critical determinant of both OD and OE. Knowledge is the result of a learning process and learning influences individuals' knowledge acquisition and transformation. Consequently, knowledge asymmetry results from learning asymmetry, and the learning process, is influenced by EE pedagogy. Despite a consensus on the importance of different EE pedagogies in the learning and entrepreneurship processes, a dearth of research has been conducted on how EE pedagogy influences students' behavioural outcomes of OD and OE. Thus, this research sets out to examine the impact of contrasting EE pedagogy on OD and OE in the entrepreneurial process. Additionally, we take a step further by exploring the mediating effect of EI in the relationship between EE pedagogy and the entrepreneurial process.

### Approach

Drawing on a general distinction underlying theoretical and practical-focused pedagogies, this study examines the nexus among entrepreneurship pedagogy, entrepreneurial intention, and opportunity discovery and exploitation of an entrepreneurial process. Data was obtained from nascent student entrepreneurs (n=462) enrolled in Chinese universities or their recent graduates. Data was analysed using path analysis with mediation in *MPlus* 8.

### Results

The research results reveal that practical-focused pedagogy contributes more to the entrepreneurial process than theoretical-focused pedagogy. Scrutinising entrepreneurship pedagogy respectively, theoretical-focused pedagogy has a more significant impact on opportunity exploitation, in contrast, practical-focused pedagogy is more influential for opportunity discovery. Results also demonstrate that entrepreneurial intention partially mediates the paths from engaging in practical-focused pedagogy and opportunity discovery and exploitation processes. Contrary to the hypothesis, a similar mediating role for the paths of theoretical-focused pedagogy is not identified.

### Implications

for society Our findings also indicate that the relationship between theoretical and practical pedagogies is of a reciprocal nature in yielding effective learning outcomes, calling for integration in teaching practice.

### Value/Originality

This research sheds light on the more nuanced effectiveness of entrepreneurship programmes on students' learning and the entrepreneurial processes by disentangling the heterogeneous nature of entrepreneurship pedagogy. It implies that opportunity recognition and exploitation are dependent upon knowledge and learning asymmetries resulting from the disparity of entrepreneurship pedagogies.

**Keywords:** Pedagogical assessment, opportunity discovery and exploitation, entrepreneurial learning, entrepreneurial intention, student entrepreneurship



## THE VALUE OF CO-CURRICULARITY IN ENTREPRENEURIAL EDUCATION

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### Questions we care about (Objectives)

Numerous studies have been conducted focusing on curricular entrepreneurship education. However, there is still much knowledge to be developed on the co-curricular initiatives that students can access and that takes place in the entrepreneurial ecosystems in which universities are immersed.

### Approach

This study approaches co-curricular entrepreneurial training from a qualitative and international perspective, focusing on the activities developed around two leading European universities in entrepreneurship: Lund (Sweden) and Malaga (Spain). Semi-structured interviews with different actors of the ecosystems, organizers, or participants of diverse co-curricular activities have been conducted.

### Results

This study is still in progress, but the preliminary results and conclusions can be drawn from the analysis of these interviews. Developing co-curricular entrepreneurial activities encourages collaboration among actors, fostering more interconnected ecosystems. They also promote a value interchange among students and the entrepreneurial ecosystem that enriches both parties. Moreover, analysing its characteristics permits the classification of the co-curricular initiatives and the identification of critical conditions or actions that foster its success.

### Value/Originality

We focus on co-curricularity which is a novel approach in entrepreneurial education research. The study presents theoretical contributions to advancing knowledge on co-curricular entrepreneurial education, highlighting its relevance as a value-creating element for the ecosystem. Our findings are of value for educators and university managers who are involved in designing entrepreneurial education initiatives across campus.

## EXPLORING THE RELATIONSHIP BETWEEN TEAM ENTREPRENEURIAL PASSION AND WELL-BEING: EMPIRICAL EVIDENCE

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### Question we care about

Drawing on the Broaden and Build Theory and the Self-Determination Theory, the study investigates the impact of Team entrepreneurial passion on the well-being of team members. Although well-being has recently been recognized as an essential aspect of entrepreneurial success, there is a lack of empirical research on how the emotional aspects related to starting a business, especially in entrepreneurial teams. Our study aimed to address this gap by exploring how different domains of TEP may affect entrepreneurial well-being.

### Approach

For this quantitative study, a structured questionnaire was administered via an online survey, and the data thus collected was used to test our hypotheses. Survey data were collected from 29 European entrepreneurial teams. The interrelationships are checked through Smart PLS 3.2.8.

### Results

The results of the study show that Team entrepreneurial passion did not significantly affect entrepreneurs' life satisfaction, but experiencing collective passion positively impacted their psychological well-being by fulfilling their sense of autonomy.

### Implications

The findings of this study have practical implications for entrepreneurship education, emphasizing the importance of incorporating passion at the team level as a lens to promote individual well-being in entrepreneurial processes. Our study highlights the need for education and accelerator programs to focus on nurturing and sustaining team passion while considering the positive and negative effects of Team entrepreneurial passion.

### Value/Originality

This study is the first to explore the interrelationship between Team entrepreneurial passion and entrepreneurial well-being. We argue that our findings provide a new avenue for entrepreneurial program designers for raising awareness of the role of psychological and emotional indicators in the entrepreneurial process by presenting passion at the team level incorporated as a lens to understand and promote individual well-being.

**Keywords:** Team entrepreneurial passion, Psychological well-being, Subjective well-being, Entrepreneurial team

## EMBEDDING ENTREPRENEURIAL COMPETENCE OR JUST “PLAYING THE SYSTEM”?

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### Question we care about

Increasingly, EE is moving beyond the mechanics of business creation in favour of developing *entrepreneurial competences*. Assessment is recognised to play a central role in student engagement and learning within EE, yet many HE institutions still fall back on traditional approaches to assessing students within EE classes and programmes. Thus, this conceptual paper addresses the fundamental question of *how can we rethink assessment within EE to encourage and support embedding entrepreneurial competence rather than just ‘playing the system’?*

### Approach

In this conceptual paper we begin with a discussion of the (limited) literature considering assessment practices within EE, identifying the increasing inclusion of entrepreneurial competences within EE programming and the challenges this raises for assessment. To better understand and contextualise entrepreneurial competences, we draw on studies from the competence development literature, viewing competence development as a process whereby learners move through a number of stages from *unconscious incompetence* toward *unconscious competence*. Building on this conceptual foundation, we draw on the psychology literature on motivation to consider the interplay between assessment and intrinsic motivation for engaging in – and sustaining – learning. From this, we identify and discuss a conceptual approach to intrinsically-oriented entrepreneurship competence development within EE.

### Results

Our conceptual work identifies a number of tensions between assessment practices and the development and embedding of entrepreneurial competence, particularly time and visibility of competence.

### Implications

We highlight the dimensions of learning and assessment that entrepreneurship educators need to consider in order to better support student entrepreneurial competence development through tailored intervention in assessment practice.

### Value/Originality

The contribution that we intend to make with this paper is to distil dimensions of learning and associated learning assessment in the context of entrepreneurial competences. These dimensions of learning are intended to help spur new conversations on assessment of competence rather than provide answers.

**Keywords:** Entrepreneurship education; entrepreneurial competence; assessment

## THE IMPACT OF INTERDISCIPLINARY ENTREPRENEURSHIP EDUCATION ON STUDENTS' ENTREPRENEURIAL MINDSET

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### Objectives

An entrepreneurial mindset is key to entrepreneurial activity. It makes people passionate about exploring opportunities, seek innovations and take entrepreneurial action (Kuratko and Morris, 2018). Whereas a large proportion of entrepreneurship education (EE) programs in higher education focused on teaching 'about' and 'for' entrepreneurship and even 'through' entrepreneurship and mainly focused on equipping students with a skillset and competencies to execute entrepreneurial activities, less focus has been given to EE aiming at shaping the entrepreneurial mindset (EM) and putting students' perspectives in the center.

### Approach

With this paper we seek to understand, how interdisciplinary entrepreneurship education contributes to developing the EM of students in comparison to monodisciplinary entrepreneurship education. We do so by drawing on transformative learning theory (Mezirow, 1978) as the source for our EE strategy. We try to gather insights by analyzing the reflecting written exams of eight students that participated in a monodisciplinary course and eight students that participated in an interdisciplinary course using content analysis by Mayring (2013)

### Results

Our research was able to demonstrate that the transformation of EM among students in a monodisciplinary course was not significantly different from the transformation of EM among students in an interdisciplinary course. Nevertheless, interdisciplinary students seem to perceive the development and promotion of skills and abilities more strongly in terms of their self-efficacy and link these closely to the methods used within a course.

### Implications

The results of this work show, that the choice of methods and the 'how you do it' in combination with room for self-reflection are of decisive relevance, especially in interdisciplinary courses with students from non-business study-programs.

### Value

Our paper contributes to the field of EE in higher education since it opens it up to an even more interdisciplinary approach and gives an insight into the development of the EM in non-business students. Our work indicates that further research is needed in this field.

**Keywords:** entrepreneurial mindset, interdisciplinary, entrepreneurship education, transformative learning theory, self-reflection

## **FANNING THE FLAMES OR LEARNING HOW TO AVOID THEM? HOW EDUCATORS IN SUSTAINABLE ENTREPRENEURSHIP BALANCE STUDENT IDEALISM AND ENTREPRENEURS' PRAGMATISM**

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### **Questions we care about (Relevance and novelty)**

Sustainability education has a long tradition of action-oriented and transformative pedagogy (Scalabrino, 2022). Since entrepreneurship education stems from a similar tradition (Jones & Iredale, 2010), the alignment of the two fields should be a fairly straight-forward activity. However, this proves to be less straight forward in a real-life context, which creates an interesting corundum for educators in the field of sustainable entrepreneurship. To create change-makers who engage in collective action and challenge the status quo, they are expected to stimulate and fan the idealistic values of the students (Rodríguez & García, 2009), but balancing students' expectations and providing them with realistic viewpoints is also necessary in order for them to be able to navigate successfully in different contexts such as the world of policy and politics, or the world of business (Joyce & Paquin, 2016).

### **Approach**

Interviews were conducted with five educators, who had embedded courses focusing on sustainable entrepreneurship in programmes that are not commonly associated with entrepreneurship, and eight of their students. In addition, nine entrepreneurs with strong focus on sustainability were interviewed about their views of sustainability. The data was analysed with the qualitative data software NVivo, which allowed us to assess frequencies of word use. We thus applied an interpretivist approach with a realist bent. Following the first round of interviews, we conducted four more interviews with educators to learn more about their approaches to teaching sustainable entrepreneurship.

### **Results**

To further our understanding of how sustainable entrepreneurship educators balance student idealism with the more pragmatical world of entrepreneurship, we organised the data with three theoretical models. Our findings indicate that educators in these models typically are positioned in-between the students' preferred approaches and the applied approaches of the entrepreneurs. An informative case where students were assigned to work with a company, is used to illustrate this. The students, who viewed sustainability as a binary rather than continuous concept, did not perceive the company to be contributing to sustainability, even though it was much more sustainable than its competitors. Although this misalignment became difficult to balance for the educator, the outcome was insightful, and it became a good learning experience for the students. Following these findings, we further explored the approaches of educators to balancing idealistic student expectations with the systems they encounter after their studies, and organised those into four themes.

### **Implications for society**

To foster more individuals who are willing to engage in the challenges that characterise our world today, it is important that we further our understanding about how we effectively design and teach educational courses that focus on this. The study is mainly informative to educators who struggle with this. It offers insights into how educators can fan the flames of discontent in their students, while teaching them how to avoid the worse pyres in the world of business and politics, i.e. how to balance student idealism with the more cynical world of business and politics.

### **Value/Originality**

Studies with clear implications for educators focusing on sustainable entrepreneurship are rare. Our theoretical models offer us guidance about, not only how to systematise different perspectives of actors within the field, but also what to expect of these different actors when they meet in an educational setting. Methodologically, our study introduces an abductive approach with interesting possibilities.

**Keywords:** Sustainability, qualitative, sustainable entrepreneurship, balancing, students, educators

## **TO COMPETE OR NOT TO COMPETE? IT'S COMPLICATED. FINDINGS FROM A LARGE-SCALE PRACTICAL TRIAL FOCUSING ON ENTREPRENEURSHIP COMPETITIONS AT PRIMARY AND SECONDARY LEVEL OF EDUCATION.**

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### **Questions we care about (Objectives)**

To include elements of competition in educational settings is a highly debated topic in educational research (Wentzel & Brophy, 2014). In no other topic are competitions more prevalent than in entrepreneurship education (Brentnall, 2020). Since entrepreneurship typically is viewed as a competitive activity (Foss & Klein, 2012; Spinosa et al., 1997), it can be considered as natural to include competitive elements in entrepreneurship education. Nevertheless, our knowledge about how participants experience encountering representatives from the local industry in a competitive context, is limited.

### **Approach**

Four entrepreneurship competitions for pupils at primary and secondary level of education in Denmark, were studied. Survey data was collected on 429 pupils and 77 judges. The survey focused on assessing the respondents' competitive orientation, entrepreneurial-attributes, and education and learning related variables. Multilevel regression analysis was used to gauge which individual-level attributes that influenced the pupils' level of satisfaction with the competition. In addition to this, we tested whether the judges' competitive orientation (cross-level) influenced the pupils' experience with the events.

### **Results**

The influence the judges had on the pupils was limited. No measurable influence of their competitive orientation could be detected. As expected, the more competitive pupils demonstrated significantly higher levels of satisfaction with the events. However, the pupils who perceived that they had a high level of academic ability, a variable that was uncorrelated with competitiveness, also demonstrated higher levels of satisfaction.

### **Implications**

It is not only the entrepreneurship related dimensions, such as, introducing competitive elements into educational activities, that we should be concerned about. We also need to think about which results we get when we streamline these types of activities to fit the broader education system. Entrepreneurship education has the potential to be emancipating and empowering to pupils from non-academic family backgrounds. By adapting the entrepreneurial content to fit the educational system, we risk creating yet another educational activity which is tailored to the academically gifted pupils.

### **Value/Originality**

Our focus on assessing the multilevel influence, that results from the intersubjective interaction between judges and pupils, offers an approach to further our understanding about how entrepreneurship competitions influence different types of pupils. In addition to this, by focusing on understanding the influence of different types of competitive orientations, we nuance the concept of competitiveness and its influence in the contextual setting of the entrepreneurship competitions.

**Keywords:** Competitiveness, Entrepreneurship competitions, Practical trial, Multilevel analysis

**ENTREPRENEURSHIP EDUCATION IN CONTEXTS OF SOCIOECONOMIC DISADVANTAGED IN BRAZIL**

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**Abstract**

This article discusses the impact of entrepreneurship education in socioeconomically disadvantaged contexts, emphasizing its perceived dynamic nature in reflecting personal values, social changes, and cultural differences (Lackéus, 2015; Loi *et.al*, 2022; Berglund *et al*, 2020; Berglund & Johansson, 2007). The focus is on the implementation of the *Empreende Jovem Fluminense* (EJF) Program for high school students in poor communities in Rio de Janeiro. The EJF had the support of school directors, the State Department of Education, and a non-governmental organization serving children and adolescents at risk. A case study using content analysis was conducted to analyze speeches from school principals, coordinators, students, teachers, parents/guardians, and NGO representatives. The study found that the main contribution of education for entrepreneurship in disadvantaged contexts was the development of non-cognitive skills that can impact academic performance and job market outcomes. The program's location on university premises also broadened the educational perspectives of the participants. Overall, the EJF is believed to be highly beneficial for the professional development of its participants.

**Keywords:** entrepreneurship education; socioeconomically disadvantaged contexts; high school students

## FOR INSIDERS ONLY? PERCEPTIONS OF ENTREPRENEURSHIP AT THE UNIVERSITY

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### Objectives

The purpose of this paper is to explore perceptions of entrepreneurship among students, PhD candidates and educators at an entrepreneurial university. We aim to understand how perceptions might influence the delivery of entrepreneurship education - and the lack of it. The question we care about is: how is entrepreneurship perceived across faculties and campuses at an entrepreneurial university?

### Approach

This is an explorative case study based on eight online focus-group interviews, one for each faculty at the Norwegian University of Science and Technology. The focus-group participants were educators, students and PhD candidates from different departments within the respective faculties (n=51). We analysed the data through theoretical thematic analysis, leaning on social identity theory.

### Results

The study highlights three main themes with seven sub-themes that express the perception of entrepreneurship among students, PhD candidates and educators. The perceptions problematize distance to the concept of entrepreneurship and highlight the importance of relevance. As a first theme, we found that the participants struggle to understand the concept of entrepreneurship. They perceived the terminology as unclear and unfamiliar and describe a lack of interest and a lack of knowledge. As a second theme, we found a distance in representation, leading most participants to see themselves as entrepreneurial 'outsiders'. And as a third theme, we found the importance of relevance when embedding entrepreneurship in the university context, learning to realise ideas, and learning how to make a living post-graduation.

### Implications

This study has implications for entrepreneurial universities aiming to promote entrepreneurship across disciplines. By focusing on improving and extending the understanding of entrepreneurship among all employees, as well as promoting a diverse representation of entrepreneurship, entrepreneurial universities may encourage a sense of relevance among educators and PhD candidates, which might, again, influence students' education. Establishing train-the-trainer initiatives and PhD courses about entrepreneurship could be a solution to improve understanding and promote entrepreneurship diversity in-house.

### Originality

The sample of participants in this study represents an original approach to studying perceptions of entrepreneurship across disciplines in the university context. The findings add to our knowledge of enablers and barriers to entrepreneurship education for broad audiences, including non-business students and PhD candidates. Further, this study highlights the role of educators across disciplines that are asked to teach entrepreneurship to their students, without necessarily having the interest, knowledge or skills to do so.

**Keywords:** Educator, entrepreneurship, entrepreneurship education, focus-group interview, social identity theory, discourse theory



## OPERATIONALISING THEORY: THE IMPORTANCE OF ENTREPRENEURS' WELL-BEING AS A KEY ASSET FOR SUCCESS.

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### Questions we care about?

Entrepreneurs' well-being has gained increased attention in the entrepreneurship literature as a non-financial contributor to why an individual may choose to set up a business (Abreu et al, 2019). Research has evolved from topics such as work-life-balance, quality of life and subjective well-being of the entrepreneur (Shir et al, 2019). The literature is beginning to turn its attention to exploring its evolution from a *hedonic* (positive state of mental wellness) perspective to the *eudaimonic* (psychological functioning, autonomy and awareness of self) perspective (Ryff, 2019; Wiklund et al, 2019). While the literature promotes the phenomenon of well-being as crucial for entrepreneurial success (Stephan et al, 2022), how aware are entrepreneurs of this intangible asset, leads to the question we care about: *How does entrepreneurship education prepare and make entrepreneurs aware of the importance of the self in their well-being for enterprise success?*

### Approach

To understand the role of well-being in entrepreneurship education (EE) and answer the question posed we use Ireland as a case study. Firstly, we explore the literature, secondly, we investigate how well-being is operationalised in training offered by public and private agencies that support start-ups. Thirdly we propose bridging the gap between the advancement in the literature and entrepreneurship training by developing a novel module for inclusion in start-up training programmes. We gathered information on non-accredited training courses of various duration, cost, and industry specific topics. Some programmes were targeted at traditional business venture creations and others at not-for-profit or social enterprise development.

### Potential findings

Our initial findings clearly show that the literature is ahead of the curve. The absence of the delivery of education on entrepreneurial well-being in practice is both insightful and alarming. We find most courses offered as 'start your own business,' 'enterprise training' and 'new venture development' fall into the category of tangible skills training. Save one course which had a minor reference to coaching, few offered the intangible or softer skills training of well-being. We did not find any evidence of the development of self-awareness, or personnel growth. While these are preliminary findings based on first level analysis we can partially respond to our curiosity, and report that there is a dearth of focus on the importance of entrepreneurs' well-being in non-accredited EE offerings in Ireland.

### Implications for society

This research affords educators the opportunity to reduce the gap between the theory and its operation in practice. The findings highlight where EE must head in exploring the significance of the role of the awareness of self in contributing to the eudaimonic well-being of the entrepreneur. The research has the potential to ignite educators' view on including entrepreneurial well-being as an important aspect of EE and programmatic review, specifically for non-accredited courses/programmes offer outside the higher education context.

### Value/Originality

Whilst EE has done well in focusing on tangible skills, we present a practical solution in our novel module which emphasises the value of the entrepreneur. This research is of interest to EE where educators and programmatic reviews need to go back, for the future.

## STUDENTS' ENTREPRENEURIAL LEARNING ABROAD: EMOTIONS, COPING AND CAPABILITIES

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### Questions we care about (Relevance and novelty)

With entrepreneurship as a driving force in a globalized world, universities invest in cross-cultural experiences and equip entrepreneurship students with adaptable skillsets to collaborate across cultures. In internships abroad, students must cope with the foreignness in culture and behavior, forcing them to behavioral experimentation, trying out new attitudes and behaviors. Placement at the boundary of a startup may therefore represent a legitimate position for students to explore new opportunities and developing entrepreneurial capabilities. Considering that the entrepreneurial learning experience abroad can be powerful and emotional, we believe students may cope differently, influencing their development of entrepreneurial capabilities. With this research we aim to build new knowledge on the role of cross-cultural learning in entrepreneurship education generally and its potential in developing important entrepreneurial skills in the global society specifically. We asked: How do students develop entrepreneurial capabilities in a cross-cultural setting and how may coping play a role in the process?

### Approach

In a qualitative study, we explored the learning experience of 5 Norwegian master students enrolled in a 3-month internship program hosted by Stellenbosch University, SA. A longitudinal study design was employed collecting data via 2 reflective interview sessions, to understand each student's entrepreneurial cross-cultural experience, as well as their personal growth and coping strategies.

### Findings

The findings highlighted that the students coped differently with the challenges of an internship abroad, and not all were able to cope in a functional and adaptive way. Emotion-focused coping strategies were prevalent in the beginning of the internships when the level of participation in the startups was low. Hence, it took time for the students to analyze the foreign socio-cultural setting to activate more problem-focused coping strategies.

### Implications

The study shows that entrepreneurship internships abroad can stimulate to entrepreneurial learning and development of capabilities if students are using adaptive coping strategies.

### Value/Originality

The research has aimed to translate and expand the theory on coping to a student and situated learning setting, and to students' learning at the periphery of CoPs, enhancing our understanding of students' entrepreneurial learning in internships abroad.

**Keywords:** Cross-cultural experiences, internship abroad, coping strategies, entrepreneurial learning

## IDEATION TEACHING TECHNIQUES: PHILOSOPHIES, THEORIES AND THE IMPLICATIONS FOR PRACTICE

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### Questions we care about (Objectives)

This conference paper considers the role of entrepreneurship theory in the development of ideation techniques for entrepreneurship education. It aims to highlight these links by exploring different philosophies and theories about entrepreneurial opportunity to consider the ideation teaching techniques each generate.

### Approach

It discusses the role of philosophy in theory formation, then introduces the four paradigms of thought. The paper shows how these guide different theories of opportunity and illustrates the different ideation techniques. It concludes by reminding researchers and educators about the role of entrepreneurship theory in educational practice.

### Results

Forms of ideation technique are presented and explained, as they relate to each paradigm, and the paper will conclude by explaining the value of these techniques for ideation, opportunity discovery and creation, in the entrepreneurial process.

### Implications

The approach presented provides a framework for thinking about different forms of entrepreneurial opportunity and introduces an organizing methodology for ideation techniques that can enhance entrepreneurship educators' capacity to generate venture concepts within their classes.

### Value/originality

In presenting four paradigms of entrepreneurship thought the paper demonstrates how each paradigm has different underlying metatheoretical assumptions. These assumptions influence how entrepreneurship is conceptualized and how entrepreneurial opportunities are considered. Each paradigm offers different views about entrepreneurial opportunity, leading to different forms of entrepreneurial practice.

**Keywords:** Ideation, Alertness, Discovery, Paradigms, Entrepreneurial Opportunity

## IMAGERIES OF ENTREPRENEURSHIP EDUCATION IN THE UNITED KINGDOM, 1860-2020

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### Questions we care about

Our paper aims to use the historical method to review the history of entrepreneurship education in the United Kingdom (UK) from 1860-2020.

### Approach

We follow Wadhvani & Viebig (2021) by adopting a historical frame that allows us to identify and consider historical variations in entrepreneurship education over time (Welter, 2011). We take a broad perspective of entrepreneurship education, examining the intersection between entrepreneurship and education in different phases of the UK's history. Our approach is designed to be an analytically structured history and our work draws on historical data, first-hand accounts, and published works, to construct a narrative.

### Findings

We present the first comprehensive history of entrepreneurship education in the UK. We thereby extend our known history and document entrepreneurship education's contemporary history, in the UK. This is an important task. Contemporary entrepreneurship education in the UK started in the 1970s and it is, therefore, timely that its history is fully assessed, recorded and considered.

### Implications

Without a comprehensive understanding our history we are unable to fully appreciate the different forms of practice that have been derived from different periods. These forms sit interwoven together and are sometimes mistaken, one for the other. A better appreciation of history allows us to 'see' more clearly these differences and understand why they exist.

### Value/originality

By undertaking and presenting this work our study provides insights into the different forms of entrepreneurship education, how they became established.

**Keywords:** History, Enterprise Education, Entrepreneurship Education, United Kingdom

## BALANCING PURPOSES IN ENTREPRENEURSHIP EDUCATION THROUGH CONSTRUCTING TEACHING PHILOSOPHIES

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### Abstract

The didactical side of entrepreneurship education prevails as a major challenge to the field – both in theory and practical application. Generic approaches have had extensive value throughout the propagation of entrepreneurship education; however, recently, the tendencies to deviate from the one-size-fits-all methods toward the contextualized and differentiated teaching ones have been found suitable for the development of how to teach entrepreneurship. The current research investigates how entrepreneurship educators balance the professional, entrepreneurial, and general educational purposes of entrepreneurship education. This is examined through the construction of teaching philosophies by a group of 15 educators in a university of applied sciences in Denmark. Through a thematic analysis of course descriptions and teaching plans followed by qualitative interviews, six themes with each their organizing principle are developed. First, the study highlights, how entrepreneurship educators apply structuring didactic principles in their planning, implementation, and evaluation of the teaching practice. Second, the educators develop a distinct vocabulary that actively translates entrepreneurship education into the setting of the university of applied sciences. This further involves educator role identity reflection, and processes of institutional brokering to realize entrepreneurship education. The close connection to professional practice becomes a focus for attentively nurturing the relationships outside the institution as well as relating this context to the purpose in focus. The implication is that contextualization of entrepreneurship education happens both from the outside and in and from the education to the professional practice through entrepreneurial practices. Teaching philosophies here have value for the academic development by having the entrepreneurship educator reflect on beliefs, goals, and practices about how to teach entrepreneurship.

**Keywords:** entrepreneurship education, teaching philosophy, entrepreneurship educators, educational philosophy, academic development, faculty development

## ENTREPRENEURSHIP EDUCATION: AN OVERVIEW OF THE LEARNING OBJECTIVES, TEACHING METHODS, ASSESSMENT METHODS, AND ENTREPRENEURIAL COMPETENCIES OF CURRENT ENTREPRENEURSHIP COURSES.

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### Abstract

The current study has been designed with a quantitative approach focused on statistical analysis using the information available on the websites of the 20 best universities in the world regarding courses and subjects related to entrepreneurship or entrepreneurial trainee by using computerized text analysis tools and manual processing. Based on the relation between learning objectives, learning activities (teaching methods), and assessment methods, this study explores a constructive alignment in outcome-based teaching and learning models proposed by Biggs (2007). It is also intended to identify which competencies are being developed in entrepreneurship courses by comparing the learning outcomes of the courses with the entrepreneurship competencies identified by Tittel and Terzidis (2020). The result shows that the current focus of the courses is on creating Strategy and Management competencies, emphasizing the relationship between entrepreneurial competencies, business performance, and the competencies derived from the extension of management. In addition, the results show the importance of implementing other competencies, such as personal and relationship competencies, in order to create an integral entrepreneur, forming more competencies derived from entrepreneurial theory.

**Keywords:** Entrepreneurship Education, Learning Objectives, Teaching methods, Assessment Methods, Constructive Alignment, Entrepreneurial Competencies.

## SAME, SAME BUT DIFFERENT: HOW DO ENTREPRENEURSHIP EDUCATORS INTEGRATE DESIGN THINKING INTO THEIR CLASSROOMS? INSIGHTS FROM AN INTERVIEW STUDY

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### Questions we care about (Objectives):

Over the past twenty years, Design Thinking (DT) has emerged in a variety of educational contexts of entrepreneurship and there is an existing debate on the value of integrating Design Thinking into Entrepreneurship Education (Daniel et al., 2016; Huq & Gilbert, 2017; Linton & Klinton, 2019; Sarooghi et al., 2019; Val et al., 2019). In 2020 the new EntreComp Playbook by the European Union was published, describing Design Thinking as one of the three most important entrepreneurial methods (Baciagalupo et al, 2020). However, although design thinking has gained wide popularity and application in EE practice (Neck & Green, 2011, Nielsen & Stovang, 2015; Sarooghi et al., 2019; McLuskie et al., 2019; Linton & Klinton, 2019), there have been scarce insights into how Entrepreneurship Educators actually apply Design Thinking into their classroom practice. Therefore, this study answers questions about what Entrepreneurship Educators actually “do” in their educational practice when integrating Design Thinking.

### Approach

This study follows an interpretive and qualitative approach, drawing upon semi-structured interviews from 29 entrepreneurship educators from Higher Education in the UK and Northern Europe. Thus, this study puts focus on the quality of the Design Thinking integration in Entrepreneurship Education - from an educator’s perspective – and demonstrates that entrepreneurship educators integrate Design Thinking in many ways into their educational practice.

### Results

As a result, this work defines a framework for the four forms (selective, idea-centric, procedural, holistic) of Design Thinking integration in the context of Entrepreneurship Education.

### Implications

If entrepreneurship educators hope to deliver Design Thinking-based educational experiences for their students (Sarooghi et al., 2019), it is yet to be defined how entrepreneurship educators should be trained in Design Thinking. In particular, this study has identified a need for appropriate training of the educators to extend their awareness of the principles of Design Thinking.

### Value/Originality

This research has identified four novel and distinct ways in which Design Thinking can be integrated with(in) Entrepreneurship Education. The value of this new understanding is that it allows educators to be more reflexive about why and how they utilise the potentially power full tool of design thinking – addressing an apparent lack of this understanding in contemporary practice.

**Keywords:** entrepreneurship, educator, design-thinking, perspective, qualitative interview study, educator-centred perspective

## LOOKING FOR HOPE IN ENTREPRENEURSHIP EDUCATION

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### Questions we care about

The world faces several grand challenges, and many rely on the upcoming generations and the development of change agents to find solutions to today's problems. At the same time entrepreneurship education relies on more student active learning approaches and students are encouraged to deal with real problems. One crucial factor identified as important for action is *hope*. Despite being one of the main emotions that drives action, it has been little studied within entrepreneurship. Thus, the research question of this paper is *What is the role of hope in entrepreneurship education?*

### Approach

We first build a theoretical framework to divide hope from other topics in entrepreneurship. Along with this, we investigated three different cases where educators used student active learning approaches. Teaching methods were similar among the cases, but contexts differed. These were 1) the Norway case, where design thinking methods were used to challenge students to solve sustainability issues, 2) the India case, where Norwegian master's students developed entrepreneurial solutions in an underprivileged community in rural India and 3) the South Africa case, where South African and Norwegian master's students explored how entrepreneurship can address problems of youth unemployment. Data were collected through interviews with students and lecturers, as well as through participant observations.

### Results

The case studies show that there are four processes taking place simultaneously; 1) what the educator plan regarding learning activities to be performed during the intervention, 2) the relationship between students and external partners, 3) the groups' process and 4) the personal emotions each individual student goes through. These processes have different implications for how students relate to the concept of hope, but also for how teachers can facilitate these processes.

### Implications

The paper sheds light on the role that hope as a motivator for action in entrepreneurship education may play. By acknowledging this, the educator should also facilitate learning activities that can help students handle and overcome emotions that may hinder further action, as well as strengthen processes where hope can lead to action.

### Value/Originality

Findings are based on three unique cases, where students were exposed to very severe challenges of today. As discussed in this paper, hope can be a crucial motivational factor that makes students take action. The topic is highly relevant, as it connects the role of educators to the fostering of change agents who are motivated to address the UN Sustainability Development Goals.

**Keywords:** Hope, Case study, Entrepreneurship Education, Norway, India, South Africa



## THE PROMISE OF PROCESS STUDIES IN ENTREPRENEURSHIP EDUCATION

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### Questions we care about (Objectives)

Both entrepreneurship (i.e., exploration and exploitation of entrepreneurial opportunities) and learning are processes. Process studies are adequate means to gain detailed understanding and knowledge of a process. We argue that process aspects of entrepreneurship education promote an avenue for process studies to develop the field further. Building on this, this paper explores how processes are (not) studied in entrepreneurship education research.

### Approach

We conduct a systematic literature review of process studies in entrepreneurship education research.

### Results

Our mapping of process studies in entrepreneurship education resulted in 101 empirical studies, which we grouped into process studies of students' learning, designing courses, evaluating programs, and developing entrepreneurial universities and ecosystems.

### Implications

Increased use of process studies will provide better answers to how learning takes place and processes unfold in entrepreneurship education. Hence, entrepreneurship education research will enable improvements in EE practice and more efficient use of public funding for education.

### Value/Originality

This paper provides an overview of previous studies of processes in the EE literature, demonstrates the need for process studies, and points to potential avenues for new studies as well as re-evaluations of accepted truths using process studies in entrepreneurship education research.

**Keywords:** Process Studies, Literature Review, Entrepreneurship Education

## SIMULATING WITH LIVED EXPERIENCES FOR DEVELOPING ENTREPRENEURIAL COMPETENCIES

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### Questions we care about

An emerging theme in entrepreneurship education literature is the development of entrepreneurial competencies relevant in subsequent careers. We argue that traditional pedagogical methods are lacking in developing associated competencies. Mainly due to the common educational goal of facilitating propositional knowledge in engineering and business schools (where many entrepreneurship educations are located), rather than developing competence.

### Approach

The aim of this study is to investigate if simulation exercise in an entrepreneurship education context can contribute to students developing judgmental and social competencies and how that implicates the design of the simulation and the role of the agents. The empirical context of our study is a simulated negotiation exercise as part of an initial course at a two-year master's level education in entrepreneurship. Empirics are built on participant surveys, participant statements and teacher observations.

### Results

In the simulated real-life situations students are acting under uncertainty as they navigate bottlenecks in the negotiation and have to alter their aims as they interact with the other party. As the simulations are iterative with increasing complexity, each iteration allows increased proximity to reality and more challenging aims. For each iteration, we observe and also receive (from student debrief and feedback) the increased competence in navigating the negotiations. This indicates that the interactions are simulated lived experiences, rather than accounts of other peoples lived experiences, thus increasing the intensity of the learning experience.

### Implications

This particular simulation exercise redefines what the role of the teacher is and the benefits of pairing students and non-institutionalized agents in the lived experience that develops competencies requiring social interactions. This pedagogical model gives more realistic experiential learnings than what can be designed solely "within" the classroom. It also implies that the teacher becomes a facilitator, and the design of the exercise is dependent on the extent the teacher can identify and relate what constitutes realistic experiences worth matching towards the intended outcome of the role-play exercise.

### Value/Originality

This study informs that development of judgmental abilities and social skills as entrepreneurial competencies, can be facilitated in an educational setting. But for a realistic learning of what to expect in a future entrepreneurial career, students should interact with those who have the lived experienced of relevant competencies.

**Keywords:** Entrepreneurial competence, Simulation exercise, Venture creation program, entrepreneurship education, pedagogy

## INSTITUTIONS AND ENTREPRENEURSHIP EDUCATION: A CRITICAL ANALYSIS OF THE LITERATURE

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### Questions we care about.

Different approaches and levels of analysis have been considered to study the role of entrepreneurship education in society and its impact on entrepreneurship (Pittaway & Cope, 2007). On the one hand, some scholars analyse how supporting policies (Hägg & Schölin, 2018), social contexts and academic environments influence entrepreneurial intention and behaviour (Pinheiro et al., 2022). On the other hand, some research analyses the contextual factors inside universities, specifically formal and informal institutions, as determinants of entrepreneurial universities (Guerrero et al., 2016; Guerrero & Urbano, 2012), influencing the behaviour of different actors in the entrepreneurship ecosystem (Pocek, 2022). Previous literature has demonstrated that institutions matter in entrepreneurship education (Ofstedal et al., 2018). However, the relationship between institutions and entrepreneurship education remains blurred. This study analyses the literature on entrepreneurship education from the institutional perspective answering the following questions: 1) How has evolved the entrepreneurship education literature based on the institutional approach? 2) What is the intellectual structure that has emerged? 3) What are the emerging models, themes, methods, and metrics that have been adopted?

### Approach

We conduct a systematic literature review supported by bibliometric analysis. A sample of 56 articles published until 2023 in journals included in the Journal Citation Reports™ was analysed. The review involved four phases: I) search criteria and selecting the articles; II) systematically analyses the literature; III) critical thematic analysis based on the clusters that emerged from the bibliometric analysis; and IV) the proposal of a future research agenda.

### Results

The main findings reveal that: (1) there is no consensus on the variables that measure the institutions; (2) additional research on the interactions between the formal and informal institutions and their effect on entrepreneurship education is needed; (3) research do not consider different stages of the entrepreneurial process (potential, nascent and new entrepreneurs); and (4) there are still few academic publications in the field.

### Implications

This paper contributes to understanding entrepreneurship education research that uses institutional theory as a conceptual framework. Therefore, these results expand the use of institutional theory to study how institutions and entrepreneurship education are related.

### Value/Originality

This study provides a detailed overview of what we know about entrepreneurship education based on the institutional approach and develops a framework for a research agenda.

**Keywords:** Entrepreneurship education; institutional theory, bibliometric, systematic literature review.

## ENTREPRENEUR BILLIONAIRES AS A PEDAGOGICAL DEVICE FOR TEACHING ETHICAL COMPETENCE

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### Questions we care about (Objectives)

Most of today's 2.668 billionaires are entrepreneurs in the sense that they made their wealth through businesses they own, or even started. We observe that the scholarly fields of entrepreneurship and entrepreneurship education for the biggest part overlook that entrepreneurship not only produces jobs and innovation, but also billionaires. Yet, the existence of entrepreneur billionaires and wealth inequality has effects on the well-being of others, at individual, collective, and ecological levels. These effects raise a range of ethical issues, on which typically a diversity of views exist. We care about the question: How can we prepare entrepreneurship education students for being at the advantageous side of economic inequality and the responsibilities that come with it? To this end, we use billionaires as a pedagogical device.

### Approach

Entrepreneur billionaires are ubiquitous in the media, well known among students, there is much information present in the public domain, they serve as role models (negative or positive), they can evoke strong emotional reactions, and although homogeneous in some respects, quite diverse in others (e.g., the use of wealth of the Koch brothers vs Bill Gates). The fact that entrepreneur billionaires impact the well-being of others in society, raises a range of issues on individual, collective and ecological levels. We sampled these issues by means of systematic combining, and then categorized them into three groups: how entrepreneurs make their wealth, how they employ their wealth, and, how their existence is responded to, also regardless of how they make or use their wealth. Regarding all identified issues, we formulate debate and discussion questions. The debates sensitize students to the considerations involved in each of these topics. While few entrepreneurs become billionaires, several may become one of the more affluent individuals in their country, city, or neighbourhood. All discussed topics may play out at a less extreme level.

### Implications

The existence of extreme wealth and the wealth inequality that extreme wealth brings about has significant effects on society, as the topics listed above imply. How these implications are evaluated depend on views and perspectives. Whether entrepreneurs will become part of the wealthiest 10%, 1%, .1% of .01% of their region or country, the appropriation of such value necessitates education that equips successful entrepreneurs for the responsibilities and intricacies that come with such a situation, and which builds ethical competency.

### Value/Originality

By discussing the topics associated with extreme wealth, students can discuss responsible entrepreneurship and develop ethical competency. With strong opposing views likely to be present in any class, different sides can talk to each other, rather than staying in their own bubble. The proposed learning format brings the topic of extreme wealth and wealth inequality into the entrepreneurship domain. The role of entrepreneurs for mitigating and reproducing inequalities is important, both in their companies and as private individuals. By debating and experiencing issues associated with extreme wealth and extreme wealth inequality, we use the existence of entrepreneur billionaires as a pedagogical device to train future entrepreneurs for responsible entrepreneurship.

**Keywords:** Entrepreneur Billionaires, Wealth Inequality, Economic Inequality, Debate, Discussion, Controversy

## HEALTH(Y) KNOWLEDGE IN MEDTECH VENTURES

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### Question we care about

Facing the demographic changes in society, where people live longer and with more complex diseases, needs the healthcare industry to work differently. Technology and new technology ventures that develop medical technology can be one of the solutions for this. Ventures do include healthcare professionals to different extents. However, we do not know how healthcare professionals contribute to the venture and the development of new technologies. By not understanding, their role and contributions to the commercialisation process is it harder to educate these professionals during their studies. Thus, this paper explores this by asking: “How do healthcare professionals contribute in the commercialisation process of medical technology?”

### Approach

Individual semi-structured interviews were conducted with four healthcare professionals, four co-founders and five employees to capture the entrepreneurial process of two medical technology (MedTech) ventures. The interviewees were encouraged to draw the entrepreneurial process of their venture for increased sensemaking and visualisation. The interviews were transcribed verbatim and analysed inductively. Prior to the interviews, documents, such as news items, websites, publicly available firm information, and financial statements were analysed to triangulate the stories of the interviewees.

### Results

In relation to internal detached team members such as regulatory specialists and external involved actors such as technical consultancies, healthcare professionals brought coordination and alignments between the three processes: business development, technology development and regulatory work. They bring feedback from one process to another and at the same time, they always have the user and end-user in focus. Even with their prior specialized knowledge, we see that they work as generalists, compared to the rest of the team members that primarily work specialized. In relation to the internal involved team members in the core of the venture, the healthcare professional is the engine that drives the venture forward through their overview and motivation for solving the medical issue. Finally, in relation to external detached actors such as investors and partners the healthcare professionals have the role of the medical specialist that provide legitimacy and expertise to the venture.

### Implications

It is rare that all roles for healthcare professionals can be found in one person since they require high engagement in both the hospital and the venture and as the venture growth it may therefore be necessary to ensure that there is more than one healthcare professional involved in the venture. The roles highlight the need for the healthcare professionals to develop entrepreneurial skills that enables them to apply their medical competence in dialogue with other professions.

### Value/Originality

This study informs entrepreneurship education for healthcare professionals about the roles they need to be equipped for to contribute in MedTech ventures. The study confirms previous studies arguing that healthcare professionals are motivated to solve healthcare issues through venturing and that they sometimes act as expert advisors for such ventures and contributes to the same literature by showing the important role of healthcare professionals in aligning the subprocesses of the venture.

**Keywords:** Case study, entrepreneurial process, entrepreneurship, healthcare professional

## **VALUE FOR VALUE: SOCIAL ENTREPRENEURSHIP EDUCATION THROUGH VALUE CREATION EXTRACURRICULAR ACTIVITY**

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### **Questions we care about (Objectives)**

The current scholarly conversation in social entrepreneurship literature reaffirms that social, environmental and economic value creation lies at the core of social entrepreneurship (Dean & McMullen, 2007; Weaver, 2018). However, when it comes to teaching social entrepreneurship at HEIs, the question is whether our teaching approach includes social and environmental value creation. The extant literature has missed the critical value creation aspect in social entrepreneurship education, which forms the theoretical basis (Åstebro & Hoos, 2021; Fiet, 2001; Gielnik et al., 2015) for teaching social entrepreneurship. Fiet (2001) suggests that theoretical basics affect 'how and what we teach'. The value-creation approach is established on the principle of creating value for others in which 'students are givers' (Lackéus, 2020). This study introduces and tests a value creation-based approach to teaching social entrepreneurship education. We did so by incorporating a value-creation approach via value-creation extracurricular activity (Vc-ECA). In sum, we intend to answer the question: What influence does the 'social and environmental value creation extracurricular activity' have in developing students' social entrepreneurship intention and self-efficacy?

### **Approach**

A longitudinal study is designed for undergraduate business students who have participated in Vc-ECA (treatment group, n = 143) and have not participated in any extracurricular activity (control group, n = 115). The study was conducted twice for two different batches of students from the academic year 2018-19 and 2019-20. The Vc-ECA is associated with a student's club, which identifies social and environmental problems and develops a plan to resolve problems. The activity includes identifying a social problem, developing a plan of action to resolve the problem, resource mobilisation, execution, and impact assessment. Students lead all the activities in teams with the assistance of teachers and the HEI.

### **Results**

The results indicate that Vc-ECA develops social entrepreneurship intention and self-efficacy among the students. The result suggests that Vc-ECA moderates the relationship between social entrepreneurship self-efficacy and intention. The study confirms the applicability of the value-creation approach as a theoretical basis for social entrepreneurship education. Further, the findings suggest that the value-creation approach can be used via extracurricular activity and complement classroom teaching.

### **Implications**

The findings will offer practical insight to HE policymakers and educators to incorporate the value-creation approach for teaching social entrepreneurship. The findings also call for adopting the value-creation-based approach to complement classroom social entrepreneurship teaching. Further, the study provides details of the value-creation approach that can be used in the form of extracurricular activity, which can be easily adapted to sizeable multi-disciplinary student groups.

### **Value/Originality**

Social entrepreneurship education needs a theoretical basis that guides educators and students. Drawing from the social and environmental value-creation principles of social entrepreneurship, this study tests the application of the value-creation approach as a theoretical basis for teaching social entrepreneurship education. The research contributes to developing a theory of value creation-based social entrepreneurship training that aligns with the core principle of social entrepreneurship.

## FACILITATING INQUIRY: ENTREPRENEURSHIP AS REFLECTIVE DESIGN PRACTICE

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### Questions we care about (Objectives)

This paper aims to explore the intersection of entrepreneurship and design by recognizing the need for a design perspective to bridge theory and practice in entrepreneurship. The study adopts a constructivist perspective on entrepreneurship as a reflective design practice and investigates the role of facilitation in the entrepreneurial design process. The paper also seeks to provide insights into how non-designers can successfully undertake the entrepreneurial design process. To achieve these objectives, the research question of the study is "What is the role of facilitation in the entrepreneurial design process?"

### Approach

To explore the role of facilitation in the entrepreneurial design process, the paper adopts a design inquiry approach that considers the underlying practices and processes of designing entrepreneurial artifacts. An eight-month action research program was conducted with one entrepreneurial team of non-designers to develop their own design process and construct actionable design knowledge. The team aimed to design a value proposition to commercialize advanced technology for an industrial setting. The empirical case narrative is discussed through Deweyan concepts of situation, inquiry, and transformation.

### Results

The empirical case demonstrates the role of prescriptive methods as a catalyst for developing one's design process, highlighting the importance of facilitation in engaging team members, partners, and customers. The team's pre-understanding enabled them to construct narratives and hypotheses, which through the iterative process of inquiry, resulted in transforming their situation. Furthermore, their playful engagement with the employed methods supported this outcome.

### Implications

The paper argues that while prescriptive methods are crucial for non-designers to develop design practice, they must be used in conjunction with facilitation. Thus, the question of how to develop one's facilitation practice is proposed as a future inquiry within entrepreneurship education and training programs. The empirical case illustrates how a team of non-designers was able to undertake their design process. However, further inquiry into more novice teams would advance this understanding.

### Value/Originality

The study contributes to the understanding of how entrepreneurial teams can develop their design process using methods and the importance of facilitation in entrepreneurial design practice. The paper recommends further research into different contexts and facilitation practices to enhance this understanding. Additionally, the study provides an illustrative example of how a design inquiry approach can provide an interpretive understanding of entrepreneurial design practice.

**Keywords:** Entrepreneurial design, facilitation, design inquiry, action research, pragmatism

## VISUALIZING THE VALORIZATION PROCESS FOR STUDENT INNOVATIONS

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### Question we care about (objectives)

Higher education institutions are not merely places for learning and research, but they also have a vital role in facilitating and supporting economic growth through knowledge creation and entrepreneurial behavior (Audretch et al., 2006). Although knowledge creation has been the key task for universities for centuries, wealth creation has not been included among their responsibilities (Hladchenko, 2016). Seeing students as important assets for external stakeholders already during their university studies highlights the importance of students' skills and ideas. However, most students' assignments and ideas, no matter how promising that are, may remain completely unused after the course; we call this the one-course trap. Good student work and ideas generated during one course should also be used and valorized in some way after the course. We aim to answer the following research questions: 1) How does valorization process in a university context look like, and 2) What are the challenges related to valorization in a university context.

### Approach

The paper applies a qualitative approach to study the valorization process within a middle-sized higher education institution in Finland during 2021-2023.

### Results

The results of the paper suggest that students' ideas are currently utilized very little, if at all. However, the potential of those ideas is recognized, and benefits of valorization process are identified for both teaching and learning. Despite the benefits, there are many issues and open questions that need to be considered, when developing the valorization process. However, this is essential for universities to generate bigger societal impact and escape the One Course Trap associated with students' ideas.

### Implications

The paper challenges the traditional one course idea, and by describing a process through which students' ideas could be better utilized, it opens innovation potential in universities. Also, increasing the usage of such ideas could eventually result in actual social value creation and eventually creation of new companies. Active efforts need to be taken to improve valorization process and engage internal users and external stakeholders. This would increase the impact universities have on society.

### Value/Originality

The paper contributes to knowledge valorization literature by focusing on knowledge valorization of student ideas. It provides novel insights about valorization beyond academic research and research commercialization, and highlights challenges in the university context, an area previously ignored by the prior literature. The paper contributes to entrepreneurship literature by proposing a model through which universities can contribute to their third mission, enhancing regional development through entrepreneurship. The paper challenges the traditional one course idea, thus providing new insights into entrepreneurship education literature.

**Key words:** valorization, student ideation, creativity, higher education, entrepreneurial university



## **MENTAL AND FINANCIAL HEALTH IN TIMES OF CHANGE: ARE TRAINED STUDENTS BETTER? A PILOT STUDY**

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### **Purpose**

This pilot study aims to make an inventory and prevention of financial worries as well as improve mental health of various types of students at the same time. Coping responses are investigated as well as effects of stress and stressors. The study makes students aware of their financial stress and possible related mental health problems. Effectiveness of interventions are tested in a safe setting.

### **Design/methodology/approach**

This intervention study takes a mixed action approach, where questionnaires, personal feedback and animations are used by various groups of students. Stress and mental health levels are measured by applying validated tools for coping, financing stress, mental health as well as financial literacy. Short and to the point animations explaining coping and financial stress are shown and pre and post measurements are done with a wide variety of students.

### **Findings**

The study finds that existing measures for coping, stress, mental and financial health are easy to apply in a university setting. Many differences that were anticipated are not confirmed. Stress levels of female students are higher compared to males even though both apply active coping styles. Indirect financial stressors found entailing study results as well as short- and long term housing challenges.

### **Originality**

The novelty of the study is that in a relatively short period an intervention is done to measure the effect of awareness animations. The study combines interactive questionnaires that give direct feedback to the respondents and makes suggestions for improvement. At the same time, respondents are supported where needed by the existing infrastructure.

### **Research limitations/implications**

Getting respondents to fill in the questionnaire twice proved to be a challenge. A first baseline was relatively easy, but results of a second measurement was limited, including a faculty cross-section. In future research data calls, the researches will link the questions list to specific study programs in order to gain a large enough sample in pre and post interventions.

### **Practical implications**

Although there is a lot of knowledge available from an academic and practical level it does not seem to stick over time. It is important to share the knowledge in a contemporary way with the stressed students for them to cope effectively.

### **Social implications**

This study aims to help and research a student population at the same time. We feel that asking for information as well as giving back the results that are applicable in real life creates a mutual benefit.

**Keywords:** Student stress, coping strategies, mental health, financial health

**Paper type** - Research paper – pilot study

## THE ROLE OF CORPORATE ENTREPRENEURSHIP EDUCATION FOR THE CAREER

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### Questions we care about

How do graduates from a corporate entrepreneurship education value and make use of learnings in the career working with corporate entrepreneurship?

### Approach

Earlier research has mainly focused on outcomes from entrepreneurship education for engagement in new venture creation (Pittaway and Cope, 2007; Scott et al., 2016). This study is interested in how graduates taking a corporate entrepreneurship education value and make use of their learnings in their career. The study builds on and extends the findings in Winborg and Hägg (2022) which presents a model of learning outcomes directly after graduation from a corporate entrepreneurship education. The findings in Winborg and Hägg (2022) indicate that the design of the education influence the learning outcomes. The design is referring to variation in terms of the design of the so-called corporate development project that the students undertake as one important part of their education. The research question of the present study is: What is the role of the design of the corporate development project for how graduates make use of learnings from education in corporate entrepreneurship in their career? To examine the role of design of the project a multiple case study is undertaken using data from a written reflection report directly after graduation together with interview data four years after graduation.

### Results

The findings indicate that the design of the corporate development project shape and guide the initial career position of the graduate. However, besides guiding and shaping the initial career choice the design of the corporate development project does not seem to have a role in shaping how graduates value and make use of the different learnings in the career. Instead, the findings indicate that the career position of the graduate influence how the graduate use and perceive the value of different learnings from corporate entrepreneurship education.

### Implications

Future research should test the findings of this study using a large sample of graduates to understand the potential role of learnings from the programme in different career positions.

### Value/Originality

Improved understanding of graduates' careers and potential differences in how graduates make use of learnings from education due to differences in careers will give us knowledge needed based on which we can design future entrepreneurship education.

**Keywords:** Corporate Entrepreneurship Education, Education design, Outcomes, Career

## TEACHING FUTURE COMPETENCES THROUGH ENTREPRENEURSHIP: AN ENTREPRENEURSHIP EDUCATOR'S REFLECTION

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### Questions we care about

The purpose of this study is to examine the educators' experience and impact on learners while Teaching through Entrepreneurship (TtE) in a nonentrepreneurship classroom. Overall, this paper seeks to contribute to the growing body of literature on entrepreneurship education in the context of Psychology Theory of Entrepreneurship. With the research question of "What can we learn from entrepreneurship educators' experiences when teaching future competences through entrepreneurship and which role could Locus of Control Theory play in this context?", it fills the gap of studying the role and experience of the educator (Kreber, 2010, Wraae et al., 2020). By better understanding the role, activities and thinking of entrepreneurship educators while promoting future skills and an entrepreneurial mindset, we can develop more effective entrepreneurship education programs and support the creation of a more innovative and entrepreneurial society.

### Approach

For the study we implemented an entrepreneurial learning journey in a nonentrepreneurship classroom with the topic of "Digital Skills: Digital Ethics and Online Security" at a German Business School. To answer the research question, we have chosen a multi-method approach to shed light from different perspectives on the educational experience of entrepreneurship educators as well as its impact on digital skills of students. Therefore, we analyzed educators' experiences in structured self-reflections. The impact on students was measured by the learners' self-assessment on digital competences in a before-after questionnaire.

### Findings

The self-reflections of the educators detect influencing factors in how TtE in nonentrepreneurship classes are experienced by teacher and learner. e.g. During the flow of the semester things change and situational agile adaptations are necessary. Also, the comparison of pre- and posttests amongst the students demonstrate effects of the intervention method. Students learn in depth (expert on their topic) and breadth (solid foundation from the work of others). They practice processes for solving complex problems. But this educational pedagogy is also demanding. It requires creativity and agile problem-solving skills as well as the openness to learn new topics and take the role as a coach and guide. Combined, the authors' findings suggest that the new intervention method is suitable to teach topics where the status of knowledge and research is rapidly changing. And we recommend it especially for entrepreneurial educators and proactive learners.

### Implications

The findings reported in this paper have implications for entrepreneurship and non-entrepreneurship educators, for learners, for program planners, for policy makers and for business. It serves as a source of inspiration, guidance and as implementation frame when training future competences with entrepreneurial education.

### Value

This study contributes to the existing literature on entrepreneurship education by examining the experiences of entrepreneurship educators who TtE in non-entrepreneurship classes. It also contributes to research on experiential learning processes by observing and measuring the effects on students who are guided through an entrepreneurial journey. Finally, it puts the research in the context of LoC Theory and its role for the thinking, activities and behavior of the educator as well as of the learner.

**Keywords:** entrepreneurship education, future skills, entrepreneurship educator perspective, Locus of Control, Teaching through entrepreneurship

## A DIDACTICAL APPROACH TO CURRICULAR AND EXTRACURRICULAR ENTREPRENEURIAL LEARNING

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### Questions we care about

The new focus on extracurricular activities, here the university incubator environment, accentuates a need to understand what we offer students in the two different learning environments situated in the same institution. Current research points toward breaking down the invisible barriers and silo thinking. A particular area where the silo thinking is very much present is regarding the role of entrepreneurial learning. Contrary to the classroom-related entrepreneurship education discussions about the pedagogical antecedents this seems missing in the literature on extracurricular activities.

### Approach

This study is based on a conceptual approach and discusses where entrepreneurial learning takes place and how extracurricular learning could be included in the traditional understanding of how and where learning happens. We apply the didactic triangle as a theoretical and conceptual frame to make comparisons of structurally based conditions for curricular and extracurricular entrepreneurship education.

### Results

The study confronts the notions of what is inside and outside and what is defined as goals and activities in the two different learning environments. From the didactical triangle and the comparative analysis, we present a framework that can be used for combinations of the two different didactical designs. The analysis constructs a new double-sided arrow that connects the entrepreneurship education subject with the aims of the incubator. Such a relationship would help bridging the 'what', 'why', and 'how' in the two different spaces, and thereby conjoining educators and consultants in possible discussions on how they work with the students. The suggested bridge frames a wider 'why' and add a more holistic and cohesive view of the two different types of activities.

### Implications

Our study contributes to the literature on how to bridge the blurred lines between curricular and extracurricular activities and breaking down the silos. The purpose is not to merge them but to have the different stakeholders learn from each other. From a societal perspective, enhancing the learning perspectives and how and where students learn contributes to students' opportunities to benefit from the different learning approaches in the two environments.

### Value/Originality

The didactical analysis and the discussion end with a proposal for how to, if not break down the silos, then develop a framework that can be used for combinations of the two different didactical designs. This can act as an inspiration for entrepreneurship educators and practitioners who wish to provide more suitable and sustainable structures and develop a holistic learning environment. The framework can further act as a foundation for more research on the topic.

**Keywords:** Entrepreneurship Education, Extracurricular Enterprise, Didactics, Entrepreneurial Learning, Incubator Environment

## CONQUERING CLIMATE CHANGE THROUGH ENTREPRENEURSHIP EDUCATION: ROLE OF THE UNIVERSITIES

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### Questions we care about (Objectives)

The "brief & rapidly closing window of opportunity" to secure a liveable future is closing (IPCC, 2022, p. vii). The IPCC 2022 report calls for immediate action to cut emissions to seize this opportunity and manage the climate emergency. Policymakers and academics have paid keen attention to the role of universities in fostering entrepreneurship (Guerrero et al., 2016), and the increasing significance of entrepreneurial ecosystems (Spigel and Harison, 2018). Recent research calls upon universities to play a responsible role in addressing societal issues such as climate change (Tsui, 2022). This study investigates how universities may turn the corner in the race to climate action by helping create new businesses that have climate action embedded in their fabric, and how universities, through entrepreneurship education and entrepreneurial ecosystems, can help create new businesses born on a Net Zero model.

### Approach

This paper adopts a qualitative research approach to examine the role of university entrepreneurship education ecosystems in creating Net Zero businesses. Eighteen semi-structured interviews were conducted with university graduates. A purposive sampling strategy is used in this study with a geographically stratified sample from three leading universities in the UK. The selected institutes have distinct university entrepreneurship ecosystems, such as different combinations of research, teaching, mentorship, incubators, technology, infrastructure, and funding support.

### Results

The study identifies four key findings. First, there is a lack of awareness among university students about the concept of NetZero and sustainability goals, highlighting the need for universities to prioritise educational initiatives that focus on raising awareness and educating students. Second, there is a lack of collaboration and coordination among different university resources aimed at helping students achieve sustainability goals, emphasising the need for universities to prioritise initiatives that encourage collaboration and coordination. Third, universities must improve the accessibility and availability of information related to sustainability initiatives and programs. Fourth, the study suggests that universities should provide additional activities that go beyond traditional classroom learning to educate students about NetZero.

### Implications

This study advances research on entrepreneurship education and brings new knowledge on the impact of entrepreneurial ecosystems in the context of climate change. The findings of this research address theory and practice alike. Building on the process-based perspective of entrepreneurial ecosystems (Spigel and Harison, 2018), this research contributes to the literature in the field of entrepreneurship education. This research also informs practice by presenting its recommendations for concerned stakeholders spread across society, including education providers, university management and policymakers.

### Value/Originality

The appetite for finding ways through which entrepreneurship education in universities can play a role in addressing societal challenges around climate change has never been stronger. The incorporation of an emphasis on sustainable business practises into entrepreneurship programmes may also aid students in obtaining funding for their businesses.

**Keywords:** Entrepreneurship Education, Climate Change, NetZero Business, Climate Action, Sustainable Future, Entrepreneurship Intentions

## ACTION-BASED TECHNIQUES AS A MEANS TO TEACH EFFECTUATION

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### Objectives

Effectuation has received attention from entrepreneurship scholars and in corporate contexts. In this study, we suggest that action-based teaching techniques are more suitable for teaching effectuation than traditional teacher-centered techniques. Past research has found that training programs that teach proactivity and a proactive mindset, for example in form of improvisational theater training, increased the firm profits of participating entrepreneurs significantly compared to traditional business training programs. Similarly, effectuation trainings specifically have been found to significantly increase the number of identified and pursued business opportunities. Entrepreneurship education hence seems to be able to benefit from the applied and interactive learning style of action-based teaching techniques.

### Approach

We use a single-case research design, which allows us to collect detailed qualitative data from in-depth effectuation training, its students and graduates with multiple years of experience in applying effectuation. In this way, we are able to learn about what they do, how they do it, and why they do it, whereas an experiment tends to paint a rather black-and-white picture, which would be more appropriate and interesting at a later stage of research. The effectuation training teaches effectuation to coaches, consultants, and managers in Germany, Austria, and Switzerland. So far, five cycles of the effectuation training have been delivered to 52 participants. The effectuation training aims at working on the mindset as well as the toolsets of effectuation in a “train the trainer” mode.

### Results

We expect to deduce concrete techniques and mechanisms that can be used to teach effectuation to students and professionals. In our preliminary data, adopting effectuation as an entrepreneurial mindset shows to open new thinking spaces and hence increase creativity and engagement. In doing so, we aim to extend the knowledge on effectuation learning and the role action-based teaching techniques can play in this process.

*Implications:* This study will create an understanding for the applicability of action-based teaching techniques for effectuation learning. It describes how action-based teaching techniques allow members of organizations to deviate from established norms and produce innovations that go back into the organization through a larger learning process by fostering the application of minimal structures, an experimental culture and open trusting communication. It will further improve entrepreneurship teaching, as it will make teaching effectuation clearer and easier. By re-informing theory with our generated knowledge and tools effectuation research as well as action-based teaching formats like improvisational theater training will become more accessible to teachers around the globe.

### Value

In order to improve entrepreneurship education, this paper aims at developing the connective tissue between effectuation as an observed behavior and theoretical construct and how it can be taught to professionals. Thus, we want to make effectuation training more approachable for entrepreneurship education as it promises a great value not only for entrepreneurs but for all members of a society faced by uncertainty and change.

**Keywords:** Effectuation, Action-based Teaching Techniques, Improvisational Theater Training, Entrepreneurial Mindset, Entrepreneurship Education

## UNDERSTANDING EMOTIONS IN ACTION-BASED ENTREPRENEURSHIP EDUCATION

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### Objectives

Insightful discussions exist regarding the topic of emotions in entrepreneurship and management education. Yet, although the process of action-based Entrepreneurship Education (EE) is one marked by emotions, the role of emotional dynamics in EE programs remains under-researched. This study aims to investigate the role of individually and socially experienced emotions during tasks of EE and the way these contribute to developing an entrepreneurial mind-set. Therewith, it aims at adding to the understanding of emotions and emotional mechanisms in EE and their role for the development of an entrepreneurial mind-set.

### Approach

We adopt a qualitative inductive approach based on interpretative phenomenological analysis (IPA) in order to thoroughly understand the individuals' lived experiences and emotions. We collected data from 58 semi-structured interviews, group reflections, individual reflection papers and application documents before, during and after the course of two comparable study programs applying action-based teaching methods.

### Results

We find that individuals experience a variety of positive and negative emotions over the course of the studied programs. Based on our findings we propose that contagion and co-regulation of emotions in action-based team assignments play an important role for individual reflection and the development of elements of an entrepreneurial mind-set.

### Implications

This study contributes to a better understanding of the emotional dynamics involved in action-based EE programs. By connecting the concepts of emotional contagion and emotional co-regulation with the social-cognitive model of self-regulated learning, this study goes beyond previous studies that have focused on emotional contagion in team leadership and working teams and suggests a framework for the process of entrepreneurial learning based on emotional dynamics. As we believe that these mechanisms have important implications for team dynamics in learning situations, we think that further investigation of socio-emotional team dynamics in EE would offer avenues for future research.

### Value

The better understanding of emotional dynamics helps to optimize team constellations and improve existing EE programs. We highlight that emotions displayed by peers play an important role during the individual appraisal of action-based tasks. They stimulate entrepreneurial learning and significantly affect students' attitude towards entrepreneurship and their perceived entrepreneurial capacity in a positive way. They provide new learning environments that not just help develop skills useful in entrepreneurship, but also facilitate the creation of an expert mind-set characteristic for successful entrepreneurs and members of an adaptable society faced by uncertainty and change.

**Keywords:** Action-based EE, IPA, Emotional Dynamics, Entrepreneurial Mind-set

## ENTREPRENEURSHIP, CREATIVITY, AND STEM TEACHER EDUCATION IN DANISH HIGH SCHOOLS

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### Abstract

In Danish high schools, entrepreneurship has been paid much attention in STEM education. Creativity has been addressed as one of key dimensions in a complex pattern of entrepreneurship development. This paper aims to answer two research questions: *a) How can we understand creativity, entrepreneurship, and STEM education are interconnected in the context of high school education? And b) How can we facilitate STEM teachers to foster creative learning environments and improve the integration of entrepreneurship into daily teaching practice in Danish high schools?* Accordingly, a theoretical framework is addressed that a) underpins students' everyday creativity experience as the starting point to improve entrepreneurship in STEM education, and b) reflects the needs of implementation of creative pedagogies such as Problem-Based Learning (PBL). This further leads to a design of a STEM teacher professional development program that helps to manage current challenges of entrepreneurship development in STEM education in Danish high schools.

**Keywords:** Entrepreneurship, Creativity, STEM Education, Teacher Education, Problem-Based Learning (PBL)