



## **3E CONFERENCE PROCEEDINGS**

### **Book of Abstracts**

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

**2022**

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 2022*. This book presents the abstracts of the 3E Conference held on 11–13<sup>th</sup> of May 2022 in Dijon, France. The Conference is hosted by Burgundy School of Business, The Community of Research on Entrepreneurship Education (CREE) and the European Council for Small Business and Entrepreneurship (ECSB).

Entrepreneurship Education is recognised as a way to support learners, at all levels of education, to develop the skills and attitudes to work within, and adapt to, a changing global economy. However, we should not lose sight of the capacity to help learners to engage critically with the drive for entrepreneurship; encouraging them to engage with the positive and negative impacts; and exploring new and diverse ways of creating value for society, the economy, and our planet. In doing so, we can also help them to understand their role as enterprising employees, as well as discovering and developing their entrepreneurial potential. This context requires us to reflect upon what we teach, how we teach and ultimately the rationales for our chosen approaches. As educators we also need to engage those outside the academia, sharing our experiences and creating a dialogue with practitioners and policy makers at all levels and with local, national and international business communities.

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

The theme of 3E 2022 is “*Entrepreneurship Education Excellence: from Outcome Assessment to Individual and Societal Impacts*”. We believe evaluating the impact of enterprise and entrepreneurship education (EE) is an important topic for all stakeholders. By choosing this theme we tried to underline the importance of going beyond outcome evaluation and considering EE impacts on individuals and the whole society. Following the 3E format there were two calls this year, one for research papers and one for practitioner development workshops. The ninth edition of the conference features 22 practitioner development workshops and 52 research papers. We wish to thank the authors and reviewers for their persistent efforts to improve entrepreneurship education as well as the conference content.

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

Mohsen Tavakoli, Burgundy School of Business  
Joseph Tixier, EM Lyon Business School  
Olivier Toutain, Burgundy School of Business  
*Conference chairs*

Ulla Hytti  
*President of ECSB*

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# **PRACTITIONER DEVELOPMENT WORKSHOPS**

## DEVELOPING INTERNATIONAL CO-TEACHING WITHIN AUTHENTIC UNIVERSITY-INDUSTRY COOPERATION

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### Workshop summary

In multidisciplinary cooperation students from higher education learn entrepreneurial and working-life skills. These transversal skills can be enhanced in international cooperation when university students from different countries and different disciplines get together and learn in a joint project.

As practical example we introduce a long-lasting cooperation between two European HEIs. "Design with Engineering" joint projects have been part of curricula of Centria UAS for ten years. Partner University is Technical University Zvolen from Slovakia. During the project design students from Zvolen and engineering students from Centria are working in mixed groups. The difference from traditional exchange is that teachers are also co-teaching.

The topic of the project varies yearly. The most interesting challenges are real problems from the companies. Working with these authentic learning cases help students to develop their entrepreneurial skills. The course includes two intensive weeks: one week in both countries. Between the two intensive weeks students are working online. Learning outcomes of this cooperation benefits also companies.

Question we care about is how international multidisciplinary cooperation develops students' entrepreneurial skills. These competencies are part of EntreComp framework and in a workshop we will utilize EntreComp framework to visualize the authentic learning in international multidiscipline cooperation.

### Workshop style and expected outcomes

Interactive workshop session starts with introducing the development and practices of the course "Design with Engineering". Introduction will be followed by group activities and reflective session using EntreComp framework to analyse more deeply some details of actions. Participants may share the ideas and outcomes. Outcomes of this workshop will be ideas/ methods/ practices to develop further as part of own teaching. Participants learn from one tested practise and get a deeper understanding, how to enhance students' entrepreneurial competences within international cooperation.

### Related research

Base of this practice lies on entrepreneurial competencies, EntreComp framework. (e.g. McCallum, Weicht, McMullan & Price 2018; Bacigalupo 2021). As a learning practise this is authentic learning with real problems, that has positive impact on developing entrepreneurial skills among university students. (e.g. Herrington et.al 2014; Nabi et.al 2017)

**Keywords:** international, university-industry cooperation, authentic learning, entrepreneurial competencies'

## ASSESSING THE ACTION ORIENTED, ENTREPRENEURIAL LEARNING PROCESS SPICED BY UNCERTAINTY

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Lisa Ploum, Wageningen University  
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### Workshop summary

Ideally, entrepreneurship education challenges students to create value – to make something – and by doing so, invites the students to fully experience the fuzzy, iterative and uncertain entrepreneurial process. This requires education in which failure, risk-taking and experimentation are allowed for. Education in which students get the opportunity to work on personal learning goals and deal with uncertainty together with peers and external stakeholders. In other words, it requires education full of **learning surprises**.

However, this brings challenges for assessment: how to assess learning processes of which the outcome is hard to predict? And of which the outcome may differ between students? In assessment, the entrepreneurial learning process should be valued, next to the artefact that the students create (e.g., a product, service, prototype, etc.). Moreover, assessment should not only be used to certify or grade students in the end (i.e., **summative assessment**) but also to stimulate students' learning throughout the process (i.e., **formative assessment**).

### Workshop style

During the workshop, practices from literature and practice will be shared. The participants will get ample opportunity to share experiences, challenges and good practices in relation to formative and summative assessment methods – so that they leave the session full of inspiration to innovate their assessment.

### Expected outcomes

At the end of the PDW, the participants:

1. Have an understanding of the most recent developments of assessment methods in entrepreneurship education and other related fields
2. Are inspired by the exchange with co-participants of experiences, challenges and good practices in relation to formative and summative assessment

### Related research

We observe that assessment is a challenging endeavour in different domains – especially in more innovative educational programs in which value-creation and impact are key. One of the domains with comparable assessment challenges is sustainability. For instance, Redman, Wiek and Barth (2021) published a review study on tools for assessing students' sustainability competencies. Because of the complexity of assessment, teachers tend to combine different assessment methods in a coherent assessment program, such as reflective writing and self-perceiving-based assessment procedures. Sandri, Holdsworth and Thomas (2018) present vignette questions for assessing graduate sustainability learning outcomes. Vignette questions include short, realistic stories, providing insights into students' competence mastery level. These examples from the field of sustainability may be of value for entrepreneurship education.

## **GAMIFICATION OF REFLECTIONS IN AN ENTREPRENEURSHIP PROCESS – A TEAM REFLECTION APPROACH BY CLIMBING A TASK MOUNTAIN AS “A” SAVVY GOAT!**

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### **Workshop summary**

The use of reflective logs, diaries, journals, post-course reflection essays are the most common form of reflection exercises in the EEd classroom today. However, I have identified 3 weaknesses of these current methods which will be the focus of the experiential exercise. 1) Perception of value of the reflection log; 2) Understanding what “reflection” really means; 3) Entrepreneurship as a team endeavour and thus reflections as team reflections over individual reflections. This interactive workshop will invite participants into a gamified competitive journey that the participants will be invited to participate in. In this game teams of participants will be represented on a virtual mountain as a goat. The goat will be tasked with climbing the "reflection" mountain. The teams will then try and come up with solutions to each of the three challenges described which correlate with the identified weaknesses of current reflection methods. Teams will self-pace their journey yet have to watch out for competition from other teams as they try and be the savviest goat of them all!

### **Workshop style**

Interactive & competitive round-table format. Team-based play with live fast-paced discussions that will ensure engagement as well as real learning. Teams will be encouraged to keep the pace (whilst maintaining the quality of the reflections created) via the savvy-goat gamification application that will drive the structured exercise

### **Expected outcomes**

Educators will get an experience that students go through in trying to balance the fast-paced nature of today’s world and the ability to reflect on their processes as a team and assess the value of team vs individual reflections. Participants will also get to assess the expected value of modularization of the reflection log.

### **Related research**

Entrepreneurship Education (EEd) in HEI’s is generally a practice based education (Neck & Greene, 2014). However, the fast-paced nature of EEd today from mapping the market needs to creating compelling pitches may unintentionally undermine the reflective component in experiential EEd. Educators who understand and value of reflective learning try and incorporate reflections into an entrepreneurial process either by deploying reflective journals or diaries (Jones, 2019; Lundmark et. al., 2019, Hagg, 2021). The use of reflective logs, diaries, journals, post-course reflection essays are the most common form of reflection exercises in the EEd classroom today. However, 3 weaknesses of these current methods which will be the focus of the experiential exercise: 1) Perception of Value of the reflection log; Understanding what reflection really means; Entrepreneurship as a team endeavour.

## DESIGNING LIVE CASES IN ENTREPRENEURSHIP EDUCATION: BALANCING UNCERTAINTY AND OUTCOMES

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### Workshop summary

Entrepreneurial action is by definition uncertain due to parallel activities of exploiting market opportunities while simultaneously creating economic value (Alvarez and Barney, 2005, Venkataraman and Shane, 2000). To challenge students on uncertainty, educators create learning situations that include uncertainty elements (Gibb, 2002, Arpiainen and Kurczewska, 2017). This workshop focuses on live cases where organizational actors are involved to create authentic learning situations aimed to simulate students experiences of uncertainty. Live cases allow students to work with business problems, in real time with real actors (Culpin and Scott, 2012, Lincoln, 2006), which brings multifaceted levels of uncertainty.

The level of information provided by educators influences the perceived level of uncertainty and outcome by both students, case owners, and educators involved (Solvoll and Haneberg, forthcoming, Daly, 2014). In particular, this workshop discusses how to design live cases that balances students uncertainty and learning outcome with expectations of case owners and educators pedagogical perspective.

While there are many elements influencing the design of a live case, we focus on three elements: 1) How to balance the level of uncertainty students face, with 2) the outcome expectations of case owners, and 3) the pedagogical uncertainty for the educator. By discussing these standpoints, we contribute to the debate on live cases in entrepreneurship education.

### Workshop style

We use the method of role-play and groupwork to highlight the topic. The role-play tunes in to typical dilemmas on case design and balance of outcome. Moderated groupwork facilitates discussions and knowledge transfer, and allows constructive sharing, inclusive discussions and interesting contributions. We close by a synthesising summary.

### Expected outcomes

We aim to increase participants' knowledge and insights about designing live cases as a pedagogical intervention on uncertainty. We collect and synthesize practical tips, tools and/or methods from the discussions, and distribute digitally as a direct takeaway and inspiration for practical use.

### Related research

Live cases bring several benefits as they expose students to real business problems and how to learn to deal with that. Although live cases equipped with uncertainty are beneficial, they don't come without tensions. Lebrón and colleagues (2020) highlight the role of different institutional pressures: Case owners are often interested in the practical outcome relevant to the current business situations that help them to navigate uncertain business environments. This is opposed to the student team's actual work and learning process. Also, Roth and Smith (2009) point out a possible tension between organizational contributions and the learning experience achieved by students. Mei and Symaco (2020) discuss whether universities can at all effectively respond and solve the real needs of local businesses. Students may experience the open-ended nature of their projects as a great burden as there are no evident prescriptions, no clear recommendations, or simple step-by-step processes to guarantee their success in the educational intervention surrounded by uncertainties (Lake, 2015). For educators, uncertainties of live cases mean pedagogical uncertainty that makes them vulnerable, but may also catalyze educators to revisit existing practices and improve (Ham et al., 2020).

## **‘WE NEED TO TALK ABOUT.... THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC) REPORTS.’**

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### **Workshop summary and Questions we care about**

The field of entrepreneurial education (EE) does not exist in a vacuum, but in a global society and on a planet facing immediate consequences of ecological overshoot. Human-induced climate change interacts with depletion of natural resources, social inequalities, and damage from recurring extreme weather events (IPCC, 2021, 2022). According to the IPCC, tackling an existential threat to humanity involves everyone - governments and public sector, private sector and civil society. What does this mean for the EE / the 3E community?

Entrepreneurial action is a particular approach to problems and opportunities in society. Advice is offered around how people can act to reach various goals, such as the United Nations sustainable development goals. People can exercise their voluntaristic agency to create new societal solutions. As entrepreneurial educators, we facilitate learning that supports such agency. Therefore, in this workshop, we wish to discuss: What do the IPCC conclusions imply for our work as enterprise and entrepreneurship educators? How can EE initiatives be (re-) designed and (re)organised in the light of the climate, ecological and resulting societal crisis?

### **Workshop style**

The workshop starts with a brief recap on the challenges set out by the recent IPCC reports and connects them to the opportunity that entrepreneurial action represents. Participants are invited to consider how the EE / the 3E community can respond to the climate and ecological crisis. A participatory decision-making process (“OPERA”) helps delegates think through and articulate responses to this issue.

### **Expected outcomes**

The workshop will enable participants to articulate, be heard and find future collaborators in development, research and projects relating to how EE can respond to the climate and ecological crisis. A range of co-created actions will be produced regarding how 3E participants can respond to the predicament raised by IPCC.

### **Related research**

In August 2021, IPCC released its report on the ‘Physical Basis for Climate Change’ (IPCC, 2021). In February 2022 a follow-on report from the IPCC described how climate change interacts with global trends such as unsustainable use of natural resources. The reports articulate the scientific consensus on climate change and make for sobering reading. Human-induced climate change is already causing weather extremes in every region across the globe and is resulting in intense heatwaves, heavy precipitation, droughts, and tropical cyclones with knock effects for water availability and quality, food production and biodiversity.

We are not alone out there. “Education for Sustainable Development” is a thriving neighbouring scholarly community that is closer to the 3E community than one might think. What if the two communities are soulmates, like twins separated at birth growing up in two different families? We hope that this PDW can facilitate a bridging across these two worlds, allowing for collective sensemaking and agency building. Our community can here consider our work and our field in relation to a bigger picture, prompting us to renew our pedagogy in relation to an unfolding climate crisis.

## THE ENTREPRENEURIAL COMPASS FOR NAVIGATING THE DIGITAL JUNGLE - GAME-BASED APPROACH FOR ENTREPRENEURSHIP EDUCATION TO EXPLORE DIGITALIZATION CHALLENGES

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Martin Storkholm Nielsen, VIA University College

### Workshop summary

Given the exponential development of digital technology, we see a need for tools and practices that can help entrepreneurs grasp the intangibility of cutting-edge technologies and explore their potential for value creation.

Based on co-creation theory, we have developed a tool for facilitating and aligning teams in the development of new digital business models by supporting and structuring the creativity of the participants. The tool acts as a dynamic roadmap that not only serves as a guiding star but also is a manifest of the knowledge produced in the process.

After a brief introduction of our experience with applying the tool, the participants will be guided through the three phases of the process. The focus of the workshop will be to get feedback from the participants regarding what works, what doesn't work and what we might change. Additionally, we aim to open the discussion for widening the playing field for future application of the tool in entrepreneurship education.

### Workshop style

Our experiences with the application of the tool will serve as the point of departure. Focusing on leveraging the experience and expertise of participants through active engagement with the tool, the workshop is structured around facilitating the emergence of new insights, ideas and possible future paths for the tool.

### Expected outcomes

Leveraging the experience and expertise of participants, we expect to leave with new possible next steps for the further development of our tool—and inspire you to make your own. Additionally, it will provide inspiration and data for our further research into the field of entrepreneurship and emerging digital technologies.

### Related research

The tool is built upon a range of existing entrepreneurship didactics and learning theories. (Lave et al., 1991; Read et al., 2016) Business Model Canvas (Osterwalder et al., 2010) is a tool for grasping and organizing the intangibility of often complex concepts such as emerging business models. As such, it can be considered an *alignment tool* (Kalbach, 2016). Likewise, our tool can be considered a tool for alignment of teams developing new business models.



## DEVELOPING A SCHOLARSHIP OF TEACHING: EXPLORING PEDAGOGICAL IDENTITY AND AUTHENTICITY

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### Workshop summary

How well we educate and develop the entrepreneurial potential within students ultimately depends on the abilities of the educators and their approaches to teaching and learning, (Fayolle et al., 2016). How we view and write about ourselves as educators has become a topic of increasing research interest, within the field of academic development. A key element of focus is the conceptualisation (and practice) of the relationship between development and identity. The importance of talking/writing about our pedagogical practice is being increasingly recognised as a critical factor influencing how we educate, create learning environments and develop our professional identity. An ongoing challenge in the EE field remains - how do we learn about ourselves as educators and what lessons are we learning from our own teaching experiences? This PDW seeks to explore what it means to reflexively inquire into our own identity and teaching practice, drawing on our experiences as educators to create a living theory of self - who is the educator, what is their story, what are our strengths!

### Workshop style

The PDW will engage participants through interactive questioning; seeking to challenge what it is we do as educators and how we view ourselves. The PDW will utilise storytelling/drawing to stimulate a (self) reflexive discussion format. Enabling participants to bring their idiosyncrasies to the discussions - and leave with a sense of meaning and awareness for their own future development.

### Expected outcomes – Key benefits of attending include:

- A space to reflect on and re-engage with your own teaching practice.
- Critical and reflexive discussion on aspects of teaching and development.
- “Planning for action” –steps to take forward.
- To grow collective learning and capability across the field.

### Related research

How we view ourselves as educators/scholars has become a topic of increasing interest, the study of professional scholarship has been a growing phenomenon in educational research but not so in the EE field. Indeed, few researchers have sought to account for how they identify themselves as educators and account for the methods employed in the classroom. The EE field has witnessed an emerging research agenda, yet the theoretical development of educators and teaching practice continues to struggle with fragmentation, lack of coherence and isolation (Hägg and Kurczewska, 2016; Nabi, *et al.*, 2017). While knowledge in the field is building our ability to distinguish between learning as a process of entrepreneurial practice and how we teach in the classroom is polarised and stagnated, (Pittaway *et al.*, 2018). There is scant evidence about what educators actually do in the classroom, what does it mean to teach, to be an educator, what methods/philosophies does our teaching practice take to enable entrepreneurial learning, what should be taught, how is it taught. Our lack of pedagogical understanding from the perspective of the educator and their teaching practice is required, this comes at a time when our understanding of what we know about entrepreneurship is superior to what we know about the educator there are few theoretical insights about the role of the educator, (Foliard *et al.*, 2018).

**Keywords:** Entrepreneurship, pedagogy, learning space, reflexivity, teaching, practice, self

## **FORMATIVE AND SUMMATIVE ASSESSMENT IN ENTREPRENEURIAL EDUCATION: WHAT, HOW, WHEN AND WHY DO WE MEASURE?**

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Rasmus Rahm, Stockholm School of Entrepreneurship  
Birgitte Wraae, University College Lillebaelt

### **Workshop summary**

This workshop aims to address the complexities that have emerged related to assessment practice in entrepreneurial education. More precisely, we want to emphasize the importance of progression and interplay that a more experientially oriented educational approach puts on assessment practice, including formative tools that regard the learning process and summative gatekeepers that objectively assess learners at specific threshold stages in the educational process. In relation to these two types of assessment practice we also see a need to contemplate how assessment wanders from the individual learner, through the class and up to the course and program level. In the workshop we will first address some of the key contemplations or tensions that are seen from both a teaching philosophy perspective and from an institutional and objectifying perspective. This will then be followed by an experiential process of co-production of insights among the workshop participants where we will deep-dive into the issue of education versus learning and the core issue of formative versus summative types of assessment and their (un)natural place at different levels inside the educational realm. Finally, a synthesis of insights will be made with some additional frameworks and potential examples how to combine assessment practice to both enhance student learning and to meet the objective outcomes measures that institutional pressure has created.

### **Workshop style**

The workshop will embark on a developmental discussion on the nature of assessment in relation to contemporary entrepreneurial education practices. We start with presenting a short overview of key concepts related to assessment practice and why our problem space is worthy deeper considerations for entrepreneurial educators in the intersection between process and outcome. After the initial talk we will engage in a progressive discussion based on the participants experiences around the interplay between formative and summative assessment in entrepreneurial education. The workshop end with a synthesis how to think around the formative Vs. summative interplay and its implications for education.

### **Expected outcomes**

Gaining new and developed insights how to create both a process and outcome-oriented alignment when seeking to develop a progressive and experiential learning process that both considers the formative assessment that seeks to cater to the process and the summative assessments that meets institutional practices.

### **Related research**

The assessment discussion as addressed by Pittaway and Edwards (2012) but also more recently by Aadland (2019) and Rahm (2019), as well as formative learning activities that helps shape the individual learners understanding of the entrepreneurial process for the development of entrepreneurial knowledge (c.f., Hägg, 2021; Wraae et al., 2020). In conjunction there is also the interplay between learning and education (c.f., Biesta, 2009) and how assessment changes depending on what overarching purpose that one is seeking. Here we aim to address the interplay between levels; individual, class, course, and program, when addressing the issue of assessment.

## A GAME DESIGN TOOLBOX FOR ENTREPRENEURIAL MOTIVATION

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Thomas Voit, Nuremberg Institute for Technology

### Workshop summary

How can we improve our entrepreneurship education with motivating elements? Which hurdles do entrepreneurs face in their first steps, when it comes to motivation? And how can entrepreneurs themselves use the power of motivation for their teams and customers? A common design approach to foster motivation is the implementation of game design elements into a non-game setting, also known as gamification. The workshop introduces a mindset and a systematic design approach that aids individuals with less or no game design experience to become designer for gameful motivation.

Background of the workshop are the results of the research project EMPAMOS: a toolbox that contains game design elements and game design misfits as inspiration card decks. They animate to look at non-game contexts through “game glasses” and to find easy and quick solutions for the motivation with game design elements. Entrepreneurship education practitioners get inspiration for new motivating game-based methods in their teaching practice, while entrepreneurship education researcher and entrepreneurs themselves can see opportunities how to ameliorate the entrepreneurial journey with the power of game design.

### Workshop style

The workshop consists of a short impulse, a plenary work and a group work. The impulse introduces the EMPAMOS project and methods. In the subsequent interactive plenary and group work the participants can discover the game design toolbox and start transferring game design elements on their individual contexts.

### Expected outcomes

The expected outcomes of the workshop are that participants have looked at their setting (entrepreneurship education, seminar, research project, entrepreneurial endeavour, business idea) with “game glasses”. This produces insights, why their situation is demotivating, or how they could give their settings a new motivational spin with the aid of game design elements.

### Related research

The workshop bases on the results of the research project EMPAMOS. The project analysed games of a game archive qualitatively and quantitatively leading to a pattern language of game design elements. Currently, 8,300 games are analysed, 104 game elements and 25 game design misfits have been identified. A catalogue of empirically proven connections shows how game elements are combined in games to solve motivational problems. One artefact of the research is a game design toolbox that contains specific methods. Additionally, we offer a web application and a canvas that help to create meaningful and tailored gamification solutions based on a design thinking process.

## USING ENTREPRENEURSHIP EDUCATION APPROACHES IN TEACHER EDUCATION

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Hafdís Guðjónsdóttir, University of Iceland

### Workshop summary

Teaching diverse groups of students needs constructive pedagogy, and teacher education is developing towards that goal. Inclusive education is an internationally recognized policy aiming towards quality education for all without segregating groups or individuals (UNESCO, 2001). Practicing this policy is a challenging task and therefore we ask how entrepreneurship education can support teacher students to work in inclusive education?

We are two teacher educators that have been developing a graduate course on inclusive practices for student teachers for the past nine years, with innovation- and entrepreneurial education (IEE) approaches as a substantial element. To develop and understand our practice we have studied the course from 2011–2020, applying the methodology of Self-Study of Teacher Education Practices (S-STEP) (e.g. LaBoskey, 2004; Samaras, 2011). Our results show a similar pattern each year where the students begin the course with reservations about whether inclusion is feasible in practice. As the course progresses, we see increasing signs of resourcefulness and solution-oriented thinking students, recognizing that inclusive education is possible.

In this workshop we engage participants in one of many exercises we apply from the entrepreneurial approaches to help students get out of the rut of developing simple solutions to complex challenges of inclusive education.

### Workshop style

Walk-and-talk, discussions, analysis and brainstorming. Participants identify challenges in teaching and learning according to the policy of inclusion, before the conference. At the conference participants in small groups walk between posters with statements of challenges and analyse and brainstorm solutions. The solutions are restricted by eliminating simple ideas like: more finance or more staff.

### Expected outcomes

Engagements of participants, deep discussions, exchange of experience and understanding inclusion. Creative and feasible solutions to expand inclusion by exercising creative thinking and finding feasible solutions to everyday challenges in school practice.

### Related research

The core pedagogy of IEE has been defined as emancipatory pedagogy where learners are creative explorers and the role of the teacher is to be a facilitator rather than an instructor (Jónsdóttir & Gunnarsdóttir, 2017). A recent European Commission reveals that entrepreneurship education is rarely implemented in teacher education in Europe: „– neither in initial teacher training nor in continuous professional development (Lilischkis et al., 2021, pg. 9)“. This lines with recent findings in three Nordic universities (Seikkula-Leino et al., 2021). Our research shows the importance of displaying the benefit of these ways of working to strengthen teacher education in various ways. The approaches of IEE as they were applied in our course is an innovation in teacher education and can help other teachers educators to discover the emancipatory nature of the pedagogy.

## **PARTNERING ENGINEERING EDUCATION AND ENTREPRENEURSHIP – A NECESSITY OR A HINDRANCE.**

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### **Workshop summary**

The workshop will explore the use of entrepreneurial activity within engineering programmes and document the pedagogical practices which support the partnering of engineering education and entrepreneurship. In addition, the workshop will seek to address the question of whether entrepreneurship is a benefit or hindrance to engineering education.

Engineering is about finding solutions to technical problems. It involves problem deconstruction, analysis, design and implementation to provide an appropriate response. In many cases engineering problems, particularly within the education arena, are confined within well-defined boundaries.

Entrepreneurship is about the ability to recognise and pursue opportunities in a variety of settings, commercial, social, cultural, etc. Entrepreneurship tends to be open ended and is defined by words such as creativity, innovation and enterprise.

A logical suggestion is to combine or embed entrepreneurship or entrepreneurial behaviour within engineering education as a means of providing a more meaningful experience for students.

There are many advocates of such a combination, believing that it will allow engineering students and graduates to be more creative and innovative in their approach to problem solving. However there are just as many who argue against, claiming insufficient time and resources to expand the curriculum beyond the already high demands of the multiple array of modules and topics to be covered.

### **Workshop style**

- 10 minutes: Introduce the workshop and share details of several approaches used to encourage entrepreneurial practices within engineering programmes.
- 20 minutes: Use audience participation in small groups as a means of identifying innovative pedagogical approaches to encouraging entrepreneurial practices and behaviour in third level engineering programmes. Participants will be encouraged to discuss their own experiences as well as the benefits and challenges of introducing new practices.
- 10 minutes: Document and describe the various approaches, activities and practical case studies offered by the audience. Consider the benefits and challenges faced.
- Present a summary and conclude workshop.

### **Expected outcomes**

The workshop will provide an opportunity to learn from knowledgeable practitioners about current approaches to partnering engineering education and entrepreneurship and as a follow on consider whether graduates of such practices are better prepared for the work environment.

### **Related research**

While recognising that there is considerable research available on the topic, the workshop will focus on the experiences of participants and will allow for a discussion on new and innovative pedagogical practices including the effect and impact of the practices on engineering education.

## **(RE)EVALUATE THE LEARNING-BY-DOING EXPERIENCE : CROSSED SELF-CONFRONTATION METHOD TO VERBALIZE KSA**

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Fabienne Bornard, INSEEC Grande Ecole

### **Workshop summary**

For our students, it is sometimes difficult to find the words to express the knowledge, skills, and attitudes (KSA) they have developed through a learning-by-doing program. While they are able to describe what they have done, they often have difficulty to turn that particular situation into new KSAs. With regard to this reflective practice, teachers or trainers are actually facing the same problem themselves and it is also difficult for them to help students in this practice. More generally, it is difficult for a practitioner (student or trainer) to put words on his or her particular practice and to present the KSA developed through this practice. Most of the time, learning-by-doing programs only focus on the concrete outcome: the project itself, instead of the learning outcomes. Yet, verbalizing one's skills seems to be of primary importance to value one's KSAs (Quinones, Ehrenstein, 1997; Kakouris, Liargovas, 2020).

The purpose of this workshop is to train the trainers, using an intersubjective methodology (crossed self-confrontation –Duboscq, Clot, 2010). The use of this methodology will help them to facilitate the verbalization of their own KSA. Then, they will be able to replicate the methodology to help students to verbalize the KSA developed through action. They will also use this methodology in a professional development process to find the right expression of their practices. This activity could be useful to open dialogue with peers and start a community of practice.

### **Workshop style physical**

Prior registration is required / 30 participants –Required equipment: smartphone.

### **Expected outcomes**

- Turn participants into actors thanks to the verbalization of their skills (reflective practice);
- Understand and live the principles of the method of crossed self-confrontation to (re)evaluate the experience of coaching student entrepreneurial teams;
- Identify the skills mobilized in the framework of an activity;
- Elaborate a formal feedback for students.

### **Related research**

The methodology presented is developed based on the following elements:

- Crossed self-confrontation method (Clot, 1999; Duboscq & Clot, 2010), adapted (Foliard & Le Pontois, 2017; Le Pontois & Foliard, 2018; Le Pontois, 2020)
- Reflective Practice in Entrepreneurship (Toutain, 2010; Neck & Greene, 2011; Neck & Corbett, 2018; Hägg & Kurzkowska, 2020)
- Verbalization of KSAs and competences (Le Pontois & Foliard, 2017).

## CONTEXT IN ENTREPRENEURSHIP EDUCATION – EXPLORING THE HEI PRACTITIONERS PERSPECTIVE

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Michael Breum Ramsgaard, VIA University College

Karen Williams-Middleton, Chalmers University of Technology

### **Workshop summary and key questions**

If you were asked to teach entrepreneurship to nurses in Brazil how would you prepare? For most educators it would presumably feel natural to explore the new context in some way and adapt their current learning designs to accommodate the new setting. But, what role does context hold in contemporary entrepreneurship education (EE)? In the workshop, we explore the accounts of the higher education institutions (HEIs) Practitioners Perspective in an interactive format.

Recent literature has established context as important to design for and with regarding entrepreneurship education (Leitch et al., 2012; Thomassen et al., 2020). While some aspects of entrepreneurship and entrepreneurial action are broadly applicable, others are significantly dependent upon the context in which one is embedded. However, there is a lack of documented knowledge regarding how to deal with context in entrepreneurship educational practice, and educators are often left to consider how to address context in entrepreneurship education and training, without clear guidance of how to do so.

For this reason, we call upon the 3E community to consider: How can/should context be addressed in entrepreneurship education in HEI? As practitioners, we wish to explore how and why context is addressed in current EE pedagogical practice. We seek to expose, which context aspects that are currently not addressed – either because they are deemed irrelevant or taken for granted. Finally, we strive to identify critical next step in addressing context in entrepreneurship education from an educator perspective.

## INTERDISCIPLINARY STUDENT TEAMWORK IN ENTREPRENEURSHIP EDUCATION

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### **Workshop summary**

This workshop will address questions related to entrepreneurship educations where students from different disciplines engage in teamwork. Interdisciplinary entrepreneurship programmes can be found at universities all over the world, but discussions about how our teaching methods need to adapt to an interdisciplinary setting are lacking. As teachers we have the opportunity to influence students' teamwork in (at least) three different areas: *team formation, team dynamics, and team performance*. During the workshop discussion will focus on interdisciplinary aspects and centre around these three areas.

### **Workshop style**

The three aspects of interdisciplinary team work mentioned above will be discussed in smaller groups. Questions distributed by the presenter will serve as a point of departure for the discussion. Participants will discuss ideas of how to possibly – through different methods – improve students' teamwork.

### **Expected outcomes**

After the workshop, the presenter will summarize the groups' discussions in one document, which will be distributed to the participants. The document will provide the participants with food for thought and inspiration on how to teach interdisciplinary teams, aiming to improve students' new venture teamwork and future entrepreneurship.

### **Related research**

In several studies interdisciplinary teamwork is argued to be important. A number of reasons are put forward: it increases creativity and the possibility to come up with new innovative ideas, it expands the competence base of the team, adds new perspectives from other subject areas, and critical thinking which could impact decision making and the performance of the new venture (i.e. Lindvig et al 2019; Zhou et al 2012; Colombo et al 2005). From a learning perspective the team is argued to be important also because knowledge is created within the process of interaction (Nonaka & Toyama, 2003), which means that students from different disciplines and with different cognitive frameworks could potentially develop a broader knowledge base and become more openminded to different ways of thinking and acting.

Students engaged in interdisciplinary teams could however experience difficulties to cooperate. The difficulties might for example be grounded in cultural clashes due to differences in perceptions imprinted by previous education, conflicts based on differences in attitudes and/or lack of understanding of other subject areas, etc. (Janssen & Bacq, 2010). Since entrepreneurship is often a team effort a discussion about how our teaching practices can influence interdisciplinary team work is of value.



## USING CASE STUDIES IN ENTREPRENEURSHIP EDUCATION TO UNDERPIN AUTHENTIC LEARNING

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 Siobhan Gallagher, Dun Laoghaire Institute of Art Design + Technology  
 Conor Heagney, Dun Laoghaire Institute of Art Design + Technology

### Workshop summary

This practitioner development workshop shares current practice around the challenge of authentic, integrated capstone projects for final year entrepreneurship undergraduate students. Integrated assessments require faculty to cooperate and collaborate and remove traditional silos in subject led teaching and assessment.

This practitioner development workshop presents a final year business case study which is applied across seven modules as an example of using case study in Entrepreneurship education to improve pedagogic practice, underpin authentic assessment and build learner communities. This approach reduces the assessment load for learners which is a frequently cited challenge for final year students. The team work collaboratively to assess each student's written report. Each student is also required to present and verbally defend their recommendations to the teaching team following submission of the written report.

This case study requires students to problem solve in a real-world context. It is a particularly appropriate teaching and assessment tool in entrepreneurship education as it gives the student the opportunity to:

- analyse real business situations,
- engage with complex problems,
- draw on their accumulated knowledge to propose solutions to those problems and
- display their achievement of programme learning outcomes.

This practitioner development workshop will share practice and experience gained over the seven years of operating this assessment. Participants at the workshop will be encouraged to conceptualise their own possible shared assignments within their own teaching context.

### Workshop style

This interactive workshop will initially introduce participants to the context and practical aspects of the case study assignment. In addition, the process and scaffolding for learners will be outlined. The critical challenges experienced over the years will be highlighted and mitigation strategies shared. Each year the process is evaluated both quantitatively and qualitatively and actions for improvement agreed amongst the teaching team this process will also be shared for participants. This should then assist participants in the development of a shared authentic assessment within their own context. This interactive workshop will help participants to develop a similar or related assignment within their own teaching context.

### Expected outcomes

This interactive workshop will support participants to develop a shared real-life assignment within their own teaching context. Evidence of practice that has evolved over the seven years of operating this assignment and the critical challenges will be highlighted enabling participants to design a process aware of the potential pitfalls and mitigation approaches. The development of an evaluation mechanism will also be a key outcome.

### Related research

Authentic assessments are designed around tasks which require students to demonstrate skills and abilities which they will be required to practice in their careers (CAST, 2018; National Forum 2017). It mirrors a move to assessment which is a more nuanced, complex and a comprehensive assessment of knowledge and higher-order skills (Shepard, 2000; Birenbaum, 2003). Authentic assessment is a model which enhances student employability. It provides the opportunity for students to demonstrate problem solving (Wu, Heng, and Wang, 2015), autonomy (Swaffield, 2011), motivation (Gulikers, Bastiaens, Kirschner and Kester, 2008), self-regulation and metacognition (Wu, Heng and Wang, 2015). This is also reflective of an increasing emphasis on the learner's disposition-in-the-world that pushes assessment beyond formal attainment outcomes (Boud, 2014; Kreber, 2014).

## CREATING PSYCHOLOGICAL SAFETY IN AN ENTREPRENEURIAL EDUCATORS PROGRAMME

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Jacinta Owens, University College Dublin Innovation Academy  
Rosie Leonard-Kane, University College Dublin Innovation Academy

### **Workshop summary**

Since 2014 the Innovation Academy at University College Dublin has facilitated a professional certificate and diploma for educators to develop their entrepreneurial mindset (EM). This unique course grew out of the recognition that students today need an EM to help navigate and make the most of this time of rapid and complex social, economical and political change. To support their students, educators need to develop their own EM and approach to teaching.

Over three separate but linked modules, educators go on a journey to understand what it means to have an EM in education and how they can apply this to their discipline or level. The curriculum has evolved over time but there is one element that has emerged as the essential component to success: establishing psychological safety. Asking educators to reflect on and reimagine their practice as an entrepreneurial educator makes them inherently vulnerable. Psychological safety in the learning environment is non-negotiable in our course and this workshop will demonstrate how we establish psychological safety so that educators are able to critically reflect on their practice as they develop an EM.

### **Workshop style**

This workshop will be interactive with live demonstrations of a range of tools and techniques that we use to develop psychological safety in the classroom. There will be small discussions on how and why these tools are effective.

### **Expected outcomes**

Participants will leave with a range of techniques to develop psychological safety for students.

### **Related research**

Key research on the importance of psychological safety (Edmondson, A. C., and Lei, Z. (2014), Kaila, T. (2020), Won You Ji, 2020). This workshop is based on robust educational theory related to experiential learning (Kolb D, 2015), entrepreneurial mindset (Larsen, I, 2022; Mitra, J, 2017), reflective practice (Moon J, 2009) and the dialogic classroom (Manalo E, 2020).

## **DEVELOPING AN ENTREPRENEURIAL MINDSET THROUGH INVERTED THINKING**

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Rosie Leonard-Kane, University College Dublin Innovation Academy

Alan Morgan, University College Dublin Innovation Academy

### **Workshop summary**

The purpose of entrepreneurial education (EE) has evolved from increasing students' intention and ability to start and run new ventures to teaching students to think and behave 'entrepreneurially' in any situation. Broad outcomes such as developing creative competencies, values, dispositions and attitudes are now common in EE courses, often grouped under 'entrepreneurial mindset' (EM), a term lacking consensus amongst entrepreneurial educators. Questions such as what is an EM? Can it be taught? How should it best be taught? are debated in the literature.

This workshop does not seek to define EM but will showcase an activity that we use to develop behaviours, beliefs, attitudes and ways of thinking that contribute to an EM. The Worst Idea is a group learning activity based on inversion thinking that is inherently playful yet provides a unique opportunity to develop EM. From the short activity key themes such as ideation, creative confidence, attitude to risk and failure and collaboration are explored.

Attendees at this workshop will experience the Worst Idea activity from the vantage point of a student. Following the activity, a facilitated discussion will draw out the key learning opportunities related to developing EM with this activity.

### **Workshop style**

This workshop will be interactive and experiential. Participants will be separated into small groups of 4-5 and will experience the Worst Idea activity for themselves. A structured whole group discussion will relate the activity back to the development of EM, identifying key learning opportunities within the activity.

### **Expected outcomes**

Participants will gain an appreciation for the potential of inversion thinking as a technique to develop entrepreneurial mindset, a practical example of an activity and reflect on opportunities to develop entrepreneurial mindset in their own settings.

### **Related research**

This workshop and activity are based on robust educational theory related to experiential learning (Kolb D, 2015), entrepreneurial mindset (Kyle, 2020, Larsen, I, 2022; Mitra, J, 2017), reflective practice (Moon J, 2009) and the dialogic classroom (Manalo E, 2020), Other sub-themes which underpin the activity include inverted thinking (Munger C, 2012) and elements of the work of Dr. Mary Helen Immordino-Yang (Immordino-Yang, MH, 2007;2015).

## FROM TEACHER TO COACH – HOW TO OVERCOME PEDAGOGICAL CHALLENGES IN LEARNING ENTREPRENEURIAL SKILLS?

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### Abstract

This workshop is based on the experiences and results of the European TEAMS -project (<https://www.project-teams.eu/>), where the goal has been to enhance soft skills, entrepreneurial skills, and design thinking to maritime schools in Holland, Belgium and Ireland. The pedagogical model has been adopted from JAMK University of Applied Sciences, Finland, where applying entrepreneurial experimental -learning-by-doing team methodology has proven to bring promising results over the past 25 years.

In this workshop, participants will be able to use the project framework to think of their own entrepreneurial pedagogy and how to integrate learning-by-doing methodology in their own teaching.

Workshop is participatory, which means that the participants will work in groups creating ideas of entrepreneurial pedagogy using TEAMS -project framework, which is presented in the beginning of the workshop. Participants will create ideas that can be used in entrepreneurial education in their home institutions.

## PROMOTING ENTREPRENEURSHIP: A TWIN MODULE APPROACH

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Margaret Tynan, Waterford Institute of Technology

EE is recognised as having a key role in the development of entrepreneurship competence as a transversal skill; a key policy objective at European and member state level. This PDW showcases a twin module delivered in 2021 to undergraduate students undertaking the same programme and module, with the same learning outcomes but different starting points. One version offers students with entrepreneurial motivation, the opportunity to work on and **in** their own business for an academic semester. The other, allows teams of students that did not self-select an entrepreneurial module option, the opportunity to work on a tourism business of their choice, as an alternative to non-viable work placements due to pandemic restrictions.

Weekly learning logs identifying experiences, learning opportunities and influence on future behaviour were analysed for both cohorts using the EntreComp framework and levels of competence (Bacigalupo et al., 2016) to understand *'How does flexible module delivery influence entrepreneurial competence development'?*

This study raises important questions for EE educators:

- Taking a competence development perspective - what are the future opportunities / challenges for educators in embracing flexible modes of delivery?
- EntreComp provides a lens for competence development. However, visibility for whom? and how can it be used effectively?
- How could visibility of entrepreneurial competence and greater flexibility in delivery encourage more cross-disciplinary engagement in entrepreneurship?

Following a brief module showcase, round table discussions will focus on the above questions. Insights captured at each table will be shared. Facilitators will collate emerging themes and share in report format for amendment/ further comment after the PDW. Following the workshop participants will have:

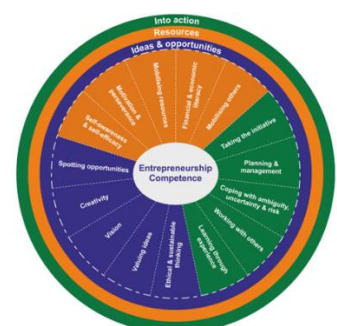
- An increased understanding of the EntreComp framework as a tool to contemplate entrepreneurial competence development in their own EE practice;
- Ideas about how to engage colleagues in dialogue about entrepreneurial competence development and opportunities for interdisciplinary collaboration.

Entrepreneurship education (EE) is defined as “the application of enterprise behaviours, attributes and competencies into the creation of cultural, social, or economic value. This can, but does not exclusively lead to venture creation” (QQA, 2018:7). While experiential approaches are popular with EE educators (Neck, Greene and Brush, 2014; 2018), the question remains ‘learning by doing what?’ (Lackeus, 2013). Fayolle and Gailly (2008) argue that EE should consider the learner position while Neck *et al.* (2014; 2018) contend it should be method driven, using a set of theory-based practices [actionable theory], to enable students to act more entrepreneurially.

Bacigalupo *et al.* (2016) propose the ‘EntreComp’ framework of entrepreneurial competence which identifies three core competence areas along with 15 corresponding competences (Figure 1). Entrepreneurial learning is complex, with no one best way to teach it (Fayolle and Gailly, 2008; Neck and Greene 2011). In contrast to prescribed standards or curricula, the EntreComp framework provides a flexible reference with different pathways for diverse audiences.

This PDW contribute to calls for the framework to be implemented and evaluated in different contexts through practitioner and end-user feedback.

**Figure 1: Areas and competences of the EntreComp conceptual model** Source: Bacigalupo *et al.* (2016:11).



## HOW TO IMPLEMENT JA JUNIOR ACHIEVEMENT COMPANY PROGRAM FOR SEN-STUDENTS?

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### Workshop summary

The workshop introduces the SENSationalSTEM project<sup>1</sup>, which aims to create an entrepreneurship education curriculum for students with special needs (SEN) at vocational education and training (VET). In the pilot program (February 2021 to April 2022), we implement the JA Company program, which aims to support the objectives of entrepreneurial attitudes, working life skills, and personal financial management of the students. During the pilot program, the SEN-students are provided with the possibility to work in international student teams and to establish student companies in the field of science, technology, engineering and mathematics (STEM) areas. Either the SENSationalSTEM project or the JA Company program do not aim just teach the business skills and create the new businesses. Instead, they both aim to encourage the students to find their strengths, to learn team work, to learn to take responsibility of their own actions, to obtain and master their STEM skills, and to find their own path in work life and in the society.

We use learning-by-doing pedagogy (i.e. collaboration and mutual experience acquired through action) and entrepreneurial learning pedagogy (i.e. curiosity, risk-taking, passion and ownership of the mutual project) and implement Opportunity-Centred Entrepreneurship (Rae 2007; Suonpää 2013) for creating the curriculum for international SEN student teams.

Due to the covid19 pandemic the teaching and guiding has to be undertaken remotely also in our project. That means that we need to find new ways to activate the SEN students to communicate and co-operate in teams-meetings. In this workshop we are discussing: how we do it?

### Workshop style

The workshop starts with the presentation of the project and after that is an interactive session for the participants. Based on the indicative thinking the participants discuss how they facilitate their student's teamwork and collaboration. They are activated by using international teams and Learning café. The team discussions are followed by a summary discussion.

### Expected outcomes

As a result of the project, we will provide the SEN-students an entrepreneurship education program and a learning environment that enhance their general wellbeing. The students will be prepared with: work life and economic skills (standard of living), communication and relationship skills (sense of community) and entrepreneurship competencies (meaningfulness and self-realisation).

### Related research

To construct the curriculum we implement the action research (AR) methodology that involves both actors and researchers. AR processes include information gathering, planning, acting, observing, evaluating, reflecting, and planning for the new cycle (Bachman, 2001; Mertler 2012, 14). We also adopt the constructive research approach (CRA) that involves seven steps: find the research problem, research co-operation, deep understanding, conceptualizing, implementing and testing, pondering the applicability, and analyzing the theoretical contribution (Kasanen et al., 1993; Lukka, 2000).

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<sup>1</sup> Funded by Central Baltic Programme

## TOWARDS A NORMATIVE FOUNDATION OF STUDENT ENTREPRENEURSHIP FACILITATION

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**Workshop title:** ‘Doing’ responsible innovation with students in higher educational institutions

### Workshop summary

While student entrepreneurship facilitation in higher educational institutions (HEIs) has been developed to accommodate for innovation, it is increasingly recognised that innovation actors (e.g. student entrepreneurs, facilitators) must work towards sustainable, mission-oriented and capacious innovation. Underpinning such normative orientation is the realization that innovation can meet social, economic and environmental challenges facing society today, but that it requires deliberate facilitation efforts in order to ensure responsibility. Following this, the framework of ‘Responsible Research and Innovation’ (RRI) has been introduced in order to draw attention to how innovation practices and methods must become more normatively oriented. Still, applying RRI in practice is not a straightforward process, and empirically the approach has mostly been utilised when discussing very ‘obviously’ controversial innovations and technologies. How RRI is to be implemented in other less obviously controversial contexts, like student entrepreneurship programs, is less studied. Through this workshop we therefore draw on RRI and apply principles of ‘anticipation, inclusion, reflexivity and responsiveness’ in an imagined student entrepreneurship facilitation setting. We aim, through facilitation efforts and participants’ engagement, to engage with case studies—real and/or imagined—through an application of RRI principles and questions.

### Workshop style

The participants in the workshop will be assigned to groups where they engage with a real or imagined case study of a student entrepreneurship idea or project. This can either be provided by the facilitators or the participants themselves. The group will then analyse the cases through applying RRI principles.

### Expected outcomes

While participants must ‘roleplay’ as students, we still expect this (proxy) workshop to provide the participants with some tools connected to how one can operationalize normative or sustainability concerns in innovation projects, as well as more insight into how these processes can be facilitated.

### Related research

As part of an ‘entrepreneurial turn’ since the 2000s we observe an increasing prevalence of student entrepreneurship programs in higher education, and higher education institutions (HEIs) are increasingly setting up infrastructure and engaging in activities that support students in pursuing entrepreneurship, such as entrepreneurship education courses, student incubators and business idea competitions. Such activities are often based on models of technology transfer and commercialization of knowledge and inventions (Kloftsten & Jones-Evans 2000; Roessner et. al. 2013) and/or models of entrepreneurship education and the building of entrepreneurial competency among students (Gibb & Hannon 2006, Jakobsen et al. 2019). While such activities undoubtedly have many good and valuable elements, we identify a challenge related to the normative foundation of such practice. Therefore, responsible student innovation and entrepreneurship should be put on the research agenda, which also could underpin how HEIs could transform to engaged universities that seriously focus on economic, social, ethical and environmental aspects (Cinar, 2022).

## IT'S ENTRETIME! TEACHING THROUGH ENTREPRENEURSHIP TO BECOMING MORE ENTREPRENEURIAL UNIVERSITIES

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### Workshop summary

The workshop builds upon the results of [entertime.eu](http://entertime.eu) - a European initiative developed to enable train-the-trainer (TTT) courses in entrepreneurship for HEI educators in any subject in any country. In total, we have thus far completed 10 pilots in nine EU countries with 80 participants from 15+ countries. The TTT initiative views entrepreneurship as both a societal phenomenon and as a pedagogy and combines workshops, an online course, webinars and a team based innovation-oriented project work with support of an entrepreneurial coach. Although all parts are important, the project where participants co-created an innovative education-related initiative when working in an international interdisciplinary team of higher education professionals proved to be the main vehicle for learning. The results of the pilots serve as impulse for the proposed workshop. A co-creation workshop based on experts' pedagogical insights and the results of 10 European pilots that developed an online toolkit for train-the-trainers in teaching through entrepreneurship and promoting more entrepreneurial universities. The results of these pilots will provide impulses for a lively discussion, followed by co-creation group work for quick prototyping of new initiatives that can build upon the online toolkit that will be freely shared with participants of the workshop.

### Workshop style

First, we will share learnings from the pilots run between September 2020 and December 2021. Next, we arrange an interactive session for sharing best practices and identification of key problems in similar settings. Last, participants will form international interdisciplinary teams to co-create new initiatives that build upon the piloted course.

### Expected outcomes

The expected outcome is the generation of novel concepts that could promote an entrepreneurial mindset among university staff to advance the institutions' third-missions and equip non-entrepreneurship educators with entrepreneurship competences to teach through entrepreneurship.

### Related research

Entrepreneurship education has historically been described as lacking rigor (Wilson, 2008), a common framework (Fayolle and Gailly, 2008), and best practices (Fiet, 2000). Solomon (2007) has reviewed the state-of-the-art in entrepreneurship education programs seven times since 1979 and summarized his findings as "There is little consensus on just what exactly entrepreneurship students should be taught." (Solomon, 2007 p. 169). Henry et al., (2005) and Klein & Bullock (2006) go so far as to ask the question "Can entrepreneurship be taught?" Our approach is instead that it can be 'learned' and most valuably learned through experiences that in turn are reflected upon (Huxtable-Thomas and Brahm, 2022; Westerberg, 2022). The approach utilised in this workshop aligns with the overall entreTime project and draws from three disciplines. From education and pedagogy (Kolb, 1984; Pittaway and Cope, 2007); innovation, (Galvagno & Dalli, 2014; Chesborough, 2006) and of course entrepreneurship (Sarasvathy, 2001; Sarooghi et al., 2019).



# RESEARCH PAPERS

## LEVELLING THE PLAYING-FIELD – COULD ENTREPRENEURSHIP EDUCATION COMPENSATE THE LACK OF ENTREPRENEURIAL PEDIGREE AND PRIOR EXPERIENCE?

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**Questions we care about:** In the last four decades, the importance of entrepreneurship education for societal renewal has seen a dramatic rise. Policy arguments state that to spur economic development, a more entrepreneurially oriented workforce is needed. To increase our understanding of how entrepreneurship education impacts entrepreneurial careers, the purpose of this paper is to investigate how entrepreneurship education, in the form of venture creation programs (VCPs), mitigate or surpass a lack of entrepreneurial career antecedents, such as entrepreneurial pedigree or prior entrepreneurial experience. We ask: What role do VCPs play in the subsequent career choice of graduates regarding career impact relative to prior entrepreneurial experience and entrepreneurial pedigree?

**Approach:** This paper investigates the role of VCPs, entrepreneurial pedigree, and prior entrepreneurial experience regarding early career choice. A broad perspective of entrepreneurial career is considered, across four occupational forms: self-employed, entrepreneurial employment (intrapreneur), hybrid (self-employed and employed in parallel), and conventional employment. To investigate career choice, data from graduates of VCPs at three universities in Northern Europe was collected through an online survey. Questions addressed graduate background prior to education, yearly occupational employment subsequent to graduation, and graduates' own perception of entrepreneurial activity in employment positions. The survey was sent to 1326 graduates (total graduate population = 1568) and received 692 responses (52.2% response rate).

**Results:** The educational context of VCPs, whether Ind-VCP or Corp-VCP, mitigated prior entrepreneurial experience. Although prior entrepreneurial experience interacted with Ind-VCP in making a career as self-employed more likely, this was not the case for Corp-VCP, in subsequently choosing intrapreneurial careers. Entrepreneurial pedigree had no significant effect on career choice other than for hybrid careers.

**Implications:** Entrepreneurial experience gained from VCPs seems to influence graduates towards future entrepreneurial careers. For some, a VCP is the first entrepreneurial experience, while others are building existing entrepreneurial experiences. Evidence supports the conclusion that many VCP graduates lacking prior entrepreneurial experience instead develop entrepreneurial competencies (knowledge, skills, and judgmental abilities) through the program, which prepares them to engage in subsequent entrepreneurial careers. For policy and practice, entrepreneurship education can level the playing field for students aspiring to an entrepreneurial career but lacking prior entrepreneurial experience or entrepreneurial pedigree. This is an important insight when considering the need to spur innovativeness among businesses transitioning towards sustainable futures and/or recouping from the economic downturns created and perpetuated by the pandemic. Our evidence illustrates that action-based, contextualized education in entrepreneurship creates graduates that engage either as self-employed or as change agents (working with initiating and developing new opportunities) in established businesses.

**Value/Originality:** This study offers novel evidence that entrepreneurship education can level the playing field for students preparing for entrepreneurial careers but lacking prior entrepreneurial experience or an entrepreneurial pedigree.

**Keywords:** entrepreneurial career, venture creation program, prior entrepreneurial experience

## THE NETWORKS OF ENTREPRENEURS SHAPING THE BUSINESS NETWORKS OF STUDENTS

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Many programs in entrepreneurship education (EE) offer modules or training in networking as a way for entrepreneurs to gather advice or co-create novel ideas with other people in their business networks. Unfortunately, the role of the diverse actors of those networks, such as family, friends and very close advisors, is taken for granted, or not explained when being applied to business. It seems that in EE, having a networks is assumed to naturally exist and there is little to be done except of expanding it. Yet, because students are in the process of forming their business, networks keep changing and strong ties need to be combined with weak ties to provide support for growth, and even more to provide a listening ear or unpaid support when it comes to early warning signals of potential business crisis.

In this paper, we argue that students are better equipped for business when they pay attention to the composition of their networks, especially when it comes to deal with a potential failure. Based on interviews of students with entrepreneurs who experienced business crisis, the episode of failure become a unique case to look at those networks that provide the support and strength to keep the business. Having business networks signaling when the business was not going well led to seek external help to mitigate the impact of the crisis and recover. From these insights, we formulate the following question: How can entrepreneurship students be better equipped in terms of using business networks, especially to counteract signals of business crisis?

This research builds upon the earlier studies of the role of networks in business, with specific attention to the creation and use of close personal ties for business purposes. We created a module where students got in touch with entrepreneurs who had experienced crisis or even failure, in order to gather lessons and improve their behavior towards business resilience. More than one thousand students enrolled in this module across several programs over the course of three academic years. From these we selected one cohort (course/year) consisting of 125 students. These students each interviewed one entrepreneur about their experience with business crises and accordingly they wrote reports about the lessons learned following a transcription of the interview. For the purpose of this research, we coded 84 students' reports that were completed and then analyzed the results. Categories of codes were given to the experience of the entrepreneurs as repeated by the students, and to intention of the students in their own reflections. The matching of categories in both sections showed that networks are strongly associated with bonds of trust and availability when being asked for.

From those results, we realize that the educational module is an added tool for the learning process of the students. Entrepreneurship educators need to devote more attention to help their student develop sufficient insight of their own networks and the purposes of them. In this article, it is shown that students were able to deduce some lessons for their own entrepreneurial aspirations: close ties can be social but also economic safety nets. Close ties are supporting without much hesitation, so entrepreneurs - and students by default - need to be more receptive to comments about mood change, be more open to tell how the business is going, and ask for recommendations of professionals providing business advice. Yet, when analyzing the intentions and actions planned by the students, we did notice that concrete reasons for create and invest in business networks is focused on advice and not much else. This goes against what is known in earlier research about multiplexity in the roles of networks: various types of networks for specific purposes in business.

EE has been advising students to build up networking skills. Most of the times the intention is to increase the diversity of networks for purposes of innovation and new ideas. That is one purpose of networks in line with finding opportunities to place the business in specific niches in the market. Thus far, our findings suggest that the modules in EE on networking skills are one-sided, and there is little to say about the full range of purposes of networks in businesses. This situation is clearly seen in event of business crisis when support is needed from networks that have been built over time and where trust is one of the key elements of those relationships.

## COMPETENCE FRAMEWORKS OF SUSTAINABLE ENTREPRENEURSHIP: A CRITICAL RE-READING THROUGH EDUCATIONAL SCIENCES

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### Objectives

This conceptual paper aims to critically look at competence frameworks for sustainable entrepreneurship education while challenging the very notion of competence as defined in the educational sciences.

### Approaches

The research design is constructed around three phases related to the main research question and the two related preliminary sub-research questions. The major methodology of critical ethnography of type 3 of Alvesson & Skoldberg (2000) has been used for the critical re-reading goal of this study. The PRISMA approach of Page & al. (2021) has been also used for conducting a systematic review of the literature on competences for sustainable entrepreneurship.

### Results

As a result, this paper shows up that existing competence frameworks for SE education poorly apply the term competence as defined and used in the educational sciences. First, the identification of related resources for each competence is sometimes absent or sometimes not appropriately used in frameworks identified. Then, none of the frameworks detected in the literature deal with the presence of a hierarchical classification of competence' mastery and their related resources. Finally, none of them associate each competence and the related resources with specific pedagogical methods or assessment methods, despite the insight of Biggs (2003) about constructive alignment.

### Implications

This paper illustrates an overview of the current literature on competences for sustainable entrepreneurship while tracing the construction of related frameworks in a school context. Our research also helps to better understand the concept of competence as defined and used in the educational sciences to bring clear instructions about its application in sustainable entrepreneurship courses. The importance of a deep construction of learning outcomes according to competence-based learning is emphasized as well as the pedagogical methods and the assessments tools used to develop and ensure the mastery of competences by students. Consequently, this interdisciplinarity and critical aspect of the research reveals multiple research avenues on elements to consider when designing a competence framework for sustainable entrepreneurship education.

### Originality

This paper contributes to the emerging research field in sustainable entrepreneurship education while providing a critical and interdisciplinary research linking the domain of sustainable entrepreneurship research with the educational sciences.

**Keywords:** sustainable entrepreneurship; education; competence frameworks; sustainable development; interdisciplinarity; critical management studies

## AN ONLINE SELF-EMPLOYMENT EDUCATION PROGRAM FOR HIGH-SKILLED UNEMPLOYED SENIORS

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### Questions we care about

The purpose of this paper is to provide insights into the impacts of a self-employment and entrepreneurship training program for high-skilled long-term unemployed workers aged 45-65 in France during the Covid pandemic. We assess the impact of the training in terms of creation of a professional activity, either as self-employment or company start-up, stimulation of entrepreneurial capacities and development of entrepreneurial mindset and attitudes. Thus, the objective is to gain insights on this training program through the following questions: What is the rate of unemployment after the training? How do trainees perceive the impact of the training on entrepreneurial self-efficacy? What part of the training is perceived as useful and relevant by the trainees and what part is not?

### Approach

- Training scheme. The training is an experimental, active learning program, selected and entirely funded by a French local government.
- Population. 97 participants aged 44-65 years ( $M = 53.4$  years;  $SD = 4.8$ ; Median = 53), including 65 females, participated to this study.
- Data collection and analysis procedure. All participants received the same distance learning training during the Covid crisis. Three months after their training, we sent them a questionnaire on their perception of the training and their current professional situation. The design of the questionnaire and the analysis of the answers were carried out using the Sphinx software. Our questionnaire is an adapted version of the CHEERS (Careers after Higher Education — a European Research Survey) questionnaire (Teichler, 2007). A cluster analysis was performed as well as analyses of variances to identify explanatory variables of the training's outcomes.

### Results

We collected data regarding the degree of success of the transition to self-employment, the quality of employment, the quality of the work tasks, and the perceived quality of the training. Our results are quite positive and encouraging even though some profiles seem to be not convinced by self-employment careers and some others seem to need longer training and some improvements of different aspects of the training, for instance commercial prospection training. After the training the rate of respondents who were unemployed, looking for work, not in training and with no short-term job prospects at the time they completed the questionnaire was of 17%. For most of respondents their current job fits their expertise and equals or exceeds their expectations.

### Implications

This study brings new results encouraging online learning, student-centered, self-employment and entrepreneurship education (EE). It also brings arguments in favor of EE during sanitary and economic crisis and proposes explanations for the training outcomes. It also shows which components of entrepreneurial mindset and skills this population learn and use with ease or difficulty.

### Value/Originality

This study used an innovative survey to assess the impact of an experimental training applied to a specific population for self-employment education. It was led during the Covid pandemic and consequently gives us new data on the outcomes of an online EE program during the Covid pandemic. It also gives us insights on motivations, entrepreneurial-related skill learning and career choices of this population.

**Keywords:** Entrepreneurship education; entrepreneurial mindset; self-employment; online; long-term unemployment; entrepreneurial skills

## ENTREPRENEURSHIP EDUCATION FOR ALL: A DELPHI STUDY ON CHALLENGE-BASED EDUCATION

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### Questions we care about

In higher education, we educate the sustainable change-makers of the future who can contribute to solving complex problems such as the transition towards a circular economy. Wide entrepreneurship education programs – more recently referred to as value-creation pedagogies (VaCP) – have the potential to do so. In VaCP students learn *through* experiencing the entrepreneurial process with all its uncertainties– similar to the process underlying sustainability-related issues. The main question we care about is: how can we bring such education to practice? In the current manuscript we explore to what extent **challenge-based learning** (CBL) provides the answer. In CBL, students work in heterogeneous teams on real challenges in collaboration with different stakeholders. The main purpose of this study is to explore to what extent CBL provides opportunities to create VaCP in higher education. Specifically, the following research questions are addressed: What are the key characteristics of challenge-based education? To what extent and in what ways do extra- and in-curricular CBL differ? What struggles do stakeholders experience in organizing CBL?

### Approach

A Delphi study has been conducted at Wageningen University to identify key characteristics of CBL from a stakeholder point of view. Wageningen University was specifically chosen as it offers both extra- and in-curricular challenges to students, which might affect the level of entrepreneurialism of the programs. Data were collected in two rounds (round 1; N=47; round 2; N=29).

### Results

Key characteristics of CBL are (1) the challenge is a complex problem with multiple solutions; (2) it provides opportunities to students to develop personal and professional skills; (3) students work in multi-disciplinary groups; (4) coaches are available for individual, team, and/or process support and (5) the challenge is a real-life problem from an external client. In in-curricular CBL, students had to meet the same learning outcomes, whereas extra-curricular CBL provided opportunities to students to have their own, customized learning journey, allowing for varied learning gains. This allowed for stronger societal impact and value-creation.

### Implications

Differences in extra- and in-curricular challenges might affect to what extent CBL can be entrepreneurial and/or foster the development of an entrepreneurial mindset.

### Value/Originality

To the best of our knowledge, CBL and VaCP have not been connected yet in existing literature. CBL is a rather new concept in education, until now especially applied in the field of engineering. As the results of the current study show that CBL can be considered a specific form of VaCP, it has the potential to open-up entrepreneurial education for all.

**Keywords:** Challenge-based Learning, Delphi Study, Sustainable Development Goals, Value-Creation Pedagogies

## A LEAP-OF-FAITH IN INTELLECTUAL PROPERTY IN ENTED CURRICULUM WITH A “LEAPINTIME” SERIOUS GAME TRIGGERS EMERGENCE OF CONTEXTUALIZATION BIAS

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### Question(s) we care about

Why should we be more aware of “contextualization bias” when gauging the relevance of Intellectual Property education within Entrepreneurship Education curricula and why should we work towards reducing the barrier of entry to Intellectual Property and Patents within Entrepreneurship Education across ALL disciplines?

### Abstract

Entrepreneurship Education (EEd) is increasingly being contextualized to non-business disciplines. However, we find an interesting observation that while contextualizing, topics that could be considered critical in EEd in one discipline were considered as sub-critical in others. The example we focus on as part of our study is the topic of Intellectual Property within EEd in general and more specifically, because of the context we were working in – that of EEd in STEM, we zoomed in on Patents. IP education and patents are a rather challenging subject to teach and often the authors themselves have relied on guest lectures from lawyers or patent attorneys or business developers from Tech Transfer Offices. However, seeing poor student engagement with the topic and poor adoption rates of the topic itself we developed LeapInTime: a Patent Game. In this development and testing process of the game in various EntEd classrooms from STEM to management, we stumbled upon an implicit bias against patent education amongst educators. We also encountered the assumption that IP and the area of patents within it to be highly complicated and written by lawyers for lawyers only. This assumption was found both in students as well as educators and this influenced the decision-making of educators when designing EEd curricula for a specific context and/or a resistance to include relevant parts of IP content. It is this effect that we term as Contextualization Bias. Thus, the focus of our study changed from only measuring the impact of the game to exploring the prevalence of this bias. We also found that these two objectives were inter-related and thus we did a pre-post survey design to map perceptions of IP within the student population as well as the impact of the game on learning and reducing the assumed fear/complexity of patents. For the educator population we opted for a qualitative interview-based approach to also see if this bias only existed in STEM educators or other educators as well. Our findings confirm the presence of Contextualization Bias as a general theme. Furthermore, we found that our game intervention helped increase the appetite for knowing more about patents as well as a reduction in the perceived fear of a patent document being complex and incomprehensible and more importantly this helped counter the effects of contextualization bias.

**Keywords:** Entrepreneurship Education, Intellectual Property, Gamification, Contextualization

## RESEARCH ON ENTERPRISE AND ENTREPRENEURSHIP EDUCATION - WHERE TO NEXT?

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### Questions we care about

The purpose of this study is to consider the current state of research in enterprise and entrepreneurship education (EEE) within the UK, offering recommendations for future research direction which in turn will drive change in both policy and practice.

### Approach

This study utilises a systematic review of the literature together with the delphi methodology, prompted and formed by an inability to meet in person during the Covid-19 lockdown. Three Project Leaders directing this study identified fifteen Thought Leaders in the UK enterprise and entrepreneurship education community, each having an area of expertise in enterprise and entrepreneurship education practice, research and/or policy. Thought Leaders were given Ratten and Usmanij's (2020) paper to read as a provocation and catalyst to examine our past, present and future contribution and direction of research in enterprise and entrepreneurship education in a UK context. Project Leaders then facilitated a written discussion between Thought Leaders.

### Results

The results of this study suggest that, from a UK perspective, future research needs to build on its theoretical foundations and must provide definitions and discussion of the purpose of EEE, acknowledging the social context in which it operates. Future research needs to bridge the gap between the disciplines of research and practice, whilst considering the 'push and pull' of policy on research direction and impetus. Researchers need to recognise and accept, or challenge, the continuing presence of Venture Creation as a primary output and measure of impact for EEE. As a community we also need to ensure that research into EEE explicitly operates beyond the business and management contextual boundaries. Finally, research needs to acknowledge the important but ever-expanding role of the EE Educator.

### Implications

As researchers, we conduct our work in a siloed community, with expectations of knowledge and 'you know what I mean' regarding enterprise and entrepreneurship. Subsequently, EEE researchers' communications for an external audience - such as policymakers and practitioners - are limited, leading to weaknesses in clarification and communication. However, the 'blame' does not sit solely with researchers; whilst we have a responsibility to communicate, others have a responsibility to listen and seek clarification.

### Value/Originality

The originality of this study derives from its methodology, and the Project Leaders facilitation of a written discussion between fifteen Thought Leaders across the UK in the midst of the Covid-19 lockdown. These circumstances provided a unique opportunity for Thought Leaders to take stock on the current state of research in enterprise and entrepreneurship and enter into discussion (albeit written) with each other.

**Keywords:** Enterprise and Entrepreneurship education, practice, research and/or policy, educators.



## THEORISING EFFECTS IN LONG FORM COMPETITIVE ENTERPRISE EDUCATION

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### Questions we care about

In Enterprise Education (EE) competitions and competitive activities are promoted in policy, widely provided by support organisations and unconsciously reproduced by educators. Measurement studies regarding the effects of Long Form Competitive EE – for example mini-company programmes or student mini companies – have generated mixed results. This paper asks: what can we learn by taking a different approach? What can we learn by theorising – that is, thinking through – rather than measuring effects? To address these questions, this paper has Long Form Competitive EE activities (defined as CEE experiences longer than a term) in school contexts as its topic. A realist informed approach is used to theorise how effects are generated for individuals and wider society, both positive and negative.

### Approach

EE has tended to be focused on measurement as its method for providing evidence regarding the effects of programmes. Meanwhile, the study of effects in evidenced based policy *has moved on* and Realist Evaluation has evolved to better theorise differences in existing contexts which influence programme outcomes. This paper focusses on Long Form CEE activities in secondary schools and theorises effects using data collected during semi-structured, realist-informed interviews with commissioner/managers of CEE, consultants/providers of CEE consultant/providers and school based educators. Evidence regarding pre-existing contextual resources (or lack thereof), at an individual, inter-personal, institutional and infra-structural level are reconstructed to develop insight and foresight in relation to the programme effects.

### Results

In Long Form CEE activities, pre-existing resources can be seen influencing: who volunteers, who stays the distance (doesn't drop out), who achieves and who bounces back from failure in Long Form CEE programmes. Realistic theorising illuminates how Long Form CEE leverages resources (individual capability, teacher commitment, family support, community resources), in 'contexts of abundance' to help generate outcomes. Whilst students from 'contexts of scarcity' (with less pupil, teacher, school and family resource), compete on an un-even playing field. The role context plays in achievement is obscured by meritocratic explanations of student and team success, reproducing and legitimising inequalities.

### Implications

This paper reveals flaws in the construction of the 'evidence base' for competitive EE activities and illuminates how Long Form CEE programmes rely on resources pre-existing in the context for positive results. This suggests the need to re-design school based EE to be more inclusive and/or the need to be more modest regarding claims about individual transformation and social mobility when programmes are leveraging advantageous contexts to generate positive results.

### Value

A core purpose of this paper is to theorise effects rather than measuring them. The illumination of negative as well as positive effects and insight regarding the most basic effects of the competitive structure of programmes – who volunteers, stays in the process, achieves and bounces back from failure - demonstrates the value of complementing measuring with thinking.

## DESIGNING AND SCALING A SUSTAINABLE BUSINESS MODEL COMBINING THE ECONOMY FOR THE COMMON GOOD AND LEAN START-UP METHODS

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### Objectives

The success of an entrepreneurial project highly relies on its business model. The concept of business model (BM) emerges for the first time by mid-20<sup>th</sup> Century as a “theory of a business” (Drucker, 1955). Despite scholars do not fully agree on its definition, the most commonly accepted definition of BM is “the rationale of how an organization creates, delivers and captures value” (Osterwalder & Pigneur, 2010, p. 14).

Thus, the underlying key variables of the above-mentioned definition are the type of value that an organization can create and deliver, and the stakeholders to whom this value creation is addressed. Likewise, Osterwalder & Pigneur (2010) create the business model canvas (BMC), a tool for supporting the business model design process. However, such BMC only considered economic value as the only source of value to be created and delivered by organizations.

In the last twenty years, organizations have experienced a rising social pressure to respond to sustainability concerns (Dyllick & Hockerts, 2002). Thus, driving to the concept of entrepreneurship for sustainable development or sustainable entrepreneurship as a multilevel phenomenon that connects social, environmental, and economic dimensions (Johnson & Schaltegger, 2020). In this sense, some authors advocate for exploring new ways of sustainability-oriented business model innovation, creating the triple-layered business model canvas (TLBMC) (Joyce & Paquin, 2016). To do so, they followed a triple bottom line approach to organizational sustainability (Elkington, 1994).

Yet, BMC and TLBMC are not exempt from criticism. Indeed, over the last years, some authors have stressed that both tools are based on a series of untested hypotheses, and this is what explains the high rates of failure among start-ups. That is why, lean start-up (LSU) techniques are developed to avoid setting up business models that rarely survived contact with customers and other key stakeholders (Blank, 2013). Thus, LSU techniques constitute what is known as the “getting out of the building” technics whilst BMC and TLBMC are known as “on the desk” techniques (Bocken & Snihur, 2020).

Despite this, up to date, in the literature body, LSU techniques are not used to test the underlying hypotheses following a sustainability approach (Sanchis, Campos, & Ejarque, 2020). Additionally, the Economy for the Common Good (ECG) model as a sustainable organizational model enables the embedding of social and environmental concerns into business operations (Felber, Campos, & Sanchis, 2019). Hence, some authors point to the ECG framework as an organizational model that allows integrating the SDGs into micro small, and medium-sized enterprises' business models, being one of the ECG contributions its metrics that can facilitate the hypotheses testing (Ejarque & Campos, 2020) (Campos, Sanchis, & Ejarque, 2020). We argue that the combination of the above-mentioned methodologies, used sequentially, can drive to overcome the limitations they show when used separately.

Taking these antecedents into account, the present work has the following objectives:

1. Provide a combined methodology that enables the embedding of sustainability concerns into the BM based on the ECG framework.
2. Provide a combined methodology that allows testing the underlying assumptions made to generate the initial sustainable business model based on LSU using the ECG metrics.
3. Describe how to pivot the initial sustainable BM considering the hypothesis testing.
4. Design the definitive version of the sustainable BM using the TLBMC considering the hypothesis testing based on LSU and ECG metrics.

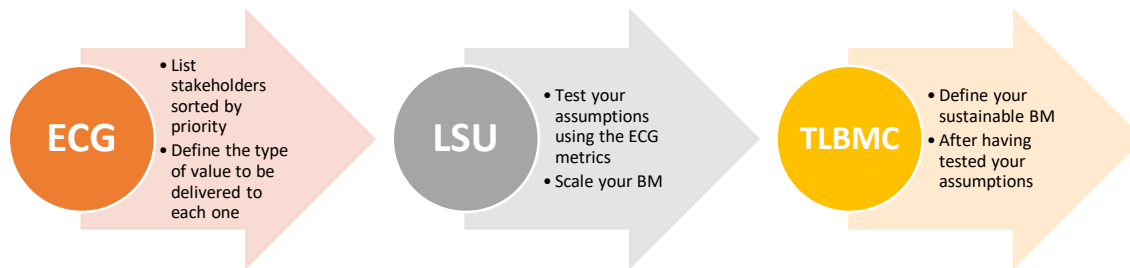
## Approach

We apply the lean methodology to the BM design and scaling process integrating sustainability concerns through the ECG framework and its metrics.

This sequential and combined methodology has been tested over five consecutive years with students enrolled in an Entrepreneurship course at the University of València, including local and international students.

## Results

The process we got can be summarized as follows:



## Implications

Social and environmental value creation are embedded into the BM since the beginning of the process through the ECG framework. LSU, using the ECG metrics, is applied to test the underlying hypotheses. TLBMC closes the loop allowing a complete design of a sustainable BM based on contrasted assumptions.

## Value/Originality

The combination of the sustainable approach provided by the ECG framework and the TLBMC with the “getting out of the building” approach provided by the LSU model, working sequentially, allows taking advantage of some synergies. Thus, overcoming the limitations of the three methodologies applied by separate whilst integrating sustainability concerns into the BM since the initial stages.

**Keywords:** Sustainable Business Model, Sustainable Entrepreneurship, Corporate Sustainability, Sustainable Innovation, Economy for the Common Good, Lean Start-up.

## WHAT'S THE WORTH OF AN ENTREPRENEURSHIP EDUCATION? THE IMPORTANCE OF DEVELOPING AN ENTREPRENEURIAL MINDSET AND IDENTITY

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### Abstract

Despite the growing popularity of entrepreneurship education, experts continue to question its value and whether entrepreneurship can be taught in a classroom. There is even evidence that suggests some forms of entrepreneurship education may hamper, rather than catalyze, entrepreneurship. This leads us to question *what is the value of entrepreneurship education, if it does not foster entrepreneurship and new venture creation?* Through a 16-month, 5-wave, inductive field study of learners enrolled in an experiential entrepreneurship course ("EntX"), we address this question. From our rich data, we induce how experiential entrepreneurship education facilitates students' development of Psychological and Behavioral Agility ("PBA") – the ability to adapt dynamically cognitions and behaviors to meet challenges in a variety of life domains. Specifically, our theorizing suggests that underpinning the development of PBA among our students were an entrepreneurial mindset and identity, which they developed as they interpreted and responded to planned and emerging psychological stressors and loss they experienced during EntX, and invoked as they navigated adverse circumstances after EntX's completion. In explaining these dynamics and their implications for learners, we make primary contributions to on entrepreneurship education and experiential learning research, as well as to scholarship on the development of an entrepreneurial mindset. Given the centrality of entrepreneurship for our economy, and the growing incidence of various types of entrepreneurship programs, our theorizing is important and timely.

## **“I DON’T KNOW WHERE TO START!” SEARCHING FOR ENTREPRENEURIAL OPPORTUNITIES AMONG STUDENTS DURING INNOVATION COURSE**

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### **Questions we care about**

Technology inventions have a broad potential of applications that can create significant value across several sectors. In this paper, we consider processes where students are introduced to technology innovations as potential means to address wicked sustainability problems, and act as entrepreneurs who explore innovations for potential venture creation. In this study, we aim to understand the knowledge accumulation and transformation that underly the entrepreneurial learning process in the context of exploring opportunities within technological inventions. The question we care about is therefore: *How do students search for entrepreneurial opportunities during a technology-based innovation course?*

### **Approach**

We build on the concept of entrepreneurial opportunities as an analytical frame of reference to study how students search for entrepreneurial opportunities based on technology inventions. We collect rich empirical data from studying the entrepreneurial process of seven interdisciplinary student team that are part of the Challenge Based Innovation (CBI) Fusion Point organized by CERN.

### **Results**

We find that students need to simultaneously balance three types of stakeholders and three types of knowledge: problem knowledge, market knowledge and technology knowledge. Since students are unexperienced with all three aspects of the process, they face high level of uncertainty and ambiguity during the search of innovative ideas and potential solutions. They are also dependent on intensive interaction with multiple actors, such as sustainability experts, technology inventors and potential customers. Hence, technology entrepreneurship education presents a unique learning context for entrepreneurship.

### **Implications**

Our findings from this study reminds educators and organizers that the level of perceived uncertainty and confusion can be very high, and that while uncertainty when solving wicked problems can trigger learning, it can also be a potential barrier to students’ entrepreneurial process in the opportunity search phase.

### **Value/Originality**

The present paper brings the topic of technology commercialization into early-phase action-based entrepreneurship education where students search for opportunities to address wicked sustainability problems through finding applications for novel technologies developed at CERN.

**Keywords:** technology; entrepreneurship education; case study, sustainability

## **SLOW AND STEADY OR FAST AND FURIOUS? HOW STUDENT ENTREPRENEURS' GROWTH AMBITIONS SHAPE THEIR ENGAGEMENT IN UNIVERSITY-BASED ENTREPRENEURIAL ECOSYSTEM**

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### **Objectives**

This study takes an actor-centric approach to explore how student entrepreneurs' growth ambitions shape their engagement in a university-based entrepreneurial ecosystem.

### **Approach**

This study uses a multiple case-study approach building on 24 semi-structured interviews conducted with twelve student entrepreneurs. The interviews were conducted from February 2021 until June 2021 and lasted between 60-80 minutes each. In addition, we used students' statements of purpose as secondary data to understand better their growth ambitions and goals they wanted to pursue.

### **Results**

Our empirical work reveals three forms of engagement: (i) explorative, (ii) strategic, and (iii) restorative. Moreover, our inductive work revealed critical cognitive states underlying these engagements: (i) optimistic, (ii) reflective, and (iii) regenerative. Our results depict that student entrepreneurs' growth ambitions can manipulate their cognitive states, causing them to gravitate towards specific forms of engagement.

### **Implications**

Our study puts forward three implications. First, we offer policymakers and system managers actionable knowledge about how student entrepreneurs engage in their ecosystem. Second, we integrate the role of growth ambitions and cognitive states, demonstrating how different motives for growth can interplay with why and how entrepreneurs engage with their ecosystem. Third, we argue that students operating in university-based entrepreneurship ecosystems are not only benefiting from the support actors in their ecosystem but can also play a critical role in giving back to their ecosystem.

### **Value/Originality**

We expand the scholarly foundations of student entrepreneurship, moving beyond current discussions that tend to view engagement as a matter of structures and governance into illuminating how different growth ambitions can shape student entrepreneurs' engagement in their entrepreneurship ecosystem. Practically, the study offers a deeper understanding of what matters to student entrepreneurs when developing their ventures, thus advancing important insights for higher educational institutions and policymakers concerned with understanding how better they could support student entrepreneurship and student venture creation.

**Keywords:** Student entrepreneurs, entrepreneurial ecosystems, cognitive states, engagement, growth ambitions.

## BEYOND THE BUSINESS MODEL CANVAS UNIVERSE - A CRITICAL ANALYSIS OF THE BMC-LANGUAGE

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### Questions we care about

The Business Model Canvas (BMC) (Osterwalder and Pigneur, 2010), has become the leading way to visualise business models, and an omnipresent global language in business and education. In this paper, we aim to problematise the BMC in relation to the critical movement in the entrepreneurship field. We care about *what metaphorical universe the BMC offers and which consequences this universe has for myths in business modelling.*

### Approach

We adopt a critical perspective and turn to semiotics and metaphors (Barthes 1957/1972). This approach enables us to analyse the structure, vocabulary, and illustrations of the BMC, which have become so widely implemented as part of business model development. We analyse the 'building blocks', non-verbal images and written text applying a step-by-step method from a denotative level to a connotative level and further to the meta-sign level that contributes to myths build into the canvas.

### Results

The analysis recognises myths from meta-signs in the BMC" and states that the BMC language (re)emphasises an established view of business models. For example, the BMC universe presents money as the basic value, and the entrepreneur as a (male) 'doer' who reaches out to passive customers. The structure of the model suggests a causation logic where the entrepreneur needs a market and a value proposition in order to define what resources and partners that need to be gathered and what activities that should be accomplice. In addition, the findings support an earlier study that the business model canvas risk decreasing creativity and ideation (Täuscher and Abdelkafi, 2017).

### Implications

When the metaphorical language of the BMC, more or less visible, shapes taking for granted narratives these also risk becoming part of an ongoing reproduction of the BMC-language in the globalized conventionalized production of eventually new canvases. The BMC speaks to its audience as a myth with a frozen, naturalised signification. Entrepreneurship educators can use the findings didactically to reflect on what a business model can be. Further, the BMC's interplay with other methods could be an area for future research on the users understanding of tool(s) and narratives.

### Value/Originality

Earlier research of business models has to a little extent focused on the language and visuals in more specific analysis but have especially focused on more broader samples of models and entrepreneurship visuals. In this single-case based analysis, our approach is a reflective contribution that strengthen the consciousness about the values inherent in the language of the BMC, and how these might affect thinking and acting in relation to business models.

**Keywords:** Business Model Canvas, Entrepreneurship Education, Metaphors, Myths, Visuals

## FOSTERING OPPORTUNITY IDENTIFICATION CAPABILITY: THE ROLE OF PHILOSOPHICAL PERSPECTIVES IN THE SELECTION OF TEACHING AND ASSESSMENT APPROACHES

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### Questions we care about

The primary purpose of this conceptual study is to propose a theoretical framework for developing EE programs that aim to foster individuals' OI capability. This will be done by exploring the relationship between the two main philosophical perspectives in the entrepreneurship field concerning entrepreneurial opportunities (i.e., opportunity discovery and creation) and learning theories in the education field based on their shared philosophical roots.

### Approach

The authors reviewed extensively related literature and research on different philosophical perspectives of entrepreneurial opportunities in the entrepreneurship field and learning theories in the education field. This detailed literature review formed the basis for developing the framework.

### Results

Based on the proposed theoretical framework, the behaviorist and cognitivist teaching and assessment approaches are the most consistent approaches with the opportunity discovery perspective's philosophical assumptions, and social constructivist approaches are more appropriate for developing EE programs based on the opportunity creation perspective. Moreover, our framework suggests that different philosophical perspectives, views on opportunities, and learning theories do not exclude one another but can exist next to each other in designing and developing efficacious EE programs.

### Implications

The proposed framework would determine the pedagogical implications of different philosophical perspectives in the entrepreneurship field concerning entrepreneurial opportunities, better informing future EE educators and researchers about the most appropriate teaching and assessment approaches of EE programs that aim to foster OI based on each perspective.

### Value/Originality

By conceptualizing how educational philosophies can be integrated into EE to support entrepreneurial learning, the paper provides future entrepreneurial researchers and educators with a novel theoretical framework that integrates the knowledge within both the entrepreneurship and education field.

**Keywords:** Entrepreneurship education, Opportunity identification, Opportunity discovery, Opportunity creation, Learning theory, Teaching approach



## THE DYNAMICS OF ALUMNI-STUDENT INTERACTIONS VIA DIGITAL COMMUNITY MECHANISMS IN ENTREPRENEURSHIP EDUCATION

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Jørgen Veisdal, BI Norwegian Business School

Lise Aaboen, Norwegian University of Science and Technology

Karoline Kaspersen, Norwegian University of Science and Technology

### Questions we care about

The mechanisms by which knowledge transfer occurs between alumni and students have been studied before, with particular emphasis on the role alumni play as role models, providers and connectors for students. Until recently, the process by which students discover, reach out to and communicate with alumni may be described as an ad-hoc, somewhat random process of social recommendations. In the present paper we explore the possibility of fostering more and better alumni engagement and thereby “harnessing the power of the alumni” in entrepreneurship education by constructing a digital database. The research question guiding the investigation was: *What are the dynamics of alumni-student interactions via digital community mechanisms?*

### Approach

The study focuses on the dynamics of alumni-student interactions, with particular emphasis on digital community mechanisms such as the alumni database. We conceptualize the digital database as a digital platform in a two-sided market (e.g. Rochet & Tirole, 2003). Two-sided and multi-sided mechanisms include those that do rely on participation from students and/or alumni for the mechanism to be of value. Such mechanisms rely on direct and/or indirect network effects (e.g. Katz & Shapiro, 1994; Parker & Van Alstyne, 2005) which arise as a function of the level and quality of participation. The primary source of data gathered for the study was semi-structured interviews with students and alumni of the two-year degree program the ‘NTNU School of Entrepreneurship’. All interviewed students were recruited from the class of 2023, the first class of students to utilize the alumni database. Alumni were recruited from graduating classes ranging from 2014-2019.

### Results

Our results highlight that a digital database is a complement to traditional alumni activities rather than a substitute. The primary role of the database was to enable contact between previously unconnected alumni and students. Furthermore, it is important to have a critical mass of active participants in the database in order to utilize it.

### Implications

The database becomes more valuable in combination with complementary digital tools and non-digital activities. Increasing the amount of information in the database may improve search ability and thereby community learning. More members become engaged and the value of the knowledge of all members become more visible. Simultaneously, the increased amount of information reduces the possibility to learn how to handle lack of information and uncertainty as well as the authenticity of the learning situation.

### Value/Originality

Shows the advantages, possibilities, challenges and necessary pre-requisites of using digital tools when engaging alumni in entrepreneurship education.

**Keywords:** Entrepreneurship Education; Alumni; Digital; Two-sided platform; Community

## CONTEXTUALIZING ENTREPRENEURIAL EDUCATION THROUGH DESIGN THINKING: THE CASE OF SOUTH AFRICAN TOWNSHIPS

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### **Abstract**

Scholars increasingly see the necessity of contextualizing entrepreneurial education, in the same manner as entrepreneurship. Specific contextual characteristics need to be addressed through exploring the best entrepreneurship pedagogical models. By developing them bottom-up, testing them, and improving on them if necessary. Combining design thinking approach to entrepreneurship education within the South African township context, still affected by the legacies of apartheid, may produce a positive impact on entrepreneurial intentions, through developing not only self-efficacy, usually enhanced by entrepreneurship education, but by going further and developing creativity, trust, and community collaboration.

**Keywords:** Entrepreneurship education, design thinking, entrepreneurial intentions, theory of planned behavior, South African townships

## **BUSINESSES COACHING IN ACCELERATOR PROGRAMS: DEVELOPING COACHABLE ENTREPRENEURS IN THE CULTURAL AND CREATIVE SECTOR**

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Diamanto Politis, Lund University

Jasna Pocek, Lund University/Free University Bozen-Bolzano

### **Questions we care about**

Start-ups in the cultural and creative sector are widely acknowledged as a significant source of economic renewal and growth in the European knowledge-based economy. One popular effort to support these start-ups has been through the creation of accelerator programs that offer non-formal entrepreneurship education to fledgling entrepreneurs. Business coaching has been identified as a central feature of accelerator programs as they provide entrepreneurs with specialised help in strengthening market offers, identifying promising customer segments, and securing resources including financial capital. The question we care about in this study is the role and impact of business coaching within accelerator programs aimed at boosting entrepreneurship in the cultural and creative sector.

### **Approach**

We have followed an eight-month accelerator program in Sweden based on multiple sources of qualitative data including 27 interviews with participants and stakeholders involved in the accelerator program, field observations and digital material. The data has been collected in different stages of the incubation process to enable both real-time and retrospective accounts by those experiencing the phenomenon of theoretical interest. The data has been inductively analyzed following principles for qualitative analysis aimed at theory-development.

### **Results**

We identified two coaching approaches employed throughout the incubation process; one leaning towards hands-on coaching and the other towards reflective coaching. The findings suggest that entrepreneurs have different coaching preferences depending on their underlying motives for learning and outcome expectations of the accelerator program. The findings show that the accelerator programme while operating in an environment that puts emphasis on scalability, acts as intermediary between this kind of a context and the cultural and creative entrepreneurs. The support program places an emphasis on developing coachable entrepreneurs that are aware of their roles and the business' role and it reconciles the conflicting micro logics with those of a broader environment. Finally, we find that coaching is a practice that is embedded in different phases and sections of the accelerator program, independently from the official agenda set up by the organizers. As such it emerges in different processes, bottom up or top down.

### **Implications**

We provide actionable knowledge for the design and implication of non-formal entrepreneurship education aimed at developing coachable entrepreneurs in the cultural and creative sector. In this respect, our context-sensitive theorizing offers a grounded understanding of the role and impact of business coaching in sector-specific accelerator programs.

### **Value/Originality**

We offer unique longitudinal insights into an accelerator program aimed at boosting entrepreneurship in the cultural and creative sector. Our findings emphasize the need of putting equal importance to the multiple interactive elements constituting business coaching in non-formal entrepreneurship education, including careful consideration of the many different meanings and interpretations of the coaching context within sector-specific accelerator programs.

**Keywords:** coaching, incubation process, accelerators, cultural and creative sector

## **DIGGING INTO THE DEEP OF ENTREPRENEURIAL LEARNING. HOW CAN THE DEVELOPMENT OF KEY COMPETENCIES IN SUSTAINABILITY AND ENTREPRENEURSHIP BECOME VISIBLE THROUGH REFLECTION LOGS?**

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**Questions we care about** Education for sustainability and entrepreneurship is becoming increasingly important at various levels of education. While research regarding integrated competence frameworks of competencies in sustainability and entrepreneurship are researched (e.g. Lans et al., 2014; Ploum et al., 2018), it is not yet explored, how learning for entrepreneurship and sustainability evolves over time. Central questions of this paper are: How can the development of key competencies in sustainability and entrepreneurship become visible through reflection logs? How can this learning process be described against the background of entrepreneurial learning as communicative process?

**Approach** While entrepreneurial competencies are hardly still up for debate, in 2020, the new European Skills Agenda highlighted sustainable competitiveness, social fairness and resilience, claiming that “more than ever, the EU needs a paradigm-shift on skills”. In academia, integrated competence frameworks of competencies in sustainability and entrepreneurship are under discussion (e.g. Lans et al., 2014; Ploum et al., 2018). Primarily developed with quantitative settings, where entrepreneurship as one single course in different study programs was researched, these frameworks might guide curriculum, module and methods development, but they currently do not answer, *how* entrepreneurial learning is processed against this background of different competencies heuristics. – Arguing from a second perspective, the lens of communication in entrepreneurship (e.g. Lounsbury & Glynn, 2001; Baker & Welter, 2018, 2020) and entrepreneurial education (e.g. Gossel, 2021a, 2021b) receives increased attention, since communicative processes are substantial aspects of experiential learning theory (Kolb, 1984), social learning theory (Bandura, 1971) or transformative learning theory (Mezirow, 1978). – Bringing both arguments together, this research aims to unfold the learning process for competencies in sustainability and entrepreneurship: *How can the development of key competencies in sustainability and entrepreneurship become visible through reflection logs?* As assuming these reflection log as part of a communicative process between teaching-/learning situations in class (and beyond) and students, this learning process is elaborated from the lens of assuming learning as inherently communicative process: *How can this learning process be described against the background of entrepreneurial learning as communicative process?*

**Results** This paper is part of a work in progress. For a MA study program in sustainable entrepreneurship, 15 weekly reflection logs of ~20 students were collected in 2021/2022, that included reflection parts for competencies in sustainability and entrepreneurship, gained in all course programs (30 ECTS) of the first semester. In a qualitative approach, both questions posed are elaborated based on these ~300 reflection logs. In addition, module descriptions and applied methods in all modules are analyzed in relation to these logs. The core result of this paper is twofold. First, it aims to uncover the complexity of learning process for sustainability and entrepreneurship, focusing on the process, on changes and challenges during this process. Second, this research aims to expand the theoretical conceptualization of entrepreneurial education *as* communication with empirical evidence to develop this theoretical lens further.

**Implications** This work can be seen as an important basis for theory debate in entrepreneurship education research. One implication is a contribution on understanding learning processes, not only in entrepreneurship, but in the context of competencies in both, sustainability and entrepreneurship. Since given literature is focusing more on competence frameworks, this research helps to understand the learning *process* for competencies. In addition, this paper picks up the already discussed theoretical idea of entrepreneurial education as communication and enriches this conceptual work with empirical evidence.

**Value/ originality** This research challenges given assumptions in entrepreneurship education research by not researching competencies in sustainability and entrepreneurship in quantitative pre-post-settings, but by focusing and unfolding the learning process itself through reflection logs and in addition by conceptualizing this process, in a larger heuristic of entrepreneurship education as communication. Therefore, the aim of this paper is to introduce these points of view to the EE community and to discuss the status quo on theory development.

**Keywords:** entrepreneurial education; competencies in entrepreneurship; competencies in sustainability; sustainable entrepreneurial education, entrepreneurial education as communication

## **„STOP IN THE NAME OF DIVERSITY!“ – DIVERSITY IN START-UP PROMOTION**

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### **Questions we care about**

The research objective is to uncover the influence of intersectional inequality on students' intention to found. The overarching question that our research interest addresses is: "To what extent is start-up intention influenced by intersectional inequality?" With the help of this research, we thus aim to identify possible hidden and even unconscious discrimination in startup intention. This is based on the assumption that start-up teaching (entrepreneurship education), counseling, and promotion do not address diverse people. This assumption is strengthened by research showing that, for example, for a large part of society, the prevailing image of a startup person does not represent a potential for identification and orientation and thus can have a deterrent, overwhelming, and discouraging effect (Liszt-Rohlf et al. 2020; Stypinska 2018; Simmons et al. 2019).

### **Approach**

In the qualitative study, the multi-level approach of an intersectionality analysis by Winker and Degele (2010) is used. The method represents a praxeological intersectionality approach. This anticipates the most diverse categories of difference and their social construction processes theoretically and methodologically on different levels.

### **Results (here importance of the topic for EE research and practice)**

The results provide evidence of hidden discrimination in start-up support at universities. The results can be communicated and sensitize diverse students, teachers, and researchers to the topic of start-ups. The results can be derived into recommendations for action, from which instruments can be developed to promote equal opportunities both in tertiary education and more broadly in society.

### **Implications (problems and challenges to be asked and addressed)**

We want to give hints on moments and realities of intersectional inequality in academic startup promotion and sensitize research and practice for diverse start-up promotion. So far, especially in entrepreneurship research as a whole, there is a very strong focus on gender, esp. women, as the dominant inequality category (Simmons et al. 2019). However, especially in entrepreneurship research, looking at gender alone presents too limited a view of the diversity of students. At the same time, prejudices against start-ups exist, which partly have an unconscious effect and remain invisible. Uncovering this represents a new perspective in entrepreneurship education or start-up research, which has possibilities for new research and also changes in practice.

### **Value/Originality (newness)**

The survey by means of an intersectional multi-level analysis (Winker & Degele 2009), which not only takes up the gender perspective, is new for entrepreneurship research. In the context of the study, not only people who are already interested in founding a company are included, but also people who were previously skeptical about founding a company are sensitized to the topic. This approach is rather new for the promotion of start-ups, since students who already have an affinity for start-ups are usually addressed (Stypinska 2018).

## ENTREPRENEURSHIP PROGRAMS AND THEIR UNDERLYING PEDAGOGY IN SECONDARY EDUCATION

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### Questions we care about

Encouraging entrepreneurship is at the top of the political agenda, and more and more entrepreneurship education is integrated into curricula. However, studies on entrepreneurship education are mainly limited to higher education, and there is little research on the content and pedagogy of entrepreneurship education in secondary education. This while knowledge and understanding of the content and pedagogy of entrepreneurship education in secondary education can help entrepreneurship educators, policymakers, and other stakeholders to map continuous learning lines and further develop of entrepreneurship education. Therefore, this research aims to answer the following questions: What different entrepreneurship programs are offered in secondary schools in the Netherlands, and why were they chosen? Moreover, what role has pedagogy/educational methods had in developing and implementing entrepreneurship education in schools?

### Approach

Analyzing entrepreneurship education requires some agreement regarding the criteria used to design and reflect entrepreneurship programs. In this study, we used the 11 design principles of Baggen et al. (2021). We combined and triangulated the data obtained from interviews, focus group discussions with teachers, and documents (application forms from schools affiliated with the VECON Business School (VBS), learning goals, missions, and visions). When coding the semi-structured interviews, we used a deductive approach based on these design principles of Baggen et al. (2021).

### Results

The results show that entrepreneurship in secondary education in the Netherlands consists of several separate components, with each school offering a unique combination of purchased, subsidized, or self-developed programs based on the time and resources each school makes available for entrepreneurship education. We also conclude from the interviews that the underlying pedagogy plays a small role in developing and implementing entrepreneurship education, as teachers and schools are not consciously engaged in it. We can see this in the lack of visions, missions, overarching learning goals, and continuous learning lines. The cause is twofold; on the one hand, there is a lack of knowledge, insight, and experience due to minimal contact with other schools and teachers. On the other hand, the resources made available for entrepreneurship education are often inadequate, so programs are hardly evaluated and further developed.

### Implications

Developing and teaching entrepreneurship education requires consensus on criteria, learning goals, learning outcomes, and the underlying pedagogy. Further developing this will improve entrepreneurship education.

### Value / originality

Comparing and analyzing entrepreneurship programs and their underlying pedagogy offered extracurricularly in secondary schools, using a set of explicit criteria is novel and provides useful information to improve entrepreneurship education.

**Keywords:** Entrepreneurship education, design principles, broad entrepreneurship education, secondary education

## PRACTICAL METHODS IN ENTREPRENEURSHIP EDUCATION: A STUDY WITH STEM STUDENTS

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### Background

Entrepreneurship education (EE) is growing rapidly and extending into non-business study disciplines and into professional development courses. It was proven to positively impact entrepreneurial competences, intentions, and outcomes. However, there is a lack of consensus on how to teach entrepreneurship. Traditional approaches to EE, which are prevalent in higher education, were found to be ineffective in teaching practical skills, hence not stimulating and engaging students. Thus, several scholars called for research to focus more on teaching methods, especially experimenting with practical activities, assessing their effectiveness and exploring students' perception towards them,

### Objectives

The purpose of this paper is to examine students' perception on the suitability and effectiveness of several practical methods of EE: guest speakers, panel discussion, pitching, case study, group work, reflective assignments, online search, multi and social media, and 1-on-1 sessions with lecturer. These methods were applied during the course "Basics of entrepreneurship" among bachelor students, from engineering and ICT background, at Tallinn University of Technology in Estonia during the fall semester of 2021.

### Research questions

1. *What is the feedback of the students on using practical methods in teaching entrepreneurship?*
2. *How has each of those methods impacted the development of entrepreneurial competences in the students?*

### Approach

The author followed a mixed method approach, with semi-structured interviews and a survey set up with eight students who attended all in-class session and completed all the activities.

### Results

The analysis of the interviews and survey results show that pitching is the most effective and valued activity by the students. It developed their motivation, perseverance, and planning and management" skills the most. Followed by 1-on-1 mentoring sessions that delivered personalized support. Guest speakers allowed learning from real entrepreneurs and understanding possible entrepreneurial trajectories. In contrast to literature, case studies and group work were not much appreciated by the students.

### Implications and value

This paper maps practical methods in entrepreneurship education against competences they develop and gather students' feedback on each of them. It extends literature into this underserved area and provide valuable exploratory findings for scholars and educators to utilize and build future research upon, which of special importance given the sample being of STEM students.

**Keywords:** Entrepreneurship education, practical teaching methods, entrepreneurial competences

## LEARNING THROUGH SCRIBBLES.....COLLABORATIVE AUTO ETHNOGRAPHIC APPROACH TO TEACHING

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### **Question we care about**

Research into EE is developing yet the theoretical development of teaching practice continues to struggle with fragmentation, lack of coherence and isolation. (Pittaway *et al.*, 2018). The paper explores how students in an entrepreneurship module developed their learning by adopting a dramaturgical storytelling framework facilitated through symbolic representations of drawn art-based images.

### **Approach**

The paper adopts collaborative auto-ethnography as a position of inquiry. The processual nature of the reflexive experience presented draws from creative methods, which implies artful inquiry, where drawing and performance are presented as modalities of collaborative learning.

### **Findings**

There is scant evidence about what educator actually do in the classroom, what does teach or learning actually look like what methods does our teaching practice take to enable entrepreneurial learning, what should be taught, how is it taught (Neck and Corbett, 2018). EE as a field is unclear in regards to the pedagogical foundational concepts of what it means to teach. In this account I have positioned dramaturgical storytelling as a teaching method which involved a collective group adopting an iterative process of learning through enactment (learning by doing).

### **Practical implications**

Our lack of pedagogical understanding comes at a time when our understanding of what we know about entrepreneurship is superior to what we know about how to teach it or what methods to use and why (Morris and Liguori 2016). In this paper I highlight how the use of storying through the medium drawing developed a conversational classroom teaching practice, which facilitated students to share experiences with one another constructing co-created learning through unstructured and uncertain social interactions.

### **Originality/value**

The paper seeks to exemplify the impact of storytelling as a teaching practice by combining the use of art-based methods of teaching entrepreneurship in new and more enriched ways. The focus was on artistic lead teaching interventions through dramaturgical storytelling as a means of stimulating dialogue through students telling stories which were facilitated by symbolic expressions and representations.

**Keywords:** Dialogue, Dramaturgical storytelling, Learning, Art-based initiatives, Teaching, Storytelling, Reflexivity



## ENTREPRENEURIAL LIFECYCLE: A VEHICLE FOR ETHICS AND RESPONSIBILITY EDUCATION

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### Questions we care about

- How can we encourage ethical behaviours (as typified by social responsibility) amongst graduates as they seek to create, or work within, entrepreneurial ventures?
- How can social responsibility be incorporated into entrepreneurship education?

### Approach

The need to understand how responsible entrepreneurship education can be taught at higher education institutions in the UK comes in response to research by Lourenço et al (2015) that suggests that ethical values of entrepreneurs and entrepreneurship students change over time. In addition, research by Tracey & Phillips (2007) suggests a continuing concentration on the creation of social entrepreneurs as a discrete and peculiar sub-set of entrepreneurship, rather than a moral standard that might become standard business practice.

Traditionally, entrepreneurship courses focus on the start up and creation stage of the venture, and the full lifecycle is rarely taught in higher education courses on entrepreneurship. However, when trying to teach and develop ethical stances for student entrepreneurs, it is important to understand the different pressures and motivations at each stage of the enterprise life cycle. For the purpose of this research, the SME lifecycle is a construct partly taken from the UK business births and death statistical indicators and partly from the literature on Organisational Life Cycles. A simple 4 stage model of birth, growth, maturation (stability) and decline/death is used and the different drivers and motivations of the SME at each of these stages is identified.

### Implications

The review has identified a number of ways in which entrepreneurship education can incorporate the long term view of entrepreneurial creation, to take in the full life cycle and in so doing prepare learners for the ethical and moral challenges that come with the volatile phases associated with business growth, while also setting reasonable expectations for the role of the mature firm in contributing to society.

### Value/Originality

This review identifies a new conceptual framework designed to help educators to set reasonable expectations for nascent entrepreneurs and entrepreneurship students with the goal of preparing the next generation of entrepreneurs to contribute to achieving the sustainable development goals through their endeavours.

**Keywords:** Entrepreneurship education, ethics, responsibility, lifecycle, SME, enterprise

## “VALUE CREATION IS IMPORTANT - BUT WE SELDOM USE THAT WORD”

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### Questions we care about

It has become increasingly important for universities to document that they create value for society (Rashidi et al., 2020). One way to contribute impact is by engaging students in entrepreneurial value creating processes (Moberg & Rasmussen, 2016). This paper explores value creation in HE based on a case study involving an interdisciplinary teacher training course on entrepreneurial teaching, where the university teachers were introduced to value creation conceptions. This led to interesting discussions and reflections, but also questions on how to integrate the value creation perspective in concrete courses and programs. To qualify value creation pedagogy (Lackéus, 2018) at the university we are interested in:

1. *How do teachers perceive and reflect on value creation in relation to I&E teaching?*
2. *How can we support teaching and educational development by providing teachers with models of value creation as didactic and pedagogical tools in I&E teaching?*

### Approach

This paper combines a review of existing models of value creation related to the field of innovation and entrepreneurship with an empirical case study. The case study applies a mixed method including a small survey among entrepreneurship educators, expert interviews carried out as preparation for developing the course, materials developed by the course participants and interviews with 5 participating educators/educational leaders.

### Results

Firstly we present different understandings of value creation which seemingly are influenced by the disciplinary field, the course/curriculum the educators are involved in and the values and ideas of their students. Overall two main understandings of value creation appear: as a mindset and as a competence. Finally a new supplementary model for value creation in relation to entrepreneurial teaching and education is proposed.

### Implications

The main intention behind the proposed model is to develop a heuristic that can inspire and support teachers, educational leaders and - developers who wish to develop and implement entrepreneurial education where students develop competencies in value creation. Ultimately this could lead to more students gaining competencies in value creation through their university studies.

### Value/Originality

The proposed ‘dynamic value-creation model for entrepreneurial education’ supplements existing models. Firstly it combines characteristics from existing models by including a number of different types of value and different levels of stakeholders as well as focusing solely on entrepreneurial teaching and education. However new perspectives and elements are also added: The addition of time and an actor adds up to a more dynamic model.

**Keywords:** entrepreneurship education, higher education, value creation, conceptual models, educational development

## **GENDERED TEACHING - DO MEN TEACHERS IMPLEMENT ENTREPRENEURSHIP EDUCATION MORE?**

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### **Questions we care about**

The phenomenon of entrepreneurship is highly gendered. However, we know little about the role of gender in teaching entrepreneurship. Is the gender effect also apparent in teaching entrepreneurship? And if so, what kind of effect it has on EE implementation? Do men teachers implement more entrepreneurship education practices than women teachers do regardless of the subject they teach? In this research, we examine the direct effect of gender, teacher's own attitude towards entrepreneurship education, and university support on the implementation of entrepreneurship education practices. In addition, we examine the moderating effect of gender on the relationship between attitude, perceived university support, and implementation of entrepreneurship education teaching practices.

### **Approach**

We use data from higher education teachers from Finland. The data was gathered during the years 2014 to 2020. Teachers represent all subject and educational fields. The data consists of 1120 responses from teachers working in 23 Universities of Applied Sciences. 61 percent of the respondents are women and 39 percent are men. We used moderated multiple regression analysis, where variables were entered as predictors in a series of steps.

### **Results**

Gender has a direct effect on the implementation of entrepreneurship education teaching practices – men perform more extensively different kind of teaching than their women colleagues. Teacher's attitude towards entrepreneurship education significantly explains the use of entrepreneurship education teaching practices as does the perceived university support. However, gender moderates the effect of the perceived university support on the implementation of entrepreneurship education teaching practices. For men, the effect of the perceived university support on the implementation of entrepreneurship education teaching practices is stronger than for women.

### **Implications**

The results verify that gendered phenomenon of entrepreneurship exists also in teaching entrepreneurship. This indicates that if men teachers are more active in teaching entrepreneurship, they can act also as stronger entrepreneurial role models for students than their female counterparts. This strengthens the image of masculinity in entrepreneurship, and can have long-term effects on the way entrepreneurship is viewed by the students even after they graduate. Teacher's own attitude is important, as is the way how entrepreneurship is embedded in strategies, mission statements, pedagogical development work and quality management systems of universities.

### **Value/Originality**

Majority of the research in gender and entrepreneurship concerns student populations or entrepreneurs. This research brings new aspects of the gender impact on teaching entrepreneurship, and raises questions for teacher education.

**Keywords:** gender, entrepreneurship education, teachers, teaching practices

## ENTREPRENEURIAL AND SUSTAINABLE EDUCATION IN NORDIC TEACHER EDUCATION CURRICULA

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### Questions we care about

The United Nations' Sustainable Development Goals (SDGs), and the European Union's strategies have set goals for solving challenges faced by societies and communities. Both UN and the EU stress the development of entrepreneurial and innovative education. Teacher education plays a crucial role in these efforts. In this research, we studied how Nordic primary teacher education curricula involve entrepreneurial, sustainable, and pro-environmental education. We sought to answer the question: How does entrepreneurial, sustainable, and pro-environmental education emerge in Nordic (Finnish, Swedish, and Icelandic) primary teacher education curricula?

### Approach

For this study we analyzed the bachelor level curricula of three academic teacher education institutions in Spring 2021. We used qualitative content analysis to interpret text data through systematic classification of coding and identifying themes and patterns. We looked for specific types of curricular topics or subjects referring to sustainability and entrepreneurship education (EE), and related concepts.

### Results

All three curricula included both entrepreneurship education and sustainable development to some extent, although often in-explicitly. In Finland, entrepreneurship/entrepreneurial and sustainable education are widely approached, primarily in national basic education core curriculum. It seems to be assumed that future teachers will be somehow trained to implement both entrepreneurial learning and sustainable development. However the aims and contents of the teacher education curriculum in the Finnish case do not explicitly mention these. In the Icelandic case, entrepreneurship/entrepreneurial education are not visible as distinctive elements in the bachelor program. Neither "entrepreneurial learning" or "initiative" were found in the program and "sustainability" or "creativity" hardly. However, the sustainability and creativity concepts are prominent in the Icelandic compulsory school general curriculum. In the Swedish case, entrepreneurship/entrepreneurial education is not an explicit element in primary education for teacher students. Creativity or creative ability, entrepreneurship nor sustainable development is found explicitly in the primary teacher education plan. However, sustainable development is explicit in the Swedish national core curriculum for primary education. Thus, the Swedish case appears to be in line with the Icelandic and Finnish cases.

### Implications

Given the urgency of problems such as global climate change, the goals and contents in these curricula related to EE and sustainable development are very limited. These three Nordic teacher education curricula have indirect and unclear references to EE, entrepreneurial learning, sustainable education, sustainability, environmental, and pro-environmental education. The primary level teacher education objectives focus on foundational learning and pedagogical activities. We question if it is enough in the modern world that general education of teachers randomly and in-explicitly involve sustainable and entrepreneurial education? Therefore, we would like to challenge curricula designers to make these crucial and transversal areas of education explicit in modern teacher education curricula.

**Value.** Although our research is small, we see its added value, especially in opening the door to more advanced curricula development, educational activities, the creation of clearer guiding policy documents, and research in the field to promote entrepreneurial and sustainable education development.

**Keywords:** entrepreneurship education, sustainable development, environmental education, teacher education, curriculum, Nordic education

## NEW WINE IN AN OLD BOTTLE: THE DISCORDANCE BETWEEN NEW PEDAGOGY AND OLD ASSESSMENT PRACTICE IN ENTREPRENEURSHIP EDUCATION

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### Questions we care about

Over the past decade, entrepreneurship education (EE) has been undergoing a major transformation from a teaching and pedagogical perspective, e.g. classroom teaching to experiential learning (Lackéus, 2020), teacher-driven to student-focused (Robinson et al., 2016), and student as a learner to an active entrepreneur (Harima et al., 2021). However, EE assessment still follows the traditional outcome and credit-based approach (Kenny et al., 2021; Pittaway and Edwards, 2012). The existing literature offers limited insights into how the traditional EE assessment assists the students' learning and how educators adapt to changing new pedagogy such as action based, student centered pedagogy approaches and at the same time wrestle with the mandated old assessment practice. We empirically investigate two specific research questions to address this research gap. 1) how does EE assessment align with the students' entrepreneurial learning? and 2) what are the consequences of traditional assessment practices on entrepreneurial learning outcomes?

### Approach

The study uses a mixed-method design to answer the research questions. The data is obtained from NEAR (National Entrepreneurship Assessment Review) research on public and private HEIs in the Republic of Ireland. The longitudinal survey of educators from 2016 (n = 32) and 2021 (n = 29) provides insights into EE and assessment practice. The qualitative information collected from the survey and follow up focus group discussions (students and educators) in 2021/22, were analyzed to obtain the educator and student perspective on EE assessment and learning.

### Results

Key findings are threefold. First, current EE assessment practices followed in higher education institutions (HEI) are predominantly traditional (exams, business plans, essays, presentations) and primarily driven by HEIs internal policy and accreditation agencies' norms. Second, traditional assessment has limitations in terms of facilitating entrepreneurial learning and does not fully account for experiential/practical learning gains. Third, because of the misalignment, traditional assessment may be counterproductive for EE by halting the entrepreneurial progress of the student.

### Implications

The findings offer practical insight to align assessment practices and entrepreneurial learning. The findings also call for substantial changes in the EE assessment to complement new and evolving teaching practices.

### Value/Originality

The extant literature focuses on developing a new teaching approach and pedagogy for EE. While the corresponding changes in assessment practices and feedback to assist learning is largely neglected. This study provides empirical insight into the consequence of the misalignment between assessment practices and entrepreneurial learning.

**Keywords:** Assessment Practices, Entrepreneurial Learning, Assessment Feedback

## IS LESS MORE? A MULTI-METHOD STUDY OF THE MISMATCH BETWEEN INPUT AND IMPACT IN ENTREPRENEURSHIP EDUCATION.

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### **Abstract**

Entrepreneurship education in higher education institutions has been strongly emphasized in the past few years, with multiple programs created. In the face of so many new offers and formats, we do not know which programs lead to entrepreneurial motivation or qualification. This study aims to investigate what kind of intended course orientation and composition appealed to potential entrepreneurs and what type of study programs entrepreneurship educators should design to foster motivation while still qualifying candidates. We conducted a triangulation research consisting of a content analysis of 660 study programs, an online survey with 214 students, and 11 interviews with selected representatives. Results from our study showed that the students predominantly appreciated the idea of being an entrepreneur. Further, we identified many different formats, but despite the mass of programs, most of the students did not feel ready for entrepreneurship. Students indicated that they felt not or were only little qualified by the programs. It seems that higher education institutions invest much input into creating new programs, but the outcome and impact are not yet as expected. To tackle this, course designers should focus on the needs of the students in alignment with the overarching goals of entrepreneurship education. This includes clear communication of the goals as well as stronger marketing of the offers so that more passive students are also addressed and supported.

**Keywords:** entrepreneurship education, course design, entrepreneurial intention, higher education institutions

## EVIDENCE-BASED DEVELOPMENT OF SOFT AND HARD SKILLS IN ENTREPRENEURSHIP EDUCATION.

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### Questions we care about

In the field of Entrepreneurship Education (EE), the interest in developing hard skills and soft skills gains more interest. The origin of most EE programs finds their origin in business schools, resulting in a focus on the business, for example, in writing business plans. However, the human factor, the entrepreneur, is recognized as the most vital factor for the performance of new ventures. Although there is an increasing number of programs that also aim to develop the entrepreneur, there is a lack of evidence-based programs to educate the entrepreneur. This paper describes a method that we used to develop an evidence-based program focused on EE's hard and soft skills. This method contributes to the question: What is the best method to educate the hard and soft skills?

### Approach

For this EE program, we combined the Education model of Fayolle and Gailly (2008) and the education model of van den Akker, Kuiper, and Hameyer (2003), resulting in three stages of education; the intention stage (the audience targets and the objectives), the implementation stage (the contents and the pedagogies) and the attainment stage (Evaluations). We use the soft support model for all these three stages to clarify how the education (support) is composed. In the first stage, we decide how skills development is intended. For the second stage, we measure the education the teachers implemented. For the third stage, we measure how the students experience their education. We discuss the results with developers, teachers, and students in an evaluation session. We use this outcome to improve the program.

### Results

The measurements clarify that the method can help develop and improve a program involving soft and hard skills education. It also gives teachers more clarity in their teaching methods. For the students, it is still difficult to see the value of developing soft skills; however, it seems to be more apparent in comparison to programs that do not use this method.

### Implications

This study provides insights into how the entrepreneurs' education hard and soft skills can be improved evidence-based. It helps developers of EE to make discussions about their objectives based on their audiences or targets. Second, it helps teachers decide what they teach and how they teach. Furthermore, the students get more clarity in the results they attained. Therefore, this study contributes to the development of the entrepreneurs and then also to the development of the enterprises

### Value/Originality

Measuring the soft support that is given and attained is unique. Combining EE's intended, implemented, and attained support makes a solid and evidence-based approach to teaching entrepreneurial hard and soft skills possible. This approach also uses knowledge from EE and combines it with specific knowledge from the (general) education field. From a scientific point of view, this method also makes it possible to open the debate about what kind of support is most beneficial for entrepreneurship and enterprises.

## WORK-LEARN BALANCE – A NEW CONCEPT THAT COULD HELP BRIDGE THE DIVIDE BETWEEN EDUCATION AND WORKING LIFE?

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### Questions we care about

There is a deep divide between the world of education and the world of working life. Differences comprise culture, values, processes, tools and more. This divide hinders humans from reaching their fullest potential, instead often demotivating them and causing suboptimal outcomes. Some collaboration efforts nevertheless attempt to bridge the two worlds. They go under many different labels, often one-sided and confusing for the other side, hampering collaboration. Sociological research suggests that collaboration across different worlds can be facilitated by unifying boundary objects such as semantic concepts that both sides can relate to and understand.

### Approach

This paper is an attempt to propose a new unifying concept that the two worlds can understand, appreciate and use when trying to describe what they want to achieve together. The concept proposed is “work-learn balance”, defined as when people on a weekly basis combine new value creation for others (“work”) and own personal development (“learn”). It was inductively articulated following a decade of extensive action research on entrepreneurship education and training.

### Results

Work-learn balance is experienced when three conditions are fulfilled. People need to do (1) meaningful value-creating work that impacts others, they need to experience (2) transformative learning experiences for oneself, and this needs to occur repeatedly within (3) a reasonably short time period, preferably weeks. Six illustrative examples are given of work-learn balance. Three from working life covering entrepreneurship, intrapreneurship and public sector innovation, and three from education covering apprenticeship education, value creation pedagogy and experiential entrepreneurship education. A pattern across the six examples is that people with a good work-learn balance seem to get more motivated and feel a deeper sense of meaning in life. This triggers them to work harder and achieve more. The six examples substantiate work-learn balance as a concept that can accurately describe and facilitate bridging across both worlds, as well as describe optimal experiences for humans more in general.

### Implications

Work-learn balance could be used as a visionary organising principle, informing leadership strategy in educational institutions and in public and private organisations. Managers may ask: “Who in our school / university / organisation is responsible for making sure people have a good work-learn balance?”. This can facilitate collaboration and unleash the human potential of students as well as employees.

### Originality

Work-learn balance as a concept is novel and unexplored, but not previously unheard of. This could be the first comprehensive attempt to define, describe, substantiate and sense-make it.

**Keywords:** Education, working life, pedagogy, balance, boundary crossing, entrepreneurship, intrapreneurship, innovation, ambidexterity, apprenticeships, vocational education.



## **ARE THERE GENDER DIFFERENCES IN A DIGITAL ENTREPRENEURSHIP COURSE CONCERNING STUDENTS' REACTIONS AND LEARNING?**

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The masculine image of entrepreneurship is found in entrepreneurship education, and the literature on gender differences in entrepreneurship education is limited. Entrepreneurship education courses may not be designed effectively to facilitate female learning and may need to be redesigned. This study investigates whether there are gender differences in a digital entrepreneurship course concerning students' reactions and learning? The data sample in this research includes 174 adults who took part in an online training program in entrepreneurship. A total of 127 individuals consented to participate and completed the pre-course questionnaire, and 68 (53.5%) completed the post-course questionnaire. All outcome analyses included only participants who completed both the pre-and post-course questionnaires. Our results identified no gender difference concerning levels of satisfaction and enjoyment. However, females reported higher levels of learning outcomes than males, especially when it comes to digital pitching and individual mentoring. Further, there were significant self-reported improvements in entrepreneurial self-efficacy and entrepreneurial attitude only among men but not women. Furthermore, we found a gender difference concerning occupational status choice intention. Female participants seem to be more attracted to organisational employment than male participants. Meanwhile, male participants were more optimistic about starting their own business within three years than females. We believe that awareness of these gender differences is essential for entrepreneurship educators, so future education courses and programs are designed to fit both men and women in a better way.

## HOW EXPERIENTIAL ARE EXPERIENTIAL ENTREPRENEURSHIP EDUCATION CURRICULA AND PEDAGOGIES?

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### Questions we care about

Experience is often regarded as an important means by which entrepreneurship educators enable their students to learn to function independently, develop emerging personality and rehearse for the activities in professional practice. Whilst all pedagogical approaches may be experience-based (hence 'experiential'), the degree of experientiality among them can vary considerably. The questions we care about are: how do we distinguish one pedagogical approach from another in terms of their degree of experientiality? What criteria can we use to make such distinction? Can we accommodate all these approaches within a single experiential framework?

### Approach

The evidence base for this study is a conceptual review of the literature in entrepreneurship education. This review synthesises the conceptual developments and diverse empirical findings towards a more integrated understanding of how we can distinguish entrepreneurship pedagogical approaches by its degree of experientiality.

### Results

This study proposes a scale of experientiality which can be applied to provide a framework for organising each of the approaches along an experiential path, identifying types of activities to facilitate selection and curriculum planning. It translates experiential learning into five modes and is then broken down further into ten levels of experience.

### Implications

By applying the scale of experientiality, entrepreneurship curriculum planners can quickly identify the specific level of experientiality to emphasize during selected entrepreneurial learning event along an experiential path. For instance, at an introductory level, an experience at the lower end of the scale may be quite appropriate. A learning event becomes more experiential when students are given ownership of their own learning objectives that help them deal with complex decisions related to real world problems and opportunities.

### Value/Originality

There is currently no study that specifically advances our understanding on how we can distinguish one experiential entrepreneurship pedagogical approach from another based on its level or degree of experientiality.

**Keywords:** Entrepreneurship education, entrepreneurship pedagogy, entrepreneurship curriculum, enterprise education, experiential learning, experientiality.

## ADDRESSING GLOBAL CHALLENGES WITH COMPASSION – HOW CAN EDUCATORS FOSTER FUTURE ENTREPRENEURS?

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### Questions we care about

Entrepreneurs have the potential to play an especially important role for sustainable development, considering their very foundational character of finding solutions to problems in different creative ways. We believe that the world needs more entrepreneurs who are aware of the global challenges of today, and who are motivated to take action with high ethical standards and compassion for others. The aim of this study is to investigate how entrepreneurship education can play a role in fostering the next generation of entrepreneurs, to address global challenges in a holistic way. Based on a three week course, where students were exposed to poverty and other challenges in the global south, we study how this experience-based teaching affected their compassion and motivation to later work with sustainability issues.

### Approach

This qualitative study is based on data collected during a three week entrepreneurship education course, where 25 master's students from various academic disciplines participated. The course included a field visit to an underprivileged, rural area in India, where students (in teams) were asked to work on entrepreneurial solutions, in close collaboration with the local community. Data were collected through a questionnaire before the course started and individual interviews with all students three times – the first week (before the field visit), the second week (in India) and the last week (when back in Norway). Data were coded inductively, with the goal to get a deeper understanding of how students reflected on their own role in relation to the course task (entrepreneurial challenges) and how their attitudes changed over the course period.

### Results

Results indicate that students gained a deeper understanding of issues related to social and economic sustainability. After the field visit, they also expressed stronger focus on compassion and empathy, and more interest in working with sustainability issues in the future. Further, they expressed an increased interest for entrepreneurship, both in relation to potentially starting a business later on, and in developing an entrepreneurial mindset within various disciplines in the future.

### Implications

Findings from this study contribute to entrepreneurship literature, by highlighting the importance of compassion and empathy. Findings also contribute to the more specific topic of entrepreneurship education, by discussing how students can be trained to develop these characteristics, and thereby be better equipped to target urgent, global challenges of today, in a holistic way. The results also implicate the value of first-hand experiences for understanding aspects of global inequality, poverty and underdevelopment.

### Value/originality

The rich data collected during the process described above, gives in-depth insights on how students can develop compassion, empathy and a deeper understanding for global challenges of today, with potential to address these in a holistic way within their various professions in the future.

**Keywords:** entrepreneurship education, experience-based learning, compassion, SDGs, India

## INSTITUTIONAL DIMENSIONS AND TOURISM ENTREPRENEURSHIP: A MULTILEVEL STUDY

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### Questions we care about

This study analyses the influence of institutional dimensions (regulative, normative and cultural-cognitive) on tourism entrepreneurship in two different stages (nascent and active entrepreneurs); among the determinants, we analyse some institutions related to entrepreneurial education, such as entrepreneurship courses and perception of learning from the entrepreneurship programs at the university, we also consider the importance of gender issues in this sector.

### Approach

Specifically, the study attends to determine the effect of the regulative, normative, and cultural-cognitive dimensions on nascent and active tourism entrepreneurship. We develop a multilevel logistic regression, considering data from the Global University Entrepreneurial Spirit Students' Survey - GUESSS – 2021 and the World Economic Forum with 54 different countries and 45.870 individuals.

### Results

As a proxy of the regulative dimension, entrepreneurship education reports significant results explaining both nascent and active entrepreneurship. Moreover, results show that female students present less probability of being active entrepreneurs than males.

### Implications

Universities should consider giving women extra support to pass from the nascent entrepreneur stage to the active entrepreneurship stage, especially for them in the hospitality and tourism industries. Also, it is important to continue exploring the determinants of the entrepreneurial process and the effect of entrepreneurial education and program learning. For this reason, it is important to develop better measures for entrepreneurial education that go beyond the courses and consider other normative and cultural-cognitive dimensions.

### Value/Originality

These results improve our understanding of the influence of institutional dimensions on tourism entrepreneurship and the relationship between the dimensions and the different levels on which they operate.

**Keywords:** Institutional dimensions, tourism entrepreneurship, multilevel analysis, entrepreneurial process, entrepreneurship education, GUESSS.

## ALIGNING INNOVATION AND ENTREPRENEURSHIP EDUCATION FOR GRADUATES ENTERING A VUCA WORK LIFE

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### Abstract

A key purpose of education has long been to ensure that students are well prepared for the workforce. In an unchanging context where tasks, roles, and expectations are stable, creating an education program that prepares students for the workforce can be achieved relatively easily, and once in place will remain appropriate if the context is stable. The challenge is in educating students for work environments that are rapidly changing and where the expectations placed on them are uncertain and ambiguous. That is training students for VUCA (Volatile, uncertain, complex, and ambiguous) environments.

In entrepreneurship education (EE) solving real-life problems has been seen as an important approach, with more guidance and less traditional lecturing. A part of the public mission of Norwegian universities is to develop students' entrepreneurial skills and knowledge. It is often about opportunity identification, business development, self-employment, venture creation, and growth, i.e. becoming an entrepreneur (Fayolle and Gailly, 2008). A definition of entrepreneurship in a higher education context "is about making students more creative, opportunity oriented, proactive and innovative, adhering to a wide definition of entrepreneurship relevant to all walks in life" (Bacigalupo et al., 2016).

The concept of calibration is the process of ensuring something is in tune or in sync in the intended way. An example from music would be calibrating an instrument to ensure it generates the intended notes. The same approach can be applied to education to ensure that educational approaches used are in tune with the requirements of students who enter the workforce.

This research looks particularly at students who enter the field of innovation and entrepreneurship. While these fields are broad and have different roles and expectations connected to them, they are also archetypical of the VUCA world in which many students seek to find jobs. This research therefore sought out students who had graduated from a master's program and had been in the workforce for less than a year to better understand what skills and education they felt were missing from their education and what skills they felt their education had provided. In short to hear how well equipped the students felt for this VUCA world.

## MANAGING INTERACTIONS WITHIN AN ENTREPRENEURSHIP COURSE: A CHALLENGE FOR TEACHERS

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### Questions we care about

The entrepreneurship teacher is no longer the unique holder of the knowledge in the classroom and this new posture implies greater individualization of the relationship with learners and more interactions within the classroom and with counterparts during the course. Teachers are not prepared for such a challenge and the way they can manage these interactions is under-investigated as it may permit to involve better the members of the entrepreneurship education ecosystem in the animation and assessment of the courses. The aim of this article is to propose a model integrating this challenge of interaction management within an entrepreneurship course.

### Approach

The originality of our approach is to rely on the theories of ecological interactions to identify strategies and tools that can be applied by educators to better manage interactions in their entrepreneurship courses.

### Results

We identified two groups of skills that have a significant influence on the quality of interaction management: social intelligence and pedagogical design skills.

### Implications

Through this article, we wish to make a theoretical contribution to the works on the role and posture of the entrepreneurship teacher and the way this teacher can foster interactions in his courses. Our study may also inspire the development of learning schemes focused on the professional training of entrepreneurship teachers.

### Value/originality

It represents a first benchmark of best practices for future studies on interactions in an entrepreneurship course. Although ecology has already inspired research on entrepreneurship education, contributions only based on the study of ecological interactions has not been done until now.

## THE PROMISE OF EDUCATIONAL ESCAPE ROOMS FOR ENTREPRENEURSHIP EDUCATION

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### Questions we care about (Objectives)

The application of serious gaming has increased in entrepreneurship education (EE). Serious games are an effective tool for teaching students problem-solving, encouraging reflective learning through a learning-by-doing approach. A new serious game is the educational escape rooms (EERs). Despite similarities in skills between EE and STEM subjects, EERs have received marginal application in the former but wide attention in the latter. Therefore, we ask how EERs can benefit EE.

### Approach

We conducted a systematic review of the literature on EERs following the SLR approach. To validate our search terms, we interviewed 35 practitioners and researchers using and studying EERs.

### Results

Common themes are that educators have multiple roles as designers, moderators, and observers of EERs (e.g., Berthod et al., 2020; Cain, 2019; Eukel et al., 2020), students have dual roles as participants and designers of EERs, and business are also involved as collaborators (e.g., Jambhekar et al., 2020). Furthermore, EERs are used to promote learning of theoretical knowledge and teach the application of specific practical and soft skills such as leadership (e.g., Clarke et al., 2016; Gordon et al., 2019; Wu et al., 2018), teamwork and collaboration (e.g., Gordon et al., 2019; Ho, 2018), and problem-solving and creative skills (e.g., Adams et al., 2018; Gómez-Urquiza et al., 2019). The structures of EERs are flexible. They can be linear with the puzzles in sequence (e.g., Eukel et al., 2020; Lopez-Pernas et al., 2019a), open where the puzzles can be solved in any sequence (e.g., Jambhekar et al., 2020) or path-based which is a combination of multiple sequential or open paths (e.g., Wiemker et al., 2015). And many EERs have a particular narrative that places the game participants in a specific role (e.g., Nicholson, 2018; Veldkamp, 2020).

### Implication

We identified the several ways in which EERs can benefit EE: 1) EERs promote skills development that are useful for entrepreneurship such as leadership, teamwork, and creativity, 2) EERs can be used to replicate path-dependencies experiences in entrepreneurial decision-making, and most importantly, 3) EERs are flexible to allow experience in diverse entrepreneurial roles and can address several teaching objectives.

### Value/Originality

Through this review of the literature on EERs, we showed how EERs can add value to EE. This study is timely as it addresses the educators' challenges of how to teach entrepreneurship.

**Keywords:** Educational Escape Rooms, Systematic Literature Review

## SHOW ME THE EVIDENCE! – DOES ENTREPRENEURSHIP EDUCATION REALLY SHAPE THE ENTREPRENEURIAL MINDSET. A CASE ANALYSES OF CAMPUS FLENSBURG

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### Abstract

In this study, we seek to provide evidence for how interdisciplinary entrepreneurship education (EE) shapes the individual's entrepreneurial mindset. More specifically we investigate, what entrepreneurial mindset changes can we measure. Our quantitative evidence showing how EE shapes EM at the individual level is based on the OMIND MINDSET ASSESSMENT tool that originally stems from tracking the open innovation mindset and is adapted to measure changes of individual entrepreneurial mindset. The pilot study results demonstrate direct effect of EE on individual mindset changes in terms of openness to experience, positive attitudes towards knowledge sharing and sourcing, risk and failure tolerance, creativity, integrative complexity, dealing with uncertainty, creation, and collaboration. This study also acknowledges direct individual contact and interchange of individuals have facilitating force on mindset change and reduce hesitancy. We also captured synergies of the effectuation approach and open innovation perspectives in two Higher Education Institution for creating new ideas and societal value.

**Keywords:** entrepreneurship education; entrepreneurial mindset; mindset change; open innovation, effectuation



## CLARIFYING THE MECHANISMS AND CONTEXTUAL FACTORS THAT ENABLE LEARNERS TO ADOPT THE ENTREPRENEURIAL MINDSET: A RAPID REALIST REVIEW

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### Question we care about

The purpose of this review is to create a better understanding of how, why, and in what context entrepreneurship education (EE) triggers entrepreneurship mindset at the individual level - the critical missing knowledge for further advancing the research field and development of EE in practice. The review is guided by the question: What mechanisms and enabling contextual factors under which entrepreneurship education generates an entrepreneurial mindset?

### Approach

We apply the novel rapid realist review approach to synthesize evidence from empirical research in Web of Science, PROQUEST Entrepreneurship, and ERIC International (2000-2022) and from relevant literature suggested by expert panel members. This review process adopts a collaborative model that involves active discussion with experts and knowledge users who provide relevant local contextual insights and technical advice in the review process. The review follows six iterative steps (1) Research question development, (2) Searching strategy, (3) Study selection and appraisal, (4) Data extraction, (5) Data analysis and synthesis, (6) Theory development with stakeholders. Data is synthesized using context-mechanism-outcome configurations as the unit of analysis. Findings are reported in line with RAMESES guidelines.

### Results

Drawing on a final sample of 25 documents and consultancy of expert and local panels, our initial findings identify four potential mechanisms and contextual factors that together cause/block entrepreneurial mindset and beyond among individual learners.

### Implications

Our findings challenge the current "one-size-fits-all" practice in EE by showing how an EE should be designed to ensure more positive entrepreneurial outcomes in a specific context.

### Value/Originality

The study is one of the pioneers that applies realist methodology to synthesizing evidence of entrepreneurship education effectiveness. The value of this study goes well beyond the methodological contribution. Findings expand our understanding of what it is about the EE that caused a change in an individual's reasoning and behavior which subsequently led to different outcomes in a particular context.

**Keywords:** entrepreneurship education, entrepreneurial mindset, entrepreneurial thinking, rapid realist review, impact evaluation, Systematic literature review.

## EMANCIPATING THINKING ABOUT THE ENTREPRENEUR: IMPLICATIONS FOR THE EDUCATOR.

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### Questions we care about

For over three decades, we have focused on the workings of entrepreneurial intentions as being a binary outcome describing whether or not one is or is not an entrepreneur or does or does not set up a new business. This myopic focus on understanding the phenomenon of the entrepreneur has to be challenged and the implications of such a challenge needs to be more fully understood. This paper therefore aims to emancipate our thinking about the entrepreneur and its implications for the educator. The Authors challenge the nature of how entrepreneurship and the entrepreneur is understood. In this paper they present research into the process of developing the entrepreneurial mindset. It will investigate the process of developing the entrepreneurial mindset of the entrepreneurship educator; reflecting on the implications of this emancipated thinking for the educator. As educators we realise that the test of learning lies in its practice and that context is not just about starting a new business. We need to both explore and expose the multifaceted contexts of behaving entrepreneurially. A review of the extant literature has identified different constructs that contribute to the developmental process of the entrepreneurial mind-set. These include the entrepreneurial behavioural attributes, competencies, cognition, intentions, concept of self and co-learning practice. Each construct contributes to an 'Interrelated model of the Entrepreneurial Mind-Set Developmental Process'.

Learning through one's experiences is at the centre of this interrelated model, evidenced by (Wilson and Beard's, 2003) learning combination lock. We all have the capacity to be entrepreneurial. A key to unlocking the entrepreneurial potential of an individual is the role of the educator. We need to awaken in the minds of educators, the value of practice and policy in their role in the development of the emancipated entrepreneurial mind-set of their students.

### Approach

This research represents a synchronic review of the extant literature and the lived stories of twenty entrepreneurship educators. A narrative based research design was carried out, using the Listening Guide Voice Centred Relational Method, (VCRM), analytical tool of data analysis), Doucet and Mauthner's, (2008).

### Results

The development of the entrepreneurial mind-set of the entrepreneurship educator is key to releasing the entrepreneurial potential of every individual who seeks to do so. It is a process, unbounded, and beyond context. It is not a binary outcome. It is a multifaceted dynamic process with many contributing factors with many different outcomes as one develops the inherent potential of this mind-set. It is a continuous process of exploration and change that will continue to develop as one learns 'about', 'for' and 'through' their entrepreneurially informed experiences. The process is heterogeneous and unique to each individual.

### Implications

The interrelated model of the entrepreneurship educator's entrepreneurial mind-set developmental process, has provided the basis to illustrate that all educators irrespective of discipline have a pivotal role in the development of the emancipated entrepreneurial mind-set of their students and wider communities.

### Value/Originality

This research challenges the perception of the binary outcome of the entrepreneurial mindset and demonstrates that entrepreneurship educators do have an entrepreneurial mindset. They are the key to unlocking the multifaceted contexts of behaving entrepreneurially.

**Keywords:** Entrepreneurial Mindset, Entrepreneur, Entrepreneurship Educators, Role Models

## NURTURING THE CRADLE OF PHD ENTREPRENEURSHIP: DOES UNIVERSITY ENTREPRENEURIAL SUPPORT MATTER?

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### Objective

This work challenges the universities' entrepreneurial role in the cradle of doctoral students' entrepreneurial process. Focusing on the relationship between entrepreneurial alertness and intentions, we aim to develop our understanding of the interplay between individual and university dimensions driving entrepreneurial path, according to the postulates of the social information processing perspective.

### Approach

We have hypothesized that entrepreneurship-related and academic engagement-related human capital, expression of the individual background, jointly with educational support, affects entrepreneurial alertness, which impacts entrepreneurial intentions. The relationship between entrepreneurial alertness and intentions has been tested for differences due to the university support, measured as concept and business development. We administered a survey to a sample of 187 doctoral students in Italy. Partial Least Square Structural Equation Modeling (PLS-SEM) and a Multi-Group Analysis (MGA) have been adopted to test our hypotheses.

### Results

Our hypotheses were all supported.

### Implication

The research extends current studies on the entrepreneurial university by shedding light on whether entrepreneurial support affects doctoral students' entrepreneurship, a still neglected target group. Moreover, it provides a more comprehensive model showing how individual and university policies work together to foster entrepreneurial processes. Finally, we recognize the role of entrepreneurship education as part of a wider support system for entrepreneurship provided by the universities.

### Originality

By looking at the doctoral students as key actors in the entrepreneurial University (Bienkowska et al., 2016), we extend current studies on entrepreneurial intentions showing, for the first time, the combined role of human capital, alertness and university support (Feola, Vesci, Botti, & Parente, 2019; Obschonka, Silbereisen, Cantner, & Goethner, 2015). Furthermore, we extend the literature on university support highlighting its distinctiveness in fostering entrepreneurial intention (Trivedi, 2016; Wegner, Thomas, & Teixeira, 2019).

**Keywords:** Entrepreneurial University, PhD Entrepreneurship, Entrepreneurial Alertness, Entrepreneurial Intentions, University Support

## ENTREPRENEURIAL EDUCATION IN ITALIAN BUSINESS AND STEM FACULTIES

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### Objective

The paper aims to describe entrepreneurship education (EE) in Italy in STEM faculties, shedding light on 1) *how* EE is taught within STEM faculty; 2) *what* content is taught; *who* the teachers are; 3) *where* are the majors that have integrated EE; and, relative to the issues addressed, 4) *what* are the differences with business faculty.

### Approach

The methodology proposed for the empirical analysis is based on primary data and information collected through the Italian database of the Educational Ministry and the website of every single course. In some cases, the Internet survey was supplemented by a direct collection of course materials. The web source is appropriate for the purpose of this study since all Italian universities provide information about their curricula and courses through this medium. All of them give basic information (syllabus, contents, materials, education method, textbooks, assessments) about courses on their website.

### Results

The findings show that entrepreneurship courses in STEM faculties have grown considerably in recent years and that there are no appreciable differences with business faculties in teaching methods; however, most courses are offered by business faculty who show a higher level of maturity in entrepreneurship courses. Courses delivered by universities also seem to incorporate the transmission of practical knowledge with a greater focus on the active role of students, aiming at the achievement of long-term goals. In addition, we can see an openness to the use of digital technologies and gamification to support EE.

### Implications

Only a clear view of the landscape can enable policymakers and scholars to identify the best ways and opportunities to move beyond the knowledge horizon.

In addition, entrepreneurial education designers can gain valuable insights into building effective educational models, introducing team project work and business games to develop presentation, self-assessment, team working, leadership, and interaction skills in a business-like setting.

### Value/Originality

The paper fills a gap in the research on the attitude of Italian STEM faculties towards the adoption of entrepreneurship courses. Furthermore, the work evaluates possible differences with business faculties and offers valuable insights to entrepreneurial education designers who can gain valuable insights into building effective educational models, considering the introduction of new teaching methods and supporting digital technologies as well as the impact of the COVID-19 pandemic crisis on teaching. In addition, our research contributes to the literature on EE of non-business students, going beyond the mere finding of integrating entrepreneurship within the non-business curriculum and analyzing what and how entrepreneurship is taught.

**Keywords:** Entrepreneurial Education, STEM, Business, Italy, Teaching Models

## FROM LOOPS TO LEAPS: ADVANCING THEORY ON ACCELERATION IN EXPERIENTIAL LEARNING OF ENTREPRENEURSHIP

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### Questions we care about

Entrepreneurial learning within experiential entrepreneurship education provides intensive and temporally compressed enterprise-oriented training arranged according to a pre-determined plan or schedule. There is a need for context-sensitive theorizing that confronts the general ideas about experiential learning of entrepreneurship with the particularities of the context in which entrepreneurship education occurs. Against this, the purpose of this study is to develop a conceptual framework that advances current theorizing on experiential learning in entrepreneurship education.

### Approach

Learning occurs when enterprising individuals engage in continuous loops depicted in four interconnected stages: active experimentation, concrete experience, reflective observation, and abstract conceptualization. In contrast, we contend that the ideal learning process in experiential entrepreneurship education builds on the notion of learning leaps. We define learning leaps as significant, forceful and quick movements of students with respect to intended learning outcomes of a teaching exercise with a particular educational intervention. Furthermore, we develop the notion of leverage as a positional advantage that enables instructors to accelerate the learning process of students in experiential entrepreneurship education. In this respect, leverage is based on the use of interactions between instructors, learners, the learning environment, and learning tasks to maximum advantage. By putting or arranging interactions in a particular place or way instructors exert force and control situations and people for speeding up entrepreneurial learning.

### Results

We identify four building blocks that create a positional advantage that accelerates the learning process in experiential entrepreneurship education - Enabling, Energizing, Earthing and Edifying. Enabling opens up opportunities for action and makes something possible. When the students are Energized, they work faster, take more initiative and experience more than they would otherwise. By paying attention to Earthing, the educator makes sure that the students embed their ideas in the pragmatic notion of considering that a proposition is true if it works satisfactorily in a particular setting based on its practical consequences. Edifying provides structure for the students in order to facilitate for them to transform their experiences to knowledge.

### Implications

The four building blocks can be used by educators for accelerating entrepreneurial learning in the context of experiential entrepreneurship education.

### Value/Originality

We develop the notion of learning leaps which emphasize the temporality that is embedded in the time-compressed, pre-designed and structured learning space that characterize experiential entrepreneurship education.

**Keywords:** entrepreneurial learning; learning loops; learning leaps; leverage

## ENTREPRENEURIAL COLLECTIVE INTELLIGENCE

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### Questions we care about

The central question behind the paper is how Entrepreneurial Collective Intelligence can inform entrepreneurial behaviors, such as learning, decision-making, innovating, and leadership? And what insights this can bring for entrepreneurship education.

### Approach

We approach the question by first breaking the question down into two ontological and descriptive questions: What is an “entrepreneurial collective”? and What is ‘collective intelligence’ in the context of entrepreneurship? We address each of these questions through short selective literature studies of collective action and entrepreneurial agency and collective intelligence and entrepreneurial knowledge. Then we attend to a third question: Where can collective intelligence and entrepreneurial collectives be identified? How do they work and what can we learn from them? We approach this question through a number of case studies.

### Results

Based on our insights from the case studies we identify four categories that each represents a central area of attention for entrepreneurship educators who wish to enhance their students ability to engage in entrepreneurial collective intelligence processes: Collaborative processes; distributed working; intelligence availability, and organisation of infrastructures.

Armed with these categories, we return to our initial question to discuss ideas and challenges and formulate new questions that we hope can engage educators, researchers and entrepreneurs in debate.

### Implications

The paper is propositional; it sets out ideas, questions, challenges and aims to engage educators, researchers and entrepreneurs in debate. Its approach is dialogic, suggesting that insights on ECI will develop with and from entrepreneurial collectives.

### Value/Originality

The contribution of the paper is twofold. One is critique of entrepreneurship education for relying on individual agency and understanding knowledge as private. A second is the discussion of new routes towards a theoretically and empirically founded alternative, built on the ideas of the Entrepreneurial Collective and Collective Intelligence.

**Keywords:** entrepreneurship; entrepreneurial agency; collective intelligence; education; learning

## WHAT HAPPENS WHEN THE ENTREPRENEURSHIP EDUCATION CLASSROOM DISAPPEARS?

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### Questions we care about

How can we, as educators, move entrepreneurship education online without losing the powerful learning that happens in the face-to-face environment of the classroom? Often we assume that entrepreneurship education is a practice that takes place in a physical locality – the classroom. Learning to become entrepreneurial is both highly physical and relational. The focus in this paper is on how teaching is structured and designed when the physical classroom suddenly disappears.

### Approach

This paper focuses on an undergraduate humanities elective with entrepreneurship as a major component. The educator was charged with initiating student projects with external organisations where they would identify a problem and come up with solutions. However, the conditions created by the pandemic required that all teaching went online. Going online was perceived as a significant hurdle in planning project-based teaching. In the end, much of the students' work took place in a hybrid format. While lectures and class interactions took place over zoom, the students worked together in small groups face-to-face. Entrepreneurial tools for competence mapping, investigation of a problem area and creativity were introduced in the online environment.

### Results

On completion of the course, the evaluations provided some interesting and surprising insights both for the teachers and for the undergraduates. It seems that entrepreneurial learning can be successfully scaffolded, even in an online environment. When careful consideration is given to a re-design of teaching practice and methods, it appears possible to scaffold and adjust tools to support online entrepreneurial learning. From the comments made by the students, the online environment can be just as, or even more, powerful than the face-to-face classroom interactions. This paper suggests that online teaching and learning may provide surprising and liberating opportunities that may be missed in the face-to-face classroom interactions.

### Implications

There has been an assumption in entrepreneurship education that learning needs to take place in a face-to-face environment where people can interact with each other in a physical context and connect to the real world. But the results of this course show that with careful planning, online tools allow for a manipulation of space and time that creates opportunities for different kinds of conversations and interactions. Students are able to use these tools to take more control of their learning and to focus on how change can create value for others.

### Value/Originality

An online teaching environment does not limit student's ability to connect with and think about the real world. First, the real world is a hybrid world. Everything we do now takes place through some combination of online interaction (including the use of online tools and storing information online) and face-to-face.

## ENTREPRENEURSHIP COMPETENCIES: A PROPOSAL FOR THEIR DEFINITION USING THE KNOWLEDGE, SKILLS, AND ATTITUDES FRAMEWORK

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### Questions we care about?

The first question we answer is: how to define a competency in entrepreneurship education? We examine the education literature and operationalize a model comprising cognitive, functional, and social dimensions (also known as KSA) in order to find an answer. The second question we tackle pertains which are the most relevant competencies for the success of a new venture and thus potentially interesting to include in an entrepreneurship education program. We are interested in defining them and understanding their underlying components (knowledge, skills, and attitudes). With that goal we propose a model of how they integrate and combine to produce the observable outcomes found in the behavior of successful entrepreneurs. These indicators materialize through the performance of a competency and are meaningful inputs for their assessment.

### Approach

We first survey the literature on entrepreneurship competencies, compiling and classifying the competencies they include in their frameworks. We operationalize the KSA model to analyze these competencies in terms of their cognitive, functional, and social dimensions. Thus, we arrive at a competency framework with the definition of each competency and its components. The resulting framework was validated via a Delphi study with expert entrepreneurship educators.

### Results

We propose a conceptual contribution in the form of an entrepreneurship competencies framework based on the KSA model. These competencies and their definitions derive from the literature. We present their cognitive, functional, and social components and a systemic model where these connect, forming the competencies and providing a more complete overview of their development along the entrepreneurship education process.

### Implications

The KSA model allows us to adopt a systemic perspective, where all competencies are integrated via one or more of their components. Having distinct and clearly defined cognitive, functional, and social components lets us develop learning and assessment plans with concrete actions and indicators to observe, also including assessment practices that go beyond self-reported reflective scales, instead observing specific behaviors in the context of a learning experience.

### Value/Originality

This study contributes to the research on entrepreneurship education, the design of instruction programs and its assessment. To the best of our knowledge this is the first comprehensive, conceptual competency framework that operationalizes the KSA model and describes in detail the underlying dimensions of each competency. Thus, it gives insights to researchers and educators on how to design and assess learning processes with greater precision.

**Keywords:** entrepreneurship competencies, entrepreneurship educations, competencies, competency framework.



## WHAT IMAGINED FUTURES ARE MADE OF: CO-CONSTRUCTING NARRATIVE IDENTITIES FOR SOCIAL ENTREPRENEURS-TO-BE

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### Questions we care about

There is a growing interest in the narrative construction of the social entrepreneurial identity. An important underlying challenge is to build on identities that are full of hope for the future while at the same time being critical of the romanticised ideals behind social entrepreneurship. In this research, we care about the way students narrate their entrepreneurial experiences and write alternative stories in the face of master narratives of social and environmental injustices. We ask “what are the turning points that provide them a basis to explore alternative pathways” and “how students construct a – positive while uncertain - future”.

### Approach

Guided by Lawrence and Maitlis (2012) and the method of scaffolding conversations (White & Epston, 2004) we invite students to “re-tell” stories of sparkling moments (micro), to contextualise their struggles within structures (macro), and to co-create in teams polyphonic future-oriented stories (meso). At the light of Conversational Experiential Learning (Baker, Jensen, & Kolb, 2005), such conversations provide students with opportunities to transform their social entrepreneurial experiences into knowledge. We empirically examine how students experienced these intra- and interpersonal conversations through the analysis of 670 pages of narratives.

### Results

We identify how students position themselves as witnesses, resisters, perpetrators or victims of social or environmental injustice. We find turning points in the fresh awareness of exceptional moments that provide them a basis to explore alternative pathways. We learn how individuals and teams elaborate and adopt strategies to overcome obstacles, helping them gain confidence in their competences. Our analysis reveals that working at the team level opens up different strategies: commitment to values, resource assessment, renegotiation of postures or reassessment of self. We highlight the emerging trajectories towards hope.

### Implications

By looking at the narrative construction of identities of young adults in the context of social entrepreneurship education, we identify possible levers for constructing uncertain but positive futures and for gaining confidence to address social and environmental injustices. It has implications for research, opening new exploration of narrative identities through positive but also negative experiences of the young entrepreneurs-to-be, alone, in team and as members of communities. It also has implications for teachers who want to convey hope without romanticisation of the social entrepreneurial identity.

### Value

We provide a model of “scaffolding identity integration” where the individuals go back and forth between levels to elaborate on their life stories and to imagine their – positive while uncertain - future.

**Keywords:** Social entrepreneurship, education, conversational experiential learning, identity, efficacy

## ASSESSING COACHABILITY IN ENTREPRENEURSHIP EDUCATION: UNDERSTANDING INDIVIDUAL AND SOCIETAL IMPACT

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### Questions we care about

Coachability is becoming a core component in entrepreneurship education, where mentoring and coaching initiative are developing and spreading to leverage alumni mentoring to develop student startup talent (Kuratko, Neubert and Marvel, 2021; Nabi, Walmsley and Akhtar, 2021b). Little is known about the individual characteristics associated with an entrepreneur's coachability, or about how to assess coachability, due to limited prior attention by the academic literature and due to the lack of a valid and reliable coachability measure (Ciuchta et al., 2018; Marvel, Wolfe and Kuratko, 2020; Kuratko, Neubert and Marvel, 2021).

To narrow these gaps this research paper aims to answer to the following research question: How to assess coachability and its development to create a remarkable individual and societal impact?

### Approach

To understand and operationalize the coachability construct, a competency-based approach has been adopted and applied to entrepreneurship education. Bridging extant theory by integrating insights from competency theory, coaching literature, and practice, it was possible to identify the individual competencies associated with the entrepreneur's coachability.

### Results

This work develops a competency model for coachability identifying five key competency areas that make up coachability— Self-awareness, Achievement Orientation, Learning, Relationships Management, and Implementation— each one characterized by specific competencies grounded in the entrepreneurial competencies' literature. Competency tools, coachability competency surveys and Behavioral Event Interviews (BEIs), have been created to assess coachability and its development, making possible a quantitative comparison and the identification of training needs.

### Implications

The adoption of a competency-based approach, and the development of a model and competency tools, allow for enhanced efforts to design, deliver, and assess effective coaching initiatives that can enrich experiential entrepreneurship programs, contributing to coachability development amongst students. By so doing, the approach strengthens student entrepreneurial competencies and helps improve venture financing success, creating significant individual and societal impact.

### Value/Originality

The development of a coachability competency model, a multi-perspective approach to assessment together with the BEI strengthens the validity and reliability of the coachability assessment and can contribute effectively to its development through experiential entrepreneurship education.

**Keywords:** coachability, competency-based assessment, Behavioral Event Interview (BEI)

## **“IS THERE A FIT?” AN INVESTIGATION OF GENDERED VOCABULARY IN ENTREPRENEURSHIP EDUCATION AND ITS EFFECT ON STUDENTS**

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### **Question we care about**

While debates are ongoing about the actual effectiveness and success of EE in general, evidence suggests that EE is attracting more male than female students, and that female students who do participate in EE, are relatively less likely to engage in entrepreneurial careers. A possible explanation might be that the dominant narrative that is being shared in EE remains rather masculine. Consequently, female students may insufficiently recognize themselves as potential future entrepreneurs. Furthermore, the different ways in which male and female entrepreneurs are generally perceived, approached and treated in the entrepreneurial ecosystems which seems hardly addressed in classrooms. By ignoring these gendered entrepreneurial challenges female students might be less prepared for a carrier path as entrepreneur. This leads to the question: *how does EE prepare female students to overcome barriers within entrepreneurial career?*

### **Approach**

First, a literature review was conducted on the obstacles that female entrepreneurs experience within the ecosystem and the attention paid to it within entrepreneurship education. Next, in-depth interviews were conducted with EE (graduated) students (n=35). They were recruited via a snowball method using our network of EE educators at various HEI's in the region of Amsterdam. We used a semi-structured topic list focused on entrepreneurial characteristics, role models, networks and classroom social safety topics and the gender situations within, and how they were stimulated to become (potential) entrepreneurs. Subsequently, interview transcripts were deductively coded.

### **Results**

Most of the students interviewed mentioned stereotypical ideas (unconscious) about gender roles, which makes them wonder whether, as female students, they have the right skills for successful entrepreneurship. This is because entrepreneurship in education is educated with male characteristics such as risk-taking, profit (maximization) and having guts. The female students indicate that 'how to' access to the right network, but also the obstacles that women might encounter are not discussed in the lessons. The additional obstacles for women in obtaining funding are not discussed either. In their experience, in EE little attention is paid to the wider ecosystem including institutional parties, important networks, and stakeholders.

### **Implications**

Our findings point to the importance of addressing gendered obstacles that (potential) female entrepreneurs may face in EE. This study shows that this is due to two facets. On the one insufficient attention within EE is paid to the gendered challenges experienced in the ecosystem. Secondly, because EE is masculine in its approach, female students feel less invited by the language used and they hardly see any relatable role models. Ignoring and/or even denying gendered obstacles does not create resilience for all students.

### **Value/originality**

Our study contributes to the broader domain of EE by focusing on the underexplored role of gender in approach and narrative. Our findings offer initial explanations as to why the underrepresentation of female students and female graduates persists to this day. As such these insights offer guidelines for educators to come up with novel practices that are better geared towards stimulating female students for an entrepreneurial career.

**Keywords:** Entrepreneurial education (EE), Social Role Theory (SRT), role models, gender bias and gender stereotypes.

## EXPLORING THE INDIVIDUAL DETERMINANTS OF ENTREPRENEURIAL TEAM FORMATION: A SYSTEMATIC LITERATURE REVIEW

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### Questions we care about

The purpose of this paper is to map the current state of the art of the key individual characteristics relevant for entrepreneurial team formation and to derive a theoretical model for entrepreneurial team formation in entrepreneurship education.

### Approach

To do so, we conduct a systematic literature review on the intersection of entrepreneurial team formation processes and individual characteristics relevant for team formation. Finally, we propose that approaching incipient entrepreneurial team formation at higher education through a lens of boundary crossing can be informative for best practices and in understanding the success of these teams at the founding stage.

### Results

This project is ongoing. We analyse a final sample of 73 articles. We find that in the entrepreneurial team formation literature, *origin*, *team formation strategy*, *context* and *dynamism* are under researched, however the literature on individual factors is growing.

### Value/Originality

In contrast to previous research on team formation we aim to look at the formation in a very early phase of entrepreneurial team development, before founding; and at a very early stage of experience of the potential entrepreneurs involved. We combine this with research of individual characteristics that play a role in team formation. This approach distinguishes our work from previous research.

**Keywords:** Entrepreneurial teams, Entrepreneurial team formation, Deep-level characteristics, Entrepreneurship education

## DOES ENTREPRENEURSHIP EDUCATION AIMED AT THE PROMOTION OF HIGH GROWTH FIRMS CONTRIBUTE TO ECONOMIC INEQUALITY? THE MISSING CHAPTER

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### Questions we care about

Entrepreneurship educators put much effort into promoting high growth firms. Many programs and trainings aim at the establishment of ventures which are scalable. While many of these high growth firms may represent productive entrepreneurship (Baumol, 1991) which creates value for consumers, jobs, and economic growth, the appropriation of the value they create often contributes to income and wealth inequality. Income and wealth inequality may subsequently lead to access inequality: access to resources, opportunities, and redistribution. Inequality of access to resources, opportunities and redistribution arguably results in possibilities for sizeable segments of the population to engage in productive entrepreneurship, and more necessity, gig and social entrepreneurship. In this context, we ask *whether and when entrepreneurship education aimed at the promotion of high-growth firms contributes to economic inequality* (economic inequality consisting of both income and wealth inequality, and access inequality). We furthermore ask *what entrepreneurship education aimed at the promotion of high-growth firms can do to promote economic equality*.

### Approach

Our approach is an essay in which we first outline how entrepreneurship relates to income and wealth inequality, and then how entrepreneurship relates to access inequality. Our analysis reveals that whether entrepreneurship contributes to economic inequality, depends on how wealth is created, and even more on how wealth is subsequently used. Based on those foundations, we design a currently missing concluding chapter to entrepreneurship textbooks titled 'After the exit'.

### Results

In this missing chapter, we follow Sandel (2007) and approach justice from three perspectives: freedom, welfare, and virtue. For each perspective we design awareness exercises as well as actions that prospective entrepreneurs can study and practice.

### Implications

The lack of attention towards 'what happens after' is possibly because of a dominant view that entrepreneurship involves value creation and value appropriation, but not value distribution. In our opinion, this is not tenable anymore. Levels of wealth inequality are historically high, and continue to increase at high speed. Given the role that entrepreneurs play in the emergence of wealth inequality and its effects, we encourage entrepreneurship educators to face this issue, and call for a more critical analysis of entrepreneurship education within the context of increasing wealth concentration.

### Value/Originality

To our knowledge many entrepreneurship educators are not involved in addressing our increasingly important question.

**Keywords:** Income inequality, Wealth inequality, Access inequality, Economic Inequality, High Growth Firms, Entrepreneurship Education.

## WHO ARE STUDENT PART-TIME ENTREPRENEURS AND WHY SHOULD WE CARE?

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### Questions we care about

Higher education increasingly utilizes active modes of teaching and learning in connection with entrepreneurship education. But should we go a step further and actively encourage students to start a business while still enrolled? We take a particular interest in part-time entrepreneurship since it is compatible with completing higher education studies. Our questions for this paper are: What are the backgrounds of part-time student entrepreneurs? What explains their intentions for full-time entrepreneurship, compared to non-entrepreneur students? Are the antecedents of entrepreneurial intentions the same for part-time entrepreneurs as they are to non-entrepreneur students?

### Approach

To test our ideas, we utilized two sets of Finnish data, the first drawn from a survey of an online panel, consisting of 79 responses from part-time entrepreneurs who indicate studying as their primary occupation, and the second from a survey of third year HEI students in 2020, consisting of the responses from 122 students who were neither working as an entrepreneur nor currently in the process of starting a business. The two groups were compared in relation to full-time entrepreneurial intentions and antecedents of intentions based on Theory of Planned Behavior (TPB). In addition, we tested how well the antecedents explain the variance in entrepreneurial intentions in these two groups with linear regression analysis.

### Results

The part-time entrepreneur students have higher means of entrepreneurial intentions (4.3 vs. 3.1,  $p < .001$ ) as well as PBC (4.3 vs. 3.7,  $p < .001$ ) and subjective norm (4.2 vs. 3.4,  $p < .001$ ). Results of the regression analysis show that attitudes ( $\beta .351$ ,  $p < .001$ ) and age ( $\beta .325$ ,  $p < .001$ ) are the most important factors explaining entrepreneurial intentions (intention for full-time entrepreneurship). Gender has no impact. The model explains 49 percent of the variance. With non-entrepreneur students, the model explains 65 percent of the variance in entrepreneurial intentions, the most important factor being subjective norm ( $\beta .467$ ,  $p < .001$ ) followed by attitudes ( $\beta .324$ ,  $p < .001$ ) and PBC ( $\beta .197$ ,  $p < .01$ ). Also, gender has an impact ( $\beta .127$ ,  $p < .05$ ) but age has no effect.

### Implications

The results suggest that starting a business is a powerful means of learning about entrepreneurship. It is particularly interesting that the effect of gender, present in the non-entrepreneur population, disappears in the student entrepreneur group. Female students in higher education in particular need experiences to overcome mental barriers to entrepreneurship.

### Value/Originality

We are not aware of any earlier work on full-time entrepreneurial intentions of part-time entrepreneurs who are also students, although graduates have been studied (Ruiz-Rosa et al., 2021). Hägg and Kurczewska (2020) suggest that EE in higher education of young adults should include guidance tailored by taking into consideration each student's proficiency and knowledge in entrepreneurship. We also highlight the possibility of peer-to-peer learning, leveraging the experience of student entrepreneurs as vicarious learning.

**Keywords:** student entrepreneurship, part-time entrepreneurship, experiential learning, entrepreneurial intentions, Theory of Planned Behavior