



3E CONFERENCE PROCEEDINGS

Book of Abstracts

3E Conference – ECSB Entrepreneurship Education Conference

2024



3E CONFERENCE – ECSB Entrepreneurship Education Conference

© 2024

ECSB European Council for Small Business and Entrepreneurship

SECRETARIAT

c/o University of Turku, School of Economics

Rehtorinpellonkatu 3

20500 Turku

FINLAND

e-mail: info@ecsb.org

internet: www.ecsb.org

ISSN 2411-3298

Preface

Dear colleague,

It is with great pleasure we welcome you to the *3E Conference - ECSB Entrepreneurship Education Conference 2024*. This book presents the abstracts of the 3E Conference held on 15–17 May 2024 in Amsterdam, the Netherlands. The Conference is organised by the Entrepreneurship Research Group of the Amsterdam University of Applied Sciences (AUAS), the School of Business & Economics, Management and Organisation of the Vrije Universiteit Amsterdam (VU) and the European Council for Small Business and Entrepreneurship (ECSB).

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

The theme of 3E 2024 is “*Entrepreneurship Education – a playground for impact*”. Over the past years, Entrepreneurship Education (EE) has increasingly become more mature in its theory and practice. Yet, it has not lost its playfulness and its willingness to try out new things. We believe EE can and should be seen as a playground for educators, scholars, and students; and continue to invite innovative action and experimentation. At the same time, this led to a variety of challenges and contexts for players to solve through creativity, interaction and mutual learning. That is why this edition encouraged the 3E community to present novel solutions to encourage tilting EE towards social development, mental and physical wellbeing, and sustainability. While being playful, we need to promote innovation, creativity as well as responsible risk-taking. And most importantly, we need to think of what we want our students to learn, what our students want to learn, and how they best learn.

Following the 3E format there were two calls this year, one for research papers and one for practitioner development workshops. The eleventh edition of the conference features 30 practitioner development workshops and 60 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.

Ingrid Wakkee
Amsterdam University of Applied Sciences

JuanFra Alvarado Valenzuela
Amsterdam University of Applied Sciences

Marco van Gelderen
Vrije Universiteit Amsterdam
Conference chairs

Agnieszka Kurczewska
President of ECSB

Table of contents

PRACTITIONER DEVELOPMENT WORKSHOPS (PDWs)

INNOVATIVE PLAYGROUNDS: HARNESSING LOCAL RESOURCES FOR IMPACTFUL ENTREPRENEURSHIP EDUCATION	12
Sarah Aiono	
MINI-HACKATHON - THE ENTERPRISING TEACHER	13
Arzu Ayikgezmez, Sonja Bruins	
INTEGRATING MINDFULNESS INTO ENTREPRENEURSHIP EDUCATION: OVERVIEW AND HANDS-ON PRACTICE	14
Ester Bernadó, Alfredo Rueda	
'3 X 3 = EE': A TRIPLE PEDAGOGICAL APPROACH TO THE TRIPLE BOTTOM LINE.	15
Zoë-Lisa Blackler, Natasha Hashimi, Steve Aicheler	
SUSTAINED: GAMIFIED LEARNING FOR RESPONSIBLE MANAGEMENT EDUCATORS.	16
Zoë-Lisa Blackler, Trudie Murray	
USING CHATGPT FOR CONCEPT DEVELOPMENT AND IDEATION, A CLASSROOM EXPERIENCE.....	17
Filip Burgelman, Lizzy Bleumers	
IMAGINING ENTREPRENEURSHIP: EXPLORING RESEARCH CONCEPTS IN POPULAR CULTURE	18
Adrienne Callander	
CONDUCTING EXPERIMENTS IN ENTREPRENEURSHIP EDUCATION	19
Sílvia Costa, Silke Tegtmeyer, Susana C. Santos, Mark T. Schenkel	
ENTREPRENEURIAL MINDSET FOR ENTREPRENEURSHIP EDUCATORS	20
Paul Coyle, Marco Lamas	
DEALING WITH UNCERTAINTY: TEACHING ENTREPRENEURIAL THINKING IN AN EDUCATIONAL CONTEXT	21
Inge Elsman- Loeffen, Maria Coakley	
CAPTURING THE STUDENTS' MENTAL MODELS.....	22
Ragnhild Nordeng Fauchald, Lise Aaboen, Dag Håkon Haneberg, Torgeir Aadland	
CRAFTING EFFECTIVE DESIGN PRINCIPLES FOR SCIENCE AND TECHNOLOGY-BASED ENTREPRENEURSHIP EDUCATION	23
Alvira Fisher, Rainer Harms, Marie Louise Blanckesteijn	
FOSTERING ENTREPRENEURIAL MINDSETS IN SECONDARY EDUCATION: DEVELOPING COMPETENCIES THROUGH EDUCATIONAL ESCAPE GAMES	24
Sultan Göksen-Olgun, Wim Groot, Ingrid Wakkee, Richard Martina	
ETHICS AS A PATH TO MORE RESPONSIBLE ENTREPRENEURS – HOW ETHICS CAN HELP NURTURE MORE SUSTAINABLE BUSINESS DEVELOPMENT?	25
Vera Haataja, Gustav Hägg, Agnieszka Kurczewska	

NUDGING BUSINESS TEAMS TO SUCCESS.....	26
Jens Hirt, Yuliya Shtaltovna	
USING AI TOOLS TO DESIGN YOUR OWN ENTREPRENEURSHIP COMIC BOOK.....	27
Florian Huber, Steven Gedeon	
A PATTERN LANGUAGE FOR SUCCESSFUL ENTREPRENEURSHIP EDUCATION.....	28
Johanna Kobilke, Klaus Sailer	
PRETOTYPING CANVAS – TEST YOUR IDEA QUICKLY AND INEXPENSIVELY	29
Zoé Lacrosse, Hugo Jamin, Aude Bonvissuto, Bernard Surlemont, Frédéric Ooms	
DECOLONIZING ENTREPRENEURSHIP EDUCATION. INCREASING THE IMPACT OF SUSTAINABILITY....	31
Serxia Lage Arias, Karen Verduijn	
USING GENERATIVE AI TO SUPPORT STUDENT ENGAGEMENT, CREATIVITY AND ENTREPRENEURIAL THINKING.....	32
Miranda Lewis	
THE WALKING CURRICULUM: A SHARED JOURNEY OF ENTREPRENEURSHIP EDUCATION	33
Joanne Malone, Una Grant	
EXPLORING SUSTAINABLE EE FUTURES TO TRANSFORM PRESENT ECONOMIC THINKING.....	34
Birgitte Woge Nielsen, Peter Keller Hansen, David Mehlsen, Hanne Duedahl Noergaard, Sebastian Planck	
UNLOCKING ENTREPRENEURIAL POTENTIAL BY ENVISIONING FUTURE(S) THROUGH CARTOON IMAGES.....	35
Birgitte Woge Nielsen, Peter Keller Hansen	
ESCAPING THE FRAME: A JOURNEY THROUGH COMPETENCY-BASED EDUCATION (ESCAPE ROOM) .	36
Niek Ploegman, Amber Koning, Angela Bogaard	
HIDDEN IN PLAIN SIGHT: EXPLORING TEAMS IN ENTREPRENEURSHIP EDUCATION	37
Ann-Cathrin Scheider, Stephanie Birkner, Fernando Rosales Bravo	
THE REFLECTIVE ENTREPRENEUR: JOURNALING IN ENTREPRENEURSHIP EDUCATION.....	38
Dana Schultchen, Audrey Stolze	
DEVELOPING PLAY-BASED INTERVENTION(S) FOR TEAMWORK COMPETENCE IN ENTREPRENEURSHIP EDUCATION	39
Peter van der Meer, Zeineb Djebali, Anne R. van Ewijk	
INTRODUCING WWW.ENTRECOMP.NU: PRACTICAL EXERCISES FOR EACH OF THE 15 ENTRECOMP COMPETENCIES.....	40
Marco van Gelderen, Thomas Lans	
ONLINE MODULAR ENTREPRENEURSHIP EDUCATION: STUDENT ENGAGEMENT, LEARNING EXPERIENCE & EDUCATOR COMPETENCIES.....	41
Robin van Oorschot, Lars Alkærsig	

RESEARCH PAPERS

THE ALUMNI CHAMPIONS - WHY DO THEY DO IT?	43
Lise Aaboen, Roger Sørheim	
IMPACT OF COLLABORATIVE DYNAMICS ON ENTREPRENEURIAL IDENTITY FORMATION IN STUDENTS.....	44
Sonia Ahmadi	
NAVIGATING UNCERTAINTY: FOSTERING ADAPTIVE CAPABILITIES IN ENTREPRENEURSHIP EDUCATION THROUGH SREL	45
Noah Bellwald	
TRANSFORMING ENTREPRENEURSHIP EDUCATION: INTEGRATING MAINSTREAM AND ALTERNATIVE EE TOWARDS SUSTAINABLE FUTURES	46
Karin Berglund, Sarah Dodd, Ulla Hytti, Sarah Jack, Serxia Lage-Arias, Jessica Lindberg, Karen Verduijn, Anna Wettermark	
WHAT WOULD GERT SAY? MOVING ENTREPRENEURSHIP EDUCATION THROUGH PLAYFUL CRITIQUE	47
Catherine Brentnall, Ivan Diego Rodriguez, Mette Lindahl Thomassen, Ragnhild Nordeng Fauchald	
EMPOWERING EDUCATORS: DEVELOPMENT AND VALIDATION THE GHENT ENTREPRENEURIAL MINDSET SCALE FOR EFFECTIVE ENTREPRENEURIAL EDUCATION DESIGN.....	48
Bart Derre, Nico De Witte, Pedro De Bruyckere, Jimme Keizer, Mathieu Weggeman	
FINDING THE DREAM TEAM: EXPLORING TEAM FORMATION IN STUDENT ENTREPRENEURSHIP	49
Tim Eckes, Aki Harima	
THE ETHOS OF SUSTAINABLE ENTREPRENEURSHIP EDUCATION: A REVIEW AND CRITICAL ANALYSIS	50
Ziad El-Awad, Jonas Gabrielsson, Diamanto Politis	
EDUCATIONAL CONSCIOUSNESS AND PHILOSOPHICAL FOUNDATIONS IN CURRICULAR AND EXTRACURRICULAR ENTREPRENEURSHIP EDUCATION	51
Katarina Ellborg, Nicolai Nybye, Michael Breum Ramsgaard, Birgitte Wraae	
'FROM STRAIGHT JACKET TO SPACESUIT, ENTERPRISE TEACHING & LEARNING BEYOND THE CLASSROOM'	52
Deirdre Fleming	
DEVELOPING AN ENTREPRENEURIAL MINDSET OF BUSINESS STUDENTS: THE ROLE OF REFLECTIVE DIARIES	53
Nataliya Galan, Jonas Gabrielsson	
EXPLORING THE ENTREPRENEURIAL ENGINEER FROM A VALUE CREATION PERSPECTIVE	54
Victor G. Galofré, Duygu Keskin, Yvette Baggen, Isabelle M.M.J. Reymen, Perry den Brok	
HEJ AI – HOW IS MY SUSTAINABLE ENTREPRENEURIAL LEARNING TODAY? CREATING A COMPUTER ASSISTED REFLECTIVE DIALOGUE TO DEVELOP IMPACT ENTREPRENEURSHIP COMPETENCIES.....	55
Britta M. Gossel	

CREATING PLAYFUL, RESPONSIBLE, AND IMPACTFUL ENTREPRENEURSHIP EDUCATION MODELS.....	57
Colette Henry, Ester Bernadó Mansilla, Slavica Singer, Barbara Gabriel, Robertt Valente, Kåre Moberg, Sabrina Tomasi	
ASSESSING INNOVATIVE TEACHING TECHNIQUES AMONG TANZANIAN SECONDARY SCHOOL TEACHERS	58
Siyajali Hussein Ntahuga, Katherine Fulgence, Matthew Wawrzynski	
WHAT RESPONSIBILITY DO WE TAKE AS ENTREPRENEURSHIP EDUCATORS? A CRITICAL REFLECTION ON PRODUCING RESPONSIBLE ENTREPRENEURIAL CITIZENS	59
Gustav Hägg, Colin Jones, Agnieszka Kurczewska, Rasmus Rahm, Birgitte Wraae	
TEACHERS AS AGENTS OF ENTREPRENEURSHIP: LESSONS FROM TRAIT ACTIVATION THEORY	60
Minna Hämäläinen, Kati Peltonen, Sanna Joensuu-Salo, Anmari Viljamaa	
STUDENTS' TECHNOLOGICAL INNOVATION AS A CORE OF CORPORATE ENTREPRENEURSHIP EDUCATION – A CONCEPTUAL ANALYSIS.....	61
Markku Ikävalko, Anna Vuorio, Terhi Virkki-Hatakka	
MEASURING THE IMPACT OF GENDER-SPECIFIC ENTREPRENEURSHIP PROGRAMS	62
Rossitza Ivanova, Elfi Lange	
HARMFUL HARMONY? ON SAFE SPACES AND BRAVE SPACES IN ENTREPRENEURSHIP EDUCATION ..	63
Rossitza Ivanova, Kazem Mochkabadi	
MUSIC AND ENTREPRENEURIAL EDUCATION'S EFFECTS ON EXECUTIVE FUNCTIONS AND MATHEMATICS ACHIEVEMENT: PRELIMINARY RESULTS FROM A QUASI-EXPERIMENTAL STUDY.....	64
Sophie Jalbert, Matthias Pepin, Jonathan Bolduc	
ENHANCING ENTREPRENEURIAL ECOSYSTEMS FOR SUSTAINABLE ENTREPRENEURSHIP: UNIVERSITY OF TECHNOLOGY PERSPECTIVE	65
Anmar Kamalaldin, Kristina Dobricic, Karen Williams Middleton, Yashar Mansoori, Mats Lundqvist	
CAPTURING AFFECTIVE LEARNING OUTCOMES – A REVIEW OF METHODOLOGICAL APPROACHES ...	66
Maisa Kantanen	
DEVELOPING DOCTORAL STUDENTS' ENTREPRENEURIAL MINDSET	67
Darsel Keane, Deborah Shepherd, Rod B. McNaughton, Guy W. Bate	
THE INK WAY: GUIDING FIRST STEPS INTO ENTERPRISE-IN-PLACE.....	68
Felicity Kelliher, Sarah Drakopoulou Dodd, Friederike Welter, Valentina Mello Lunardelli	
STRATEGIES TO CHANGE TEACHER'S APPROACH IN ENTREPRENEURSHIP EDUCATION? DESIGNING A TEACH-THE-TEACHER MODULE TO OVERCOME INSECURITY.....	69
Ruud G.M. Koopman	
STORIES WE TELL: DECONSTRUCTING FRAUD THROUGH FILM IN THE EE CLASSROOM	71
Anne Köhler, Sophie Rudolph	
ENTREPRENEURSHIP EDUCATION AS AN INDUSTRY – REIMAGINING OUR FIELD AND HOW WE STUDY IT	72
Martin Lackéus, Catherine Brentnall, Per Blenker	

VALUE CREATION PEDAGOGY IN HIGHER EDUCATION: TWELVE CASES FROM ENGINEERING, HEALTHCARE, PEDAGOGY, BUSINESS, HUMANITIES AND NATURAL SCIENCE	73
Martin Lackéus, Jette Seiden Hyldegård, Helle Meibom Færgemann	
ENTREPRENEURSHIP EDUCATION TAILORED FOR THE NEXT GENERATION OF SCIENTISTS	74
Kathrin Lichius, Ferran Giones, Andreas Wahl, Mia Zsohár	
PRE-ENTREPRENEURIAL CONSTRUCTIONS ON ENTREPRENEURSHIP: OBSERVATIONS FROM FINNISH STUDENT NARRATIVES WRITTEN IN 2004 AND 2023.....	75
Seppo Luoto, Greg O'Shea	
SHOULD WE DITCH THE PITCH? EXAMINING THE USE OF INTERACTIVE ORAL ASSESSMENT IN ENTERPRISE CLASSROOMS.....	76
Roisin Lyons, Briga Hynes, Yvonne Costin	
INCORPORATING SUSTAINABILITY INTO TEACHING PRACTICE: AN ANALYSIS ON ENTREPRENEURSHIP COURSE SYLLABI AT SWEDISH UNIVERSITIES.....	77
Jiejie Lyu, Diamanto Politis	
EXPLORING METHODS FOR IDEA IDENTIFICATION IN ENTREPRENEURSHIP EDUCATION	78
Marie Löwegren	
EXPLORING HYBRID ENTREPRENEURSHIP: ENTRY AND EXIT DYNAMICS.....	79
Bogdan Marculescu, Laura Brancu, Nicolae Bibu	
KEY SUCCESS FACTORS OF ENTREPRENEURIAL COACHING FOR ENTREPRENEURSHIP EDUCATION PROGRAMS: A COACHES' PERSPECTIVE	80
Giammarco Marras, Matteo Opizzi, Michela Loi	
THE PLAYGROUND: A DESIGN STUDY FOR A UNIVERSITY PRE-INCUBATION SPACE	81
Bianca A. Meyer, Anne R. van Ewijk	
DESIGN PRINCIPLES FOR AGENCY-CENTRIC K-12 ENTREPRENEURSHIP EDUCATION IN DEVELOPING ECONOMIES.....	82
Ashwin Mohan, Mekin Maheshwari	
LATIN AMERICAN APPROACH TO ENTREPRENEURSHIP EDUCATION	83
Joysi Moraes, Sandra Mariano, Robson Moreira Cunha	
PLAYFUL SEEDS OF IMPACT: A CONSTRUCTIVIST GROUNDED THEORY APPROACH TO PRESCHOOL ENTREPRENEURIAL EDUCATION INQUIRY	84
Trudie Murray, Breda Kenny, Helen McGuirk, Thomas M. Cooney	
HOW DO CHILDREN EXPERIENCE ENTREPRENEURIAL EDUCATION?	85
Sabrina Nagel	
EXPLORING ENTREPRENEURSHIP EDUCATION: A REVIEW THROUGH THE INSTITUTIONAL LENS	86
Maria Noguera Noguera, David Urbano, Tatiana Lopez	
DOCTORAL STUDENTS IN THE ENTREPRENEURIAL UNIVERSITY: CHALLENGING THE ROLE OF UNIVERSITY SUPPORT SYSTEM.....	87
Matteo Opizzi, Giammarco Marras, Michela Loi	

SUSTAINABILITY THROUGH ENTREPRENEURSHIP - HOW TO FOSTER SUSTAINABILITY COMPETENCIES THROUGH ENTREPRENEURSHIP EDUCATION	88
Sebastian Planck, Sonja Wilhelm, Johanna Kobilke, Klaus Sailer	
STUDENTS' STRUGGLE TO CONVERT THEIR ENTREPRENEURIAL INTENTIONS INTO BEHAVIOUR.....	89
Pascal Renz, Taiga Brahm, Michael Flad	
LLMS AS A CATALYST FOR SUSTAINABLE OPPORTUNITY RECOGNITION CAPABILITY.....	90
Pascal Renz, Johannes Martin	
ENTREPRENEURSHIP EDUCATION UNDER CONDITIONS OF POVERTY: IMPLICATIONS FROM THE CAPABILITIES THEORY	91
Susana C. Santos, Michael H. Morris	
NAVIGATING THE DARK SIDE AND FOSTERING RESILIENCE IN ENTREPRENEURSHIP EDUCATION	92
Ann-Cathrin Scheider, Stephanie Birkner, Alexis Papathanassis, Orestis Terzidis	
MIRROR, MIRROR ON THE WALL: ROLE AND SELF-CONCEPTION OF ENTREPRENEURSHIP EDUCATORS – INSIGHTS FROM AN INTERVIEW STUDY.....	93
Hannah Laura Schneider, Louisa Huxtable-Thomas, Paul Jones, Nils Högsdal, Robert Bowen	
BECOMING ENTREPRENEURIAL: USING BRONFENBRENNER'S BIOECOLOGICAL MODEL TO UNDERSTAND ENTREPRENEURIAL COMPETENCY DEVELOPMENT	94
Deepa Subhadrammal, Martin Bliemel, Jochen Schweitzer	
ROLE OF EMOTIONS IN LIFEWIDE ENTREPRENEURIAL LEARNING: A MULTI-CONTEXTUAL STUDY	95
Deepa Subhadrammal, Martin Bliemel, Jochen Schweitzer	
SUPPORTING ENTERPRISING COMPETENCIES THROUGH PLAYFUL LEARNING IN ENTREPRENEURSHIP EDUCATION	96
Kati Suomi, Katriina Heljakka	
WOMEN ENTREPRENEURS' BEHAVIOR ELICITED BY ACCOMPANYING GROUP-TYPE SUPPORT	97
Eriko Toda, Rihyei Kang	
CULTIVATING GLOBAL ENTREPRENEURSHIP: INTEGRATING CULTURAL INTELLIGENCE INTO ENTREPRENEURSHIP EDUCATION	98
Francesca van Marion, Ellen van Andel	
THE CHANGE AGENT TEACHING MODEL: EDUCATING ENTREPRENEURIAL LEADERS TO HELP SOLVE GRAND SOCIETAL CHALLENGES.....	99
Frank van Rijnsoever, Silas Sitzler, Yvette Baggen	
ORGANIZATIONS SUPPORTING VENTURES PARTICIPATING IN AN ACCELERATOR PROGRAM	100
Várin Vaskinn	
WE DID IT: DEALING WITH PROBLEMS AND LEARNING FROM THEM IN ACTION-ORIENTED ENTREPRENEURSHIP EDUCATION	101
Mukesh Hasirumane Venkatesh, Sara Maryami, Dag Håkon Haneberg	

HOW DOES QUALITY OF AN ENTREPRENEURIAL IDEA SHAPE STUDENTS' ENTREPRENEURIAL ATTITUDES AND PASSION FOR THE IDEA?	103
Anna Vuorio, Markku Ikävalko, Terhi Virkki-Hatakka	
'LEARNING ON YOUR FEET' - USING ACTIVE-LEARNING PEDAGOGICAL APPROACHES TO SUPPORT THE ENTREPRENEURIAL MINDSETS NEEDED TO ENACT SOCIO-CULTURAL CHANGE FOR A MORE SUSTAINABLE WORLD	104
Lucia Walsh, Olivia Freeman, Sarah Louise Rawe	
HOW AND WHY WELL-BEING AND POSITIVE PSYCHOLOGY SHOULD BE INTEGRATED INTO ENTREPRENEURSHIP EDUCATION	105
Steffen Weyreter, Stephan Lengsfeld	

**PRACTITIONER DEVELOPMENT
WORKSHOPS
(PDWs)**

INNOVATIVE PLAYGROUNDS: HARNESSING LOCAL RESOURCES FOR IMPACTFUL ENTREPRENEURSHIP EDUCATION

Sarah Aiono, Longworth Education (sarah@longwortheducation.co.nz)

Workshop Summary

How can repurposed 'junk' innovatively foster inclusive, global entrepreneurship in educational settings? This workshop delves into the playful yet profound world of utilising local, everyday materials for entrepreneurship education. In an era where innovation and sustainability are key, we explore how accessible resources can be a playground for impactful learning and entrepreneurial thinking. Our focus is on how these materials can bridge economic disparities in education and foster an inclusive, engaging learning environment. We will explore the concept of 'play' as a serious educational tool, challenging the conventional classroom setup. This workshop aims to inspire educators to create playful learning experiences that are culturally relevant and grounded in local contexts. By leveraging the simplicity and accessibility of local materials, we aim to develop entrepreneurial skills in students that are both practical and imaginative. Our approach is rooted in the belief that entrepreneurship education should be a vibrant, dynamic playground where creativity and problem-solving thrive. We will explore how educators can transform their teaching practices to make learning an adventurous and impactful journey, resonating with diverse groups and promoting a global perspective on entrepreneurship.

Workshop Style

Participants will engage in interactive, hands-on activities simulating real-world entrepreneurial scenarios, fostering brainstorming, innovation, and collaboration. The workshop serves as a dynamic playground for experimenting with various materials and turning them into effective educational tools. It emphasizes experiential learning, promoting creativity, teamwork, and the joy of learning through play.

Expected Outcomes

Attendees will learn creative use of local materials for teaching entrepreneurial skills; gain insights into designing impactful, culturally relevant, and playful educational experiences; discover methods to foster inclusive, innovative and engaging learner communities; develop strategies to integrate play into curriculum and teaching; and gain practical ideas for playful entrepreneurial learning.

Related Research

This workshop leverages extensive research from developmental psychology, education studies, and entrepreneurship, showcasing how hands-on, experiential learning with repurposed materials not only fosters creativity and innovation but also enhances social interactions, communication skills, and cognitive flexibility. These interactions with 'loose parts' have been proven to support complex problem-solving, risk-taking, and leadership abilities in children. Ultimately, this approach underscores the importance of engaging, culturally relevant materials in developing the foundational skills of creativity, initiative, and resilience in future entrepreneurs.

MINI-HACKATHON - THE ENTERPRISING TEACHER

Arzu Ayikgezmez, University of Applied Sciences Rotterdam (a.ayikgezmez@hr.nl)
Sonja Bruins, University of Applied Sciences Rotterdam

Summary

The 21st century is a century of change. New technological possibilities follow each other quickly while social issues become increasingly complex to solve (Goedhals and Biekens, 2022). In terms of Rittel and Webber (1973), we are increasingly confronted with wicked problems: these are unique problems that are difficult or impossible to solve due to incomplete or contradictory information within a changing context (Pesch and Vermaas, 2020).

At the Institute for Built Environment of the University of Applied Sciences in Rotterdam, we prepare our students to deal with these wicked problems, such as the shortage of housing, nitrogen emissions, flooding, and heat stress. Within a rapidly changing society and working field we observe that entrepreneurial competencies are important to get students ready for complex tasks in their future position. Training students as self-managing professionals requires a new, more coaching role from us as teachers. If we want enterprising, self-directed students, we as teachers must be inspiring, creative and enterprising too. Here lies a challenge. The approach of this workshop is to create a proper understanding of how we as teachers can prepare ourselves pedagogically and didactically for this challenge. The workshop helps to create awareness to train the teachers. The main question which we deal with is: *How enterprising are you as a teacher?*

Workshop Style

In this workshop participants work in an interactive setting in small groups. We use the EntreComp framework (Bacigalupo *et al.*, 2016) as a driver for the discussion and to frame the entrepreneurial attitude and mind-set we're talking about. Participants are asked to share how they stimulate creativity, innovation, collaboration, teamwork, common purpose in the classroom. But also, to share the problems and challenges they encounter.

Workshop Outcomes

At the end of the workshop, the groups will share their results and ideas on how to introduce entrepreneurial attitude in the classroom, reflect on what they have learned from each other and what questions haven't risen. We engage with each other, looking for new creative solutions.

Related Research

The scientific literature indicates that having certain entrepreneurial competencies enriches life in general and enables people to solve complex problems (Blenker *et al.*, 2011). This involves, for example, developing a person's creativity, proactivity and innovative capacity. According to Moberg (2014) the reason for this is that entrepreneurial competencies are primarily non-cognitive competencies, which require "learning by doing". Education that focuses on this, is defined within the literature as broad entrepreneurship education (EE) (Gulikers *et al.*, 2019; Lack us, 2015).

Within the framework of broad EE, the focus extends beyond merely starting a business and includes fostering value creation across economic, social, and ecological dimensions. It focuses on developing entrepreneurial competencies such as the competencies that are part of the European Entrepreneurship Competence Framework (EntreComp) framework (Bacigalupo *et al.*, 2016). This framework is increasingly used in entrepreneurship education and offers an approach that could be used in tech studies.

INTEGRATING MINDFULNESS INTO ENTREPRENEURSHIP EDUCATION: OVERVIEW AND HANDS-ON PRACTICE

Ester Bernadó, TecnoCampus (ebernado@tecnocampus.cat)
Alfredo Rueda, TecnoCampus

Workshop Summary

Entrepreneurship is inherently intertwined with uncertainty and unpredictability. Consequently, entrepreneurs frequently navigate through heightened levels of uncertainty, risk, and potential failure compared to other fields. These challenges may contribute to elevated levels of anxiety, stress, and even depression, potentially impacting performance and increasing the risk of failure.

We advocate that Entrepreneurship Education (EE) should recognise and tackle these inherent difficulties, equipping aspiring entrepreneurs with the necessary tools to cope with uncertainty, foster resilience, and navigate the intricate landscape of entrepreneurship. Mindfulness represents one such approach. Defined by attentive awareness in the present moment, mindfulness has been linked to beneficial outcomes including increased openness to experience, enhanced attention span, heightened creativity, greater resilience, and improved mental health. Building on these findings, mindfulness practices in EE can better equip students and prospective entrepreneurs to cope with uncertainty and foster their resilience amidst setbacks. Despite its potential benefits, the incorporation of mindfulness into teaching and learning remains limited. This workshop aims to raise awareness about the advantages of mindfulness in EE, while providing educators and researchers with a hands-on practice that may serve as an ice-breaker for their use in teaching practices and EE research.

Workshop Style

The workshop combines a concise overview of mindfulness practices in higher education, grounded in existing research, with an immersive firsthand experience of mindfulness. It follows these steps:

1. Introduction to mindfulness, its benefits and application to EE.
2. Practice 1 - Guided meditation: Participants engage in a guided meditation practice led by the facilitators, accompanied by soothing music.
3. Practice 2 - Walking meditation: An invitation for participants to experience a walking meditation, to illustrate how mindfulness can be integrated into any activity.
4. Reflection and discussion in small groups.
5. Key takeaways and feedback from the participants.

Expected Outcomes

- Understanding of mindfulness and its benefits for entrepreneurship and EE.
- Ability to use mindful practices for oneself.
- Ability to lead mindfulness practices in curricular and co-curricular settings.
- Networking and co-creation with like-minded entrepreneurship educators.
- Inspiration and enhanced motivation for an enhanced perspective on EE.

Related Research

Several studies emphasize the positive impact of mindfulness on entrepreneurship. Exemplary, Kelly and Dorian (2017) assert that mindfulness positively impacts the entrepreneurial process, particularly in opportunity recognition and ethical decision-making. This is supported by Rivoallan (2018), who found that an 8-week mindfulness intervention enhanced the resilience of entrepreneurs. In higher education, the application of mindfulness practices has demonstrated notable benefits, including the reduction of stress, anxiety, and burnout, alongside improvements in cognitive flexibility, attention, and emotional regulation (Tejada-Simón and Lodhi, 2022; Schwind et al., 2017). Despite the well-documented advantages, the integration of mindfulness into EE remains limited. This workshop aims to raise awareness about the benefits of mindfulness and stimulate practice and research within EE.

'3 X 3 = EE': A TRIPLE PEDAGOGICAL APPROACH TO THE TRIPLE BOTTOM LINE.

Zoë-Lisa Blackler, Cardiff Metropolitan University (zblackler@cardiffmet.ac.uk)

Natasha Hashimi, Cardiff Metropolitan University

Steve Aicheler, Cardiff Metropolitan University

Workshop Summary

Elkington (2018) famously critiqued his own management concept, suggesting that the triple bottom line sustainability framework had become an 'alibi for inaction' and merely a tick-box exercise for organisations. This false sense of completion had the potential to stifle future innovation and suspend a continuous exploration of commitment to sustainability.

This conceptual recall prompts the question: does HE act in the same manner? HE institutional dynamics can be complex, and silo-working can occur. Do we tick the institutional box of curriculum enterprise education, entrepreneurship incubator support, and separate research activity... and then miss opportunities to connect in a tripartite manner for optimal impact? To what extent does this prevent pedagogical innovation and progression towards the holistic embeddedness of people, planet, and profit within enterprise education, and what role can we play as Enterprise Educators in linking the pockets of excellent practice within our networks? This workshop aims to explore connectivity in enterprise education through curricular, extra-curricular and research activity.

Workshop Style

The workshop will be facilitated by a lecturer, an entrepreneurship incubator manager, and a researcher to reflect the three 'competing' elements of educational focus. Delegates will be presented with familiar HE scenarios and challenges, and will be encouraged to explore synergies of interest, with particular reference to the people, planet and profit pillars.

The PDW will provide opportunities to explore connectivity, drawing upon both explicit enterprise education interventions, and interventions where the emphasis has been on ethics and sustainability, and participants will work together to map out best practice approaches.

Expected Outcomes

A review of connectivity within HE enterprise provision; sharing international approaches on the embedding of the triple bottom line within entrepreneurship and enterprise education, and identification of future international collaborative opportunities for teaching, incubation, and research.

Details of any related research

Presented with a backdrop of SDGs and PRME principles, the core pedagogical questions about current tripartite collaboration are firmly grounded in the conceptual distinction of entrepreneurship education as 'about, for and through' entrepreneurship, posited by Hannon (2005). Questions we will ask of participants link directly with Blenker et al. (2011) and the paradigm of education as a facilitation within everyday practice, with priority on mindset development. Rae et al. (2012) highlight the imperative of dialogic relationships between educator, institution, process and community, the importance and impact of this approach for increased employability and entrepreneurship emphasised by Towers et al. (2020).

SUSTAINED: GAMIFIED LEARNING FOR RESPONSIBLE MANAGEMENT EDUCATORS.

Zoë-Lisa Blackler, Cardiff Metropolitan University , (zblackler@cardiffmet.ac.uk)
Trudie Murray, Munster Technological University

Workshop Summary

SustainED is a multi-institute collaborative initiative, aiming to support responsible management education through using an innovative gamification tool. Our project directly aligns with the principles of PRME, by empowering educators to embed sustainability, social responsibility, and the UN SDGs into their pedagogical design. The digital tool fosters a multidisciplinary approach and encourages educators to engage collaboratively by working as a team to complete 'challenges' that provoke and stimulate ethical and sustainable thinking. Through its provision of an iterative learning experience, the tool incorporates the PRME i5 characteristics, including joy, active engagement, meaningful learning and supportive social interaction. The aim of this PDW is to demonstrate how this teaching tool can encourage deeper thinking about the value of and approach to embedding sustainability into our teaching practice. Beyond strengthening the foundations of responsible management education, this initiative actively contributes to creating and cultivating a community of educators who are conscientious of their social responsibilities. The aim is to support the instilling of the values of sustainability and responsible management in future generations. By immersing entrepreneurship and enterprise educators in a gamified learning environment we strive to encourage alignment with PRME's overarching mission to prepare today's educators for transformative change tomorrow.

Workshop Style

Adopting an "educate the educator" model, SustainED requires participants to use smartphones for a competitive game experience, answering puzzles on sustainability topics. This session offers a beta-testing opportunity to refine the tool based on academic feedback, enhancing its application across educational settings.

Expected Outcomes

The workshop aims to promote discussion on best practices in responsible management education, encourage innovative pedagogical approaches centred around sustainability, foster a community of educators dedicated to sustainable ethics, disseminate the gamified model to inspire positive change and elevate teaching practices in entrepreneurship education and the wider PRME community.

Details of any related research: The SustainED initiative leverages games-based learning (GBL) and experiential learning, aligning with Kolb's Experiential Learning Cycle to transform education into an interactive journey equivalent to an "escape room." This supports diverse learning styles and neurodiversity by engaging participants in concrete experiences, reflective observation, abstract conceptualisation, and active experimentation, fostering a dynamic learning environment (Kolb, 1984). GBL uses game elements to enhance engagement, applying game mechanics in educational settings to stimulate ethical and sustainable thinking, crucial in entrepreneurship education where simulating real-world challenges is key (Zichermann & Cunningham, 2011). Furthermore, constructivism and social constructivism theories advocate for learning as an active, social process where learners construct knowledge through experiences and social interactions (Dewey, 1977; Vygotsky, 1978), essential in entrepreneurship for networking, mentorship, and community engagement. Situated Learning Theory complements this by emphasizing learning through participation in practice communities, encouraging role-play, problem-solving, and decision-making in realistic scenarios (Lave & Wenger, 1991). Integrating these theories into SustainED's design, the workshop aims to create an engaging, practical learning environment for educators. This approach enhances learners' engagement and motivation, and closely aligns with the complexities of the real-world, preparing educators to inspire the next generation of leaders.

USING CHATGPT FOR CONCEPT DEVELOPMENT AND IDEATION, A CLASSROOM EXPERIENCE.

Filip Burgelman, Thomas More University of Applied Sciences (filip.burgelman@thomasmore.be)

Lizzy Bleumers, Thomas More University of Applied Sciences

Workshop Summary

The workshop reports on experimenting with AI within entrepreneurship education, and wants to let participants actively experience the use of AI in an entrepreneurial learning process. The specific entrepreneurial competencies mentioned here are ideation, opportunity discovery and concept development. First, we dive into the use of ChatGPT as a co-creation partner to support concept development and ideation for entrepreneurial challenges. We share a concrete classroom experience where ChatGPT was used by bachelor students in digital product design.

Next, together with the participants we set up a concept development and ideation session where the participants will be able to engage in real-time conversations with the AI model, using two interaction models: question chain and roleplay. We simulate exactly the same experiment as the one we performed with the students.

To conclude, we reflect on the experiment by considering the possible implications for teaching practice, addressing the opportunities and challenges ChatGPT presents in fostering creativity and concept development competences among students.

Workshop Style

We introduce the experiment to the students being challenged to find solutions for digitalization's impact on society. Students brainstorm innovative solutions using ChatGPT for idea refinement. In an identical session with PDW participants, we guide them using two interaction models: question chain and roleplay, alongside ChatGPT assistance.

Expected Outcomes

The workshop aims to explore ChatGPT's role in fostering entrepreneurial skills like ideation and concept development. We'll discuss AI's potential in creative processes and how to balance its use with nurturing human critical thinking and creativity, also in relation to the teaching practice.

Details of related research

Does not apply.

IMAGINING ENTREPRENEURSHIP: EXPLORING RESEARCH CONCEPTS IN POPULAR CULTURE

Adrienne Callander, University of Arkansas (ahcallan@uark.edu)

Summary

Led by an artist-educator and entrepreneurship scholar, this workshop offers practical guidance and resources for teaching entrepreneurship concepts through the integration of creative arts and popular culture. Based on a course developed at the University of Arkansas, it showcases a blended approach to understanding entrepreneurship both within and as a creative discipline. The course that informs the workshop, "Imagining Entrepreneurship," combines academic theories with the study of artistic works, creative exercises, and reflection to develop students' worldbuilding mindset and demonstrate the transferability of entrepreneurial skills beyond business contexts. The workshop will provide an overview of the course, share sample student outcomes, and engage participants in a collaborative game that make the analysis and application of entrepreneurship theory engaging and memorable. Participants will receive course materials to adapt for their own classrooms. The workshop will conclude with a discussion on the definition and scope of entrepreneurship education and practice, emphasizing the positive impact of integrating creative arts into entrepreneurship education and expanding the scope of entrepreneurial practice.

Workshop Style

Participants will receive an overview of the *Imagining Entrepreneurship* course and sample student outcomes, play collaborative games that mirrors the in-class experience, and discuss the implications of an arts-integrated approach to entrepreneurship education as well as the definition and scope of what entrepreneurship education and practice entails.

Expected Outcomes

Expanded knowledge of research on links between arts, creativity, and entrepreneurship; introduction to a flexible framework for designing arts-integrated entrepreneurship curriculum; peer dialog between educators about the objectives and practice of entrepreneurship education; reference materials that can be adapted for individual classroom use.

Related Research

The benefit of this pedagogical approach suggests that hybridization of entrepreneurship and the arts supports the development of a worldbuilding mindset while demonstrating the transferability of entrepreneurial capacity—a necessity if our students are to build futures for an unknown future—in and beyond the business realm. In turn, it proposes a paradigm shift in the definition and scope of what entrepreneurship education and practice entail. The course introduced in this workshop draws on entrepreneurship theories such as effectuation, emancipation, socioeconomic wealth, opportunity creation, structural transformation, optimal distinctiveness, and others, as well as research on entrepreneurship as an imaginative and transdisciplinary practice and pathways for arts integration in entrepreneurship education.

CONDUCTING EXPERIMENTS IN ENTREPRENEURSHIP EDUCATION

Sílvia Costa, University of Groningen (s.m.costa@rug.nl)

Silke Tegtmeier, University of Southern Denmark

Susana C. Santos, Florida State University

Mark T. Schenkel, Belmont University

Workshop summary

“Research into entrepreneurship education is on the rise, yet the assessment of causality resulting from various teaching methods and their impacts on students and society at large remains limited. Consequently, incorporating experimental designs into entrepreneurship education research becomes imperative to move the field forward. Establishing cause-and-effect relationships, discerning which approaches yield desired outcomes (and which do not), contributes to a clearer understanding of the connections between educational activities and their results” (Costa, Tegtmeier, Santos, & Schenkel, 2024).

This was our starting point to organize and publish a Special Issue in the journal *Entrepreneurship Education and Pedagogy*. In this workshop, we would like to share the results of that special issue with our audience, as well as offering space for reflection and practical advice on how to use experimental designs in our teaching practices.

Workshop style

This will be an engaging workshop consisting of three parts: 1) overview on what experimental designs are; 2) group reflection on how to tackle the main challenges and opportunities of using experiments as a methodology to assess the effects of entrepreneurship education; 3) practical do’s and don’ts of using experiments in entrepreneurship education.

Expected outcomes

After this workshop we hope to bring everyone’s attention to the importance of conducting experiments in entrepreneurship education research. Additionally, the audience will take home practical advice on how to conduct experiments to assess the impact of their teaching practices.

Connection to research

The contents of this workshop connect to the recently published Special Issue in the journal *Entrepreneurship Education and Pedagogy* on the topic of conducting experiments to advance entrepreneurship education research. **As preparation for the workshop, attendants could read:**

Costa, S., Tegtmeier, S., Santos, S. C., & Schenkel, M. T. (2024). Special Issue Guest Editorial: The Challenges of Experimental Designs in Entrepreneurship Education Research - An Interview With Thomas D. Cook. *Entrepreneurship Education and Pedagogy*, 7(1), 3–21. <https://doi.org/10.1177/25151274231207726>

ENTREPRENEURIAL MINDSET FOR ENTREPRENEURSHIP EDUCATORS

Paul Coyle, Entrepreneurial Mindset Network (paul.coyle@entrepreneurial-mindset.network)

Marco Lamas, ISLA - Instituto Politécnico de Gestão e Tecnologia

Workshop Summary

There is increasing interest in helping students of any academic discipline, not just business studies, to develop an entrepreneurial mindset. The mindset is also seen as being relevant not just to graduates who aspire to become entrepreneurs but also to future employees in the private, public and not-for-profit sectors. When educators think about educating students about the entrepreneurial mindset they consider what students will gain in terms of knowledge, skills and competences. Educators ask the simple question “what do we want the students to be like?” However, insufficient attention has been given to the associated question “if we want the students to be like this, what do the educators need to be like?” Research shows that although educators are designing learning experiences in which students will develop an entrepreneurial mindset, educators themselves rarely consider the strengths or weaknesses of their own entrepreneurial mindset. Therefore, this workshop is designed to help educators self-reflect on their entrepreneurial mindset and consider the implications for their educational practice. The workshop will explore three key questions: 1 Do educators have entrepreneurial mindsets and do they apply the mindset in their teaching, research and societal engagement? 2 Can educators role model the behaviours associated with the entrepreneurial mindset to their students? 3 By understanding their own entrepreneurial mindset will educators be better able to deliver successful student outcomes?

Workshop Style

This workshop is designed to engage every participant in a personal reflection on their entrepreneurial mindset and their education practice. There will be individual, small group and whole group exercises designed to stimulate reflection, discussion and action planning.

Expected Outcomes

Each participant will complete a guided self-reflection about the entrepreneurial mindset and will use this reflection to determine actions that they can take to enhance their own educational practice. After the workshop a summary of all the key discussion points will be shared with all participants.

Details of any related research

This workshop is informed by a) research on the entrepreneurial mindset by Commarmond (2017), Daspit et al. (2023), Haynie et al. (2010), Mawson et al. (2023), and Naumann (2017), and b) research into reflective practice by Maksimović et al. (2019), Mann et al. (2009), and Yaacob et al. (2021). Evidence is also presented from the SHINE project (Scaling Higher Education Innovation using the Entrepreneurial Mindset) which involves 32 project partners based in 25 countries.

DEALING WITH UNCERTAINTY: TEACHING ENTREPRENEURIAL THINKING IN AN EDUCATIONAL CONTEXT

Inge Elsman- Loeffen, Saxion University of Applied Sciences (i.m.a.elsman@saxion.nl)
Maria Coakley, College Cork

Summary

In recent years, education has been faced with the challenge of how to prepare students for their professional role in an increasingly unpredictable and complex world (Berger & Johnston (2015)). In entrepreneurship education, 'how to deal with the unknown' has always been a relevant question. Traditionally however, education is goal-oriented, and rewards set learning outcomes. The relationship between cause and effect is clear and predictable. The traditional educational environment has conditioned students to think and act causally from an early age. Meaningful training of young entrepreneurs involves taking this conditioning into account. After all, their assumptions may cause our students to either embrace or resist unpredictability and lack of structure towards an adaptive shift (Kegan & Lahey, 2009). Developing an effectual way of thinking starts by awareness of one's own preferences and conditioning. In order to navigate an unpredictable environment students could benefit from thinking effectually (Saras Saravathy, 2008). Both effectual and causal thinking employ their own language. The words we use when approaching a task, reflect our mindset. We developed playful exercises to help students of entrepreneurship explore their personal attitude and preferences when it comes to dealing with (un)predictability, and how this is reflected in the language they use.

Workshop style

Experiential learning: by reflecting (in pairs and by participating in an interactive group discussion supported by Mentimeter) on a familiar everyday task participants become aware of their preferred strategies when dealing with uncertainty, as reflected in their use of language. Theory is added after the reflection exercises.

Expected Outcomes

Participants become aware of their personal preferences when dealing with uncertainty/unpredictability, and the assumptions they have around this. They may discover the value of alternatives and learn from each other's perspective. Participants also become aware of the differences between causal and effectual language and impact upon entrepreneurial thinking and behaviour.

Details of any related research

The metaphor of cooking, often used to explain the difference between causal and effectual thinking and action, offers opportunities for exploration: a recipe offers certainty, contingencies introduce unpredictability. Students generally have assumptions that in an educational environment causal behaviour and reasoning in the form of prediction, goal setting and/or benchmarking is the only option. The causal approach is considered a safe option that gives learners a feeling of control (Petrie 2011). An unstructured, unpredictable learning environment, like the entrepreneurial environment, may create too big a gap between perceived control and desired outcome and cause stress and anxiety. Development of complexity of mind (Kegan, 1994), so that students accept uncertainty (and are willing to make use of it and explore it, rather than wishing it away) becomes possible when they are encouraged to recognise the limits of their knowing, to question assumptions or test new ones. The words we use reflect our assumptions around our ability to execute a task, and how we predict its outcome. According to Kegan and Lahey (2001) the way we talk can change the way we work. Therefore exploring language used is helpful in moving towards a greater sense of control when dealing with uncertainty.

CAPTURING THE STUDENTS' MENTAL MODELS

Ragnhild Nordeng Fauchald, Norwegian University of Science and Technology (ragnhild.fauchald@ntnu.no)

Lise Aaboen, Norwegian University of Science and Technology

Dag Håkon Haneberg, Norwegian University of Science and Technology

Torgeir Aadland, Norwegian University of Science and Technology

Workshop Summary

In this PDW, we introduce, and let the participants practice, Zaltman Metaphor Elicitation Technique (ZMET) (Zaltman and Coulter, 1995) for exploring students' cognitive structures (mental models) to understand how students perceive learning from EE. Our experience is that neither student representatives' responses nor questionnaires, nor one-to-one conversations with students provide us with deep insights to students learning experiences. Process insights to the interplay between actions and approaches in terms of "how and what is leading to what" in the learning processes are required. It can however be challenging to capture students' perceptions of this from the "traditional" assessment approaches. ZMET allows for obtaining rich insights into the deeper meaning of a concept, or a course. The technique consists of several steps to ensure rigor. During the workshop the participants will practice these steps of creating mental models built on "means-end" chain analysis (Reynolds and Gutman, 1988). Mental models illustrate connections or relations between objects or activities and the valued state of the objects or activities (Gutman, 1982). With ZMET, educators and program managers can obtain rich insights into the deeper meaning of concept in the education and the students' structures of thoughts and feelings related to the object.

Workshop style and Expected Outcomes

The participants will test and practice the processes behind creating mental maps from means-end chain analysis. This process will be emphasized in the PDW and the participants will actively practice creating mental maps together. Discussions of ZMET as tool for EE practitioners will be facilitated after participants have tested it.

Participants will get a tool for improving their courses based on deeper information than before. Examples on how will be given based on the authors experiences of using ZMET. The reflection session opens for perspectives on how ZMET or other methods can be used to assess students' perceptions of EE.

Details of any related research

ZMET includes the creation of mental models built on "means-end" chain analysis (Reynolds and Gutman, 1988). Mental models illustrate the relation between objects or activities and the valued state of the objects or activities (Gutman, 1982). ZMET (Zaltman and Coulter, 1995) can as such be a good tool to obtain rich insights into the deeper meaning of concept (Christensen and Olson, 2002). With ZMET, we believe educators and program managers can obtain rich insights into the deeper meaning of concept in the education and the students' structures of thoughts and feelings related to the object. That is why we, with this PDW, intend to present and develop ZMET as tool for educators to understand how and why students learn from EE. ZMET has been used in three research papers in EE. In Haneberg and Aadland (2020) it was used to understand how students in the same VCP cohort perceived their education differently depending on if they were part of a start-up while being a student or not. Haneberg and Aaboen (2022) explored different learning trajectories in an extra-curricular community while Fauchald, Aaboen and Haneberg (2023) showed how students perceive the learning that occurs when applying to seed grants.

CRAFTING EFFECTIVE DESIGN PRINCIPLES FOR SCIENCE AND TECHNOLOGY-BASED ENTREPRENEURSHIP EDUCATION

Alvira Fisher, Vrije Universiteit Amsterdam and Universiteit Twente (A.H.Fisher@vu.nl)

Rainer Harms, Universiteit Twente

Marie Louise Blanckesteijn, Vrije Universiteit Amsterdam

World Cafe

In this interactive workshop, practitioners exchange knowledge on entrepreneurship education didactics in a science and technology-based domain. Through sharing of real-world practices, tools and experiences we co-create insights that lead to a set of domain specific design principles. Design principles serve as a foundation for systematically developing entrepreneurship educational interventions for educators (Baggen et al., 2022). The mini world cafe format is a scientific enquiry which facilitates structured discussion in small groups and provides empirical data to researchers whilst encouraging collaboration (Schiele et al., 2022). The objective of this session is to consider the current design principles in entrepreneurship education practices and define design principles tailored to education in the science and technology domain.

The workshop is aimed at (entrepreneurship) educators, practitioners, and professionals such as venture creation managers who seek to enhance entrepreneurship education within the science and technology domain. During the workshop practitioners share their current practices and insights for themes to emerge providing preliminary findings for further study as the Researcher aims to formulate domain-specific design principles. The session concludes with a process of voting for the most key entrepreneurship education principles which would align with the demands of a science and technology entrepreneurship program.

Workshop Style

- In the first 5 minutes we will provide the participants with a definition and context when using design principles.
- Thereafter, an interactive 15 minutes will be dedicated to collecting insights.
- The session closes with a 10-minute dot voting round, aiming to identify the most important design principles.

We expect the mini world cafe to offer the opportunity to learn how entrepreneurship practitioners are currently educating students. Through clear discussion statements, participants problem-solve solutions and exchange insights. The collection of insights facilitates empirical inputs in the development of entrepreneurship educational design principles for science and technology-based domains.

Related Research

In the realms of science and technology, higher education institutions rely on educators to drive innovative changes and foster entrepreneurial skills for the commercialization of scientific breakthroughs (Forliano et al., 2021; Klofsten & Jones-Evans, 2000; Siegel & Wright, 2015). However, a notable gap exists in scholarly literature concerning this domain (Blanckesteijn et al., 2021; Harms, 2015; Tiberius & Weyland, 2023). Traditional science and technology programs often fail to adequately prepare students for entrepreneurship compared to scientific pursuits alone (Duval-Couetil et al., 2020).

The formulation of design principles is crucial, serving as the foundation for developing entrepreneurship educational interventions (Naia, 2014; Baggen et al., 2022; Goksen-Olgun, 2022). These principles facilitate reflection on existing programs, aid in developing new ones, and enable comparison and research. Despite various proposed approaches to entrepreneurship education (EE), there is a lack of focus on the "why" and "whom" dimensions in current literature (Naia, 2014; Baggen et al., 2022; Goksen-Olgun, 2022).

Entrepreneurship education is key to the commercialization process, supported by evidence-informed discussions among educators. Thus, identifying and applying EE design principles specific to science and technology domains is crucial for enhancing pedagogy and addressing scholarly literature gaps (Duval-Couetil et al., 2020).

FOSTERING ENTREPRENEURIAL MINDSETS IN SECONDARY EDUCATION: DEVELOPING COMPETENCIES THROUGH EDUCATIONAL ESCAPE GAMES

Sultan Göksen-Olgun, Maastricht University (s.goksen@maastrichtuniversity.nl)

Wim Groot, Maastricht University

Ingrid Wakkee, Amsterdam University of Applied Sciences

Richard Martina, Zuyd University of Applied Sciences

Workshop Summary

Entrepreneurship education (EE) promotes an entrepreneurial mindset through experiential learning. Game-based learning (GBL) is a valuable methodology, and Educational Escape Rooms (EERs) have gained popularity in recent years. EERs have been found to positively impact motivation, collaboration, creativity, critical thinking, and problem-solving skills. However, secondary EE opportunities still need to be fully understood. We have designed Educational Escape Games (EEGs) for secondary school EE to develop entrepreneurship competencies. EEGs involve solving puzzles to resolve the narrative but do not require escaping from a physical classroom. However, effectively linking the learning experiences of educational escape games to developing entrepreneurship competencies is a crucial challenge. This raises the following questions: To what extent are educational escape games an appropriate pedagogical approach to convey entrepreneurship competencies to secondary school students? What types and design elements of educational escape games can foster entrepreneurship competencies in secondary school students? Moreover, to what extent is the acquisition of entrepreneurship knowledge possible within educational escape games, or is the focus more on fostering entrepreneurship skills and attitudes? Finally, what steps should be taken during the debriefing process to achieve the desired learning outcomes?

Workshop style

The workshop encourages participants to interact through various engaging activities, including hands-on group activities, posters with post-it notes, and a short plenary session. The workshop aims to foster dynamic engagement, collaboration, and knowledge exchange among participants, enhancing the learning experience.

Expected outcomes

By the end of the workshop, participants will be able to identify design elements that promote students' EE competencies, analyze entrepreneurial knowledge's role in EEGs, and explore pedagogical considerations for using EEGs.

Related research

Several studies highlight the positive impact of Educational Escape Rooms (EERs), including improved collaboration, motivation, social interaction, critical thinking, creativity, and problem-solving skills (Fotaris and Mastoras, 2019). Although educational escape rooms (EERs) are used extensively in secondary education in subjects such as math, biology, and natural sciences (Veldkamp et al., 2020), the only application in entrepreneurship education is in higher education for the time being (Martina and Göksen, 2022). Therefore, we have decided to use EEGs instead of EERs to prioritize a practical approach to learning. EEGs can be used to supplement a lesson before, during, or after, similar to classroom experiments used in secondary school for economics (Grol et al., 2017). This new development has sparked an interest in implementing EEGs in secondary schools to cultivate entrepreneurship competencies in secondary school students, drawing on the positive outcomes observed in various academic disciplines and higher education levels.

ETHICS AS A PATH TO MORE RESPONSIBLE ENTREPRENEURS – HOW ETHICS CAN HELP NURTURE MORE SUSTAINABLE BUSINESS DEVELOPMENT?

Vera Haataja, Aalto University

Gustav Hägg, Malmö University (gustav.hagg@mau.se)

Agnieszka Kurczewska, University of Lodz and University of Science and Technology

Workshop summary

In this PDW we aim to discuss how ethics could gain a more central role in developing responsible entrepreneurs by means of entrepreneurship education. The workshop will engage in a discussion how ethical theory could act as a beacon when maneuvering the entrepreneurial process and how different moral evaluations based on ethical theories could aid students when developing entrepreneurial opportunities responsibly, despite the increasingly uncertain environment they are facing. We build our workshop around the recent conceptualization of entrepreneurial responsibility (ER) as a dualist construct (Hägg et al., 2024). The workshop will engage participants in a critical discussion on ethically sensitive situations by means of using different ethical theories (duty-based and consequentialist ethics). The participants will face different scenarios at different stages of the entrepreneurial process, which will open up for employing different moral evaluations depending on the level (and scope) of uncertainty. The scenarios build on the constant-variable-value-vignette method (Reidenbach & Robin, 1990; Fink et al., 2023), which has been developed to approach ethically sensitive situations. This is something especially apparent when addressing entrepreneurial contexts where both nascent and experienced entrepreneurs need to act and make decisions under uncertainty (Sarasvathy, 2001). Our guiding question is: *How does ethical orientation of an individual guide towards sustainable business practice?*

Workshop style

The workshop is structured as seen below with a focus to engage in critical discussions how to build responsibility by means of ethics into the entrepreneurial educational learning space:

- Introduction – ER and its presence throughout entrepreneurial process (10 minutes)
- Vignette scenarios and participant discussion (20 minutes)
- Debriefing and takeaways (10 minutes)

Expected outcomes

Participants will gain insights on how to utilize ethically sensitive scenarios that follow the entrepreneurial process when teaching students how to act responsibly while developing opportunities. Additionally, how to use the constant-variable-value-vignette method in an educational setting also provide value for educators in how to include ethical dilemmas in teaching.

Details of related research

Entrepreneurial responsibility has gained interest due to the creative but also destructive role entrepreneurs may play in society (Baumol, 1996). We know from research that the ethical orientation is important early on when starting businesses (Zhang & Arvey, 2009), but much research has focused on potential ethically bad consequences (Bosse et al., 2021) and less studies have sought to address both duties of entrepreneurs when engaging in developing entrepreneurial opportunities and the consequences it may cause. There is a need for guiding principles, as entrepreneurs often suffer from a lack of organizational culture or moral compass to lean on in ethical decisions (Buchholz & Rosenthal, 2005).

NUDGING BUSINESS TEAMS TO SUCCESS

Jens Hirt, Carl Remigius Fresenius Education Group (jens.hirt@hs-fresenius.de)
Yuliya Shtaltovna, Hochschule Fresenius

Workshop Summary

Nudging, rooted in behavioral economics and decision-making theory, shapes choice environments for favorable decisions without limiting freedom. In this PDW, which has been trialed at our university, we use "nudges" on two levels: an open goal with a nudging task and as didactic means to guide the process of built-in unexpected challenges. This should encourage students to sense real-life entrepreneurial scenarios by experimenting and imitating entrepreneurial action, including team communication and overcoming intercultural challenges. Thus, questions in our focus: *How might nudging contribute to nurturing a healthy corporate communication culture and well-being among entrepreneurial teams? To what extent can nudging techniques bolster self-confidence in confronting unforeseen complex challenges? Can self-reflection offer insights for refined understanding of this concept further?*

Workshop Style

In a hands-on exercise, participants form teams to solve a given task in the form of a scenario with the help of nudging techniques supported by built-in nudges to better confront challenges. Shared self-reflection should evaluate the team's progress and support provided by nudges. The key question here is whether the technique can contribute to an improved belief in one's own resilience.

Expected Outcomes

Participants in this workshop will have practical skills, tailored to their work, that will enable them to develop and implement nudging strategies to teach greater flexibility and resilience in tackling complex tasks in a focused and prepared way. The PDW combines these practical skills with theoretical insights and links them to exciting didactic issues in entrepreneurship education. It is designed to appeal to educators, business training professionals and researchers.

Details of any related Research

After the success of Thaler and Sunstein's book "Nudge" (2008), the technique was applied in many fields including in empowering entrepreneurial teams (Hertwig and Grüne-Yanoff, 2017). As classroom-based learning 'may not be sufficient to achieve the highest level of affective learning outcomes' (Ilonen and Heinonen, 2018: 400), students may lack capacity to reflect on entrepreneurial experiences (Hägg and Kurczewska, 2019). The influence of nudging on behavior can be positively controlled through customized nudging strategies (Herzog and Hertwig, 2014; Kusters and Van der Heijden, 2015). "Nudging in Education" (Weijers, de Koning, and Paas, 2021) and Neergard et al (2021) describe how to achieve transformation of individual behavior in the entrepreneurship education process. Addressing the gap in practical implementation, our goal is to enhance personal resilience during the student-to-entrepreneur transition (Ahsan et al 2018; Shepherd and Patzelt 2018; Doh, Tsui and Zaheer 2023). Mertens, Herberz, Hahnel and Brosch's meta-analysis (2021) informs our workshop design.

USING AI TOOLS TO DESIGN YOUR OWN ENTREPRENEURSHIP COMIC BOOK

Florian Huber, Technische Hochschule Ingolstadt (florian.huber@thi.de)

Steven Gedeon, Toronto Metropolitan University

Workshop Summary

One of the privileges of being an entrepreneurship educator is to be close to new technologies, market trends, and motivated individuals willing to shake up the status quo. In this PDW, we want to explore how current AI tools can be used by entrepreneurship educators to enhance their course materials by creating narrative, story-based, and highly visual comic book strips for some of the core entrepreneurship concepts they are teaching. We argue that this approach adds an engaging way to help students learn abstract concepts such as entrepreneurship theory, mindsets, and tools in a playful way. We hope to spark the interest of participating entrepreneurship educators to use similar approaches at their universities and reduce perceived barriers to using these tools for the first time.

Workshop Style

After a brief warm-up, we will use printed, custom-made workshop canvases to guide participants through our workshop. Initially, we create a rudimentary understanding of how AI tools such as ChatGPT and Midjourney enhance the design of entrepreneurship course materials. Next, we will facilitate a group ideation and storyboarding exercise to develop potential use cases. This will be followed by a demo of how some of these ideas could be realized with available AI tools.

Expected Outcomes

First, we want to spark interest in using AI tools to open up new possibilities for creating engaging course materials. Second, we aim to clarify how visual story-driven course materials may be used in the local context of each workshop participant. Third, we will demonstrate first-hand how these tools are used to reduce perceived barriers that some educators might have. Lastly, we will round off our workshop by encouraging each participant to take home a concrete and actionable To-Do item for their future exploration of AI tools.

Details of Related Research

Researchers are discussing the impact of AI tools on entrepreneurship education in general (Bell & Bell, 2023), the paradoxes of its use in management education (Lim *et al.*, 2023), the varied effects on creative destruction (Norbäck & Persson, 2023), how AI might impact dealing with uncertainty in entrepreneurial decision making (Townsend & Hunt, 2019), the impact on entrepreneurial career intentions (Park & Sung, 2023), its ability to personalize learning for students (Baidoo-Anu & Ansah, 2023; Su & Yang, 2023), how to utilize AI tools to create more value for entrepreneurship students (Darnell & Gopalkrishnan, 2023), and how we as a community of educators might cope with these recent developments (Mills, Bali & Eaton, 2023). Among the current stream of publications in this field, you also find exciting and uncommon research approaches such as the one employed by Michel-Villarreal *et al.* (2023, p.1), who have used an ethnography approach to frame their paper on the “challenges and opportunities of generative AI for higher education as explained by ChatGPT”.

A PATTERN LANGUAGE FOR SUCCESSFUL ENTREPRENEURSHIP EDUCATION

Johanna Kobilke, Strascheg Center for Entrepreneurship (johanna.kobilke@sce.de)
Klaus Sailer, Strascheg Center for Entrepreneurship

Workshop Summary

By making use of Christopher Alexander's "Pattern Language" approach (1977) we want to tap into the collective expertise of 3E conference participants, fostering collaborative engagement to identify and document successful entrepreneurship education (EE) patterns. The goal is to both make participants familiar with this methodology in the context of EE and benefit from the implicit knowledge of other educators and their education approaches. For this, they will be going through a rapid version of creating a new pattern language through "pattern mining", "pattern writing" and "pattern symbolizing" (Iba & Isaku, 2016). The tangible result of this cocreative session will be a limited number of successful EE patterns.

Workshop Style

The workshop will begin with a quick introduction into the methodology and why it was chosen to be applied in the context of EE. This will be followed by an interactive session consisting of both 1:1 interviewing and a plenary discussion to effectively get to the core patterns of all participants based on their experience as entrepreneurship educators. The workshop will be finalized with an overview of the patterns that were developed.

Expected Outcomes

The interactive method will enable educators to uncover their implicit beliefs and approaches to entrepreneurship education and simultaneously reflect on a common understanding of what is necessary to cultivate an entrepreneurial mindset in students from various backgrounds. The methodology can be replicated, and the workshop outcomes can serve as baseline for further developing own entrepreneurship education design (Baggen et al., 2022).

PRETOTYPING CANVAS – TEST YOUR IDEA QUICKLY AND INEXPENSIVELY

Zoé Lacrosse, University of Liege (zoe.lacrosse@uliege.be)

Hugo Jamin, University of Liege

Aude Bonvissuto, VentureLab, Liège

Bernard Surlemont, University of Liege

Frédéric Ooms, University of Liege

Questions we care about – Aim and summary

Traditional innovation methods often center around the question of "how" to build a product or service, emphasizing the intricacies of execution. However, a fundamental yet often overlooked question that entrepreneurs must address is "should we actually build it and why?" This critical question goes to the heart of whether an opportunity is worth pursuing in the first place. It is here that the intersection of entrepreneurship and prototyping becomes highly relevant. This submission seeks to introduce and explore the concept of prototyping as a powerful tool for entrepreneurs to answer this pivotal question. Prototyping, as coined by Alberto Savoia¹, challenges the conventional wisdom of investing significant time and resources into building prototypes before validating key business assumptions. Instead, it advocates to test these assumptions quickly and cheaply, thereby shifting the focus from "how" to "why."

In this Professional Development Workshop (PDW), we intend to explore a method that we have developed for the practical application of the prototyping methodology, specifically tailored to assist nascent entrepreneurs. By the end of the PDW, participants will be well-prepared with the knowledge and resources necessary to not only master the prototyping methodology themselves but also to effectively guide others through this transformative process.

Workshop Approach

Participants will collaborate in teams comprised of 3 to 4 individuals. Each team will be provided with a Prototyping card deck and canvas, thoughtfully developed in collaboration with an incubator and a university. Following an introductory presentation on the Prototyping methodology originally crafted by Alberto Savoia, participants will be led through a systematic, hands-on journey on how to effectively employ this tool in the context of their Business Model.

Expected Outcomes

The expected outcomes of the workshop are:

- Understanding prototyping, its purpose and its relevance in the context of validating ideas before investing significant time and resources
- Tool familiarity by learning how to effectively utilize it to structure their thoughts and actions when validating a startup idea.
- Team collaboration and critical analysis. Participants will engage in discussions, share perspectives, and collectively navigate through the process of using the tool. The sharing session will likely involve discussions on strengths, weaknesses, challenges faced, and potential areas of improvement in using the Prototyping Canvas.

Details of any related research

The tool is currently being used in an incubator supporting 180 young entrepreneurs per year. It is also integrated into Master's degrees in entrepreneurship at the university associated with the incubator. At present, we can consider that the tool itself is included in a process of continuous improvement and will be the subject of further research.

¹ Savoia Alberto, *The Right It: Why So Many Ideas Fail and How To Make Sure Yours Succeed*, New-York, HarperCollins Publishers, 2019.

Takeaways for EE teaching practice

Teaching the concept of prototyping underscores the possibility of doing business while minimizing the risk of failure. Emphasizing the importance of validating hypotheses through fast, inexpensive experiments with direct customer engagement instills a mindset of risk management among aspiring entrepreneurs.

Providing practical tools like the Prototyping Canvas and a variety of methods via cards and examples from "The Great Discoveries" book enhances students ability to apply prototyping techniques in real-world scenarios.

The threefold objective of clarify, inspire, and validate offers a structured approach to hypothesis testing. It encourages students to identify, understand, and validate their assumptions systematically at different stages in the creation of their company.

Advance preparation

Prior to the PDW, participants are invited to watch a video of a startup pitch and read a rapid BMC (Business Model Canvas) of the project (see the links below). This scenario will ensure to have sufficient time to explore prototyping during the PDW and to exchange between teams to receive feedback and examples.

[Startup pitch](#)

[BMC for change](#)

DECOLONIZING ENTREPRENEURSHIP EDUCATION. INCREASING THE IMPACT OF SUSTAINABILITY

Serxia Lage Arias, University of A Coruña and Vrije University Amsterdam (s.lagearias@vu.nl)
 Karen Verduijn, Vrije University Amsterdam

Workshop Summary

The purpose of this PDW is to provide a space for educators to jointly reflect on their Entrepreneurship Education practices from a decolonial perspective. Adopting a decolonial perspective in Entrepreneurship Education (EE) can challenge prevailing paradigms of development favoring the Global North, resulting in ecological degradation and social inequalities (Kothari, Acosta & Demaria, 2015). Decolonial education offers alternative worldviews beyond the dominant Western paradigm (Sousa-Santos, 2014; Collin, 2017).

One such alternative is 'Buen Vivir', or Living Well, rooted in Latin-American indigenous concepts like Sumak Kawsay, prioritizing communal well-being and harmony with nature (Kothari, Acosta & Demaria, 2015). This approach aims to counter the historical marginalization and exploitation of indigenous communities by industrialization and Western thought models. Furthermore, indigenous and traditional knowledge, i.e. Ubuntu, Swaraj, and Whakapapa, could guide an ecosocial transition towards more inclusive entrepreneurial societies.

Workshop Style

We seek active participation from our attendees by bringing a short writing of their EE practice to discuss in groups and jointly elaborate on pedagogical practices and proposals we are working on. A decolonial analysis (Stein et al, 2022) of participant's EE practices will be developed, along with examples and alternatives inspired by, e.g., 'Economies of Buen Vivir' (Sousa Santos & Cunha, 2022).

Expected outcomes

We aim to lay out to our participants a set of questions to jointly reflect on:

1. Analyzing teaching practices to identify Global Norther patterns.
2. Overcoming profit orientation, addressing EE to life-sustaining processes.
3. Moving from an anthropocentric to an ecofeminist perspective, comprising humans and more than humans in complex, intertwined, natural relationships.
4. Leaving individualism behind, recognizing human nature as interdependent and vulnerable.
5. Questioning competitive-based pedagogies. Go beyond the utilitarian paradigm, acknowledging that all lives matter, being worthy and valuable per se.

Details of any related research

Different conversations are going on within Academia regarding the decolonization of Entrepreneurship Education (EE). Woods, Dell & Carroll (2022) advocate for integrating a decolonial and indigenous approach into business schools to explore alternative interpretations and foster a sense of community. Critical EE proposes learning beyond traditional business practices, as seen in Berglund & Verduijn (2018) when suggest experimenting with pedagogical approaches and involving students as co-learners to foster new understandings. Transformative EE positions from Erasmus+ project TrEE and Dodd et al. (2022) highlight the importance of decolonizing EE and developing sustainable pedagogies for social justice, emphasizing the need to deconstruct and reconstruct EE for more equitable alternatives.

USING GENERATIVE AI TO SUPPORT STUDENT ENGAGEMENT, CREATIVITY AND ENTREPRENEURIAL THINKING

Miranda Lewis, Bayes business school (miranda.lewis@city.ac.uk)

Questions we care about – Aim and summary

Since the advent of ChatGPT one year ago, the hottest topic in education has been that around generative AI. Despite polarised opinions, the emerging consensus over time suggests that generative AI is not only here to stay but ultimately a part of our students' technological toolkit for the future workplace.

While one side of the debate looks at designing assessments that are resistant to ChatGPT and developing policies that provide clarity in terms of academic misconduct, another side interrogates teaching practices to incorporate the use of generative AI. However, as with all technologies, we always run the risk of adopting them just for the sake of it or only to follow the latest trend in the environment.

This PDW aims at addressing the following interrelated questions: 1) How can entrepreneurship education incorporate the use of generative AI in entrepreneurship curricula, programs and courses?, and 2) How can generative AI help to develop student entrepreneurial thinking?

Workshop Approach

The workshop will adopt a hands-on approach to explore the pedagogical use of Design Sparks to support students in developing and refining business ideas

The workshop will be organised in 2 phases. The first phase will present Design Sparks, a generative AI which produces a series of prompts to stimulate creative thinking. After explaining how it has been developed and works (natural language processing, heuristic reasoning and generative AI), some of its multiple applications will be presented. The second phase will involve an exercise where participants are invited to identify problem statements for specific businesses and industries, use Design Sparks to generate prompts and as if they were in a game that challenges the AI, select the design ideas (creative thinking) that in turn can provide a foundation for business ideas (entrepreneurial thinking).

Expected Outcomes

A first expected outcome of the workshop is to develop a thoughtful debate on the ways of incorporating generative and other forms of AI into entrepreneurship education practice, including playful practice. A second outcome is to suggest examples of pedagogical practice using generative AI which then supports entrepreneurial thinking. Finally, this workshop also aims at developing a discussion with participants on alternative pedagogical uses of generative AI.

Details of any related research

The proposed PDW builds on the emerging body of literature on entrepreneurship education and the use of generative AI (i.e. Townsend, Hunt, 2019). We build on the work by Norback and Persson (2023), suggesting that generative AI can support creativity but also questioning if it actually does stifle disruption or the contrary.

Takeaways for EE teaching practice

The main takeaways for entrepreneurship education practice look at identifying ways of embedding generative AI in pedagogical practice, while still achieving learning outcomes such as entrepreneurial thinking. In particular, the debate among educators has focused on understanding how to conceptualize generative AI in relation to learning: friend or foe? Participants at this PDW by the end of the session should have a finer understanding of their perspective on generative AI. In particular, they should identify different ways we, as educators, could think about and apply pedagogical designs to help the students developing a metacompetence around how to dialogue/interact efficiently and critically with digital tools and (generative) AI?

THE WALKING CURRICULUM: A SHARED JOURNEY OF ENTREPRENEURSHIP EDUCATION

Joanne Malone, South Eastern Technological University (joanne.malone@setu.ie)
Una Grant, South Eastern Technological University

Summary

The aim of the workshop is to showcase an immersive, place-based approach to entrepreneurship education with walking at its heart. The project involves using a walking curriculum pedagogy to engage our undergraduate students in enterprise education, with a focus on the importance of enterprise in and to 'place'. This is a teaching practice that we are embedding within existing modules. The expected learning outcomes from this initiative include developing a sense of place and entrepreneurial mindset; development of reflective and critical thinking skills; and experience of learning in authentic settings.

Workshop Style

The workshop will begin with a brief explanation of the walking curriculum and how our project has used the approach with a group of enterprise students in a pilot study. Participants will be presented with a number of questions to consider, related to how they might make use of a walking curriculum in their practice.

- Participants will work in small groupings of three or four, and be invited to take a 20-minute walk where they can discuss the questions posed.
- Walking will ideally take place outside, but can take place inside. The focus is on continuous walking / rambling, over a 20-minute period – where conversations can flow without the aid of pen, paper, devices.
- On returning, participants will be invited to give their responses to questions posed, but also reflect on their experience of the walking curriculum approach.

Expected Outcomes

- The workshop will explore the theories and educational benefits of a walking curriculum.
- Participants will reflect on, if and how walking altered their approach to conversation, discussion, debate, idea generation and so on while engaged in the workshop.
- Consider how they might trial or integrate walking in their own pedagogical practice – identifying at least one instance where they might use a walking curriculum in enterprise education.

Details of any related research

This initiative is based on international best practice and current walking curriculum debate, including: A Walking Curriculum: From “*Good Ideas for Walks*” to Transformative Design for Eco-Social Change (Judson & Datura, 2023) – a place-based learning resource.

While some of these resources are focused on other contexts (e.g., Imaginative Ecological Education (IEE) with K-12 teachers, the Arts, etc.), the focus of our research is using a walking curriculum to develop a more place-based and immersive enterprise education experience for undergraduate university students.

Bibliography

Judson, G. and Datura, M. (2023). A walking curriculum: From “*Good Ideas for Walks*” to Transformative Design for Eco-Social Change. *International Journal of Education Policy & Leadership*, 19(2), 19.

EXPLORING SUSTAINABLE EE FUTURES TO TRANSFORM PRESENT ECONOMIC THINKING.

Birgitte Woge Nielsen, VIA University College (bin@via.dk)
Peter Keller Hansen, VIA University College
David Mehlsen, VIA University College
Hanne Duedahl Noergaard, VIA University College
Sebastian Planck, HM Munich University of Applied Sciences

Workshop Summary

As we grapple with ecological and social crises, reimagining Entrepreneurship Education (EE) is crucial for a sustainable future. We challenge participants to (re)envision EE as a tool for creating flourishing futures for both humans and the environment. Our future-focused workshop pivots from past lessons to the dire futures prompting us to preemptively tackle imminent challenges. The session begins by critiquing the prevalent growth-centric mindset in mainstream EE and its adverse effect on sustainability. We discuss the integration of sustainability in EE and examine alternative economic models like the circular and doughnut economies, which are gaining traction but lack a firm foothold in EE curricula. Participants will embark on an exploratory journey, featuring an animated film on the Anthropocene epoch to illustrate humanity's significant impact on Earth. This is followed by an interactive "time travel" exercise, facilitating a dialogue between the future and present, enriching our understanding of EE's potential in shaping tomorrow.

Workshop Style

In this interactive, immersive (and hopefully not too gloomy) workshop, participants will travel into a future of regenerative EE. Through different methods like mental time travel and future wheels, participants will explore the implications of different EE futures. The workshop will use methodologies from speculative design (Dunne, Raby 2004) and design futuring that actively engages participants.

Expected Outcomes

1) Understanding the rationale behind transforming the current landscape of EE. 2) Exploring new economic theories that amalgamate economic principles with a much broader context. 3) Engage in discourse regarding EE's pivotal role in addressing global challenges. 4) Connect with the upcoming generation, facilitating dialogues about past, present and desired future lifestyle changes.

Detail of any related research

Outside of mainstream economics, critics have pointed out growth-based economics as one of the root causes for our current planetary ecological crises (Meadows, 1978). Mainstream economists have answered with *decoupling* growth and the fossil system, thus continuing growth while abating ecological destruction. However, proof of this theory is not evident yet (Parrique et al. 2019). Outside EE alternative economic paths are booming. Doughnut economics seeks to find a sweet-spot between meeting basic human needs and planetary boundaries (Raworth, 2018). While research on sustainable entrepreneurship education is growing for a decade (Amatucci et al. 2013), a lot of sustainable entrepreneurship education still clings to linear and growth-driven sustainability.

UNLOCKING ENTREPRENEURIAL POTENTIAL BY ENVISIONING FUTURE(S) THROUGH CARTOON IMAGES

Birgitte Woge Nielsen, VIA University College (bin@via.dk)
Peter Keller Hansen, VIA University College

Workshop Summary

Entrepreneurship education activities in higher education institutions (HEIs) are still underrepresented among disciplines such as cultural studies, social science, and health studies. A prime reason is linked to the difficulties of translating the business-like language and profit-seeking activities to these groups of students, because this potentially can make students feel alienated from entrepreneurship. Student incubators in many HEIs have succeeded in connecting entrepreneurship education to reflective self-development. In this workshop, we present Visionboost, a tool that facilitates an exploration of students' visions for the future. The tool combines these dreams (step 1) with considerations of their self-identity (step 2) and encouraging them to reflect on the next steps to pursue their visions (step 3).

During a Visionboost, the teacher facilitates the process by writing on a whiteboard or on a large piece of paper. First, the three steps are outlined, and during the conversation, the teacher elaborates on the three steps using a combination of notes and drawings.

Visionboost is introduced to students through cartoon visualization to prepare them for the process. Furthermore, the comic serves as a medium for knowledge sharing with colleagues, managers, providing an alternative approach to sharing information.

Workshop Style

The workshop style will be a mix of knowledge sharing and doing. It'll be divided into three parts. First, we'll present a bit about the background. Then, we'll invite the participants to try a Visionboost. Finally, we'll discuss the tool and its possibilities in EE.

Expected Outcomes

Through a presentation of Visionboost, along with the opportunity to actively try the tool, the goal is to empower participants to work with Visionboost. This empowerment could involve direct utilization of Visionboost or finding alternative ways to unlock students' entrepreneurial potential by collaborating with their visions for the future.

Details of any related research

In 2023, the Visionboost was integrated into a research project involving semi-structured interviews with seven female students and graduates to gain insights into the aspects and nuances of their subjective experiences with a Visionboost during their studies. The research revealed that the Visionboost supported and inspired the women to see opportunities, and, to some extent, they all subsequently acted on those opportunities. It created coherence in the students' narratives, thereby promoting their narrative identity as individuals who had opportunities and acted upon them. Simultaneously, there was also a reframing for several of the women during the Visionboost, where they broke away from conventional thinking and were inspired to see their competencies in a new light and in connection with their dreams.

But perhaps in theoretical education, we also forget to assist in connecting the theories and skills with the individual and what she or he dreams of, where research shows that there is so much energy and drive in tapping into the more personal motivation rather than solely focusing on the academic content.

ESCAPING THE FRAME: A JOURNEY THROUGH COMPETENCY-BASED EDUCATION (ESCAPE ROOM)

Niek Ploegman, Rotterdam University of Applied Science (n.c.ploegman@hr.nl)

Amber Koning, Rotterdam University of Applied Science

Angela Bogaard, Rotterdam University of Applied Science

Workshop Summary

This workshop advocates for a transformative shift in contemporary education, prioritising the cultivation of curiosity, wonder, and adaptability as essential skills for navigating today's uncertain world. This is particularly pertinent in entrepreneurship education. We explore the multifaceted nature of uncertainty and its implications for educational practice, addressing key questions, challenges, and problems in fostering innovation and resilience. Drawing on insights from leading scholars like Hinchliffe, Artino Jr., and Walters & Chiariello, we present an original approach that integrates competency-based education with wonder-driven pedagogies. Using an interactive format inspired by escape room dynamics, participants will actively liberate symbolic students from the confines of conventional education, highlighting the urgent need for transformative pedagogies. Central to our workshop are key questions addressing the adaptation of education to constant flux, the pivotal role of curiosity in fostering resilience and innovation, and practical strategies for creating dynamic, student-centred learning environments. Grounded in theoretical frameworks proposed by Hansen & Herholdt-Lomholdt, and Barnett, our approach integrates competency-based education with wonder-driven pedagogies to nurture holistic student development. Through collaborative dialogue, attendees will gain insights to promote more inclusive and innovative educational environments. Join us in reshaping education for an ever-changing world.

Workshop Style

Unlike typical escape rooms, our aim isn't to confine you, but to empower you to liberate others. Imagine students trapped in a monotonous university system devoid of creativity. Your task? Assist in their escape, engaging in interactive games to envision a competency-based learning shift. Let's transform education collaboratively!

Expected Outcomes

The workshop cultivates awareness of traditional education's limitations, empowers advocacy for innovative practices, inspires educational innovation, fosters community collaboration, develops tangible action plans, encourages reflection on educational models, teaches escape room facilitation, and promotes commitment to ongoing improvement for inclusive, innovative learning environments.

Details of any related research

The proposed model for competency-based education, as advocated by Hansen and Herholdt-Lomholdt (2015) and Van Merriënboer and Kirschner (2007), forms the theoretical foundation of our approach. These models intertwine with contemporary understandings of education in an inherently uncertain metamodern world, where ambiguity and fluidity reign supreme. As Barnett (2009, 2012) noted, the traditional epistemological approach to education falls short in navigating such complexities, highlighting the need for an ontological shift. This shift encourages students to embrace wonder—a concept deeply explored by philosophers such as Noroozi (2017) and Heidegger—wherein curiosity transcends mere empirical pursuit and leads to prolonged not-knowing. Wonder-filled education challenges students to suspend preconceptions, critically reflect, and grapple with paradoxes, fostering self-awareness and empathy. Inspired by Hansen et al. (2017, 2020, 2021), our instructional design model facilitates this journey by integrating competency clusters with wonder-based exploration, creating an atmosphere of openness, flexibility, and nonconformity within learning teams. By embracing wonder as a catalyst for self-discovery and transformation, our approach seeks to empower students to navigate uncertainty and emerge as authentic individuals equipped for success in an ever-evolving world.

HIDDEN IN PLAIN SIGHT: EXPLORING TEAMS IN ENTREPRENEURSHIP EDUCATION

Ann-Cathrin Scheider, University of Applied Sciences Bremerhaven (ascheider@hs-bremerhaven.de)

Stephanie Birkner, University of Applied Sciences Bremerhaven

Fernando Rosales Bravo, Karlsruhe Institute of Technology

Workshop Summary

This workshop aims to create a richer picture of teams in Entrepreneurship Education (EE). Research on the distinct role and effect of teams in EE to this day remains scarce. Even though many formats, especially in experiential EE programmes, use teams as an integral part of the entrepreneurial learning arena. In this workshop for practitioners, researchers and students, we aim to tap into the collective, hidden knowledge about teams in EE. By working together and bringing our implicit knowledge to light, we aim to answer the following questions:

- What is the role of teams in EE?
- What challenges are connected to team learning in EE?
- How can curricula and formats support the development of team work capabilities in students?
- How can we equip students of entrepreneurship properly with the meta-competence of teamwork?

Workshop Style

In this workshop an explorative dialogue approach will be used in order to tap into the implicit knowledge of participants on teamwork in EE. Participants translate their knowledge into a curricular artefact to synthesize answers to the leading questions above.

Expected Outcomes

Participants will experience dialogue to create a shared understanding of teams in EE, as well as the role and effect on competence building. The outcomes will show areas for further research and give directions for the development of better teaching formats and curricula.

Details of any related research

This workshop is part of a research in progress focusing on teams in EE programmes. A preliminary literature review revealed that there is research gap, when it comes to the role of teams and their effect on learning in EE. Consequently, we carried out a systematic literature review on teams in EE and scanned 382 EE programmes to gain insights on the current state of research and practice. In the workshop, we seek to explore the implicit knowledge and formats used as part of our research and a means to create value for workshop participants. Our aim is to collectively start to design didactical formats and ideas for curricula that properly address the competence building of team work in EE.

THE REFLECTIVE ENTREPRENEUR: JOURNALING IN ENTREPRENEURSHIP EDUCATION

Dana Schultchen, Center for Entrepreneurship, (dana.schultchen@sce.de)
Audrey Stolze, Strascheg Center for Entrepreneurship

Workshop Summary

Our workshop is dedicated to integrating reflection into entrepreneurship education, providing educators with different approaches to foster reflective practices among students and grading seminars. Through an interactive and practical session, participants will explore the role of reflection in promoting a comprehensive understanding of the entrepreneurial journey. By utilising a reflection journal, educators will gain first-hand experience in cultivating resilience and adaptability in students, ensuring a holistic approach to entrepreneurship education. Educational designs are crafted to be empowering, experiential, cooperative, and reflective, aligning with Schön's principles (1987). Our overall goal is to empower educators to integrate reflective concepts into their teaching methodologies seamlessly.

Workshop Style

Our workshop employs a dynamic format featuring a brief presentation, an interactive journaling exercise followed by discussion, and a debate on the pros and cons of using such methods of reflection for grading. The session concludes with shared insights and actionable teaching strategies.

Expected Outcomes

Participants gain practical insights into integrating reflection approaches into their educational formats, fostering empathy, adaptability, and resilience among students. By aligning teaching methods with students' needs, educators promote a holistic understanding of innovation. Moreover, educators gain a further mean for grading students individually in group work seminars.

Details of any related research

Research on reflection in entrepreneurship education is growing. However, practical tools for integrating reflection into the classroom remain scarce, and the reflection questions are often general, neglecting consideration of the specific phases of the innovation process. Previous research on the general approaches has demonstrated enhancements in critical thinking, problem-solving, and a deeper understanding of entrepreneurial concepts (Hägg, 2021; Huxtable-Thomas & Brahm, 2023, Kirkwood, Dwyer & Gray, 2014; Lundmark, Tayar, Qin, & Bilsland, 2019). Furthermore, it cultivates resilience, self-awareness and adaptability, which are key attributes for success in an entrepreneurial environment (Hägg, 2021). In conclusion, reflection tools have an impact on student's entrepreneurial learning experiences and our approach is to also include the different phases of the innovation process to increase the entrepreneurial learning journey.

DEVELOPING PLAY-BASED INTERVENTION(S) FOR TEAMWORK COMPETENCE IN ENTREPRENEURSHIP EDUCATION

Peter van der Meer, Utrecht University (p.o.vandermeer@uu.nl)
 Zeineb Djebali, University of Liverpool
 Anne R. van Ewijk, Utrecht University

Workshop Summary

The workshop begins with a 10-minute introduction discussing the goal and presenting interventions in development of teamwork competencies (TC) to facilitate collaborative learning (CL) in Entrepreneurship Education (EE). In the subsequent 20-minute session, small groups utilise design thinking to develop play-based intervention models for TC in EE and discuss how educators can implement them to help develop TC. The final 10 minutes are dedicated to a concluding discussion where participants share ideas and actions for addressing the role of educators in developing TC in EE, fostering interactions and informal exchanges. The workshop encourages input from academics and practitioners to discuss examples of team development in their settings. Overall, the workshop aims to stimulate rich discussions and role-plays around TC in EE, providing a platform for developing TC and sharing insights from both academia and practice.

Workshop Style

Following a design thinking approach to developing play-based interventions for teamwork competence, we will co-create various educational interventions together with the participants. We do this, by testing various preliminary prototypes in simultaneous brief role-plays, survey examples, and simulations, while capturing their experiences, questions, and suggestions as users.

Expected Outcomes

Expected outcomes include emphasising the need for educators to teach students how to work in projects, fostering collaboration towards exploring strategies for improving student team effectiveness, gaining insights into team competencies, and creating prototypes/models for team development interventions using Design Thinking. Participants will also expand their networks and leave with actionable ideas for implementing CL in EE at both curriculum and institutional levels. Overall, the workshop encourages active engagement and exchange of ideas among participants to enhance CL in EE.

Details of any related research

Collaboration is an essential competence in today's society (Alexeeva-Alexeev et al., 2022; Ebbens & Ettekoven, 2005; Kreijns, 2020). Collaboration involves combining individual tasks and interactive group work to jointly achieve problem solving, shared decision-making and outcomes (Alexeeva-Alexeev et al., 2022). Collaborative learning has proven benefits including: academic benefits, increased learning outcomes and social and psychological benefits (Kreijns, 2020; Kyndt et al., 2013).

Collaborative learning is an often used didactic method used in entrepreneurship education (EE) when students focus on learning from and through experience by working in teams on real-world exercises (Hägg and Gabrielsson, 2019). However, collaborative learning does not come naturally and teachers often overestimate students' competencies in collaborative learning and working in teams (Kreijns & Kirschner, 2018; Prichard et al., 2006).

Despite a growing literature on entrepreneurship education (EE), there remains a gap in our understanding of what interventions improve teams' effectiveness in higher education. Lacerenza et al. (2018) distinguish two main categories of team development interventions and Shuffler et al. (2018) discuss ten team development interventions, both articles elaborating on Sales et al. (2005) article on five components of teamwork (the "Big Five" in teamwork).

INTRODUCING WWW.ENTRECOMP.NU: PRACTICAL EXERCISES FOR EACH OF THE 15 ENTRECOMP COMPETENCIES

Marco van Gelderen, Vrije Universiteit Amsterdam m.w.van.gelderen@vu.nl
Thomas Lans, HAN University

Workshop Summary

In 2021 we (Thomas Lans and Marco van Gelderen) published a Dutch language book for entrepreneurship educators in vocational education, called “Working with EntreComp in vocational education: A teachers’ guide to entrepreneurial competencies”. The book was distributed by the Dutch Ministry of Economic Affairs to teachers involved in entrepreneurship education – both in business and non-business domains - in vocational schools and in secondary education. We kept the rights to publish the book in other languages, and have now created a website which showcases the content of the book: www.entrecomp.nu.

The aim of the book/website is to provide insights from (entrepreneurship education) theory and research, and accompany those insight with hands-on exercises and an assessment rubric for each of the 15 EntreComp competencies. All exercises have been tried and tested multiple times by the authors. Each competency is covered in a separate chapter/webpage.

This session will introduce you to the website www.entrecomp.nu which provides, for each of the 15 EntreComp competencies, some brief highlights from theory and research and high quality, mostly experiential exercises.

Workshop Style

We will have the audience pick a competency and then either Thomas or Marco, depending on who wrote the chapter, will explain and possibly do one of the exercises. Then we move to the next competency chosen by the audience, and so on.

Expected Outcomes

Fellow educators can find inspiration pertaining to any of the 15 competencies. All exercises have been trialed at length and can be readily implemented. Policy makers can recommend the resource to trainers and educators.

Details of any related research

Both presenters have two decades of experience in providing competency training in higher education using the broad definition of entrepreneurship. There are many highly valuable EntreComp resources available. We believe our novel resource www.entrecomp.nu adds to this abundance by providing accessible brief translations from theory and research, and high quality, mostly experiential exercises. In addition, each webpage/chapter also contains a rubric, a competency circle (attitude/skill/knowledge) and some tips for further reading.

ONLINE MODULAR ENTREPRENEURSHIP EDUCATION: STUDENT ENGAGEMENT, LEARNING EXPERIENCE & EDUCATOR COMPETENCIES

Robin van Oorschot, DTU Entrepreneurship (roor@dtu.dk)
Lars Alkærsig, DTU Entrepreneurship

Summary

Universities face an increasing demand for entrepreneurship education from students, policymakers, and educators alike. These developments can put entrepreneurship educators in a tough spot, balancing growing student numbers while providing a quality learning experience. This workshop focuses on online modular education as one solution for expanding entrepreneurship courses. We employ a modular approach to education, with each module fully prepared online, providing an independent learning experience on a specific entrepreneurial topic. This contrasts with project-based education, where students go through an entrepreneurial journey throughout the course. We discuss how this approach affects students, educators, and learning outcomes and how to take advantage of the opportunities of an online learning experience.

Workshop Style

An interactive workshop where we will start with a presentation to share our experiences. Then, we will break up into groups, and each group will develop an outline (using the provided Miro templates) for an online module covering several elements.

Expected Outcomes

- We provide input for setting up and teaching online modular-based education.
- We provide participants with several Miro Templates to develop their online module(s)
- We provide guidelines and questions that educators can take up within their organisation to transition from in-class education toward online education.

Details of any related work

Chen, L., Ifenthaler, D., & Yau, J. Y. K. (2021). Online and blended entrepreneurship education: a systematic review of applied educational technologies. *Entrepreneurship education*, 4(2), 191-232.

Liguori, E., & Winkler, C. (2020). From offline to online: Challenges and opportunities for entrepreneurship education following the COVID-19 pandemic. *Entrepreneurship Education and Pedagogy*, 3(4), 346-351.

Isabelle, D. A. (2020). Gamification of entrepreneurship education. *Decision Sciences Journal of Innovative Education*, 18(2), 203-223.

RESEARCH PAPERS

THE ALUMNI CHAMPIONS - WHY DO THEY DO IT?

Lise Aaboen, Norwegian University of Science and Technology (lise.aaboen@ntnu.no)

Roger Sørheim, Norwegian University of Science and Technology

Questions we care about

This paper explores the motivations and roles of highly engaged “alumni champions” in a venture creation program.

Approach

We make an inductive analysis of interviews with 10 alumni champions and discuss it in light of previous literature about role identity and alumni engagement.

Results

We find a symbiotic engagement driven by both emotional ties and instrumental benefits. These “alumni champions” are key players in fostering a “pay it forward” culture. Mutual trust is a critical element, underpinning resource sharing, collaboration, and network solidarity. Further, we find that engagement evolves from generalized early post-graduation assistance to specialized and more professional roles over time. This duality reveals that early emotional investment over time will provide value to the network and the individual over time.

Implication

Study program managers are advised to not only set up the structures for an alumni organization and hope that alumni engagement will naturally evolve but instead foster a culture of sharing and collaboration already in the program.

Value/Originality

We contribute to previous literature and practice of alumni engagement by adding factors related to emotional motivation, trust in the program and alumni's' strong ties as antecedents of the alumni interaction that in turn underpins the alumni engagement in the venture creation program.

Keywords: Alumni; VCP; Alumni network; emotion; trust

IMPACT OF COLLABORATIVE DYNAMICS ON ENTREPRENEURIAL IDENTITY FORMATION IN STUDENTS

Sonia Ahmadi, Norwegian University of Science & Technology (sonia.ahmadi@ntnu.no)

Abstract

While previous studies show that entrepreneurship education contributes to the development of entrepreneurial identity among students (Chen et al., 2021), and acknowledge the importance of identities in the development of student entrepreneurship (Donnellon et al., 2014; Lundqvist et al., 2015; Nielsen and Gartner, 2017), there remains a gap in understanding the impact of entrepreneurship education on entrepreneurial identity formation in specific contexts (Anderson et al., 2019). Therefore, this research focus on investigating the specific context of Venture Creation Programs (VCPs) and the role of group dynamics or working in teams within VCPs in the development of students' entrepreneurial identities. VCPs are educational programs at the higher education level that focus on entrepreneurship and practical business skills. These programs emphasize experiential, hands-on learning and place a strong emphasis on the creation of real-world business ventures (Lackéus & Williams-Middleton, 2023). Understanding the role of EE within the context of VCPs in the formation of EI among students is crucial for educators, policymakers, and those involved in entrepreneurship education as it can provide insights into enhancing these programs to better facilitate the development of entrepreneurial mindsets, skills, and identities among students.

The question we care about is therefore: *How do collaborative dynamics among students at VCPs impact the formation of their identities as future entrepreneurs?*

This study will employ Social Identity Theory (SIT), originally formulated by Tajfel and Turner in 1979, as a framework to see how entrepreneurial identity of students at VCPs are developed and constructed during team work. Social identity theory focuses on how individuals perceive themselves in a social context. By applying social identity theory (Tajfel & Turner, 1979), this study aims to explore the role of subjective, context-dependent dimensions, such as students' self-perceptions within the context of entrepreneurship education in VCPs, and how these perceptions influence the formation of their entrepreneurial identity. This paper will be based on a longitudinal study conducting approximately 30 semi-structured interviews with students at VCPs across universities in Norway. The interviews will be conducted 2-3 times over a period of 3-6 months.

NAVIGATING UNCERTAINTY: FOSTERING ADAPTIVE CAPABILITIES IN ENTREPRENEURSHIP EDUCATION THROUGH SREL

Noah Bellwald, University of St. Gallen (noah.bellwald@unisg.ch)

Abstract

Today's dynamic business environment demands more than technical skills from entrepreneurs. Self-regulated entrepreneurial learning (SREL) capabilities are crucial for navigating uncertainty. While recognized as important, current entrepreneurship education (EE) lacks effective strategies to develop SREL. This study addresses this gap by developing and testing a novel SREL intervention with an accompanying SREL canvas. Using a Design-Based Research approach, the intervention equips entrepreneurs with practical tools for decision-making. A controlled study demonstrated significant improvement in SREL capabilities, highlighting the potential of targeted SREL strategies. These findings suggest a shift towards more dynamic and practice-oriented EE programs to prepare entrepreneurs for an uncertain market.

Keywords: Self-Regulated Entrepreneurial Learning, Entrepreneurship Education, Design-Based Research, Uncertainty Management, Entrepreneurial Decision-Making

TRANSFORMING ENTREPRENEURSHIP EDUCATION: INTEGRATING MAINSTREAM AND ALTERNATIVE EE TOWARDS SUSTAINABLE FUTURES

Karin Berglund, Stockholm Business School (Karin.Berglund@sbs.su.se)
Sarah Dodd, University of Strathclyde
Ulla Hytti, University of Turku
Sarah Jack, Lancaster University
Serxia Lage-Arias, University of A Coruña and Vrije University Amsterdam
Jessica Lindberg, Stockholm Business School
Karen Verduijn, Vrije University Amsterdam
Anna Wettermark, Stockholm Business School

Abstract

The many, ongoing crises demand a reflection on what kind of entrepreneurial pedagogies could better prepare students for taking a role in mitigating these crises of the present and future. In this paper we investigate current entrepreneurship education (EE) practices, with the ambition to develop new pedagogical approaches that are better apt in rising to this challenge of ongoing crises. Methodologically we adopt philosopher Bornemark's conceptualisations of ratio and intellectus. Whilst ratio points to the taken for granted and mainstream understandings of entrepreneurship, intellectus unfold experimentations of alternative ways for how to practice, think about and teach entrepreneurship. With the concepts of ratio and intellectus, we can discern how entrepreneurship education can be transformed and suggest that intellectus driven EE investigations along three themes where the 'map of EE' is rewritten through 1. Movement, 2. Conceptualization and 3. Technical devices.

Keywords: Entrepreneurship education, crisis, navigation, sustainability, intellectus, paths of transformation

WHAT WOULD GERT SAY? MOVING ENTREPRENEURSHIP EDUCATION THROUGH PLAYFUL CRITIQUE

Catherine Brentnall, Manchester Metropolitan University (c.brentnall@mmu.ac.uk)
 Ivan Diego Rodriguez, Valnalon
 Mette Lindahl Thomassen, Aarhus University
 Ragnhild Nordeng Fauchald, Norwegian University of Science & Technology

Questions we care about

At 3E 2023 a Systematic Literature Review (SLR) of the use of learning theory in Entrepreneurship Education (EE) research was presented (Fauchald, Larsen and Thomassen, 2023). This study searched for the use of learning theory in EE articles from 1991 to 2021, screening 3416 items and reviewing 204 articles for learning theory use. The study found that *Experiential Learning* was the most frequently cited learning theory in EE (157 out of 204 articles). Furthermore, the SLR found that this learning theory was often used *in a superficial way* to justify an Experiential Learning focus, rather than to interpret and explain results. After presenting these findings, the authors of the SLR asked the question: *what are the consequences of this?* This is a question we care about, and we explore it in this paper.

Paper approach

This conceptual paper focuses on the over reliance of Experiential Learning in Entrepreneurship Education (EE). We introduce critiques of Experiential Learning Theory (ELT) from education, particularly the problem raised that ELT *is not a theory*. After this, we introduce an off-the-rails Experiential Learning model and connect this with routinised experiences in EE. Then we take on the perspective of Gert Biesta - who has written *Against Learning* (Biesta, 2005) - to theorise consequences of all this and raise new questions. Everyday theorising (Werron et al, 2023), is used as method to develop a new perspective on the research question.

Results

Biesta's perspective on the purposes of education – qualification, socialisation and subjectification – show how EE can be unbalanced when it is focused on Experiential Learning (theory and practice) as opposed to education. Qualification is thin, where a focus on venture creation and learning by doing limits critical thought; socialisation is high, where students are moulded into certain ways of thinking and behaving; and subjectification - in the way that Biesta describes it – is low, as students *become the objects of EE interventions*.

Implications

The 3E 2024 conference call invited authors to think about: what we want our students to learn, what our students want to learn and how they learn best. By taking on Biesta's perspective we unsettle and extend questions about a learning focus. Biesta challenges us to think: Learning what? And for what purpose? Though we focus on Biesta's ideas, the paper also summarises existing, persistent critique of Experiential Learning, from the field of education, which should be of interest.

Value and originality

This paper takes a ubiquitous, yet under-researched area, Experiential Learning theory and practice, and develops insight about its consequences. The methodology speaks to the conference theme of playfulness, where authors engage in an act of academic cos-play, 'dressing up' as an educational philosopher who has written against learning. By formalising everyday research tactics such as reading, writing, thinking and talking we celebrate the convivial experience of remote research development that develops a collective perspective that could not have been reached by an individual author. Overall, the paper contributes to the ongoing goal of unsettling taken-for-grantedness and revitalising EE (Berglund and Verduijn, 2018), posing new questions for the 3E community to consider, and signposting ways forward suggested through Biesta's ideas.

EMPOWERING EDUCATORS: DEVELOPMENT AND VALIDATION THE GHENT ENTREPRENEURIAL MINDSET SCALE FOR EFFECTIVE ENTREPRENEURIAL EDUCATION DESIGN

Bart Derre, HOGENT University of Applied Sciences and Arts & Eindhoven University of Technology
(bart.derre@hogent.be)

Nico De Witte, HOGENT University of Applied Sciences and Arts and Vrije Universiteit Brussel

Pedro De Bruyckere, Utrecht University

Jimme Keizer, Eindhoven University of Technology

Mathieu Weggeman, Eindhoven University of Technology

Objectives

Although the fostering of entrepreneurial mindset among students is increasing in entrepreneurial education practice, there is still a great deal of scientific unclarity regarding both conceptualization and operationalization of the concept. This paper proposes the development and validation of the Ghent Entrepreneurial Mindset Scale (GEMS) which enables to measure and capture entrepreneurial mindset as a driver of entrepreneurial behavior (Daspit et al, 2023).

Paper Approach

A theoretical framework defining entrepreneurial mindset's core dimensions as a latent construct, including decision-making, personality traits, and competencies, was developed. Based on this theoretical framework, 71 statements were formulated. Given this instrument's novelty, relationships between variables were unknown, a confirmatory factor analysis (CFA) was used. This technique examines the relationships between the observed variables and the underlying hypothesized latent constructs they are supposed to measure and thus providing evidence for the construct validity of the GEMS.

Results

In cooperation with a private company, a web-based tool was created to collect a large sample of 2861 self-employed entrepreneurs, both starters and individuals with a strong intention to start. The analyses revealed that the original GEMS instrument could be reduced to 52 variables measuring all theorized latent components. The instrument's construct validity showed good fit indices. The final GEMS scale accounted for 55.82% of the variance in entrepreneurial mindset and a Cronbach's α of .971, indicating strong internal consistency.

EE Implications

The GEMS offers a swift and cost-effective assessment, utilizing 52 variables to gauge entrepreneurial mindset as a latent construct comprehensively. Our findings emphasize that entrepreneurial mindset extends beyond mere personality traits, forming a distinct, multifaceted structure influenced by personality traits, competences, and decision-making.

Value and Originality

The GEMS instrument was theoretically underpinned and validated through CFA on a large dataset and stands out as a reliable and valid tool for assessing entrepreneurial mindset as a multifaceted latent construct. This instrument empowers educators to develop effective targeted pedagogical interventions, manage students' cognitive load based on assessed proficiency levels, and evaluate the impact of their implemented entrepreneurial education programs on student learning outcomes.

Daspit, J. J., Fox, C. J., & Findley, S. K. (2023). Entrepreneurial mindset: An integrated definition, a review of current insights, and directions for future research. *Journal of Small Business Management*, 61(1), 12–44. <https://doi.org/10.1080/00472778.2021.1907583>

FINDING THE DREAM TEAM: EXPLORING TEAM FORMATION IN STUDENT ENTREPRENEURSHIP

Tim Eckes, EBS Universität für Wirtschaft und Recht (Tim.Eckes@ebs.edu)
Aki Harima, Tallinn University of Technology

Abstract

This study aims to explore how students with innovative business ideas set up their founding teams. While most previous research on student entrepreneurship focused on the formation of entrepreneurial intention, we aim to improve the understanding of how this intention develops into actions through the formation of founding teams. Therefore, we observed a public scholarship in Germany and interviewed alumni entrepreneurs of the program who successfully formed startups out of the university context.

This study applied a systematic inductive qualitative research approach and used the Resource Orchestration Theory to investigate the team formation process of student entrepreneurs. The findings revealed the dynamics of the team formation process in student entrepreneurship. Based on the findings, this study developed a process model. The process model provides a roadmap to follow the main findings, which consist of four main parts: 1) Initial Structuring, 2) Destructuring, 3) Restructuring, and 4) Aligning team dynamics. Our findings react to calls from research to better understand the team formation process in student entrepreneurship (Clarysse, Mustar, & Dedeyne, 2022; Passavanti, Ponsiglione, Primario, & Rippa, 2023).

THE ETHOS OF SUSTAINABLE ENTREPRENEURSHIP EDUCATION: A REVIEW AND CRITICAL ANALYSIS

Ziad El-Awad, Lund University (ziad.el-awad@fek.lu.se)

Jonas Gabrielsson, Halmstad University

Diamanto Politis, Lund University

Questions we care about (Objectives)

In this study, we employ bibliometric methods to provide insights and quantitative data about academic publications on sustainable entrepreneurship education in field-specific entrepreneurship journals. *We ask:* To what extent are conversations on sustainable entrepreneurship education present in field-specific entrepreneurship journals? What conceptual themes are present in the conversations? What research base do conversations build on?

Approach

We utilize descriptive statistics and bibliometric analysis to examine the research field, employing co-occurrence and co-citation coupling analyses for visualization. Co-occurrence analysis generates maps using titles and abstracts, representing concepts as nodes with their distance indicating relationships and node size reflecting keyword frequency. Co-citation clustering analysis creates maps based on cited documents, forming clusters that indicate related research streams.

Results

Our review and analysis of academic publications on sustainable entrepreneurship education in field-specific entrepreneurship journals emphasize the need for a multidimensional approach combining bibliometric analysis with qualitative assessments to evaluate the field comprehensively. Our study reveals that field-specific entrepreneurship journals play a significant role in driving conversations on sustainable entrepreneurship education. However, there are selective citation practices that concentrate attention on a few high-impact journals. The analysis also identifies four conceptual themes prevalent in the field, focusing on entrepreneurial intention, small business success factors, social entrepreneurship, and institutional aspects of sustainable entrepreneurship education. Additionally, the analysis highlights influential works and research themes within sustainable entrepreneurship education.

Implications

The findings of our research have important implications for sustainable entrepreneurship education. One key implication is the need to address selective citation practices due to the observed skewed pattern in citations, where a few high-impact journals receive a significant proportion of citations. To ensure a balanced representation of the scholarly conversation, researchers and scholars should be encouraged to cite various sources from various journals and disciplines. Additionally, the findings highlight the strong influence of field-specific entrepreneurship journals in driving conversations on sustainable entrepreneurship education. However, researchers should engage with journals from other disciplines to gain a more comprehensive understanding of the field, fostering interdisciplinary perspectives and facilitating knowledge exchange across different fields.

Value/Originality

Overall, the study's use of bibliometric methods, its comprehensive analysis of publications, and its insights into the research landscape and thematic trends contribute to the value and originality of research in the field of sustainable entrepreneurship education. First, the study contributes to the field of sustainable entrepreneurship education by employing bibliometric methods to provide insights and quantitative data about academic publications. This approach offers a systematic and objective analysis of the scholarly conversation in the field. Second, the study's identification of publications in field-specific entrepreneurship journals provides a comprehensive and up-to-date overview of the research landscape. This contributes to understanding the current state of sustainable entrepreneurship education within the specific context of entrepreneurship and small business management outlets.

Keywords: Sustainability, entrepreneurship education, teaching entrepreneurship

EDUCATIONAL CONSCIOUSNESS AND PHILOSOPHICAL FOUNDATIONS IN CURRICULAR AND EXTRACURRICULAR ENTREPRENEURSHIP EDUCATION

Katarina Ellborg, Linnaeus University (katarina.ellborg@lnu.se)
Nicolai Nybye, UCL University College
Michael Breum Ramsgaard, VIA University College
Birgitte Wraae, Technische Universität Berlin

Questions we care about (Objectives)

The aim of this conceptual paper is to explore philosophical perspectives in the complex educational practice of EE by discussing ontologies, epistemologies, and axiologies and how these affect the roles, methods, and objectives in curricular and extracurricular entrepreneurship education. We ask the following question we care about: “How can philosophical underpinnings enhance the dialogues between curricular and extracurricular entrepreneurship education to create a holistic learning environment for the students?”

Approach

To represent a philosophically driven perspective, we turn to sociologist Zygmund Bauman and his thoughts on liquid modernity and learning, including his discussion on *individuality de jure* and *individuality de facto*.

Results

By integrating the philosophies of Bauman, we can investigate in depth the risk of pure individualization in the student’s entrepreneurship education engagement. Bauman has written extensively about individualization in modern societies and how this means that people must navigate disconnections, episodic time, and events and establish coherence themselves. Bauman’s concepts serve as perspectives on contemporary society and education in the discussion on what, how, and why entrepreneurship education is provided in classrooms and student incubators.

Implications

The present paper contributes to bridging students’ learning experiences from curricular and extracurricular entrepreneurship education by advancing a philosophically driven discussion on the roles and responsibilities when arranging entrepreneurship education in and for liquid modernity.

Value/Originality

The present paper specifically aims to qualify the integration between curricular and extracurricular entrepreneurship education while contributing to critical and reflective discussions by introducing philosophical foundations that can inspire *educational consciousness* in both learning spaces.

Keywords: entrepreneurship education, educational consciousness, ontology, epistemology, axiology, curricular, extracurricular

'FROM STRAIGHT JACKET TO SPACESUIT, ENTERPRISE TEACHING & LEARNING BEYOND THE CLASSROOM'

Deirdre Fleming, South East Technological University (deirdre.fleming@setu.ie)

Recent studies have argued for experienced based (Hillard, 2020) and challenge-based learning (CBL) approaches (Gallagher & Savage, 2023) to enhance entrepreneurial competences in our undergraduate (UG) students. CBL has been highlighted as key to educational reform and students' professional development (Gallagher & Savage, 2023). It actively engages students in a 'live' situation that involves working in teams and engaging with stakeholders from multiple settings (Morselli & Orzes, 2023) to help conceive of, and define, a challenge. Once agreed, all parties work together to develop a solution that is environmentally, socially, and economically sustainable (e.g., the three components of sustainability).

Questions we care about?

- How do we actively engage students in real-world enterprise challenges?
- What pedagogies best place students in the challenge mindset?
- How do we support student's entrepreneurial competence development?

Paper Approach

This paper gathered student's views of a CBL approach, incorporated into their enterprise education. They were asked to reflect on challenge activities, co-created with students, stakeholders and educators in GROWTHhub, a learning space specifically designed for enterprise education. Enterprise educators filled the role of facilitator and collaborated with colleagues in GROWTHhub to develop ideation workshops based on the Sustainable development goals. They are then required to develop business solutions to these problems and use a software tool to build their business models over the course of the semester. Further workshops were facilitated throughout the semester with other academic stakeholders and regional entrepreneurs using AI to generate prototypes and how to develop network IQ skills.

Results

Allowing students to be active in the learning process by using a CBL pedagogy and team-learning have positively influenced the student learning experience. Overall students were motivated by the SDG challenge and felt that their creativity and project management skills were enhanced throughout the process. In particular, students felt that the use of technology was a highly practical learning experience that they will take with them into their professional careers.

EE Implications

This research contributes to the literature on challenge-based learning by extending knowledge beyond STEM higher level courses into business disciplines (Gallagher & Savage, 2023). In addition, few research studies have explored the impact of technology and sustainability on enterprise education (Gallagher & Savage, 2023).

Value and originality

For teaching and learning best practice guidelines will be developed on the use of CBL as a pedagogy as it is a new and emerging approach to teaching.

Keywords: Entrepreneurship, Enterprise education, Challenge based learning

DEVELOPING AN ENTREPRENEURIAL MINDSET OF BUSINESS STUDENTS: THE ROLE OF REFLECTIVE DIARIES

Nataliya Galan, University West (nataliya.galan@hv.se)
Jonas Gabrielsson, Halmstad University

Questions we care about (Objectives)

In this paper, we explore the use of reflective diaries (RD) as a learning tool for students in a Swedish business school. The question we ask is: How can diaries be used to aid students in setting learning goals and directing their learning process?

Approach

First, drawing on entrepreneurship education (EE) and management education (ME) literature, we justify the fitness of employing RD to support students in cultivating self-regulated learning. Next, we present our format of RD and explain how it was incorporated into one of the core courses within a one-year MSc program in business administration. Further, based on our analysis of available RD, we identify various approaches used by students for setting their learning goals and directing their learning processes. Finally, we discuss the implications of our findings for ME.

Results

The results suggest multiple effects of RD on student learning. Two learner types emerged from the analysis: guided (seeking explicit external guidance) and autonomous (preferring independent reflection and analysis for devising their own learning strategies), which can be shifted over time. Transitions from guided to autonomous learning seems to be attributed to the internalisation of performance feedback received while learning from and through others. In contrast, transitions from autonomous to guided learning seems to be linked to the increasing complexity of objectives and tasks autonomous learners are engaged in while progressing in their learning journey.

Implications

Our study offers implications for ME regarding the design of supportive and scaffolded learning environments that provide performance feedback to students with various learning needs and approaches. In this regard, the study highlights the importance of recognizing and accommodating different learner types and their preferred learning approaches. By tailoring learning experiences and providing opportunities for gradual transitions, business schools can enhance student engagement, learning outcomes, and the development of critical skills needed for navigating competitive challenges in the global landscape.

Value/Originality

Our study examines the use of reflective diaries as a learning tool for business school students. By exploring the specific role of reflective diaries in promoting goal setting and directing the learning process, our study offers a unique perspective on how reflective diaries can be tailored to individual student needs that provide a nuanced understanding of their impact on student learning outcomes.

Keywords: Reflective diary, Entrepreneurial mindset, Self-regulated learning, Management education, Entrepreneurship education

EXPLORING THE ENTREPRENEURIAL ENGINEER FROM A VALUE CREATION PERSPECTIVE

Victor G. Galofré, Eindhoven University of Technology (v.garcia.galofre@tue.nl)
Duygu Keskin, Eindhoven University of Technology
Yvette Baggen, Wageningen University & Research
Isabelle M.M.J. Reymen, Eindhoven University of Technology
Perry den Brok, Wageningen University & Research

Questions we care about (Objectives)

The Grand Societal Challenges, such as the Sustainable Development Goals and the recognition of entrepreneurship as a lifelong learning competence, are raising interest in the engineering field. For engineering students, this is an opportunity to experience sustainable value-creation through innovative entrepreneurial education. Accordingly, they should be educated on applying entrepreneurial competences in environments that are complex, uncertain, and have a value-laden character. From an educational design lens, designing entrepreneurial education for engineers from a value-creation perspective requires exploring and analysing desired states of future entrepreneurship education for engineers. Specifically, this implies understanding who the entrepreneurial engineers are and what their value-creation process looks like to be able to translate such understanding into future educational interventions.

Approach

This paper shares the findings of a survey with open-ended questions shared among Faculty and professionals of the engineering industry. We gather data including (1) perspectives of entrepreneurship, (2) characteristics of the entrepreneurial engineer, (3) value creation process (4) desired contribution to society and (5) role of the entrepreneurial engineer when facing sustainable transitions and transformations.

Results

We are currently developing and iterating the codebook based on 5 responses. Results reflect the findings of this process and are, therefore, in an early stage.

Implications

This paper shares part of the findings of the PhD position of the 4TU project “Educating the Entrepreneurial Engineer”. These help in designing learning interventions for educating future Entrepreneurial Engineers, and they contribute to the overarching theme “The future of engineering education”.

Value/Originality

The findings of the study contribute to setting the ground for future studies aimed at mapping how the 4TUs are currently fostering Entrepreneurial Engineers. Ultimately, these will add value in building a common curriculum strategy at the 4TUs and beyond for educating the future entrepreneurial engineer. The originality of this contribution lies in the inclusion of faculty and industry in the design process, contributing to bridge theory and practice.

Keywords: Entrepreneurial Engineer, Grand Societal Challenges, Entrepreneurial Education, Value creation process

HEJ AI – HOW IS MY SUSTAINABLE ENTREPRENEURIAL LEARNING TODAY? CREATING A COMPUTER ASSISTED REFLECTIVE DIALOGUE TO DEVELOP IMPACT ENTREPRENEURSHIP COMPETENCIES.

Britta M. Gossel, University for Sustainable Development Eberswalde (bgossel@hnee.de)

Questions we care about

Entrepreneurial education as playground for impact asks for development in competencies in impact entrepreneurship that means competencies in entrepreneurship and sustainability. 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 impact entrepreneurship evolves over time. Knowing about the relevance of reflective learning, and keeping in mind that NLP and GPT show how fundamental technological progress affects everyday life, research and learning, the central question of this paper is: How can a model for a computer assisted reflective dialogue be created to support students in developing their impact entrepreneurship competencies?

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 language and communication in entrepreneurship (e.g. Lounsbury & Glynn, 2001; Baker & Welter, 2018, 2020) and entrepreneurial education (e.g. Gossel, 2021a, 2021b) receives increased attention, since communicative processes are substantial aspects of experiential learning theory (Kolb, 1984), social learning theory (Bandura, 1971) or transformative learning theory (Mezirow, 1978). – Recent developments in NLP (neuro linguistic programming) and GPT (Generative Pre-Trained Transformer) show the power of machine learning and its applications (e.g. ChatGPT). However, even though a lot of data on individual competence development exist, e.g. in forms of reflexion logs, it is not yet explored, how those emerging technologies might support the individual learning process. - Bringing these arguments together, this research aims to unfold language and textuality of the learning process for competencies in sustainability and entrepreneurship, by developing a text-based model that shall be applied for automated evaluation that supports learners in monitoring their own competencies development.

Results

This paper is part of a work in progress. For a MA study program in sustainable entrepreneurship, weekly reflection logs of ~50 students in three cohorts were collected from 2021/2022 on with help of the LoopMe-App that included reflection parts for competencies in sustainability and entrepreneurship. Thus far about 1.200 reflexion-loops exist. In a topic modeling approach, this paper elaborates how competence progress in the distinctive domains can be made visible. 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 textual manifestation of this process. Second, this research aims to expand the methodological lens on how to explore these phenomena.

Implications

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

Value/ originality

This research challenges given assumptions in entrepreneurship education research by not researching competencies in sustainability and entrepreneurship in quantitative pre-post-settings, but by focusing and unfolding the learning process itself through reflection logs. On an applied level, this paper is one step to fulfil the vision of the creation of a computer assisted intelligent machine-learning tool, that supports the learner during this journey.

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

CREATING PLAYFUL, RESPONSIBLE, AND IMPACTFUL ENTREPRENEURSHIP EDUCATION MODELS

Colette Henry, Dundalk Institute of Technology (colette.henry@dkit.ie)

Ester Bernadó Mansilla, TecnoCampus

Slavica Singer, J.J. Strossmayer University in Osijek

Barbara Gabriel, University of Aveiro

Robertt Valente, University of Aveiro

Kåre Moberg, The Danish Foundation for Entrepreneurship

Sabrina Tomasi, University of Pisa

Questions we care about In recent years, scholars have noted a radical shift in how universities are perceived. No longer are they mere knowledge producers and providers; rather, they are entrepreneurial changemakers, driving social, economic, and technological transformation and localising SDG challenges. However, to truly drive transformation, universities need to create novel and responsible entrepreneurship models based on ecosystem engagement, knowledge exchange and co-creation, aspects that, to date, have received insufficient academic attention. To address this gap in knowledge, our research question asks: *How can universities create more playful, responsible, and impactful entrepreneurship education models?* Answering this question could enhance the take-up and relevance of entrepreneurship education, encouraging students, academics, entrepreneurs and, indeed, every citizen, to use their skills to address society's grand challenges.

Approach We adopt an in-depth case approach to critically explore the EU-funded 'Start for Future' (SFF) alliance². SFF is an entrepreneurship and innovation mega-ecosystem that brings universities together on a reciprocal exchange and co-creation basis to deliver entrepreneurship education in SDG-related domains. It is now the fastest growing university-ecosystem driving responsible entrepreneurship across Europe. Using documentary analysis, score grids and a series of questionnaires, the case draws on multiple data sources, including work package leaders, academic managers, entrepreneurship educators, and students.

Results SFF has delivered its entrepreneurship education programme to over 1,500 participants through a range of innovative and playful formats in three key phases: entrepreneurial idea development. These are realised via a combination of synchronous and asynchronous training, project matchings, virtual/real incubation experiences, expert mentoring, pitches, competitions and engagement with industry. The responsibility dimension is embedded in the project from the outset, cutting across multiple SDGs.

Implications Our findings challenge current insular models of entrepreneurship education and offer valuable insights into how to enhance the take-up, responsibility and impact dimensions of entrepreneurship education. Findings imply that, to fulfil their new entrepreneurial change-maker role, universities need to be prepared to experiment more, taking bolder steps toward developing more innovative entrepreneurship education models.

Value / originality Our paper will be of value to university leaders and entrepreneurship educators seeking to engage more playfully, more responsibly and more impactfully within their entrepreneurship ecosystem. We make three important contributions: 1) We underscore and enhance understanding of the critical role universities play as entrepreneurial changemakers, driving social, economic and technological transformation; 2) We contribute to the growing body of scholarship on entrepreneurship education, specifically illuminating the responsibility dimension in driving impactful entrepreneurship; 3) We draw attention to a novel, playful yet highly impactful entrepreneurship education model – *Start for Future* – that is built on the principles of responsible entrepreneurship, reciprocity, mutual learning, co-creation and experimentation.

Keywords: Entrepreneurship education; entrepreneurial university; responsible entrepreneurship; SDGs; entrepreneurship ecosystem

² Start for Future (SFF) was established in 2019 and comprises over 30 academic partners across Europe.

ASSESSING INNOVATIVE TEACHING TECHNIQUES AMONG TANZANIAN SECONDARY SCHOOL TEACHERS

Siyajali Hussein Ntahuga, Dar es Salaam University College of Education (hafsantahuga2@gmail.com)
Katherine Fulgence, Michigan State University
Matthew Wawrzynski, Michigan State University

Study background and Objectives

Entrepreneurship skills encompass a range of abilities including creativity and innovation and significantly impact both economic and social transformations. Studying entrepreneurship education as a stand-alone course as well as integration of entrepreneurship in education through the application of innovative teaching techniques (ITTs) such as industry-based learning, project-based learning, facilitated peer-tutoring to mention a few, have enabled the development of entrepreneurship skills across contexts. Research examining the application of ITTs among teachers has primarily concentrated on higher education settings with limited research assessing how secondary school teachers employ ITTs to develop entrepreneurship skills among students. This study analyses the application of ITTs by Tanzania secondary school teachers, and will address the following questions; What are the perceptions of teachers regarding the application of ITTs in developing entrepreneurship skills among secondary school students? What ITTs are employed by secondary school teachers to develop entrepreneurial skills among students? What challenges do teachers encounter when employing ITTs and how does school management support them?

Methodology

The study utilized a mixed research approach, engaging 360 in-service teachers and education leaders. Purposive and convenience sampling were used to select the qualitative and quantitative study participants respectively. The findings revealed that teachers utilized various approaches in implementing ITTs, such as inquiry-based learning, group discussions, case studies, and hands-on projects, with a moderate use of technology and industry role models. Various skills particularly critical thinking, problem-solving, innovation, risk-taking, creativity, confidence, opportunity-seeking, business acumen, and the capacity to embrace challenges, were highlighted as being developed among students following the application of ITTs. Teachers demonstrate inadequate knowledge in implementing ITTs. Other challenges such as limited management support, misalignment of some techniques with parents-school expectations, and large class sizes were also found to affect the application of ITTs.

Implications

This study provides valuable guidance for teachers and policymakers on enhancing the curriculum and implementing necessary adjustments to foster entrepreneurial skills among secondary school students. It suggests re-evaluating teacher training programs and advocates for the integration of ITTs to equip teachers with the necessary tools for developing entrepreneurial mindset among secondary level students. This study's value lies in revealing the underutilization of ITTs by Tanzanian teachers in promoting entrepreneurial skills. The study originality stems from its focus on the Tanzanian context, advocating for comprehensive support systems including capacity-building programs to empower teachers to maximize the utilization of ITTs in nurturing entrepreneurship skills among secondary school students.

Keywords

Innovative teaching techniques, Teacher education, Entrepreneurship education, Entrepreneurship skills, Education stakeholders, Tanzania

WHAT RESPONSIBILITY DO WE TAKE AS ENTREPRENEURSHIP EDUCATORS? A CRITICAL REFLECTION ON PRODUCING RESPONSIBLE ENTREPRENEURIAL CITIZENS

Gustav Hägg, Malmö University (gustav.hagg@mau.se)

Colin Jones, Australian Pacific College,

Agnieszka Kurczewska, University of Lodz and Norwegian University of Science and Technology

Rasmus Rahm, Stockholm School of Entrepreneurship

Birgitte Wraae, Technical University Berlin

Questions we care about

Over the last few decades, entrepreneurship education has gained significant prominence (Hägg & Gabrielsson, 2020), with educational institutions often celebrating the successful startups emerging from their programs (Nabi et al., 2017). It has been seen as an important arena to develop problem-solving and critical competencies to handle uncertain work-related situations. However, this focus on success stories and its potential effect to generate entrepreneurial citizens obscures the darker side of entrepreneurship (e.g., Berglund et al., 2020), including failed ventures, unproductive pursuits (Baumol, 1996), and even unethical practices (Hägg et al., 2024; Jones & Spicer, 2009) and the pressure imposed on young individuals to create their own work (Rose, 1996). This paper aims to investigate the responsibility of educational institutions (Bécharde & Grégoire, 2005) and the role that entrepreneurial educators play in the pursuit of developing responsible entrepreneurial citizens. To meet our aim, we ask: *What responsibility do we take as entrepreneurship educators and how might we enable responsible conduct?*

Approach

The paper build on responsible management education research (e.g., Dyllick, 2015; Giacalone & Promislo, 2013; Paine, 2000) and recent calls for entrepreneurial responsibility (Bosse et al., 2023; Hägg et al., 2024; Vallaster et al., 2019) employing the idea around desirable difficulties (Björk & Björk, 2014) to enhance learning. To address our aim, we build on autoethnographic educator reflections using Haywards (2000) reflective inquiry.

Results

Entrepreneurship teachers are a diverse group therefore their understanding of responsibility and its boundaries differ. Awareness of one's own identity as a lecturer and a reflection on responsibility as a teacher help to go beyond one pattern in teaching and extend it to include less obvious content and methods.

EE implications

The paper promotes a reflective stance within entrepreneurial education, prompting educators to critically assess their role in preparing students for entrepreneurship. Acknowledging the darker side of entrepreneurship, it suggests a need for a more holistic approach that prepares students for the challenges and uncertainties they may face while identifying and developing entrepreneurial opportunities.

Value and originality

Despite the importance put on developing entrepreneurial citizens from governments and other public organizations, there is still questions arising how, why and what role entrepreneurial educators play when teaching individuals in the pursuit for entrepreneurial careers. The study provides a reflection based on entrepreneurial educators and open for further question on what to teach, how to teach it, and why to teach it when taking entrepreneurial responsibility into the equation from the educator perspective and not only pushing the agenda forward to the individual learners.

Keywords: Entrepreneurship education, responsible management education, productive entrepreneurs, ethicality, entrepreneurial educators

TEACHERS AS AGENTS OF ENTREPRENEURSHIP: LESSONS FROM TRAIT ACTIVATION THEORY

Minna Hämäläinen, LUT University (minna.hamalainen@lut.fi)

Kati Peltonen, LAB University of Applied Sciences

Sanna Joensuu-Salo, SEAMK University of Applied Sciences

Anmari Viljamaa, SEAMK University of Applied Sciences

Questions we care about

Teachers are acknowledged to play a significant role in promoting entrepreneurship in HEIs (Gibb, 2011; Peltonen, 2015). Prior research has demonstrated the importance of HEI institutional support in shaping the entrepreneurial mindset of teachers and building entrepreneurial universities (Hämäläinen et al., 2022; Joensuu-Salo, 2023). The main focus has been on either faculty entrepreneurship (academic spin-offs) or entrepreneurship education for students, leaving out the faculty engagement in promotion of entrepreneurship within their workplace (Lahikainen et al., 2022). The question we care about is: which factors support teachers in acting as entrepreneurial change agents in HEIs?

The objective of the research is 1) to examine the effect of teacher's entrepreneurial traits and institutional support on teacher's promotion of entrepreneurship in HEI, and 2) test trait activation theory perspective in explaining the relationship between teacher's entrepreneurial traits, institutional support, and teacher's action in promotion of entrepreneurship.

Approach

Using the lenses of trait activation theory, we examine how institutional support as a cue activates teacher's entrepreneurial traits leading to enhanced promotion of entrepreneurship within a teaching-led HEI.

The data consists of 1156 answers from Finnish higher education teachers representing various educational fields in HEIs. The dependent variable (teacher's promotion of entrepreneurship in HEI) was measured with three items related to teacher's activity in developing, evaluating and promoting entrepreneurship education in their institution. Entrepreneurial traits were measured with five items related to teacher's own innovation ability, risk-taking propensity, and problem solving. Institutional support was measured with two scales; the first one measured managerial support with two items and the second one structural support with four items. We used structural equation modelling with path analysis in testing our hypothesis.

Results

Both teacher's entrepreneurial traits and the institutional support from the university have positive effects on teacher's promotion of entrepreneurship in their HEI. Thus, teachers are more likely to become agents of entrepreneurship if they themselves have entrepreneurial traits and characteristics. In addition, if university's management and structural systems support entrepreneurship, it will have a positive effect on teacher's activity in promotion of entrepreneurship. In addition, the results show that institutional support boosts the effect of teacher's entrepreneurial traits on behavior (promotion).

Implications

Our study contributes to the prior research by showing that organizational context can encourage teachers to act as promoters of entrepreneurship in HEIs. Teachers' promotion of entrepreneurship is stimulated by structural and managerial support as contextual variables, and especially the structural support mechanisms have direct and indirect effect in activating teachers' entrepreneurial traits.

Value and originality

Trait activation theory seems to provide a novel way to examine the relationship between teacher's entrepreneurial traits, institutional support, and teacher's action in promotion of entrepreneurship. Trait activation theory (TAT), rooted in interactional psychology, builds on the idea that personality traits or characters are underlying predispositions to behave in certain ways and are activated and expressed when exposed to situational cues that are related to these traits.

Keywords: Higher education, Entrepreneurship, Trait activation, Quantitative

STUDENTS' TECHNOLOGICAL INNOVATION AS A CORE OF CORPORATE ENTREPRENEURSHIP EDUCATION – A CONCEPTUAL ANALYSIS

Markku Ikävalko, LUT University (markku.ikavalko@lut.fi)

Anna Vuorio, LUT University

Terhi Virkki-Hatakka, LUT University

Questions we care about

The initial impetus of this paper is the reorganization of engineering studies at a multidisciplinary university in such a way that students would have better opportunities to produce new innovations during their studies. Even this is not labelled as entrepreneurial intervention we would like to study if this can be regarded as corporate entrepreneurship education.

Approach

In this paper, we present one example of a multidisciplinary university where the technical faculty aligns teaching to help students produce innovations. We are studying this as a manifestation of corporate entrepreneurship education and students' innovations as a learning vehicle of corporate entrepreneurship education.

Results

Our reasoning provides new insights about the dynamics of corporate entrepreneurship education in university context by focusing on technological innovation oriented curriculum development project and its outcome. First, the results suggest that corporate entrepreneurship has a significant role in the engineering education. Second, the results highlight the role of corporate entrepreneurship in students learning in the university context and future employment. Further, the results also contribute to education as it potentially increases the number of educational tools, that is, the learning vehicles of corporate entrepreneurship education.

Implications

The application of corporate entrepreneurship into university curricula brings continuity to the learning process for university students and enables not only higher quality learning but also the creation and development of innovations during their studies. This can also increase value creation among participating reference groups.

Value/Originality

This paper aims to bring a nearby but little-discussed area, that is. innovations during students are creating during their studies, into the scope of corporate entrepreneurship education, and to present this production of innovations as a new teaching vehicle for corporate entrepreneurship education.

MEASURING THE IMPACT OF GENDER-SPECIFIC ENTREPRENEURSHIP PROGRAMS

Rossitza Ivanova, HHL Leipzig Graduate School of Management (rossitza.ivanova@hhl.de)
Elfi Lange, TU Bergakademie Freiberg

Objectives

This study assesses the effectiveness of Gender-Specific Entrepreneurship Education Programs (GSEP) in the German-speaking area, focusing on their impact on women entrepreneurs' self-efficacy, attitudes, entrepreneurial progress, and financial knowledge.

Approach

Utilizing a mixed-method approach, the research involved qualitative interviews and a quantitative survey among participants of GSEP and Gender-Open Entrepreneurship Programs (GOEP), exploring the nuanced impacts on the entrepreneurial journey.

Results

This study contrasts the impacts of Gender-Specific Entrepreneurship Programs (GSEP) with Gender-Open Entrepreneurship Programs (GOEP) on female entrepreneurs. While interviews suggested GSEPs boost women's confidence and willingness to start businesses, survey data didn't show these programs significantly advancing their entrepreneurial activities or financial knowledge. Interestingly, GOEPs positively influenced financial understanding and attitude towards entrepreneurship. This mix of findings — positive personal feedback without clear evidence of business progress — suggests rethinking the role and design of GSEPs in supporting women entrepreneurs.

Implications

The findings question the necessity and efficacy of GSEPs, suggesting a pivot towards more inclusive, gender-open programs that effectively integrate into broader entrepreneurial ecosystems.

Value

By offering a comprehensive evaluation of gender-specific entrepreneurship education's impact, this research challenges existing paradigms and advocates for more inclusive program designs.

Keywords: Gender-specific entrepreneurship education, impact measurement, women entrepreneurs, inclusive programs, female entrepreneurship

HARMFUL HARMONY? ON SAFE SPACES AND BRAVE SPACES IN ENTREPRENEURSHIP EDUCATION

Rossitza Ivanova, HHL Leipzig Graduate School of Management (rossitza.ivanova@hhl.de)
Kazem Mochkabadi, Bergische Universität Wuppertal

Objectives

Women-only entrepreneurship education is becoming more popular in Germany as an effort to minimize the gender gap in entrepreneurship and help women kick-start their entrepreneurial careers. However, there is a lack of scientific research, and little is known to what degree these programs have a positive effect on female entrepreneurship. Since most programs are funded by the public, it is important to understand if women-only entrepreneurial education adequately addresses the complexities of the German ecosystem. This study seeks to learn how effectively gender-specific entrepreneurship education helps solve the key challenges women entrepreneurs face in the ecosystem or even changes the system itself.

Approach

We approach this question by adopting an abductive methodology and using concepts from anti-discrimination work. We study this question from the view of the education process which moves back and forth between moments in which the participants are feeling protected or brave. This movement between safe spaces and brave spaces enables learning in the context of potentially uncomfortable topics and uncertainties.

Results

Our results indicate that not all challenges can be satisfactorily addressed within the safe spaces of female founder initiatives. These initiatives are often unable to solve problems of the larger startup ecosystem, do not change the system, and instead create new microcosms with a limited number of participants.

Implications

We underscore the need for a nuanced and context-aware approach to developing entrepreneurship education. Women entrepreneurship education programs, we argue, should serve a dual and evolving purpose. On the one hand, these initiatives should provide a safe and supportive environment for women to commence their entrepreneurial endeavors. On the other, they should integrate their graduates into an ecosystem after the program. The programs do not change the participant's hopes, needs, and fears, which makes the transfer into the broader ecosystem a crucial secondary function. There is a pressing need in a different perspective, which emphasizes regular dynamic shifts from the initial safe spaces of women-only entrepreneurship education to eventually fostering belongingness in brave spaces for everyone in the entrepreneurial ecosystem. We believe such strategic integration would contribute to the diversification and improve collaboration within the entrepreneurial landscape. The results of this integration would also counteract the prevailing male dominance observed in contemporary entrepreneurial networks. We conclude that the best option for participants to grow and evolve as entrepreneurial identities is a constant bouncing between safe spaces and brave spaces.

Value

We call for a change in perspective towards a more inclusive approach in entrepreneurship ecosystems, moving beyond gender-specific divides. The research emphasizes building bridges between brave and safe spaces to build a more adaptive entrepreneurship ecosystem rather than creating isolated spaces.

Keywords: entrepreneurial education, women-only networks, abductive method, safe space, female entrepreneurship

MUSIC AND ENTREPRENEURIAL EDUCATION'S EFFECTS ON EXECUTIVE FUNCTIONS AND MATHEMATICS ACHIEVEMENT: PRELIMINARY RESULTS FROM A QUASI-EXPERIMENTAL STUDY

Sophie Jalbert, Université Laval (sophie.jalbert.1@ulaval.ca)
 Matthias Pepin, Université Laval
 Jonathan Bolduc, Université Laval

Questions we care about

A growing body of evidence suggests that music education can help with executive function (EF) development (Jaschke *et al.*, 2018), but little is known about entrepreneurial education (EE)'s role in this aspect. EFs are cognitive processes essential for adapting to new and non-routine situations, solving problems or learning effectively (Diamond, 2013). Core EFs include inhibition, working memory (WM), and cognitive flexibility (Diamond, 2013). A few papers have explored the role of EFs in the entrepreneurial process (Jalbert and Pepin, 2023), suggesting potential impacts of EE on EFs and making an entrepreneurial approach of music education a promising way to support EF development. This research cares about the following questions: *What are the effects of an entrepreneurial approach of music education program on elementary school students' EF development? What is the specific contribution of entrepreneurship education to EF development?*

Approach

The quasi-experimental research involves 57 fourth-grade students across three classes, each experiencing different pedagogical interventions: entrepreneurial approach of music education (MUSENT), EE without music education (ENT), and an active control group engaging in problem-solving activities during math classes (MATH). The study assessed the impact of these interventions through a comprehensive evaluation framework with a pre-post design.

Results

Preliminary findings suggest that the interventions, particularly MUSENT and ENT, may have a protective effect on students' mathematics achievement, suggesting these interdisciplinary approaches can enhance academic performance. The effects of the interventions on EF development appear to be more nuanced. Specifically, although no significant differences were found in the standardized task measuring inhibition and WM, assessments using the teacher form revealed that the ENT intervention may create conditions that are conducive to improvements in the behavioral manifestations of inhibition among students. However, the impact on WM was more complex, with varying degrees of effectiveness observed across different groups.

Implications

This paper documents the relevance of EE and an entrepreneurial approach of music education for EF development to support the decisions of policymakers in education. Our findings help advocate for a broader integration of music education and EE in the elementary school curriculum. Lastly, as EFs are essential for decision-making and creative problem-solving, which are key skills for entrepreneurs, the findings help educators better understand the development of EFs in the classroom and develop strategies to enhance EFs in their students.

Value/Originality

This study addresses a literature gap by examining the intersection of EE and music education in relation to EFs. The study explores the effects of music education and EE programs on the EF development of elementary school students. This study is the first quasi-experimental research to examine the effects of an entrepreneurial approach of music education on cognitive development. It provides novel insights and opens up research avenues for the fields of music education, EE, and cognitive psychology. This research provides new insights into the role of EFs in EE, making it a valuable contribution to the field.

Keywords: music education; entrepreneurial education; mathematical achievement; executive functions; inhibition; working memory

ENHANCING ENTREPRENEURIAL ECOSYSTEMS FOR SUSTAINABLE ENTREPRENEURSHIP: UNIVERSITY OF TECHNOLOGY PERSPECTIVE

Anmar Kamalaldin, Chalmers University of Technology (anmar.kamalaldin@chalmers.se)

Kristina Dobricic, Chalmers University of Technology

Karen Williams Middleton, Chalmers University of Technology

Yashar Mansoori, Chalmers University of Technology

Mats Lundqvist, Chalmers University of Technology

Questions we care about (Objectives)

How can universities of technology evolve their entrepreneurial ecosystem to support sustainable entrepreneurship? What are the obstacles and enabling factors?

Approach

This paper builds on an exploratory multiple case study of seven European universities of technology. Data was mainly collected through 26 semi-structured interviews with informants of different entities of the universities' entrepreneurial ecosystems, supplemented by data from secondary sources. The data analysis was based on a thematic analysis approach to identify relevant themes and patterns in relation to entrepreneurial activities and their association with sustainable entrepreneurship.

Results

The study identifies four key obstacles that universities of technology face while striving towards supporting sustainable entrepreneurship through their entrepreneurial ecosystems. These are: 1) entities having multiple roles with different priorities, 2) challenges in targeting and involving diverse stakeholders, 3) governance and funding complexities and universities, and 4) complexity and vagueness in defining sustainable entrepreneurship and measuring its impact. The study also identifies four key factors enabling sustainable entrepreneurship through university entrepreneurial ecosystems. These are: 1) organizational culture and institutional support, 2) specialized entities targeting specific focus areas, 3) internal and external collaborations, and 4) processes for monitoring success and impact.

Implications

The study carries implications for universities aiming to bridge research, commercialization, and entrepreneurship education to contribute to addressing societal challenges, especially the sustainability challenge, through their entrepreneurial ecosystems.

Value/Originality

Universities engage in activities that at times will only benefit residually to their mission of impacting society. As it is often unclear what impact will be when initiating engagement, we need to consider and reconsider ways in which universities can embrace different entrepreneurial activities while upholding core missions. The potential for more proactive use of the 'whole' ecosystem of the universities often requires increased integration on multiple levels to ensure that opportunities are identified, and challenges are addressed.

Keywords: Sustainable Entrepreneurship; Entrepreneurial Ecosystems; University Missions; University of Technology

CAPTURING AFFECTIVE LEARNING OUTCOMES – A REVIEW OF METHODOLOGICAL APPROACHES

Maisa Kantanen, University of Turku and South-Eastern Finland University of Applied Science
(maisaa.h.kantanen@utu.fi)

Abstract

What is the impact of our entrepreneurship education practices? Different entrepreneurship education (EE) practices produce different kinds of learning outcomes, both intended and unintended. Learning outcomes should be measured to assess the effectiveness of education and guide the improvement of EE. Affective learning outcomes are important because they focus on the emotional and attitudinal aspects of learning, contributing to a more holistic and well-rounded educational experience. These outcomes go beyond traditional cognitive measures (knowledge and skills) and address the development of students' emotions, attitudes, values, and beliefs.

Research on affective learning outcomes is still sparse in the field of EE. Nabi et al. (2017) found lack of research addressing affect or emotion, particularly related learning outcomes in EE. Ilonen and Heinonen (2018) state that affective learning outcomes are still under-researched. One reason to this might be that affective learning outcomes are difficult to catch, as affective learning involves students emotionally and is attached to values, attitudes, and behaviors (Shephard 2008), and emotions are experienced as they happen, and they are difficult to capture at a later stage through questionnaires or surveys (Lackéus 2014). Different methodological approaches might give an insight to this. The purpose of this paper is to examine how affective learning outcomes are seen and measured, also outside the field of EE. By researching affective learning outcomes, we can create practices to make entrepreneurship education more meaningful.

Traditionally, the main domains of learning are cognitive, psychomotor, and affective learning (Bloom 1956). My approach is to conduct a literature review and search for scientific articles about affective learning outcomes to find out how they are measured in empirical papers. What do we know about affective learning outcomes? As a key result I will show how affective learning outcomes are measured in different research papers. This methodologically oriented conceptual paper contributes to understanding the current situation of affective learning outcomes and how they are measured. I will offer a typology of different methods and outcomes based on these findings.

This study contributes to a better understanding of affective learning outcomes which are an important part of the EE practices of HEI. The study of Ilonen & Heinonen (2018) revealed various affective learning outcomes of university students in an EE course. Research suggests that the impact of EE programs on attitudes as well as on behavior is equivocal, as studies suggest both positive and negative outcomes (Nabi et al. 2017, 278). Emotions are an important part of the entrepreneurship education process, and Souitaris et al. (2007) already called researchers to explore what kinds of emotions are experienced in entrepreneurship programs.

I argue that if we want to create more attractive EE practices, we must take into careful consideration the affective learning outcomes of students. The findings of this study can be useful at a practical level when planning and evaluating different EE practices in higher education institutions.

Considering the contribution to the theory of EE, I am demonstrating how affective learning outcomes are researched and providing recommendations on how it should be approached. I'm focusing on the various methodological solutions needed to capture the affective learning outcomes, which are often considered challenging to apprehend.

DEVELOPING DOCTORAL STUDENTS' ENTREPRENEURIAL MINDSET

Darsel Keane, University of Auckland (d.keane@auckland.ac.nz)

Deborah Shepherd, University of Auckland

Rod B. McNaughton, University of Auckland

Guy W. Bate, University of Auckland

Questions we care about – Objectives

This paper aims to understand the effectiveness of integrating entrepreneurship education within doctoral training through the lens of the Doctoral Entrepreneurial Leadership Program (DELP). It addresses the benefits of cultivating an entrepreneurial mindset among doctoral students, which is valuable in preparing them for diverse career paths in many contexts.

Paper approach

This paper examines the DELP at the University of Auckland, outlining its objectives and educational principles. Aimed at doctoral students following their provisional year, DELP promotes the development of an entrepreneurial mindset and career exploration. Utilising the Entrepreneurial Mindset Profile (EMP) by Davis et al. (2016) it assesses participants' mindset growth. Other indicators of DELP's effectiveness include positive Net Promoter Scores (NPS), feedback, heightened participation in entrepreneurship education, and improved post-doctorate employment outcomes.

Results

The results show an enhanced entrepreneurial mindset and broader career perspectives among participants. Following their experience with DELP, participants reported feeling more empowered to distinguish themselves and act independently, improved their ability to conceive various innovative ideas and take action to turn them into reality. Additionally, an increase in persistence reflects a heightened capacity to endure challenges, while a significant boost in self-confidence indicates a reinforced belief in their abilities. This analysis demonstrates DELP's effectiveness in developing crucial entrepreneurial traits and promoting a proactive career development and problem-solving stance.

Implications for entrepreneurship education

This study highlights the advantages of entrepreneurship education in doctoral programs, particularly for fostering an entrepreneurial mindset. It shows that programs such as DELP positively impact entrepreneurial attitudes, as assessed by EMP, though further refinement is needed to improve outcomes in underperforming areas. Feedback indicates an increased understanding of entrepreneurial careers, emphasising the importance of integrating comprehensive entrepreneurship education into doctoral curricula to better prepare students for the dynamic job market.

Value and originality

Universities aim to develop doctoral candidates with the mindset and skills to make social and economic change (Klofsten et al., 2021; Opizzi, 2023; Rippa et al., 2020). Entrepreneurship education is one way to help prepare doctoral candidates for future careers. However, most entrepreneurship education offerings and research focus on undergraduates, with very little on doctoral candidates (Dooley & Kenny, 2015; Williams et al., 2013). This paper provides educators with an example that explicitly focuses on developing the entrepreneurial mindset, offering a novel approach that can be customised for various contexts.

Keywords: Entrepreneurial Mindset, Entrepreneurship Education, Doctoral Education, Experiential Learning

THE INK WAY: GUIDING FIRST STEPS INTO ENTERPRISE-IN-PLACE

Felicity Kelliher, South East Technological University (felicity.kelliher@setu.ie)

Sarah Drakopoulou Dodd, University of Strathclyde

Friederike Welter, University Siegen

Valentina Mello Lunardelli, South East Technological University

Abstract

The Ink Way is an innovative nature-immersed academic writing programme, aimed at enhancing writing skills and self-efficacy among participants, all of whom are faculty, and structured around walking nature-based pathways, which edge entrepreneurial ecosystems. Centred on the theme of enterprise-in-place, this collegial academic writing programme uses advanced, critical approaches to authoring place, including hands-on and feet-on engagement with local Green and Blue Ways. It draws on local stories, legends, journeys and connections that are made of water, as much as of land, and both shape past, present and future insight. Using novel approaches to surface ideas and specialist insight on sustainable enterprise engagement with our natural environment, this approach helps slow writers down to thinking speed, and its calm deepens our inspiration. This paper documents our experience as designers and facilitators of the Ink way pilot programme and helps us explore the potential of walking-to-write practices to more inclusively, deeply and rigorously co-create new understandings of peripheral pathways to enterprise research.

STRATEGIES TO CHANGE TEACHER'S APPROACH IN ENTREPRENEURSHIP EDUCATION? DESIGNING A TEACH-THE-TEACHER MODULE TO OVERCOME INSECURITY.

Ruud G.M. Koopman, Saxion University (r.g.m.koopman@saxion.nl)

Questions we care about

Entrepreneurship Education (EE) needs capable educators. While most of the teach-the-teacher programs focus on the content (knowledge and skills) of the teachers, the attitude of the teachers seems to be the main problem in expanding the number of teachers who can facilitate EE. A toolkit for EE needs to have a complete set of programs to facilitate all the different aspects of EE. For the toolkit, we use the education model for EE (Fayolle & Gailly, 2008). This gives us the framework in which we position the toolkit's programs. The toolkit targets the teachers and the students (entrepreneurs). At the same time, the outcome (results) of the toolkit can vary from focusing on startups (small) to being entrepreneurial (wide) (Lackeus, 2015). The program in this paper focuses on the teachers as the target group (for whom) in being entrepreneurial (for which results).

Approach

For the development of the program, we use the model of the 'effectual ask' (Sarasvathy, 2021). This model is about developing novice entrepreneurs into expert entrepreneurs and has two axes that find their origin in the effectuation theory (Sarasvathy, 2001): the prediction and the control axe. In the model, she gives strategies for students about what to ask and how to ask. According to the model of Fayolle & Gailly (2008), there should also be a strategy for 'why' to ask. To develop the training for teachers, we translated and developed strategies for all three aspects to ask in educational settings.

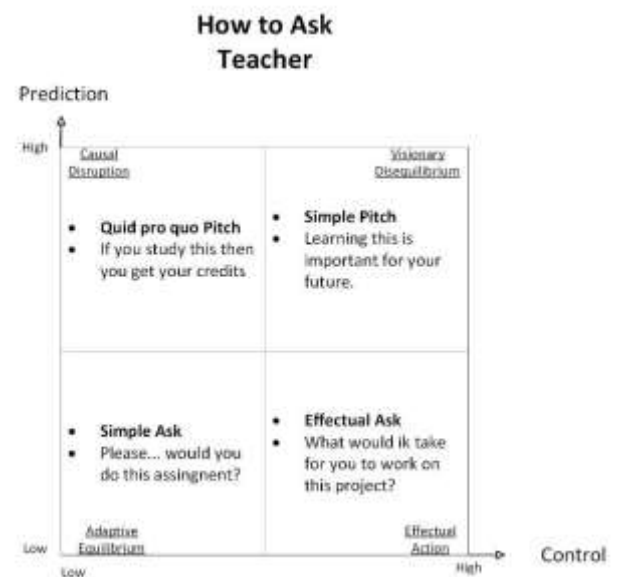


Figure 1 How to ask as a teacher

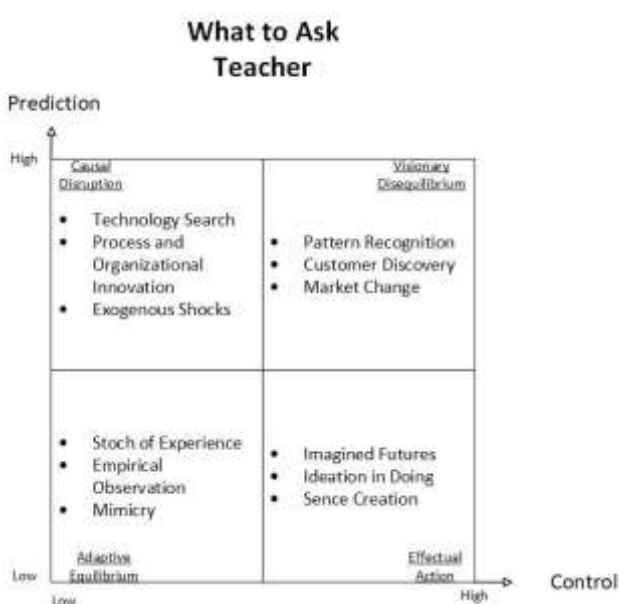


Figure 2 What to ask as a teacher

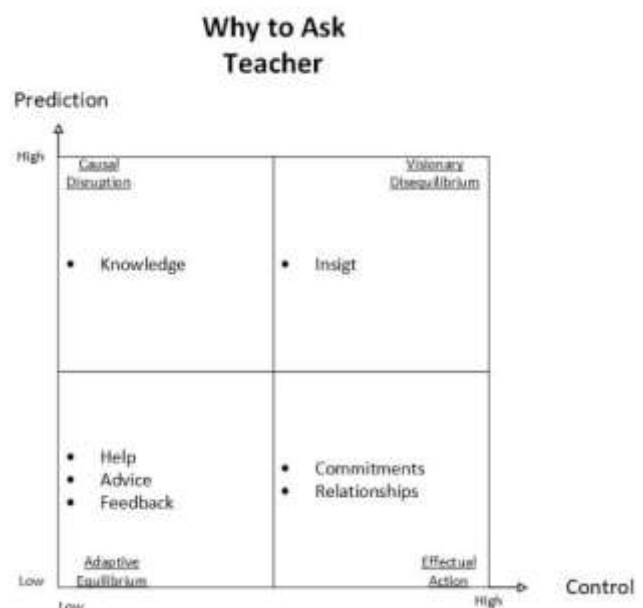


Figure 3 Why to ask as a teacher

Findings

We found that using the effectual ask, in combination with the generic teaching model in entrepreneurship education, there are strategies that teachers can use to overcome the hesitation some teachers feel when teaching entrepreneurship. These strategies are about How to ask as a teacher, What to ask as a teacher, and Why to ask as a teacher, as shown in Figure 1, Figure 2, and Figure 3. The 'how to ask' gives strategies for how a teacher can ask questions to activate students. The 'what to ask' gives examples of what to ask for in developing entrepreneurial activities. The 'why to ask' gives directions on the learning outcome. The 'how' and 'why' to ask are based on the work of Sarasvathy (2021).

Implications for society

This approach allows teachers to work on their attitude toward teaching entrepreneurship. Moreover, this program can also help teachers generally to shift from teacher-led education to student-focused education, as is also indicated by Sarasvathy (2023). It also clarifies for teachers that traditional education is not wrong per se, but each approach has value in specific situations. When teaching teachers with this framework, they are assumed to get more confidence in their teaching methods, but it also gives them more indications about fields they are good at and where others are good. This also helps them to ask other teachers for help. This 'ask' approach helps to create a more diverse pedagogical field, which is not only valuable for EE but also helps to teach in an entrepreneurial way in all kinds of sectors.

Value/originality

Entrepreneurship courses for students are often based on a causal approach, which fits best for predictable situations. In modern society, the future is often not so well predictable, which means that control should be used. Change from a causal approach to a more diverse (effectual) approach needs the development of programs and the teachers that execute the programs. It is well known that the teacher significantly influences the programs' quality (Assen, 2018; van den Akker et al., 2003). Those 'teach the teacher' programs mainly focus on the knowledge and skills of teachers. Learning about the "Canvas Business Model", "Lean Startup", and those elements. The teacher's attitude (his/her fear and insecurities) is mostly not addressed. This approach focuses on those elements. As the 'effectual ask' is successfully used to help novice entrepreneurs become expert entrepreneurs, we think this 'ask' approach can successfully develop novice entrepreneurial teaching in expert entrepreneurial teachers.

STORIES WE TELL: DECONSTRUCTING FRAUD THROUGH FILM IN THE EE CLASSROOM

Anne Köhler, University of St.Gallen (anne.koehler@unisg.ch)
Sophie Rudolph, Eastern Switzerland University of Applied Sciences

Questions we care about

We are two lecturers who designed an 'interventionist' entrepreneurship course that combines critical entrepreneurship studies and film studies. We had asked ourselves: how can we make students aware of the (grand) narratives and myths that persist in entrepreneurship? Stories of entrepreneurship often seek to celebrate only 'the wealthy and successful' (Welter et al. 2017) and are inherently gendered (Balachandra et al., 2019, Bird & Brush, 2002). These stories, which are laden with values, beliefs, and unspoken social norms are perpetuated as part of a hidden curriculum in entrepreneurship education (Jones, 2018). Thus, we wondered: how can film help us uncover the hidden meanings of the stories told in and beyond the EE classroom? And how can we engage students as active co-learners in the classroom whilst discussing difficult topics such as fraud, and failure? With this course, we follow a call by critical scholars to teach students about the dark sides of entrepreneurship (Talmage and Gassert, 2020; Ziemianski and Golik, 2020).

Approach

In spring 2023, we introduced a new master's level course that would bring a critical perspective to the EE classroom, addressing topics that are seldomly part of the core curriculum at the business school (Parker, 2018). We encouraged students to deconstruct entrepreneurial narratives in popular media and to reconstruct alternative stories of entrepreneurship. This paper reports on how fraud stories were interpreted in the course and how these readings may influence the constructions of entrepreneurship and the entrepreneur.

Results

Films are complex artifacts in popular culture, which must be carefully analysed to understand their underlying meanings. We find that stories of entrepreneurship depicting fraudulent activities can be read in different ways and that this has implications for how entrepreneurship is constructed. Students' learning reflections highlight how they were initially unaware of these meanings. Throughout the course, they learned to deconstruct narratives in popular media and became more sensitive to ethical questions.

EE implications

Our findings emphasise the need for a critical approach in entrepreneurship education. As educators, we need to be more aware of the hidden curriculum and the values and beliefs that are so deeply rooted in EE. This paper hopes to stimulate a discussion and encourage educators to reflect on the stories we tell in the classroom.

Value/originality

The use of film in the classroom is perhaps not new or original per se (cf. van Gelderen & Verduijn, 2003). Nevertheless, film is seldomly used as a pedagogical tool. The contribution of this paper is twofold: firstly, we theorize film as narrative and argue that popular media stories and ethics should be addressed as part of the entrepreneurship curriculum. Secondly, we illustrate how film can be used as an engaging and effective pedagogical tool that engages students as active co-learners in the EE classroom, even when difficult topics are on the agenda.

Keywords: Narrative, storytelling, critical pedagogy, film analysis, hidden curriculum, ethics

ENTREPRENEURSHIP EDUCATION AS AN INDUSTRY – REIMAGINING OUR FIELD AND HOW WE STUDY IT

Martin Lackéus, Chalmers University of Technology (martin.lackeus@chalmers.se)
Catherine Brentnall, Manchester Metropolitan University
Per Blenker, Aarhus University

Questions we care about – Objectives

Entrepreneurship Education (EE) is now an established scholarly field with its own journals, faculty positions, conferences and associations, as well as a broad array of curricular and extra-curricular activities aimed at making people more entrepreneurial. Inspired by a recent study into the multi-billion-dollar Entrepreneurship Industry, we argue that an entire industry has been built also here – the Entrepreneurship Education Industry. This industry is populated and influenced by powerful actors such as political decision-makers, vice-chancellors, deans, international organisations, NGOs, corporations and funding entities. Questions we care about are: What *is* EE as a field of study? Who decides what it should be? Who has the de-facto power? Why does the field look the way it does? How can we find out more about how things actually are being done? In search of answers, we propose a research agenda where a community of scholars redirects their gaze upwards to “study up” against powerful actors in EE.

Approach

With our aim being twofold in reconsidering both *what* we study and *how* we study in EE, the paper consists of two main parts. In the first part, we give a brief overview of what an industry is, and then present how we see the Entrepreneurship Education Industry. In the second part, we portray the dominant research traditions within EE as “studying down” on students and teachers. We then propose a “studying up” approach to conduct critical research on powerful EE industry actors. We draw on four critical studies in literature to generate methodological inspiration for such research.

Results

We provide an overview figure of the EE industry and a list of some main industry actors. We propose methodological techniques useful in “studying up”-based research, including constructing life stories, hanging out with informants, analysing web relations between actors, synthesising existing critique and re-describing powerful actors based on materials published by themselves.

Implications

A 'studying-up' research approach enables us to pay attention to the operation of money, power and influence in EE. This unsettles the taken-for-granted benign intentions of policymakers, commercial actors and educational institutions. A broad variety of resulting new questions can in turn help uncover institutional sacred cows and group think.

Value/originality

We contribute descriptively by portraying the hitherto unstudied Entrepreneurship Education Industry. We contribute methodologically by establishing 'studying-up' as a productive research approach in EE, enabling us to pay attention to the operation of money, power and influence.

Keywords: Entrepreneurship education, industry analysis, critical studies, research methods

VALUE CREATION PEDAGOGY IN HIGHER EDUCATION: TWELVE CASES FROM ENGINEERING, HEALTHCARE, PEDAGOGY, BUSINESS, HUMANITIES AND NATURAL SCIENCE

Martin Lackéus, Chalmers University of Technology (martin.lackeus@chalmers.se)
Jette Seiden Hyldegård, University of Copenhagen
Helle Meibom Færgemann, Aarhus University

Questions we care about – Objectives

In value creation pedagogy (VCP), students learn through creating value for others outside their higher education (HE) institution. This represents a broadening of entrepreneurial education well beyond business creation. VCP has been positioned as a “primary pedagogy” in entrepreneurial education (EE). However, most studies of VCP have been conducted on primary and secondary education levels, as well as on student experiences, leaving important gaps in literature on teacher perspectives on VCP in HE. This study aims to remedy these gaps by exploring the following questions: 1) What happens in practice when teachers let their students create value for others as formal part of a non-entrepreneurship HE course or programme? 2) Why is it done this way, and how does it work? 3) What kinds of value are created by the students, and for whom? 4) What advice do teachers give other teachers interested in VCP?

Approach

Twelve non-entrepreneurship courses and programmes in HE were identified as employing VCP. These twelve cases represent stories of experienced teachers involving external stakeholders, from a broad plethora of topics in engineering, healthcare, pedagogy, business, humanities and natural science. Teacher interviews were conducted and analyzed in terms of similarities and differences, searching for answers to our four main questions.

Results

Similarities included strong engagement among teachers and students but also numerous challenges that impact feasibility and organisation of VCP. Strong differences were found between cases, such as duration, stakeholder types engaged and values created by students. It was evident that little is known about VCP as practice in HE, triggering many new questions.

Implications

VCP requires teachers to engage in a multi-year, iterative and challenging development journey. Students need more emotional support than in regular courses. Progression may need to be designed into both courses and programmes. HE managers and policymakers need to provide more support to teachers through communities of VCP practice, supporting models, assessment techniques, and possibly also additional funding.

Value/originality

This is the first multiple case study of VCP in HE. It has uncovered strong variation in pedagogical practices, as well as a community of teachers who often act as “lonely riders” in need for more support. This motivates further research on how to conduct and support VCP.

Keywords: Value creation pedagogy, entrepreneurial education, higher education, multiple case study

ENTREPRENEURSHIP EDUCATION TAILORED FOR THE NEXT GENERATION OF SCIENTISTS

Kathrin Lichius, University of Stuttgart (kathrin.lichius@eni.uni-stuttgart.de)

Ferran Giones, University of Stuttgart

Andreas Wahl, University of Stuttgart

Mia Zsohár, University of Stuttgart

Questions we care about

What curriculum design balances scientific rigor and entrepreneurial relevance the best? What core entrepreneurial skills competencies are essential for scientists to successfully navigate the complexities of translating research into real impact?

Approach

Adopting a design science research methodology, this study examines the challenges and needs of PhDs and postdocs aspiring to engage in entrepreneurship. Through a literature review, interviews with target groups, evaluation of existing incubator programs, and a field experiment involving over 3,000 PhDs and postdocs, this research constructs and iteratively refines an innovative entrepreneurship education framework. The framework aims to address the unique demands of early career researchers.

Results

The research identified a hybrid modular workshop format, with a duration of 3-4 hours per workshop over 10 weeks, comprising 8 modules, as a successful structure for the incubator program. Both economic and social impact framings were found to be effective in attracting early career researchers to explore entrepreneurship as a pathway for science commercialization. The program's validation through accompanying surveys and a field experiment revealed its potential to foster an entrepreneurial spirit among early career researchers.

Implications

The study highlights the pressing need for tailored entrepreneurship education among scientists to bridge the gap between traditional scientific training and the entrepreneurial skills required for successful endeavors. It underscores the importance of developing education programs that are not only reflective of the entrepreneurial aspirations of scientists but also conducive to fostering a culture of innovation and societal impact within the academia.

Value/Originality

By focusing on the unique challenges and aspirations of PhDs and postdocs, the study offers a novel perspective on how to equip these emerging scientists with the skills necessary to translate their research into meaningful societal contributions. The design science approach ensures that the developed program is both effective and adaptable to the evolving landscape of science and entrepreneurship.

Keywords: Academic entrepreneurship, field experiment, Entrepreneurship Education, PhDs and post-docs, design science approach

PRE-ENTREPRENEURIAL CONSTRUCTIONS ON ENTREPRENEURSHIP: OBSERVATIONS FROM FINNISH STUDENT NARRATIVES WRITTEN IN 2004 AND 2023

Seppo Luoto, LUT University (Seppo.Luoto@lut.fi)
Greg O'Shea, LUT University

During the last decades the stream of Critical Entrepreneurship Education (CEE) has been creating critical and reflective thinking also within higher education (HE). Even if these studies have made crucial contributions in the field of entrepreneurship education, there exists a lot of space for increasing our understanding on how and why entrepreneurship is a contextual social construct. We consider this as a relevant approach also because students' life has changed dramatically within past 20 because of the digitalization, social media and mobile-phone behavior. However, none of the prior studies within CEE problematize these aspects effecting students' constructions on entrepreneurship. Therefore, in this study we ask: what are students' contextual constructions on entrepreneurship?

To answer this question, we collected university students' constructions on entrepreneurship in 2004 and 2023 in Finland and in two different geographical areas. To produce these constructions students wrote short narratives role-playing their imaginary futures as entrepreneurs. In total we collected 154 narratives, 75 narratives in autumn 2004 and 79 in spring 2023. Based on these narratives, we constructed then two packed "model-narratives" illustrating both the similarities and differences of students' constructions from these two different contexts.

The first model-narrative "surviving with hard work" from the year 2004 considers entrepreneurship as local, optional and "other" compared to proper paid job. This narrative was also gendered: female students imagined themselves in traditional female business areas and roles, while male students set themselves as active players in the entrepreneurial practices. In the second model-narrative "Growth by sustainable innovation and digitalization" the gendered constructions on entrepreneurship are not anymore explicit. Instead, entrepreneurs are now growth oriented and digitalized entrepreneurs who are worried about the current challenges of climate change and sustainability.

Our findings illustrate how contextuality matters when aiming to understand students' entrepreneurial constructions. For instance, based on this finding it can be argued that localized or gendered constructions on entrepreneurship might be decreasing, or changing their dominant appearances in entrepreneurial constructions. Instead, it seems that digitalization and sustainability have become new dominant discourses at least in Finland to be further studied in future CEE – related research. Based on this study we also believe that our methodic concept of model-narrative is currently unique and could be further developed for the needs of both academic research and practices in entrepreneurship education, at least in higher education.

SHOULD WE DITCH THE PITCH? EXAMINING THE USE OF INTERACTIVE ORAL ASSESSMENT IN ENTERPRISE CLASSROOMS

Roisin Lyons, University of Limerick (roisin.lyons@ul.ie)

Briga Hynes, University of Limerick

Yvonne Costin, University of Limerick

Though entrepreneurship education boasts many innovative pedagogies, challenges can arise in the assessment of students and teams. Firstly, in a burgeoning era of AI, entrepreneurship educators will increasingly struggle to discern between content created by generative tools and by their student teams. Secondly, the traditional presentation pitch that forms the final assessment of many start-up modules, while engaging, can often gloss over some of the fundamental weaknesses of a venture concept, and can be heavily scripted in advance. Lastly, we suggest that the pitch presentation may limit the potential to examine students higher-order cognitive skills, particularly in large class formats.

We examine the use of an adapted version of the Interactive Oral Assessment (IOA) methodology as a mechanism to elucidate student knowledge and critical thinking about their start-up venture concept. This method, rooted in constructivist theory, has been found to enhance student engagement, oral communication, metacognition, and deter academic misconduct (Sotiriadou et al., 2019; Ward et al., 2023). It comprises a free-flowing dialogue between student and educator wherein the student can show a richer understanding of their concept and allows educators to move away from the more scripted “question and answer” format of evaluation.

Given the relative newness of IOA as an assessment method and its lack of use in entrepreneurship education we applied Design Thinking methodology, using stages of ‘empathise, define, ideate, prototype and test’ to design and develop the IOA method for entrepreneurship education. This was then piloted with a large student cross disciplinary entrepreneurship module focusing on Establishing a New Venture comprising 130 students (32 teams).

Following the submission of a business plan, teams attended a follow-up discussion with an expert evaluator, who framed the conversation with three discrete sections: a pitch component, a prompted focus on a specific functional area of the business – e.g. marketing, and a ‘pivot’ wherein the evaluator asks a “what if” scenario question. While some students noted the process added ambiguity, the evaluator panel considered the method allowed for a higher level of depth and critical thinking and engaged students to deal with ambiguity and how to plan in a less prescribed setting.

Our study provides practical insights and guidelines for entrepreneurship educators who may wish to consider this method, complemented with a robust evaluator briefing tool and marking scheme. To the best of our knowledge, the IOA methodology has not yet been applied to the entrepreneurship context previously but offers sincere potential in every changing AI landscape.

Keywords: interactive oral assessment; business plan; pitching; assessment; student teams.

INCORPORATING SUSTAINABILITY INTO TEACHING PRACTICE: AN ANALYSIS ON ENTREPRENEURSHIP COURSE SYLLABI AT SWEDISH UNIVERSITIES

Jiejie Lyu, Lund University (jiejie.lyu@fek.lu.se)
Diamanto Politis, Lund University

Questions we care about

The relevance of sustainability-related issues, such as gender equality, climate change, and those resulting from the COVID-19 pandemic, is starting to be recognised in research on small businesses and entrepreneurship. Sustainable entrepreneurship has the capacity to significantly aid in the accomplishment of these objectives since sustainable entrepreneurs frequently identify opportunities within market failures that are pertinent to society and the environment. Unfortunately, there is a dearth of educational practices aimed at preparing students for and spreading knowledge of this particular breed of entrepreneurship and its potential, despite the expanding corpus of research on sustainable entrepreneurship and growing interest in it. According to Gibb (2002), entrepreneurship education (EE) can help individuals develop entrepreneurial mindsets, behaviours, and skills necessary to start, manage, and expand new businesses, with an emphasis on the social, economic, or environmental spheres. As a result, sustainability integration and sustainable entrepreneur cultivation in entrepreneurship education (EE) are conceptually deemed pivotal. However, their practices appear to lag. We then ask *to what extent and in which ways sustainability has been integrated into the existing EE frameworks?* This, in turn, raises questions about *how EE educators might adapt rising tendencies in sustainable entrepreneurship and incorporate them into their teaching practice. e.g., what content and methods relevant teaching might take, and what forms the impacts of that teaching might measure?*

Approach

We unpack the research questions by analysing entrepreneurship course syllabi in Swedish universities. In total, 116 entrepreneurship course syllabi that involve sustainability were identified. Data were analysed with a summative qualitative content analysis approach.

Results

Results demonstrate that although the proportion of incorporating sustainability roughly evenly among the three divisions of expected learning outcomes (understanding, skill, and judgement) of a course syllabus, teaching content is centred on the concept and principles of sustainability with didactical approaches and conventional assessment tools. Thus, pedagogical configurations of course syllabi are largely not compatible. Having understood the width and breadth of sustainability integration, its four typologies emerged: *Peripheral, Integral, Orchestrated, and Immersive Typologies*. Their corresponding learning theories were discussed.

EE implications

Uncovering commonalities and dissimilarities in approaches, content, and evaluation techniques of course syllabi could provide examples to EE educators who combine sustainability in their teaching. The research findings increase the discernment of EE educators and course designers on how to incorporate sustainability into their teaching to facilitate students' entrepreneurial learning processes and outcomes.

Value and originality

There has been limited theoretical and empirical attention to designing and implementing sustainable entrepreneurship education. This paper provides an overview of whether and to what extent EE educators are integrating sustainability into their teaching practices, providing a scholarly dialogue on the intersection of the theory and practice of education, sustainable development, and entrepreneurship. Thus, this study advances the emerging literature pertaining to sustainable entrepreneurship education.

Keywords: Course Syllabus, Sustainability, Sustainable Entrepreneurship Education, Learning Theory

EXPLORING METHODS FOR IDEA IDENTIFICATION IN ENTREPRENEURSHIP EDUCATION

Marie Löwegren, Lund University (marie.lowegren@fek.lu.se)

Objectives

Opportunity identification is one of the most important skills of entrepreneurs and accordingly an important part of entrepreneurship education and training. So far research has not paid much attention to how different kinds of opportunity identification teaching methods impact student teams' business ideas. The aim of this study is thus to explore what kind of opportunities student teams identify when exposed to two different teaching methods predominantly based on the theoretical foundations of either discovery or creation. Hence, we seek an answer to the question of how teaching methods influence student teams' identification of new venture opportunities.

Approach

The empirical case for this study is an elective undergraduate course in entrepreneurship enrolling 35-45 students, with a variety of educational backgrounds, a year. The pedagogy is mainly experiential, i.e. students work in teams with a business idea of their own choice during one semester. We analyze seven years of students' business ideas (2017-2023) in relation to different methods of stimulating opportunity identification.

Results

Idea generation methods in conjunction with either a discovery or a creation perspective did not seem to influence the student teams' ideas to a major extent. The business ideas are found to be either competence-based, context-based, or trends-based regardless of perspective and methods. Experiences and observations that are close to their student context are dominating.

Implications

The study indicates that despite efforts to enhance creativity, alertness, and active search among students, the context seems to be more impactful when it comes to the identification of opportunities. It may be the case that creativity takes longer to develop than the curriculum permits, or that students' previous knowledge is limited. Teamwork may also influence the business ideas in the sense that the individuals within the teams have different backgrounds and different aspirations regarding the course. More research to capture student team's perspective is needed.

Value and originality

Since opportunity identification is at the center of entrepreneurship, it is valuable to find indications about the outcomes of different pedagogical methods. Previous studies have mainly discussed outcomes in terms of the number of ideas, self-perceived increase in creativity, and degree of innovation. This study explores methods related to two different perspectives on opportunity identification and adds the team aspect.

Keywords: opportunity identification, entrepreneurship education, discovery, creation

EXPLORING HYBRID ENTREPRENEURSHIP: ENTRY AND EXIT DYNAMICS

Bogdan Marculescu, Xi'an Jiaotong Liverpool University (bogdan.marculescu@xjtlu.edu.cn)

Laura Brancu, West University of Timisoara

Nicolae Bibu, West University of Timisoara

Questions we care about (Objectives)

The research seeks to identify what drives individuals in Romania to engage in hybrid entrepreneurship—the simultaneous management of wage employment and entrepreneurial endeavors—and how they navigate the challenges and opportunities this path presents.

Approach

A qualitative study was conducted through semi-structured interviews with a varied cohort of Romanian hybrid entrepreneurs, aiming to understand the underlying motivations, pathways patterns, and lived experiences associated with this form of entrepreneurship.

Results

The investigation brings to light a multi-stage decision-making model for hybrid entrepreneurship, including the transition phases between employment, hybrid entrepreneurship, and potentially full-time entrepreneurship. It also unpacks the roles played by early life influences, personal aspirations, and environmental conditions in shaping these pathways.

Implications

The findings have significant implications for policymakers, educators, and business mentors by providing a deeper understanding of the motivations and constraints of hybrid entrepreneurs. This could inform the development of supportive structures and educational programs tailored to the needs of this growing entrepreneurial sector.

Value/Originality

This study fills a gap in existing research by offering a comprehensive model of the hybrid entrepreneurship journey within the Romanian context. It sheds new light on the personal and contextual factors that motivate individuals to pursue hybrid entrepreneurship and the unique challenges they face.

Keywords: Hybrid Entrepreneurship, Entry/Exit Factors, Motivational Factors, Career Path, Career Decision Making

KEY SUCCESS FACTORS OF ENTREPRENEURIAL COACHING FOR ENTREPRENEURSHIP EDUCATION PROGRAMS: A COACHES' PERSPECTIVE

Giammarco Marras, University of Cagliari (giammarco.marras@unica.it)

Matteo Opizzi, University of Cagliari

Michela Loi, University of Cagliari

Question we care about

Entrepreneurial Coaching (EC), recently defined as a developmental intervention aimed at supporting entrepreneurs in the pursuit of individual and organisational goals (Kotte, Diermann, Rosing, and Möller, 2021), is increasingly integrated into Entrepreneurship Education (EE) programmes (European Commission, 2018). Understanding and improving tools and interventions to better support entrepreneurs in the development process of their project might be strategic from a theoretical (what is key to contrast failure at the beginning of the process?) and practical points of view (how to design successful programs for supporting entrepreneurs at the early stages of the process?).

Within this scenario, this proposal aims at understanding *how EC could be critical in the opportunity development process*, i.e., a process in which ostensive ideas become concrete entrepreneurial projects. Our review of the literature has identified some elements for developing a successful EC intervention, such as the coach's experience (Audet and Couteret, 2012), the coachees' skill to learn (Ciuchta, Letwin, Stevenson, et al., 2018), the goodness of the coach-coachee relationship (Diller, Brantl, and Jonas, 2022), and the existence of enabling contextual factors (Kotte et al., 2021). However, conceptual, and empirical studies on the critical elements that make EC a successful intervention in an early phase of the entrepreneurial process remain scarce, providing fragmented empirical results (Kotte et al., 2021; Marras et al., in press), especially because the coaches' perspective has not been fully explored yet.

In addressing this gap, this study contributes to the existing literature by developing a theoretical framework that explains the successful elements of EC in the early phase of the entrepreneurial process from the coaches' perspective.

THE PLAYGROUND: A DESIGN STUDY FOR A UNIVERSITY PRE-INCUBATION SPACE

Bianca A. Meyer, Utrecht University (b.a.meyer@uu.nl)
Anne R. van Ewijk, Utrecht University

Questions we care about (Objectives)

Physical innovation spaces facilitate student entrepreneurship through expected synergy effects of co-locating entrepreneurship education, student activities, and events from relevant external parties. However, academic research on the design and use of these spaces globally is scarce. In addition, this design appears context-dependent and customization to users is essential. So how could design criteria for the 'Playground' by the Utrecht University Centre for Entrepreneurship be established?

Approach

This pragmatist inductive followed the double diamond model of design thinking (Tschimmel, 2012). First, design criteria were established through nine focus groups (N=253) in the academic year 2022-2023. Second, twelve explorative prototyping-test sessions (N=99) took place in 2023.

Results

Major design requirements that emerged from phase one were: multifunctionality (through open and closed-off spaces and modifiability of facilities and furniture), inspirational content (through events, hands-on learning, and accessible expertise) and sense of community (through shared mindset and values, reinforced by involving students in design and operational decisions). The prototype-test sessions provided more insights into the physical design of the Playground as well as indications of which factors stimulate community building.

Implications

Various theoretical and practical implications on the design of mix use spaces for student innovation and entrepreneurship are derived.

Value/Originality

This paper contributes to the field of entrepreneurship education research by demonstrating experimental action-learning and reflective learning via design thinking as scientifically valid and societally relevant research method.

Keywords: design, space, innovation, entrepreneurship, student, higher education

DESIGN PRINCIPLES FOR AGENCY-CENTRIC K-12 ENTREPRENEURSHIP EDUCATION IN DEVELOPING ECONOMIES

Ashwin Mohan, Udhyam Learning Foundation (ashwin@udhyam.org)
Mekin Maheshwari, Udhyam Learning Foundation

Objectives

Entrepreneurship education (EE) has so far been studied in the literature using different research methods, showing positive effects on students' entrepreneurial intentions, attitudes, and behaviors. However, most studies have been contextualized with the purpose of increasing students' abilities to become entrepreneurs and have been set in post-secondary education in the global West. The potential for experiential entrepreneurship education to bolster emergent agency to enable students to become independent and in-charge of their own lives in the real world, within and outside entrepreneurship, has been relatively unexplored. This is of primary importance for EE policy in developing countries which have been pushing for more EE experiences for students at the K-12 level.

Approach

In this paper we consider the design principles that influenced the creation of an experiential entrepreneurship education program in India that centers student agency as a desired outcome. Drawing on two different views of agency from a developmental and a capacities perspective, we outline the considerations that went into the design of our program that has been operating across multiple states in India. We present the basic inputs and outputs of the program and elucidate the outcomes and long-term social impact that has arisen as a result of it.

Results

Framing these forms of agency as moving towards 'entrepreneurial' identities, we showcase the utility of EE in helping students make critical life decisions by bootstrapping emergent agency. We conclude with opportunities and open questions emerging from the program as well as an elaboration of the current research project to understand how experiential entrepreneurship education can have long term social impact. Some sample data from quantitative psychometric measures and qualitative analyses of student agency in the real world are also presented from a large corpus of data that has been collected to monitor program impact across the last five years.

Implications and Value

The study has two important implications. Firstly, it highlights the potential for agency-centric approaches to entrepreneurship education and the larger impact that EE can have for students beyond just the domain of entrepreneurship. It also adds to a growing body of evidence for the impact of experiential EE for K-12 students in the Global South, which remains an understudied sociocultural context.

Keywords: Agency, K-12 Education, Mindsets, Experiential Learning

LATIN AMERICAN APPROACH TO ENTREPRENEURSHIP EDUCATION

Joysi Moraes, Universidade Federal Fluminense (jmoraes@id.uff.br)

Sandra Mariano, Universidade Federal Fluminense

Robson Moreira Cunha, Universidade Federal Fluminense

Questions we care about

The dissemination of entrepreneurship education and its inclusion as a mandatory construct in the curricula of basic education in Brazil has raised a significant question: Is a Latin American approach to entrepreneurship education possible? This article explores the potential of entrepreneurship education within the framework of the Freirean perspective (Freire, 2000a; 2000b; 2015a; 2015b; 2021a; 2021b). We use entrepreneurship education as a playground for Paulo Freire's ideas.

Approach

In Brazil, the early programs for entrepreneurship education were heavily influenced by the Anglo-American approach, with recent trends indicating an adoption of elements from the European-Continental approach. This ongoing debate provides an opportunity to develop a Latin American approach to entrepreneurship education. Paulo Freire's theoretical construction can provide the foundation for a Latin American approach to entrepreneurship education.

Potential Findings

The study aims to develop a Latin American approach to entrepreneurship education, presenting a perspective that has the potential to diversify viewpoints in entrepreneurship education, emerging from the global south, in a developing country. This approach, influenced by Paulo Freire's thoughts, emphasizes the capacity of individuals to transform their reality, change their destinies through their actions, and dynamically shape the world, constructing a new narrative. The intention is also to contribute to existing discussions that have incorporated theoretical insights from Paulo Freire (Berglund & Johansson 2007; Fedotova & Nikolaeva, 2015; Verduijn & Berglund, 2020; Siqueira et al. 2023; Klapper & Fayolle, 2023).

Implications for Society

The development of a Latin American approach would contribute to the literature on entrepreneurship education. Specifically, our study would contribute to making it more feasible to include entrepreneurship education in basic education schools in Brazil. Despite its inclusion in the Brazilian National Common Curricular Base, the resistance among teachers persists, viewing it as another expression of American and European colonialism. A Latin American approach would have the potential to strengthen teacher engagement and promote more effective education, particularly considering the socio-economic context in Brazil.

Value/Originality

This proposal for a Latin American approach originates in the global south, within a developing economy, and is formulated by Latin American researchers deeply engaged in entrepreneurship education and the study of Paulo Freire's work. To the best of our knowledge, this represents the first proposition of a Latin American approach to entrepreneurship education.

Keywords: Paulo Freire; Freirean perspective to Entrepreneurship Education; Latin American perspective to Entrepreneurship Education.

PLAYFUL SEEDS OF IMPACT: A CONSTRUCTIVIST GROUNDED THEORY APPROACH TO PRESCHOOL ENTREPRENEURIAL EDUCATION INQUIRY

Trudie Murray, Munster Technological University (trudie.murray@mtu.ie)
Breda Kenny, Munster Technological University
Helen McGuirk, Munster Technological University
Thomas M. Cooney, Technological University Dublin

Questions We Care About (Objectives)

This study explores the integration of entrepreneurial education (EE) in Early Childhood Education (ECE), and asks - how can early childhood educators foster entrepreneurial thinking and behaviour in preschool children? It seeks to bridge the gap in literature on entrepreneurial learning in early childhood, emphasising the potential of EE to equip children with critical thinking, creativity, and problem-solving skills vital for success in the 21st century.

Approach

Employing a Constructivist Grounded Theory (CGT) methodology (Charmaz, 2006), the research captures the experiences, perspectives, and practices of preschool educators in Ireland. Through semi-structured interviews with 19 participants, the study explores the nuances of implementing EE in ECE settings. The approach emphasises the co-construction of knowledge and the iterative, reflexive nature of CGT in analysing educational practices.

Results

This research identifies eight key categories of entrepreneurial education (EE) integration in ECE, with a significant finding being the subconscious facilitation of EE through educators' daily practices. Play emerges as a critical pedagogical approach, naturally fostering creativity, independence, and problem-solving. The findings also emphasise the need for continuous professional development (CPD), highlighting the crucial influence educators' qualifications, educational philosophies and curricula play in the effective implementation of EE.

Implications

The study offers a theoretical contribution to entrepreneurship education by presenting a framework that encompasses interconnected development, transformative practices, inclusivity, empowerment, collaborative engagement, and evaluative insight. It extends the domain of entrepreneurial learning to early childhood, advocating for the systemic inclusion of EE in ECE curricula. Practical implications highlight the necessity of innovative pedagogical strategies and the importance of policymakers supporting frameworks that facilitate EE integration.

Value/Originality

This research presents a novel framework for embedding entrepreneurial concepts within ECE, emphasising the dynamic processes essential for fostering entrepreneurial skills from an early age. By leveraging CGT, the study provides a robust, contextually grounded theoretical framework, offering actionable insights for educators and policymakers. It emphasises the transformative potential of EE in early childhood education, positioning it as a crucial foundation for personal growth, gender equality, and socio-economic development.

Keywords: entrepreneurial education, early childhood education, preschool, constructivist grounded theory.

HOW DO CHILDREN EXPERIENCE ENTREPRENEURIAL EDUCATION?

Sabrina Nagel, Auckland University of Technology (sabrina@igniteinnovation.co.nz)

Abstract Questions we care about

The voice of children is often neglected in educational research but as a 10-year-old child said: “Schools are all about us, so why aren’t we asked more.” Addressing a research gap, the study deliberately chose four schools actively integrating entrepreneurial education, with three serving younger students, offering a distinct perspective often omitted in existing research concentrated on the experiences of older children at the secondary school level.

Approach

This qualitative study explored the understanding and implementation of enterprise in selected New Zealand schools, focusing on its impact on student passion, engagement, and skill development. It utilised an exploratory case study methodology involving educators and students from four different types of schools (one primary school, one intermediate school, one high-school and one composite school). Data was collected through interviews with educators and a diamond ranking activity with students to capture students’ experiences.

Results

Entrepreneurial education influenced students positively, intertwining passion, engagement, and skill development. This aligns with research on choice, intrinsic motivation, and deepened learning (Swartz et al., 2016). Notably, the study observed increased engagement, especially among boys and less academically inclined students. Teachers noted intrinsic motivation, deeper learning, and students willingly stepping outside comfort zones. Students also recognised a blend of ‘hard’ and ‘soft’ skills, with a focus on problem-solving and teamwork, while confidence emerged as a key outcome.

Implications

Engaging children in research, such as through the diamond ranking activity, offers transformative benefits by amplifying their voices and enriching data collection. This approach provides unique insights into their views on entrepreneurial education. By making abstract concepts accessible, the diamond ranking activity promotes deeper understanding and active engagement in learning. This study underscores the outcomes achievable through entrepreneurial education, including helping students connect their passions to higher purposes, enhancing overall well-being, and increasing engagement for both students and teachers. These findings offer actionable insights for educators and policymakers to improve entrepreneurial programmes, ensuring they resonate more profoundly with students.

Value and originality

This paper provides a unique perspective on entrepreneurial education by spotlighting students' voices and experiences. Utilising a diamond ranking activity, where children organised provided words, the study demonstrates innovative ways to include children's voices beyond traditional interviews or focus groups. Furthermore, unlike most research focusing on older children or young adults, this study centres on pre-teens and teenagers.

Keywords: Entrepreneurial education, Student voice, Qualitative, Diamond ranking activity

EXPLORING ENTREPRENEURSHIP EDUCATION: A REVIEW THROUGH THE INSTITUTIONAL LENS

Maria Noguera Noguera, Universitat Autònoma de Barcelona
David Urbano, Universitat Autònoma de Barcelona (david.urbano@uab.cat)
Tatiana Lopez, Universitat Autònoma de Barcelona

Questions we care about (Objectives)

The primary objective of this study is to conduct a comprehensive review of entrepreneurship education literature through the lens of institutional theory, identifying key environmental factors that shape entrepreneurship education.

Approach

We conducted a systematic literature review supported by bibliometric analysis. The analysis was conducted using activity indicators to provide data on the volume and impact of research, allowing for the observation of the literature's quantitative evolution over time. A sample of 65 articles published between 2010 and 2024 in journals included in the Journal Citation Reports™ was analysed.

Results

The main findings reveal that (1) institutional factors are crucial in shaping both the pedagogical approaches of entrepreneurship education and its outcomes; (2) There is a need for further exploration into how both formal and informal institutional dynamics interact and influence entrepreneurship education; (3) Current research lacks a nuanced examination of the entrepreneurial process and the influences of institutions and entrepreneurship education at each phase; (4) Despite a growing number of publications, there remains a scarcity in studies leveraging institutional perspectives within entrepreneurship education, particularly concerning the role of entrepreneurship education in fostering entrepreneurial growth, a significant area of interest cited in many studies; (5) An emerging research domain focuses on institutional entrepreneurship, examining entities that disrupt existing institutional frameworks, though this area is still emerging.

Implications

Our findings underscore the need for academia and policymakers to consider the institutional environment's influence on entrepreneurship education. By recognizing the specific thematic areas and the overarching framework, stakeholders can better support the design and delivery of effective entrepreneurship education programs.

Value/Originality

This study contributes uniquely by integrating environmental factors into understanding entrepreneurship education via institutional theory. It maps the current state of research and paves the way for future studies and policy formulation.

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

DOCTORAL STUDENTS IN THE ENTREPRENEURIAL UNIVERSITY: CHALLENGING THE ROLE OF UNIVERSITY SUPPORT SYSTEM

Matteo Opizzi, University of Cagliari (matteo.opizzi@unica.it)
Giammarco Marras, University of Cagliari
Michela Loi, University of Cagliari

Questions we care about

While doctoral students are increasingly recognized as a potential bridge between university and the external environment (Mars et al., 2022; Muscio & Ramaciotti, 2019), the early stage of their entrepreneurial journey is still a black box, with very little evidence about the role of university support system. The question we care about concerns the role of the university support system in nurturing doctoral students' decision to become entrepreneurs. Informed by the social information processing perspective, which underscores the interplay between individuals and their contextual surroundings in organizational behavior, this study presents and empirically examines a model aimed at elucidating doctoral students' transition from entrepreneurial alertness to intentions, thereby exploring their decision to pursue entrepreneurship.

Approach

A structured questionnaire was administered to 261 doctoral students from 19 Italian universities. Partial Least Square Structural Equation Modeling (PLS-SEM) was employed to assess causal relationships among latent variables. Necessary Condition Analysis (NCA) was utilized to ascertain whether the significance of the university support system varies based on doctoral students' levels of pro-social motivation.

Results

Results reveal that higher levels of human capital among doctoral students correlate with increased entrepreneurial alertness. Conversely, the study indicates that the university support system does not bolster doctoral students' entrepreneurial decision-making process, but emerges as indispensable when pro-social motivation is lacking.

Implications

This research significantly advances theory by shedding light on the true impact of university support systems in nurturing early-stage academic entrepreneurship. Additionally, it presents a comprehensive multi-level model that enhances our understanding of how academic entrepreneurship unfolds among doctoral students.

Originality

Importantly, the findings also hold crucial and original implications for entrepreneurship education. Our study underscores that while entrepreneurship education is often perceived as a vital form of support offered by universities, our results challenge this notion. Specifically, we find that a high level of entrepreneurship education is not always essential for doctoral students to make entrepreneurial decisions, particularly when they are driven by a strong pro-social motivation.

SUSTAINABILITY THROUGH ENTREPRENEURSHIP - HOW TO FOSTER SUSTAINABILITY COMPETENCIES THROUGH ENTREPRENEURSHIP EDUCATION

Sebastian Planck, Strascheg Center for Entrepreneurship (sebastian.planck@sce.de)
Sonja Wilhelm, Strascheg Center for Entrepreneurship
Johanna Kobilke, Strascheg Center for Entrepreneurship
Klaus Sailer, Strascheg Center for Entrepreneurship

Questions we care about

The primary objective of our paper is to connect sustainability and entrepreneurship education by showing their convergence. By contributing to the discourse on transdisciplinary competence development, our paper offers valuable perspectives on the question of how the connection of sustainability and entrepreneurship education can foster competence development and address pressing sustainability issues.

Approach

Utilizing a qualitative interpretivist approach, we conduct a comparative analysis of two competency frameworks: GreenComp (sustainability) and EntreComp (entrepreneurship). Furthermore, we advocate for suitable methods and propose practical suggestions to cultivate these competencies within an action-learning context that is rooted in Transformational Learning Theory (Mezirow, 1991).

Results

The analysis of GreenComp and EntreComp frameworks reveals untapped synergies, reinforcing the imperative to blend sustainability with entrepreneurship education. Our research suggests that combining the “mindset” approach of GreenComp with the “toolset” approach of EntreComp will help bridge the gap between entrepreneurship and sustainability.

Implications

Our research supports integrating sustainability into entrepreneurship education to cultivate responsible, entrepreneurial individuals, aiming to remedy the knowledge-action gap in existing sustainability programs.

Value/Originality

Delineating the overlap of GreenComp and EntreComp offers educators a way of integrating both models without having to prioritize one or the other, to integrate sustainability into entrepreneurship education or entrepreneurship into sustainability education.

Keywords: Sustainability, Entrepreneurship, Competencies, EntreComp, GreenComp

STUDENTS' STRUGGLE TO CONVERT THEIR ENTREPRENEURIAL INTENTIONS INTO BEHAVIOUR

Pascal Renz, University of Tübingen & University of Applied Science Esslingen (pascal.renz@hs-esslingen.de)

Taiga Brahm, University of Tübingen

Michael Flad, University of Applied Science Esslingen

Question we care about

Growing evidence suggest that many people develop intentions to start their own business, but often do not realise their planned behaviour (van Gelderen, Kautonen, & Fink, 2015). While it is known that intention can also lead to behaviour at a later stage in life (Kautonen, Gelderen & Tornikoski, 2013), it is unknown why this behaviour rarely occurs during university studies. In particular, the reasons explaining the intention-behaviour gap in students' entrepreneurial activities has hardly been investigated in a comprehensive study. Accordingly, the aim of this study is to offer explanations for the absence of first entrepreneurial behaviour in that specific life-stage. Therefore, we investigated the extent to which a lack of business opportunity recognition (Lo-BOR), high levels of procrastination (PROC) or a perceived lack of capacity (LoC) affects the Theory of Planned Behaviour (TPB) and its gap between intention and behaviour.

Paper Approach

The research sample consisted of 317 student's participants from diverse German universities, with a balanced gender distribution of 45.7% male and 52.3% female participants. With regard to the level of education, 55.3% pursuing a bachelor's degree, 32.3% a master's degree and 12.2% seeking other degrees. To analyse our data, we employed a T-Test to examine the presence of an intention-behaviour gap among our participants. Subsequently, to investigate the underlying causes of this gap and to test our hypotheses, we applied structural equation modelling (SEM), designating entrepreneurial behaviour (EB) as the dependent variable. The evaluation of the model fit indicates that the model adequately replicates the observed variance-covariance matrix of the sample. All overall goodness-of-fit indices reach a level that is typically considered acceptable: RMSEA = 0.068 (below 0.080 for moderate) and CFI = 0.912 (above 0.90).

Results

Our study confirmed the presence of a significant entrepreneurial intention-behaviour gap among student in our sample, thereby reinforcing the generally accepted notion that, despite high intentions, an individual's actual behaviour is sometimes limited (Sheeran, 2002; Godin & Conner, 2008); Conner & Sparks, 2015, Conner & Norman, 2022). In particular, we demonstrated that a LoBOR, as well as LoC can significantly contribute to this gap in students entrepreneurship. Contrary to what was assumed from literature, student's level of procrastination and their perceived behavioural control did not have a significant, direct effect on entrepreneurial behaviour.

Implications

Our study demonstrates that the promotion of students' entrepreneurial intentions is not enough. Regardless of their will, students will not be able to become entrepreneurially active if their perceived capacities seems to be limited and/or simply their skills to identify business opportunities are lacking. Educational institutions may therefore need to fundamentally rethink the focus and content of their entrepreneurship teaching programs and move away from simply promoting the intention and instead focus on breaking down barriers of students' entrepreneurship.

Value and Originality

Our study expands our understanding of the intention-behaviour gap in entrepreneurship, thereby questions some established pillars of the TPB in the field of entrepreneurship and opens up a variety of starting points for possible improvements in entrepreneurship education.

Keywords: Entrepreneurial Intention-Behaviour Gap, Procrastination, Lack of Capacities, Lack of Opportunity Recognition

LLMS AS A CATALYST FOR SUSTAINABLE OPPORTUNITY RECOGNITION CAPABILITY

Pascal Renz, University of Tübingen & University of Applied Science Esslingen (pascal.renz@hs-esslingen.de)
Johannes Martin, University of Applied Science Esslingen

Question we care about

Our society and the global economy will face major challenges in the coming years. This requires global action, as set out in the Sustainable Development Goals (United Nations, 2016). Entrepreneurship is increasingly seen as a promising way to achieve these goals (Dean and McMullen, 2007; Patzelt and Shepherd, 2011). In this context, entrepreneurship education at universities plays a key role, particularly in promoting entrepreneurs with new solutions and encouraging a shift in thinking towards sustainable business models. Recognizing sustainable solutions that simultaneously fulfil ecological, social, and economic conditions seems to be particularly challenging (compare Fichter et al., 2023), underscoring the need to enhance the abilities of potential future entrepreneurs in this area. Therefore, we aim to explore how AI, especially advanced Large Language Models (LLM) like ChatGPT, could aid in educational settings to support students' ability to recognize and develop sustainable business opportunities.

Paper Approach

To test our hypotheses, we conducted an experiment in which participants had to identify two profitable business opportunity based on two different sustainable scenarios. By evaluating the quality of the ideas, the opportunity recognition capability (ORC) was measured. The use of ChatGPT was allowed for one of the two tasks. All resulting solutions were anonymized and given to experts for evaluation in random order. In addition, participants were asked to take part in a survey to evaluate their own ORC and to determine their perceived level of competence in the use of ChatGPT.

Results

Our study demonstrates that ChatGPT significantly enhances participants' ability to identify business ideas (difference between mean ORC with and without ChatGPT utilization = 1.657, $p < 0.001$). While expert assessments confirmed significant ORC improvements with ChatGPT, participants' self-assessments did not, indicating a disparity between perceived and actual performance enhancements. Further analysis revealed that participants with initially lower ORC benefitted more from ChatGPT usage. A significant mean improvement difference between lower and higher initial performance groups was found (2.228, $p = 0.003$). In this study, the self-assessed level of competence in the use of ChatGPT have no significant impact on individuals' performance when using ChatGPT to identify sustainable business opportunities.

Implications

Our study results show that LLM can also be used effectively in the field of entrepreneurship. Teachers should therefore consider integrating LLMs into entrepreneurial teaching formats to expand the toolset of potential future founders. Because the use of LLMs is particularly helpful for low performers, we expect younger and less experienced students in particular to benefit from using LLMs to develop meaningful ideas that enable them to enter entrepreneurial activities. This implies that the use of LLMs is particularly useful in early semesters.

Value and Originality

The study is the first to demonstrate the effectiveness of LLM in the context of ORC and opens up various possibilities for further research into the use of LLM in the field of entrepreneurship.

Keywords: LLM, Artificial Intelligence, Opportunity Recognition Capability, Entrepreneurship Education

ENTREPRENEURSHIP EDUCATION UNDER CONDITIONS OF POVERTY: IMPLICATIONS FROM THE CAPABILITIES THEORY

Susana C. Santos, Florida State University (ssantos@jmc.fsu.edu)
Michael H. Morris, University of Notre Dame

Questions we care about (Objectives)

In this conceptual study, we explore how adult education, as learning opportunities for adults wishing to update or acquire new skills and knowledge (Brookfield, 1985), focused on entrepreneurship, can play a significant role in lifting individuals out of poverty. Specifically, we pose the question: *How does adult training in entrepreneurship enhance the capabilities and functionings of individuals in poverty?* We discuss this question through the lens of the capability theory (Sen, 1999) as this approach allows a re-positioning of education in terms of both its intrinsic value and its instrumental role in the development of poverty reduction (e.g., Bird et al., 2022).

Approach

The capability theory is based on two core concepts: functionings, which refer to achievements, and capabilities, which refer to the ability to achieve (Sen, 1987, 2000). The scarcity of resources and means in poverty limits the freedom that individuals have to act in ways that are of value to them and poses unique challenges to converting their limited resources into capabilities and functions. Therefore, education is a critical mechanism for developing individual's capability sets and influencing their real opportunities and choices available. Particularly important is education related to entrepreneurship, focused on the fundamental knowledge, skills, and attitudes applied to starting and growing a venture. Entrepreneurship represents an emancipatory process for breaking from social and cultural constraints (Rindova et al., 2009), empowering individuals to create self-employment pathways to escape poverty (Santos et al., 2019). The capability approach allows us to consider the potential for individual freedoms both *in* and *through* adult education in entrepreneurship as a means of social inclusion, empowerment, and participation of disadvantaged groups (Boyadjieva & Ilieva-Trichkova, 2021).

Framework

We propose an adult training program in entrepreneurship for individuals in poverty conditions comprised of both formal and informal learning modalities. We postulate that participation in adult training in entrepreneurship has a dual effect on critical conversion factors, which refer to variations in how a particular set of resources (here, adult education in entrepreneurship) form an individual's capability set and influence their real opportunities and choices available (Sen, 1999; Robeyns, 2005). Specifically, it buffers negative and restrictive personal, social, and environmental conversion factors that constrain capability sets in entrepreneurship; and it enables the positive personal, social, and environmental conversion factors that foster the development of capability sets in entrepreneurship related to launching and growing a sustainable venture and freedom of choice through the venture. Enhancement of capability sets in entrepreneurship enables the achievement of functionings for the poor related to moving out of poverty and increasing eudaimonic well-being.

Value/Originality

This conceptual framework is a work in progress. We will collect data using focus groups with adults in poverty who are part of a training program in entrepreneurship in different cities in the United States under the [Urban Poverty and Business Initiative](#) model.

Keywords: adult training, entrepreneurship education, poverty, capabilities, functionings

NAVIGATING THE DARK SIDE AND FOSTERING RESILIENCE IN ENTREPRENEURSHIP EDUCATION

Ann-Cathrin Scheider, University of Applied Sciences Bremerhaven (ascheider@hs-bremerhaven.de)

Stephanie Birkner, University of Applied Sciences Bremerhaven

Alexis Papathanassis, University of Applied Sciences Bremerhaven

Orestis Terzidis, Karlsruhe Institut of Technology

Questions we care about (Objectives)

The entrepreneurial journey is packed with emotional ups and downs. Negative experiences might lead e.g. to stress, feelings of grief and even depression. We argue, the “dark side” in EE in terms of existing stressors may serve as an opportunity to develop students’ resilience.

In this study, we consider these prototypical entrepreneurship scenarios of venture-creation programmes as a kind of laboratory to observe phenomena that also occur with 'real' entrepreneurs and to develop strategies for learning requirements.

Approach

Data was obtained from three stakeholder groups: students, teaching staff and researchers. The findings were coded, analysed and synthesized using the “General Morphological Analysis” (GMA), which is specifically useful in problem areas which are new, multidimensional and complex. In this study, data was obtained using focus-groups, semi-structured interviews as well as a systematic literature view. The data was coded in three steps and subsequently synthesized using a cross-consistency analysis (CCA) to attain a rigorous process and robust results.

Results/ Implications

The results showed that there are three levels to which stressors as well as supporting factors can be attributed: the individual-level, the academic-level and the team-level. Towards the stressors and supporting factors the academic-level was most prevalent, indicating that the curricula and teaching approaches in EE bear most potential for the development of resilience. The CCA revealed 3 clusters of stressors: personal development challenges, competence-building challenges and curricular challenges, all offering grounds for the development of resilience. The analysis of supporting factors showed that a focus on the development of non-cognitive skills, personal development, emotional support from educators and clear learning aims may help students to develop resilience. This article leaves practitioners with indications how resilience can be fostered through a new paradigm for curricular development.

Value/ Originality

This paper introduces the methodology of GMA and CCA to tackle the research gap of resilience in EE. This methodological framework that is novel in the domain of EE research and was used for a complex multi-method research approach to contribute to the scientific debate and generate indications for practitioners and researchers alike.

Keywords: entrepreneurship education, resilience, behavioural design, experiential learning, venture-creation

MIRROR, MIRROR ON THE WALL: ROLE AND SELF-CONCEPTION OF ENTREPRENEURSHIP EDUCATORS – INSIGHTS FROM AN INTERVIEW STUDY

Hannah Laura Schneider, Stuttgart Media University
Louisa Huxtable-Thomas, Swansea University (L.A.Huxtable-Thomas@swansea.ac.uk)
Paul Jones, Swansea University
Nils Högsdal, Stuttgart Media University
Robert Bowen, Cardiff University

Questions we care about (Relevance & Novelty)

In the context of Entrepreneurship Education (EE), the educator is the key player in the design and delivery of EE (Toding & Venesaar, 2018; Löbler, 2006). As EE has evolved from different fields (Fayolle & Gailly, 2008), the educators come from different backgrounds and disciplines resulting in individualised, rather than generalised practice (Vanevenhoven, 2013). This raises the question we care about: How do Entrepreneurship Educators see themselves and how do they describe their own role in the classroom? We also investigate whether their self-reflections are embedded in theoretical frameworks.

Approach

A pan-European qualitative, semi-structured, in-depth interview-study was conducted to gain insights into the educator's self-conception and their role in EE. The study comprised 29 semi-structured interviews with experienced Entrepreneurship Educators.

Results

The study discovered that Entrepreneurship Educators are diverse in their selfconceptualisations, their perceptions of their role in the classroom and the extent to which these were grounded in entrepreneurship or education theory. The subjective choices of educators influence the teaching process, which prompts inquiries into how they perceive their own roles and whether these perceptions align with theoretical frameworks. Findings reveal the cultural and structural barriers faced by EEs in trying to balance the resource intensive practice against the intellectually ambiguous concept of entrepreneurship.

Implications for society /EE

This study provides further insights into Fayolle's (2013) question of "Who the Entrepreneurship Educators are" and answered the call to put increased focus on the role of the individual educator (Hägg & Gabrielsson, 2019), their backgrounds and how their decisions shaped entrepreneurial learning (Henry, 2020; Kyrö, 2015). This study offers novel perspectives on educators' identities, barriers faced in educational delivery, and highlights the importance of educators' awareness of underlying educational philosophies guiding their actions, stressing the necessity of pedagogical training within this domain.

Value / Originality

This study addresses research gaps previously noted by Hannon (2005) and Fayolle & Gailly (2008) by confirming the ways education and entrepreneurship education theory is used by entrepreneurship educators.

Keywords: entrepreneurship, educator, role of the educator perspective, qualitative interview study, educator-centred perspective

BECOMING ENTREPRENEURIAL: USING BRONFENBRENNER'S BIOECOLOGICAL MODEL TO UNDERSTAND ENTREPRENEURIAL COMPETENCY DEVELOPMENT

Deepa Subhadrammal, University of Technology Sydney (Deepa.subhadrammal@student.uts.edu.au)

Martin Bliemel, University of Technology Sydney

Jochen Schweitzer, University of Technology Sydney

Questions we care about The rapid increase in entrepreneurship education programs has not necessarily generated a commensurate increase in entrepreneurs or a more entrepreneurial workforce. This raises questions about how they provide entrepreneurial learning experiences and whether they create a lasting increase in entrepreneurial competencies and entrepreneurial self-efficacy. Most studies of entrepreneurship education programs are single-context studies that focus on a given program through which how students are expected to learn and develop. What is less known, is what occurs 'beyond the classroom' or outside the program, and across contexts such as the real-life contexts in which learners also engage in entrepreneurial activities. This study aims to adopt a more holistic approach to exploring entrepreneurial competency development, simultaneously considering multiple contexts that learners engage in. This paper adopts Bronfenbrenner's bioecological systems theory (Bronfenbrenner, 1979; Bronfenbrenner and Morris, 2006) to explore the interaction between personal characteristics and with factors within their context/environment, which then shape the mechanisms of entrepreneurial learning contributing to the competency development.

Paper approach This study focusses on a cohort of students undertaking a 1-year undergraduate honours degree in Entrepreneurship. As part of the program, students submitted written reflections that link a recent given activity to one of 12 EntreComp competencies. The written reports provide rich data and were complemented by semi-structured interviews three years since graduating about the learning journey. These reflections and interviews were analysed through the PPCT model and examine the interactions between the student and factors in their learning ecology.

Results This study found that the contexts where students developed entrepreneurial competencies were not limited to classrooms. Furthermore, results revealed different activities, resources and relationships with stakeholders contributed to competency development in a way that experiences in one context directly supported the competency development in another context. This study found a set of developmental characteristics and disruptive characteristics which were addressed through the interaction between contextual factors.

EE Implications Implications for entrepreneurship educators are to design entrepreneurship programs and learning environments in a way that nurtures the entrepreneurial competencies within the program while also actively encouraging learners to seek experiences and reapply their competencies across contexts. This amounts to personalised learning, which looks at learners as whole people, acknowledges the plurality of contexts students they are involved in, and can be used to tailor activities to the learners' strengths and weaknesses.

Value and originality Despite suggestions of prior research that competencies develop over time and across new experiences, the entrepreneurship education literature lacks a holistic framework to understand such a lifewide developmental process of learning and development. This study brings together the literatures of entrepreneurship education, education and developmental psychology by adopting Bronfenbrenner's ecological model, also known as the Process-Person-Context-Time model (PPCT for short) and applying it to the development of entrepreneurial competencies. This is the first study in entrepreneurship education to take a quasi-longitudinal analysis to understand the development of entrepreneurial competencies using Bronfenbrenner's ecological model in students.

Keywords: Entrepreneurial competency, Entrepreneurial learning, Bioecological theory, Person-context interaction

ROLE OF EMOTIONS IN LEWIFIDE ENTREPRENEURIAL LEARNING: A MULTI-CONTEXTUAL STUDY

Deepa Subhadrammal, University of Technology Sydney (Deepa.subhadrammal@student.uts.edu.au)

Martin Bliemel, University of Technology Sydney

Jochen Schweitzer, University of Technology Sydney

Questions we care about

Studies on entrepreneurial emotions have since shown that they can have a significant impact on business outcomes (Foo, 2011; Podoyntsyna et al. 2012; Welpe et al. 2012; Grichnik et al. 2010) with emergent findings about their role in classroom learning (Arpiainen et al. 2013; Jones & Underwood, 2017). In response to gap in multi-contextual research on entrepreneurial learning and emotion, this paper investigates the role of emotion in competency development across contexts. Furthermore, purpose of this study is to provide a deep understanding of students lived experience of entrepreneurial emotions and their impact on competency development

Paper approach

This study uses a longitudinal design to explore the learning experiences of 3 student-entrepreneurs across multiple settings. Student-entrepreneurs are enrolled in a mix of curricular and extracurricular programs across the university. Primary data for this study is semi-structured interviews and written reflections. The student-entrepreneurs provided written reflections that link a learning experience to a chosen entrepreneurial competency, from a preselected list based on the EntreComp. The reflections were generated using a reflection guide based on Gibb's (1988) framework of reflective writing that explicitly prompted participants to acknowledge their emotional state over the course of the experience that are reflecting on. These reflections and interview transcripts were analysed using inductive thematic analysis.

Results

Analysis identified different emotions (discrete emotions and dispositional emotions) that had a significant impact on the competency development. It also clearly revealed that contexts where students developed entrepreneurial competencies were certainly not limited to classrooms. A set of negative discrete emotions were identified including loneliness, anxiety, confused, embarrassment, shame, insecure, hurt, unacknowledged and overwhelmed. Positive discrete emotions include enjoyment, excitement and pride. Positive dispositional emotions include passion and empathy, while negative dispositional emotions included fear of failure.. Interestingly, the emotions in one context influenced how the student entrepreneur reacted to similar experiences in future settings. Furthermore, participants reported engaging with users/early adopters, which then reinforced their empathy and passion for pursuing their problem space.

EE Implications

This paper makes original contributions to entrepreneurship education, entrepreneurial learning and education literatures. From a practice perspective, the findings encourage educators to be mindful of the emotional state of students, including the managing feelings of anxiety and uncertainty inherent in exploring entrepreneurial opportunities. Being mindful of the emotional state can also include encouraging students to be open with their peers about what experiences and emotions they are bringing into the classroom from another context.

Value and originality

The results can contribute to better design of learning experiences, including incubator, mentorship and accelerator programs in a way that can ensure the longer-term psychological well-being of entrepreneurs as they ride through emotional highs and lows.

Keywords: entrepreneurial emotions, positive and negative emotions, dispositional emotions, entrepreneurial competencies, emotional management

SUPPORTING ENTERPRISING COMPETENCIES THROUGH PLAYFUL LEARNING IN ENTREPRENEURSHIP EDUCATION

Kati Suomi, University of Turku (kati.suomi@utu.fi)
Katriina Heljakka, University of Turku

Questions we care about

The potential of play is widely acknowledged and employed in children's learning. This study examines the use of playful learning methods in entrepreneurship education. We are interested in how university students could be trained and supported in their capacities to think and act like entrepreneurs. During the past decade, interest has been in bringing more playfulness to adult contexts regarding leisure, learning, and even working life. While playful learning pedagogies have emerged as part of adult education during the past years, their possibilities have been largely ignored in supporting entrepreneurial thinking and skill sets to be developed within entrepreneurship education.

Approach

We turn to Fayolle, Gailly, and Lassas-Clerc (2006, p. 702) following their definition of an entrepreneurship education program as: "any pedagogical program or process of education for entrepreneurial attitudes and skills, which involves developing certain personal qualities. It is therefore not exclusively focused on the immediate creation of new businesses." In this paper, we bridge the enterprising competencies (van Gelderen 2017) with various rhetorics of playfulness as presented in earlier play theory and student perceptions of playful learning.

Results

In the study, we focus on playful learning in association with a course titled "Entrepreneurial Opportunities" at a School of Economics in Finland. In 2022 and 2023, we designed and gave this course³, during which the students were given assignments related to opportunity recognition to perform over intensive days. Through reflective feedback, we gathered data from the students inquiring about their ideas on play and their responses to using playful approaches, such as materials and methods, as part of learning. In our study, we first asked how students perceive play and, second, how they perceive play(fulness) in entrepreneurship education, and third, how they perceive that they have adopted enterprising competencies during their coursework. Our results indicate that playful methods expose students to tolerating uncertainty in safe classroom environments.

Implications

The study's findings may enhance future entrepreneurship education, especially the use of creative materials as part of playful learning to support enterprising competencies.

Value/Originality

Our study's contribution links the previously unconnected areas of entrepreneurship with playful learning and student perceptions of the creative materials and methods used during two university courses. By linking enterprising competencies with the rhetorics of play(fulness) identified in the students' reflections, we better understand the connections and similarities between entrepreneurial thinking and play(fulness).

Keywords: playful learning, playfulness, learning methods, creative materials, entrepreneurship education

³ Acknowledgements: The authors wish to express gratitude to Dr. Sanna Ilonen, who previously taught the Entrepreneurial Opportunities course, for her invaluable contributions to the course's structure, content, and selection of course readings.

WOMEN ENTREPRENEURS' BEHAVIOR ELICITED BY ACCOMPANYING GROUP-TYPE SUPPORT

Eriko Toda, HOSEI University Graduate School of Engineering & Design (eriko.toda.5x@stu.hosei.ac.jp)
Rihyei Kang, HOSEI University Graduate School of Engineering & Design

Objectives

The purpose of this study is to clarify how an accompanying group-type program aimed at entrepreneurship development for women changes the attitudes and behavior of participants and lead to their subsequent entrepreneurial activities. The program was organized by cities in the Hokuriku region of Japan and managed by the authors. It has been held annually since 2021, and in 2023, the third year of the program, it had developed into one of the largest programs of its kind in Japan. Specific changes and factors contributed to them was discussed through interviews with participants after the program. The research question for this study is "How does the accompanying group-type support elicit behavior from women entrepreneurs?"

Approach

The survey subjects were 22 participants and two mentors of the program held in 2022. Semi-structured interviews were conducted two months after the end of the program. The research method was qualitative research based on thematic analysis.

Results

The analysis generated three themes, "Role model Effects from Mentoring and Peer Interaction," "Learning from team projects," and "Perception of Self-efficacy through Voluntary Actions," which were found to influence entrepreneurial activities after the program.

Implications

Accompanying group-type support is a program that incorporate group works and team projects with the aim of encouraging participants to take voluntary actions. This study found that the accompanying group-type support creates role model effects through advice from mentors and interaction with peers and encourages participants to take entrepreneurial behavior.

Value and originality

This study is one of the first studies to reveal the evolution of the behaviour of middle-aged generation women entrepreneurship program participants over the medium term, and we believe it will contribute to future women entrepreneurship education.

Keywords: Women entrepreneurs, Entrepreneurship education, Role model effects, Mentoring

CULTIVATING GLOBAL ENTREPRENEURSHIP: INTEGRATING CULTURAL INTELLIGENCE INTO ENTREPRENEURSHIP EDUCATION

Francesca van Marion, Delft University of Technology (francesca.vanmarion@gmail.com)
Ellen van Aniel, Delft University of Technology

Questions We Care About - Objectives

In the rapidly globalizing world, entrepreneurship education faces the challenge of preparing future leaders who can navigate the complexities of diverse cultural landscapes. This paper addresses the critical gap in current entrepreneurship programs by integrating Cultural Intelligence (CQ) into the curriculum. The primary objective is to explore how a more profound incorporation of CQ can enhance students' entrepreneurial capabilities, preparing them for success in the international market.

Approach

The research adopts a mixed-methods approach, combining a comprehensive literature review, semi-structured interviews, and analysis of course material from the Minor in International Entrepreneurship and Development at TU Delft. The literature review establishes a foundation for understanding the significance of CQ in global entrepreneurship. The semi-structured interviews with students participating in the minor provide insights into their pre-departure preparation and experiences abroad. Course materials are analyzed through the lens of the Cultural Intelligence Scale (CQS) to identify gaps and opportunities for integrating CQ into the curriculum.

Results The findings reveal that while students are prepared in CQ Knowledge, there is a significant opportunity to enhance their CQ Strategy, Drive, and Action skills. Interviews indicated that students with previous international experience displayed a higher level of CQ in strategizing and adapting their behaviour in culturally diverse environments. However, the analysis of course material suggests that the current curriculum focuses predominantly on CQ knowledge, with limited activities designed to develop Strategy, Drive, and Action components of CQ.

Implications

The research highlights the importance of experiential learning in developing CQ among entrepreneurship students. Students can enhance their ability to adapt and innovate across cultural boundaries by engaging in real-world projects in culturally diverse settings. The findings suggest incorporating structured CQ training and experiential learning opportunities into the entrepreneurship curriculum, aiding students' preparedness for global entrepreneurship.

Originality

This paper contributes to the growing discourse on the necessity of CQ in entrepreneurship education. By integrating CQ into the curriculum, educators can provide students with the tools they need to succeed in the global market. This research offers practical recommendations for curriculum development, emphasizing the role of experiential learning in cultivating cultural intelligence. The unique contribution of this study lies in its comprehensive approach to evaluating and enhancing CQ within an established entrepreneurship program, providing valuable insights for educators and program designers aiming to prepare the next generation of global entrepreneurs.

Keywords: Cultural Intelligence (CQ), Entrepreneurship Education, Experiential Learning, Global Entrepreneurship, Curriculum Development

THE CHANGE AGENT TEACHING MODEL: EDUCATING ENTREPRENEURIAL LEADERS TO HELP SOLVE GRAND SOCIETAL CHALLENGES

Frank van Rijnsoever, Utrecht University (f.j.vanrijnsoever@uu.nl)

Silas Sitzler, Utrecht University

Yvette Baggen, Wageningen University and Research

Abstract

Higher education is increasingly expected to educate change agents who can help with solving grand societal challenges. Social and sustainable entrepreneurship (SSE) education and social and sustainable leadership (SSL) education provide promising directions to develop the education that prepares these students for their future roles. However, both educations are part of different research streams and have their respective pedagogical approaches. In this systematic literature review, we identify the differences and similarities between SSE and SSL education. We used the teaching model framework to map systematically the elements of the teaching and learning process. Our results show that the different streams share the aim of educating change agents in authentic, collaborative learning processes that are experiential in nature and challenge students to create value for others. However, SSE education focuses more on creating societal value, whereas SSL education captures the personal development of students. Based on the review, we present an overarching teaching model for educating change agents. Our teaching model can guide practitioners to design change agent education. It illustrates the urgency to change pedagogies fundamentally and how students, staff, and teaching infrastructures should be approached using such pedagogies to realize impactful change agent education.

Keywords: social entrepreneurship, sustainable entrepreneurship, sustainable leadership, change agent, teaching model

ORGANIZATIONS SUPPORTING VENTURES PARTICIPATING IN AN ACCELERATOR PROGRAM

Vårin Vaskinn, Norwegian University of Science and Technology (varin@ntnu.no)

Question we care about

Entrepreneurial Support Organizations (ESOs) are frequently researched from the perspective of a single ESO, focusing on development, growth, performance, and success as outcomes when supporting ventures (Bergman and McMullen, 2022). ESOs can be technology transfer office business accelerators and university incubators. Research on business accelerators have focused on organizational structures, collaborations, and venture/entrepreneurial outcomes. Ventures seek help and support from different ESOs simultaneously, while the structure between the involved ESOs varies. Even though simultaneous support from multiple ESOs is known from practice, research has primarily focused on the context of how one ESO support new venture(s) (Crişan et al., 2021). Thus, this paper focuses on the support from multiple ESOs given to ventures, while they participate in a business accelerator. From the perspective of the ventures this paper is to answer: *“How are new ventures supported by multiple ESOs simultaneously?”*.

This study investigates how three ESOs, support new ventures in a business accelerator, creating a triangle of support for the ventures. One accelerator, one business incubator and one technology transfer office (TTO). All three ESOs are working towards the same goal; to help ventures commercialize their technology. Prior research has indicated that accelerator programs are the accelerating factor for business development. On the contrary, this paper argues that the accelerator points out a direction for the ventures, while the TTO and business incubator accelerates the ventures to move in that direction. All through an un-coordinated supportive environment for the ventures.

Paper approach

Inspired by Langley, a single case study approach with embedded comparative cases (new ventures) participating in an accelerator was used. The empirical data are in-depth longitudinal interviews viewing the embedded cases from different approaches. The empirical data was collected over a duration of six months and consists of interviews with ventures (31), mentors (4) and contributors (11) to the business accelerator, totalling 45 interviews. Moreover, the author observed the business accelerator ensuring a command understanding. The empirical data was abductively analysed through Amezcua et al., (2013) theory on entrepreneurial sponsorship. Stating that networking, field-building and direct support services are influencing new organization survival.

Results

The business accelerator facilitates the involvement of different ESOs to meet and actively support the ventures. The ventures viewed the mentors' competences, experience, and network as most important factor for business development, while direct support and positive feedback helped the entrepreneurs to continue working with the venture. The cross-comparison of the embedded venture development process indicates that structured support from the ESOs triangle were reflected upon as providing important value to the ventures. Those ventures with access to less structured support created their own support system, seeking the same output as those with more structured support.

This paper contrasts previous research through showing how the support provided by a TTO and an incubator are catalysing venture development for new ventures in a business accelerator. This paper has implications for practice by offering an increased understanding about how ESOs should include several actors within the same entrepreneurial ecosystem.

Keyword: Entrepreneurial Support Organizations; Entrepreneurial Ecosystems; Business Accelerator; Business incubators

WE DID IT: DEALING WITH PROBLEMS AND LEARNING FROM THEM IN ACTION-ORIENTED ENTREPRENEURSHIP EDUCATION

Mukesh Hasirumane Venkatesh, Norwegian University of Science and Technology
(mukesh.h.venkatesh@ntnu.no)

Sara Maryami, Norwegian University of Science and Technology
Dag Håkon Haneberg, Norwegian University of Science and Technology

Questions we care about –Objectives

Dealing with problems and setbacks is crucial to entrepreneurial learning (Cope, 2011; Shepherd et al., 2011). However, simply experiencing a problem does not guarantee learning and can even lead to adverse consequences (Uy et al., 2017). Recent research by Funken et al. (2020) demonstrates how students' positive attitudes toward problems (error mastery orientation) can enhance learning in action-oriented entrepreneurship education (EE).

Entrepreneurship is inherently a team activity (Klotz et al., 2014). Moreover, team-based activities are central to action-oriented EE (Hytti et al., 2010). Collaboration among student teams is crucial for venture creation and progress (Shepherd et al., 2023), but more needs to be known about how student teams navigate problems.

Recent team literature emphasizes the critical role of team cohesion in fostering trust, collaboration, and collective problem-solving (Van den Bossche et al., 2006; Joo et al., 2012). Drawing on relational cohesion theory (Lawler & Yoon, 1996), we leverage team cohesion to facilitate collective problem-solving in student teams (Warhuus et al., 2021). Particularly by extending Funken et al.'s (2020) model to the team level by incorporating team-related indicators, such as team cohesion, our research aims to explore how new venture team cohesion influences dealing with problems and translates it into valuable entrepreneurial learning and new venture progress.

Paper approach

We conducted a longitudinal study in eight waves during an action-oriented EE program to continuously assess students. The study took place in a bachelor entrepreneurship course at an Indian university, where the students were required to launch and operate a micro-business. Our dataset comprises 367 lagged observations from 75 students. We used Bohlayer and Gielnik's (2023) scale to measure problems and venture progress, Loughry and Tosi's (2008) scale for team cohesion, and Shepherd et al.'s (2011) scale to measure entrepreneurial learning. A combined lagged effects model to account for the lagged nature of the data.

Results

Our research has revealed that the number of problems encountered by a team has a negative impact on both entrepreneurial learning and venture progress. However, we have also discovered that team cohesion plays a significant role in mitigating this negative effect. When team cohesion is high, the negative effect of problems is translated into positive entrepreneurial learning and venture progress. This implies that team cohesion serves as a crucial team mechanism that acts as a switch, turning problems into opportunities for learning and venture progress.

EE implications

Our study has significant theoretical and practical implications. Firstly, our study contributes to the theoretical understanding of team dynamics within the context of action-oriented EE. Secondly, while existing literature suggests that entrepreneurs with high error mastery orientation and effective pedagogic scaffolding can learn from setbacks (Funken et al., 2020), our study extends this by emphasizing the importance of team cohesion. We show how team cohesion influences new venture teams to respond to problems and learn from them. Thirdly, this study provides practical insight for educators to implement team-building activities to develop strong team cohesion before engaging the students in venture-creation activities. Educators can leverage these insights to design interventions that enhance team cohesion, leading to more effective problem-solving and decision-making within student teams. Additionally, training programs can benefit by incorporating strategies

that prioritize team dynamics in problem-solving scenarios, aligning educational practices with the real-world challenges in teams.

Value/Originality

This study is a response to Funken et al.'s (2020) call to explore team-based variables in understanding the relationship between problems and entrepreneurial learning. Therefore, our research adds significant value to team and EE literature by specifically examining the interplay between team mechanisms, problems, and entrepreneurial learning within the context of a team in EE. Moreover, our study introduces the moderating effect of team cohesion as an important indicator. This shift represents an innovative approach, providing a deeper understanding of how collective team dynamics influence the translation of problems into entrepreneurial learning.

Keywords: Action-oriented entrepreneurship education, problems, entrepreneurial learning, team cohesion.

HOW DOES QUALITY OF AN ENTREPRENEURIAL IDEA SHAPE STUDENTS' ENTREPRENEURIAL ATTITUDES AND PASSION FOR THE IDEA?

Anna Vuorio, LUT University (anna.vuorio@lut.fi)
Markku Ikävalko, LUT University
Terhi Virkki-Hatakka, LUT University

Questions we care about (Objectives)

Entrepreneurial opportunity recognition is important for entrepreneurial action; however, it is not enough for entrepreneurial action to occur (McMullen & Shepherd, 2006; Shane & Venkataraman, 2000), because entrepreneurial opportunities need to be carefully evaluated (Wood et al., 2014). Regardless of the importance of opportunity evaluation, limited attention has been paid to it (Haynie et al., 2009; Wood & Williams, 2014). We extend this notion to students' entrepreneurial ideas. Prior entrepreneurship education research has tended to emphasize how students' entrepreneurial attitudes and competencies can be shaped through entrepreneurship education (Nabi et al., 2017; Wong & Chan, 2022), but the importance of the ideas and projects students are developing during studies have been largely ignored. Thus, we explore the question of what role a student's idea quality plays in shaping students' attitudes and passion for the idea.

Approach

The paper applies a quantitative approach to explore the research question. A sample of 66 university students working on their projects in a prototype lab at a middle-size Finnish university was analyzed via fuzzy-set qualitative comparative analysis. The measurement scales utilized in the study are adopted from the literature.

Results

The results suggest distinct configurations for high passion for product idea and favorable attitude towards entrepreneurship. The results show that neither project idea feasibility, desirability nor general project idea quality alone explain passion for project idea and attitude towards entrepreneurship.

Implications

The results of this study highlight the need to think about university education as a context for the realization of entrepreneurship. Therefore, entrepreneurship educators need to see the similarities and differences between realms at universities and the outside world.

Value/Originality

The results provide a new perspective on the emergence of students' entrepreneurial thinking patterns and provide new opportunities for entrepreneurship education as there is a connection between good-quality project ideas and entrepreneurial awakening. The results highlight the generality of the phenomenon in the entirety of university studies and the fact that entrepreneurial ideas can develop also in courses where entrepreneurship is not explicitly visible. While these results provide new opportunities for entrepreneurship education, they also highlight challenges in organizing the overall education.

Keywords: entrepreneurial ideas, entrepreneurship education, idea quality, passion for project ideas, attitude towards entrepreneurship

'LEARNING ON YOUR FEET' - USING ACTIVE-LEARNING PEDAGOGICAL APPROACHES TO SUPPORT THE ENTREPRENEURIAL MINDSETS NEEDED TO ENACT SOCIO-CULTURAL CHANGE FOR A MORE SUSTAINABLE WORLD

Lucia Walsh, Technological University Dublin (lucia.walsh@tudublin.ie)

Olivia Freeman, Technological University Dublin

Sarah Louise Rawe, Technological University Dublin

Questions we care about

Human-induced climate change is the most pervasive threat that we have ever experienced. How we teach, learn and think in the anthropogenic era can lead to opening and shaping mindsets and transformative actions resulting in positive impact on our society, the environment and economy. Traditional teaching and learning approaches, where the learner is a passive recipient of information, are no longer effective in a fragmented world where collaboration, creativity, leading and mobilising others and thinking across systems is necessary.

The focus of higher education is increasingly on developing entrepreneurial mindsets of our students as global citizens and future decision-makers, so they are ready to solve complex trans/inter-disciplinary, organisational and societal challenges resulting from climate change, food insecurity and biodiversity loss. The main question that we address is: *How can active learning pedagogies be used to support and nurture the complementary competences set out in the EntreComp and GreenComp frameworks?*

Approach

We will share insights on the use of innovative pedagogical practices designed as transformative learning experiences for students in the form of three case studies which have been implemented in our university: (i) Climate Change and SDG-themed Escape Room Challenges (Rawe et al., 2024), (ii) Stepping into the Doughnut workshop, based on Raworth's (2018) 'Doughnut Economics' framework, and (iii) Climate Fresk workshop, a collaborative workshop on climate science. All three require students to step away from the traditional classroom and engage in 'physically interactive learning' (Hrach, 2021).

Results

We reflect on our experiences of designing and facilitating these three pedagogical approaches, as well as the way that they can enhance learners' competencies using the Entrecomp and Greencomp frameworks.

Implications

We showcase the value of active-based teaching and learning approaches. Students' success and evidence of transformative learning impacted on us, as educators and academic activists, positively too and motivated us further to continuously innovate. Other entrepreneurial educators from business and non-business disciplines will gain knowledge and confidence in how to design and deliver their own engaging learning experiences aligned with supporting the development of many of the competences set out in the EntreComp and GreenComp frameworks. Ultimately, this approach empowers learners, shaping them into informed and skilled global citizens capable of addressing complex sustainability challenges.

Value/Originality

As educators, we can endeavour to support students in increasing their levels of sustainability literacy and in expanding their awareness of, and emotional response to, the existential crisis facing humanity due to climate change and the associated loss of biodiversity. Equally, and particularly in the context of increasing eco-anxiety among children and adults, (Wals et al., 2022) educators can also empower students to develop action-based and solutions-oriented entrepreneurial mindsets with which to grapple with this challenging reality. Through our exploration of active-based pedagogies for transformative learning we aim to showcase how entrepreneurial competences and mindsets can be nurtured with the intension to create meaningful social and cultural change and action-based solutions for a more sustainable future.

Keywords: Education for Sustainable Development, Global Citizenship Education, Entrepreneurship Education, Transformative Learning, Active-based Pedagogies

HOW AND WHY WELL-BEING AND POSITIVE PSYCHOLOGY SHOULD BE INTEGRATED INTO ENTREPRENEURSHIP EDUCATION

Steffen Weyreter, University of Freiburg (steffen.weyreter@ee.uni-freiburg.de)
Stephan Lengsfeld, University of Freiburg

Questions we care about

In entrepreneurship literature, well-being is mostly discussed as an outcome of entrepreneurship. Recent publications on this matter empathizes, that well-being should be considered as a contributor to, or even as a requirement for entrepreneurial success (Shir & Ryff, 2021; Weyreter & Lengsfeld, 2024). For entrepreneurship education (EE) this relationship is particular interesting, because the understanding of various effect of well-being on entrepreneurship can contribute to improved education in this field. The objective of this paper is to answer (1) How can and why should Positive Psychology and Well-being as a contributor for entrepreneurial success be integrated in entrepreneurship education, and how can an integrative course concept look like, (2) what learning outcomes can be derived in such courses at higher education institutions and (3) which implication can be derived for higher education, for education and coaching in startup hubs and accelerators, and for future research and the education of young researchers.

Approach

To answer these questions, a teaching concept, developed at the University of Freiburg over the last 8 year, gets explored, corresponding reflection papers of participating students were qualitatively analyzed to getting insights in their learning outcomes and implications for EE, accelerators and future research was discussed.

Results

Results showed that the integration of well-being orientation into entrepreneurship education through the concept of Positive Entrepreneurship is possible and that such courses leads to various beneficial learning outcomes among the students.

Implications

Derived from the various learning outcomes and the positive feedback regarding the teaching concept, the integration of well-being orientation into EE courses seems highly beneficial. This is also true for accelerators, were interviewed personal sees well-being orientation as highly relevant, but is underrepresented in their programs.

Keywords: Well-being, Entrepreneurship Education, Positive Entrepreneurship