



## **3E CONFERENCE PROCEEDINGS**

### **Book of Abstracts**

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

**2015**

3E CONFERENCE – ECSB Entrepreneurship Education Conference

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ECSB European Council for Small Business and Entrepreneurship

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## Preface

Dear colleagues,

It is with great pleasure we welcome you to the *3E Conference - ECSB Entrepreneurship Education Conference 2015*. This book presents the abstracts of the third 3E Conference held on 22–24 April 2015 in Lüneburg, Germany. The conference is hosted by Leuphana University in Lüneburg and the European Council for Small Business and Entrepreneurship (ECSB).

The past decades have born to witness a rapid increase in the offerings of entrepreneurship education across Europe. There is an explicit political agenda at both the national and at the EU level to promote entrepreneurship education at all levels of the school system because policy makers expect entrepreneurial skills to be the key to enhancing an innovative culture, which in turn will result in higher competitiveness and economic growth. However, in order to achieve these objectives it is important that educational systems and methods move from traditional to creative, interactive and student-centred educational models that will help change student mindset and prepare students for the challenges of the future.

Through an innovative and untraditional format, the 3E conference establishes a new paradigm for entrepreneurship conferences. It offers an exclusive and engaging opportunity for researchers, educators and politicians to debate and exchange their experiences of the major challenges and advances in enterprise education with a special and unique focus on Europe. Unlike more traditional academic events, the conference will focus on problems and questions rather than on ready-made solutions and presentations of research findings.

The theme of 3E 2015 is “*Entrepreneurship Education for Shaping the Civil Society of the 21<sup>st</sup> Century*”. There are 42 interesting papers included in the conference programme. We wish to thank the reviewers for their valuable work.

We also thank Brand Trust for the financial support.

On behalf of the organisers, we also want to thank all the presenters and authors for the papers.

Silke Tegtmeier  
*Conference Chair*

Helle Neergaard  
*President of ECSB*

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## STUDENT START-UPS EMPOWERING THE LEARNING ENVIRONMENT

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### Questions we care about

How has the learning environment been developed to support entrepreneurship? How were student start-ups and educational institutes able to benefit from each other during the cooperation? How can the university connect with small-scale and student enterprises in the best way possible? How do people learn to work in entrepreneurial ways? What lessons were learned that could benefit similar projects?

### Approach

Practical case study of empowering student start-ups in a joint project.

### Results

The joint project with three educational institutes diversified the learning environment. Cooperation and communication has increased between students and project partners from different institutes and at study levels. The pedagogical model “Learning by Developing” supports student’s entrepreneurial competences. Bottom-up interests have increased students’ motivation to study efficiently and the model has inspired students to achieve new kinds of study results. It has been a very beneficial experience to pay attention to student entrepreneurship. The implementation of the different cases has established new student enterprises. The teachers have gotten new motivation, too. The theoretical and traditional lectures endorsed the issues that students have suggested they want to learn. Student start-up examples have shown how authentic student enterprises are able to enrich and empower the learning environment.

### Implications

An experimental project with different school-level representation and different study institutes is recommended. One student start-up can inspire other students to develop their own; peer learning is efficient. The learning environment will become more dynamic and authentic. Business elements and entrepreneurship become part of the learning environment; study objectives, learning issues, and business challenges are suggested by students. As a consequence, it allows for participation in broader learning systems, such as within industries, and to respond to future changes in the business world. The studies are targeted according to a model of the business world; it leads to changes in ways of acting, as well as changes in the meta-skills of the students. The close networking, communicating together, and working at the boundaries stimulated innovations in the entrepreneurs. Together we have realized an ability to design a social learning system for ourselves. During the project all participants learned: student entrepreneurs, student colleges, teachers, project partners, and some local small-scale entrepreneurs.

### Value/Originality

The results offer insights and practical cases for developing the learning environment and for planning and implementing the entrepreneurial community.

### Key words

Entrepreneurship, educational institutes, community co-creations, learning by developing, learning environment, student start-ups

## **SUPPORTING STUDENTS' ENTREPRENEURSHIP AS A PART OF UNIVERSITY STUDIES – PRACTICAL EXAMPLE OF PRE-INCUBATOR ACTIONS**

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### **Questions we care about**

This article introduces a practical example how to support entrepreneurship as a part of university studies. When supporting entrepreneurship our case is a way of benchmarking and learning from best practices. Our question to discuss is: How universities can manage to implement pre-incubator activities as a part of “normal” curricula?

### **Approach**

We will present two cases of students' incubating activities. University pre-incubating process is one element in wholeness, laying the foundation for entrepreneurial path. This model of action offers possibilities to develop tutors' knowledge and skills and the pre-incubator activities continuously as a learning network. In practice these actions are based on co-operation with regional business incubators. Students benefit authentic learning and teachers' co-operation (co-teaching).

### **Results**

From separate project-funded way of action the students' pre-incubator has developed towards an integrated part of the studies. This means that there are stable constructs as little as possible. Activities are based on the student's needs in his/her business plan and tutoring. The model of action and process concerning cooperative partners and schedule will be planned case by case to offer the most qualified support and tutoring for the entrepreneur candidate. By networking a small unit with small annual amount of entrepreneur candidates is able to guarantee the quality of action.

### **Implications**

The focus in pre-incubating process is on personal growth and learning. Within engineering degree programmes the students have been able to complete several courses within the incubating process of their future business. In this process the teachers also co-operate when tutoring and mentoring the entrepreneur candidates. This kind of co-teaching is normally very unusual in universities.

### **Value/Originality**

Findings from the students' incubating activities prove the effectiveness of this kind of curricula integrated method of incubating. A novel approach is to present a different way to implement university incubation process without official campus incubation centre. Students are able to benefit the wider expertise through co-teaching. Pedagogical value comes from co-teaching and authentic learning.

### **Keywords**

Pre-incubator, student's curricula, university students, networking



## A PILOT EVALUATION OF A UNIVERSITY-WIDE KICK-OFF WEEK ABOUT ENTREPRENEURSHIP

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### Questions we care about

Entrepreneurship is gaining increasingly more importance in the economic theory as it is seen as a decisive factor for economic progress. One way to enhance entrepreneurial mindsets is to incorporate entrepreneurship-based programmes in academic education. In this context, some important questions arise: Which are the right programmes that help developing entrepreneurial mindsets? How can scholars appropriately evaluate existing programmes in order to identify factors that positively affect entrepreneurial mindsets and intentions of the participants? Which are the conclusions that can be drawn for the conception of prospective programmes?

### Approach

This paper discusses a pilot study that examines a unique entrepreneurial programme at Leuphana University ("Start UP!"). From research based on the "Theory of Planned Behavior" (Ajzen 1991) we know that attitude towards venturing and perceived behavioural control can influence the intention to start a business (e.g. Krueger et al., 2000). As done before, this paper uses Banduras concept of self-efficacy (Bandura, 1977) as a proxy for perceived behavioural control. Hence, we applied a pre- and post-test design and assessed both personal attitude towards venturing as well as entrepreneurial self-efficacy (ESE) to evaluate the programme "Start UP". For doing that, we developed a questionnaire including measures for attitude and ESE formerly validated by McGee et al. (2009)

### Results

We observed an enhancement in the participants' ESE, whereas their attitude towards venturing did not increase significantly. Male students exhibited significantly higher levels of ESE at the start of the programme than female participants. The initial attitude of participants with entrepreneurial parental role models was also significantly more positive than the attitude of their classmates without such role models. Both of these differences could no longer be observed after the termination of "Start UP!".

### Implications

The integration of role models and practical elements promoted the participants' ESE, whereas an overly positive representation of entrepreneurship could be a reason for the consistent attitude. Female students, as well as students without a self-employed parent, were encouraged both through the presence of entrepreneurs and by their own senses of achievement. Students with a self-employed parent might have got the feeling of a too unrealistic presentation of entrepreneurship.

### Value/Originality

By evaluating "Start UP" and looking deeply into the factors which might have led to the results, we identified specific elements that can be used to design entrepreneurship programmes. This makes this paper valuable not only for research but also for teaching practice. Since this paper examines a pilot-study, prospective research should consider the limitations of this work in order to obtain more robust results. Especially the incorporation of a follow-up survey some time after the termination of the programme and a control group seems essential.

### Keywords

Entrepreneurship Education, Theory of Planned Behaviour, innovative pedagogy, evaluation

## 11 THESES ON ENTREPRENEURSHIP EDUCATION: HOW SHORTLY CAN WE EXPRESS THE ESSENCE?

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### Questions we care about

How can I best contribute to establishing clarity and precision to the way we develop the central elements of entrepreneurship education research?

### Approach

Inspired by Karl Marx's 11 theses on Feuerbach the paper establishes 11 short theses on entrepreneurship education. These theses are formulated around questions of the ontology of entrepreneurship, the entrepreneurial process, entrepreneurial learning and entrepreneurship education.

### Results

The 11 theses are short, precise and constitute a framework, which educators and researchers can use either for agreeing or disagreeing on what should be the foundation of entrepreneurship education research.

### Implications

The paper produces a few central statements (theses) that entrepreneurship educators and entrepreneurship education researchers would benefit from either agreeing or disagreeing on.

### Value/Originality

The 11 theses contribute to more precision in the nomenclature and central building blocks of entrepreneurship education research. Hereby it facilitates the development of either a common frame of reference – or an enlightened disagreement between different takes on the core elements - of entrepreneurship education

### Key words

Entrepreneurship Education, Entrepreneurial Learning, Ontology, Didactics, Pedagogy

## THE SOCIAL ROLE OF THE ENTREPRENEUR: PROFESSIONALIZATION THROUGH EDUCATION AND TRAINING?

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### Questions we care about

'The entrepreneur' is social role that has become institutionalized as a distinct endeavor carried out by individuals which is legitimate, supported and rewarded, and embedded in networks of role-relations with incumbents of the same and other roles, an embeddedness that guides, constrains and enables the entrepreneur. We care about the question: Is there a process of professionalization of the social role of the entrepreneur? Professionalization may involve three processes: increase in level of human capital in the role, increase in coupling among components of human capital in the role, and reduction of age of entry into the role (a shift from experience to education and training as preparation for entry facilitates entry at younger age).

### Approach

A sample of 2,005,057 adults around the world has been surveyed during 2001 to 2014 in the Global Entrepreneurship Monitor.

### Results

Analyses show that, globally, i.e. in the population of adults in the world, the effects among education, training and career are positive. This is a starting point for testing for professionalization. Analyses show that education, training during and after schooling, and competence have become widespread in the population in recent decades; the coupling among education, training during and after schooling, competence, and entry into the role, has become tighter in recent decades; and the age of entry into the role has been lowered in recent decades.

### Implications

Finding that the social role of the entrepreneur is in a process of professionalization suggests policies promoting further knowledge-based professionalization.

### Value/Originality

An exceptional value is the global scope of the study and the generalizability of its findings to the population of adults in the world. The theoretical contribution is to conceptualize 'the entrepreneur' as a social role with some characteristics of a profession in form of a coupling, positive effects among education, training, competencies and entry into the role. The empirical contribution is to test whether the role is undergoing professionalization. The substantive contribution is that professionalization is unfolding, especially among youth. In short, entrepreneurship is becoming a profession for the young.

### Keywords

Professionalization, education, training, competence, intention, upstart

## A TRANSDISCIPLINARY APPROACH TO GROWING THE PROTECTIVE PORTFOLIO: RESILIENCE PEDAGOGY IN ENTREPRENEURSHIP EDUCATION

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### Questions we care about

An entrepreneur's exposure to risk and vulnerability is disproportionately high compared with other professions. Especially when confronted with professional crises or critical private life events, their entrepreneurial success can be severely endangered. Therefore, the question of how to strengthen entrepreneurial resilience in the face of adversity is of particular relevance for entrepreneurship educators. The paper aims at shedding light on that question and presents an innovative educational approach rooted in resilience theory.

### Approach

Based on an interdisciplinary review covering entrepreneurship literature, as well as psychological and pedagogical works, the concept of resilience is introduced and discussed. By focusing on the individual level, seven entrepreneurial resilience factors are identified. The paper proposes a model for exploiting the untapped potential of promoting resilience in the course of educational endeavors by growing an individual's protective portfolio.

### Results

A transdisciplinary curriculum for entrepreneurship education is developed. It consists of a twofold approach, combining cognitive learning with behavioral training in a real-life context. The integrative entrepreneurial resilience training runs two semesters and consists of a theory and reflection seminar on individual and supra-individual resilience, as well as of a practical course, coaching students along the road from team building and development of a business idea to sustainable market implementation.

### Implications

Universities can serve as resilience enablers by supporting students to grow their entrepreneurial protective portfolio ex-ante, thus prior to the actual risk exposition. The format presented in this paper covers the requirements necessary for effective resilience trainings as well as for high-quality entrepreneurship courses.

### Value/Originality

Resilience is an increasingly popular, but rather unexplored concept in entrepreneurship research. Nevertheless, due to its long history in psychology research and pedagogical practice, it bears a considerable potential for business education. The paper introduces resilience into the entrepreneurship education literature and paves the way for implementing resilience trainings in business education.

### Keywords

Resilience, Entrepreneurship, Education, Risk, Vulnerability

## EXPECTATIONS FROM EARLY ENTREPRENEURSHIP EDUCATION – A PUPIL’S PERSPECTIVE

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### **Questions we care about**

Appropriate opportunities for entrepreneurship education are only available in Germany, as in many other countries, in selected trainings and higher education degree programs. But in the curricula of general education schools entrepreneurship education is barely been taken into consideration yet. This paper aims to investigate which factors influence pupil’s willingness to participate in entrepreneurship education programmes in order to discuss requirements for the provision of adequate entrepreneurship education programmes in school.

### **Approach**

To find out the pupil’s expectations from and willingness to participate in entrepreneurship education programmes we use a research model based on the Theory of Planned Behaviour.

### **Results**

Pupils intend to participate in entrepreneurship education programmes when they think to meet the expectations of reference groups like parents and teachers. Facets concerning marketing and having fun are perceived as an important outcome of such programmes.

### **Implications**

The integration in scholar curricula could ensure that pupil’s intention to participate becomes more independent of social pressure and enable opportunities for everyone. Programmes of early entrepreneurship education should be designed more interactive.

### **Value/Originality**

Entrepreneurship education in school has not been explored so deeply yet. The research about pupil’s expectations is an additional perspective that should be taken into consideration.

### **Keywords**

Early entrepreneurship education, school, Theory of Planned Behaviour

## VISUALIZED REFLECTION. A METHOD OF ENTREPRENEURSHIP EDUCATION

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### Questions we care about

How can the method of visualized reflection support entrepreneurship education? How can visualized reflection help to change students' role perception? What can entrepreneurship educators learn from students' visual external representations and their verbal self-reflections?

### Approach

Role identity or the change of role perception ("seeing oneself as an entrepreneur") might be of particular relevance in entrepreneurship education (Krueger 2007). Based on the assumption that (a) the human cognitive system includes both, a verbal and pictorial (image) subsystem and (b) the thinking process is not exclusively located on the cognitive level, but materiality and visual external representations are important, we argue that the combination of visualizing techniques and reflection reports might support the change of role perception.

### Results

By the method of visualized reflection, we suggest and introduce an activation of the visual and verbal cognitive level. First, we describe the method generally. Second, we evaluate one example of this method by case study approach. We do so by introducing our entrepreneurship course and explain the work with visualized reflection based on one example ("draw a picture of a typical entrepreneur"). By qualitative content analysis of drawings and reflection reports, we illustrate how the imagination of "the entrepreneur" changes and how the personal role perception ("seeing oneself as an entrepreneur") changes over time.

### Implications

Visualized reflection is seen as an impulse to open entrepreneurship education (and the research on its effects) to a visual dimension. Our work might support other teachers to develop further exercises that help to understand and to break off barriers at the development of an entrepreneurial self.

### Value/Originality

First, we add to the literature on entrepreneurship education by combining visualization techniques with reflection reports. Second, we highlight the often untended visual in the discourse on entrepreneurship education. Third, we introduce a new method that might support other formats in teaching entrepreneurship in higher education.

### Key words

Visualized reflection, visualization, self-reflection, entrepreneurial self

## CHARACTERISTICS AND RELEVANCE OF FOUNDERS' COACHING IN ENTREPRENEURSHIP EDUCATION

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### Questions we care about

Founders need sufficient (entrepreneurial) competencies in order to implement routines and processes which foster the competitiveness and the ability to survive of the start-up (Kollmann, 2008). Good news is entrepreneurial competencies can be developed to a certain extent through learning processes, for instance coaching (Kyrö, 2007). Its demand is correlating with the years of experience in management and the educational background (Kollmann, 2008).

At the same time we face an intransparent market structure of coaching offers which reduces the comparability (c.p.Gries, et al., 1997; Anderseck, 2009). Also the founders, who are obtaining support in terms of coaching, are a very heterogeneous group, with different life courses and consequently different capabilities and needs. In conclusion the professional practice of coaching is determined by a wide range of questions addressed by the founders and different methods, attitudes and intentions as an answer from the supporters.

### Approach

With this research project I want to contribute to the recent discussion of the competence development in entrepreneurship education by concentrating on the development process of in the very early stages of a venture and exploring the process of building entrepreneurial competencies supported by coaches. Therefore semi-structured interviews with 30 selected founder coaches have been done in order to get a general impression of the practices in coaching founders and identifying possible models, similarities and differences.

### Results

Results show c.p. a mixed approach of coaches which is linked to their personal attitudes towards founding processes as well as a high volitional impact regarding the competency development process of founders.

### Implications

The findings give a first impression that founder coaches rather deal with the personal problems of entrepreneurs and consider coaching in the context of sustainable enterprise creation. This has implications for the quality assurance of the founders coaching.

### Value/Originality

The value of the research lies in the production of a clear definition of founders' coaching, conducting a collection of best practices as well as giving systematic recommendations on how to optimize founders' coaching.

### Keywords

Entrepreneurial competencies, competence development, coaching

## BRIDGING THE GAP BETWEEN HIGH SCHOOL AND UNIVERSITY BUSINESS SCHOOLS

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### Questions we care about/Objectives

A major challenge is the great variety of programs that high schools offer and the freedom these high schools have in the design of these programs, while they all start in the same business school at the university. A second challenge, at the other end of the gap, is to find a methodology or didactical instruments, to have all students in the same program, leading to a sort of generic level in the end. This challenge becomes even bigger, taken into account that on the high school, some learners have shown more progress than others and all graduated at the same day. In university education the difference between students may even become bigger. The questions the authors want to solve in the near future are:

- 1) What systematic construct (typology, methodology, taxonomy ...) could help to map the variety of high school business schools?
- 2) How can motivation and passion be continued when going from the high school business school to the university business school?

### Approach

Based on the methodology of the interactive research model of Ellström (2008) and activity model of Engeström (1999), a two-step model of is designed, based on motivation and competence of the student.

### Results

First results show partly the bridging of the gap. Motivation and competence are provided; but how this can be valued on the university, will all students start from the same line?

### Implications

The results raise the questions asked. When solving these elements as well, the gap may be bridges lose to full.

### Value/Originality

When the gap can be closed, significant less students will drop-out on university. This is not only the saving of tax money, but also the rescue of talents and human capital.

### Keywords

Secondary Education, Curriculum Design, Business School, Gap



## PHENOMENOLOGY OF THE INNOVATIVE QUESTION WHEN BASED ON WONDERMENT

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### Questions we care about/Objectives

This paper questions, how we, from a phenomenological point of view, can describe and understand the phenomenology of innovative questions and processes of questioning when based in a wonder-driven approach to innovation and entrepreneurship.

From this starting point, we would like to discuss the following issues on the conference:

- How can we as educators challenge and support students to develop their own and independent thoughts? Which kind of independent thoughts can contribute to innovation and entrepreneurship?
- How can we as educators support the students to dwell in processes of innovation and wonderments, which they probably will first see the meaning of much later? And what does it actually mean to dwell in a process of innovation?
- How can we describe the connection between thought and action in a process of wonder-driven innovation and entrepreneurship? How do we prevent losing the aim of innovation, our why, in the enterprising part of the project phase? And how do we turn our wonderments, longings and call onto others? And where should we be cautious doing so?

### Approach

In our research we take on a phenomenological, philosophic-hermeneutic and wonder-driven approach to innovation and entrepreneurship.

### Results

The innovative questions arising in a wonder-driven approach to innovation and entrepreneurship are mainly characterized by two conditions. First the questions seem to be from the heart of the existence of the questioner. Second the questions seem to arise from within the profession, being in resonance with some kind of meaningfulness.

### Implications

A wonder-driven approach to innovation and entrepreneurship seems in some way and degree to grasp the meaning of our professions and the deeper meaning of our existence through what we, inspired by Hansen's earlier work, have named a 'meaning-receiving paradigm'. Such approach seems to make sense in non-business educations; especially professions working with human beings, as innovation and entrepreneurship in these kind of educations is not always about inventing new products but also to get in a resonance with some kind of meaningfulness.

### Value/Originality

The study has originality because of the phenomenological research-approach to innovation and entrepreneurship and because of the philosophic-hermeneutic and wonder-driven approach to innovation and entrepreneurship teaching.

### Keywords

Phenomenology, philosophic-hermeneutic, wonder, innovation, entrepreneurship

## SOCIAL MEDIA AS A TOOL OF LEARNING

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### Questions we care about

The paper first focuses on the question of how social media (e.g. blogging) can be used in higher education of business and second, what are the educational strengths of social media. One of the aims of this paper is to stimulate discussion about how blogging can increase active participation, which could better learning outcomes and working skills. We are interested in how to advance reflection skills and communication skills by collaborative learning through social media. We present following questions to guide discussion: 1) Could social media (e.g. Blogs) serve teaching and if could, how? 2) How to enhance learning outcomes by social media?

### Approach

First, the theoretical framework is introduced: Key ideas of collaborative learning will be discussed, and applications of learning diary method (e.g. blogging) will be introduced. Collaborative learning activities can include collaborative writing (e.g. group blogs) or communication (e.g. blog commentary/reflection). Collaborative learning refers to the ways in which learners engage in a common task where each individual depends on and is accountable to each other. This includes both contact teaching (lecturing) and e-learning, for example, by means of social media. In the current paper, learning diaries in the form of blogs are considered as written reflections of students' learning experiences and outcomes. In this paper we analyze how blogs are used in two separate courses with two different approaches; blogs written a) as a group or b) as an individual. The qualitative data were collected in order to receive students' feedback. The qualitative data consisted of learning diaries, i.e. weblogs, online discussions and feedback from students as well as teachers' documentation.

### Results

The development of reflective skills is achieved through the use of the blogs. The blogs of groups were publicly published so that the learners could read and discuss their peers' diaries. The learning diaries of individuals were mainly private. The fact that students wrote public blogs is seen immensely valuable, allowing students to experience writing in the 'real' world instead of closed platform. The purpose of such public learning diaries is to enrich traditional university courses with critical reasoning and metacognitive activities in order to enhance a deeper processing and better retention of the contents to be learnt. The new teaching method; blogging, was experienced meaningfulness and cooperative. Moreover, students' found that the method supports the needs of working skills of the future.

### Implications

The importance of this topic for entrepreneurship education is to develop a more student-centered and cooperative learning method which could support A) learning outcomes and B) cooperative and working skills. Moreover, the approach could support individual learning process in the meaning of divergent students. A modern professional needs cooperative and social skills more than ever and also education should support required working skills. Similarly, the social media has to be mastered and a university can provide a familiar environment to start practicing with the support from teacher and other students.

### Value/Originality

The paper presents examples how blogs have been used with students and discuss about the benefits of this method. Further, we introduce some findings which should be taken into consideration before blogging is applied as a teaching method.

### Keywords

student-centered, collaborative learning, teaching method, blog, learning diary, entrepreneurship education

## BEHIND OPEN DOORS: HOW DO WE ACCOUNT FOR PERIPHERAL PARTICIPATION IN ONLINE

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### Questions we care about

This paper explores peripheral participation in online learning environments and, more specifically, Massive Open Online Courses (MOOCs) and presents the case of a MOOC developed and delivered by Leeds Enterprise Centre educators entitled 'Starting A Business'. It asks the following questions:

1. What are the enablers and barriers to active participation in online environments?
2. Do different groups of learners experience different enablers and barriers to participation?
3. What are the learning outcomes for those who participate on the peripheries?

### Approach

The paper reviews the literature on online participation with a focus upon the concept of situated learning developed by Lave and Wenger and their concept of legitimate peripheral participation in communities of practice (CoPs). From this we develop and outline a classification of newcomers' participation in online CoPs. We then apply this to the context of our research with 60 young people aged 16 – 18 who completed the Enterprise Centre MOOC in the summer of 2014.

### Results

Although the resources were designed with their age group in mind, feedback suggests that there are issues with online learning specifically linked to the age and experience and of the students and these can present barriers to the students' full participation. While students participated on the peripheries they were still engaged with the learning resources – approaching their learning as 'witness learners' rather than 'active learners'. This was partly due to the perceived power and identity dynamics at play between different learners using the platform and the students' perception of their experience and credibility. However, our research suggests that they were starting to become enculturated into a learning community which may enable them to participate more actively in future online learning. Indeed, many suggested they would be more willing to participate in other online courses in the future as a result of their experience using the MOOC.

### Implications

There are potential barriers that inhibit younger people's participation in online learning environments, particularly in MOOCs where there are many students from diverse backgrounds. Understanding and engaging with the power and identity dynamics at play may help educators to develop online learning that takes this into and encourage active participation from all.

### Value/Originality

The paper highlights how power and identity can inhibit active participation of certain groups of students using MOOCs. It also helps us to understand the range of participation options that students might pursue and how they may become enculturated into a learning community and CoP.

### Keywords

Peripheral participation, MOOC, entrepreneurship education, young people

## HOW VALUE DIVERSITY INFLUENCES TEAM PERFORMANCE IN DIFFERENT ENTREPRENEURIAL CLASSROOM TASKS

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### Questions we care about

An unresolved debate exists as to whether homogeneous or heterogeneous teams perform better. While many studies examine factors related to human capital, few look at how diversity in individually held values impact team performance. Research has shown that teams with higher value consensus tend to experience less conflict and better performance. However, we would like to know how task interdependence moderates the effect of value consensus on team performance. Thus, we put forth two propositions 1: Group Value Consensus (GVC) is positively related to performance and 2: Task interdependency moderates the relationship between GVC and performance.

### Approach

In this quantitative study, GVC for 13 teams (69 individuals) was determined using Q-sort methodology and an established list of 54 work-related values called the Organizational Culture Profile (OCP) (O'Reilly et al. 1991). Team performance was measured in two tasks that require varying levels of interdependence among team members: an action oriented start-up challenge where performance was based on the revenue teams brought in under a one week period, and a two-week case-based exercise where teams wrote a joint report and were graded by an instructor. The start-up challenge was considered to require less interdependence than the case based exercise.

### Results

In the task with relatively less interdependence (the start-up challenge), GVC was found to be significantly and negatively related to performance. This calls the first proposition into question and supports the second proposition.

### Implications

This study has implications for team construction around varying tasks in entrepreneurship educations.

### Value/Originality

This higher degree of functionality at lower levels of value consensus is a previously undiscovered finding.

### Keywords

Group Value Consensus, conflict, interdependence, team composition

## ENTREPRENEURSHIP EDUCATION IN A MULTI-CULTURAL MULTIDISCIPLINARY SETTING: CAN SOCIAL MEDIA HELP?

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### Questions we care about

This paper examines the impact of the use of Facebook as a pedagogical tool for a multidisciplinary, multi-cultural entrepreneurship programme. This research was designed to determine the efficacy of using a dedicated ECF Facebook Page to engage students in Entrepreneurship Education by examining impact of this approach on students' entrepreneurial and cultural competencies.

### Approach

A mixed methods research design was used to examine the impact of the use of Facebook as a pedagogical tool for a multi-disciplinary, multi-cultural entrepreneurship programme. The design, in particular, employed "sequential exploratory" methods in which survey data served as the primary data source for entrepreneurial self-efficacy, while interview and narrative data (from students' Facebook annotations, reflective journal entries and post programme evaluations) provided further insights into survey results and allowed a deeper analysis of the cross cultural learning. The main discussion of this paper is around the discourse analysis of the Facebook commentary.

### Results

In terms of the role of Facebook in entrepreneurship education, there is evidence that it has a significant role to play for information sharing, formal and informal learning. Collaborative engagement in Facebook activated hierarchical and horizontal discourses that had a bearing on pedagogical instruction. The true extent of the cross cultural learning was more apparent in the offline reflective journals completed by students.

### Implications

The results of this study have implications for colleges and universities tasked with preparing their students for knowledge based, technology driven global economy. The findings and conclusions of this research have implications for educator and policy makers. This research offers a better understanding of the impact of intensive camp based programmes for the learner and the teacher.

### Value/Originality

This paper suggests how the digital behaviours and habits of students enrolled in this course may be used in developing supportive tools that can be harnessed for entrepreneurship education.

## THE VOCABULARY AT ENTREPRENEURIAL EDUCATION FOR NON-BUSINESS TEACHERS AND STUDENTS

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### Questions we care about

As entrepreneurship is seen as very important for economic growth the education of entrepreneurship is getting more interest, not only from business oriented schools, but also from non-business schools. It is widely recognized that entrepreneurship education needs other approaches of teaching. To teachers this means that they have to change they educate.

### Approach

In 2013 we started a training program for teachers to teach in a more entrepreneurial way. This program is designed around constructivistic teaching and action learning, which is widely seen as an appropriate way of teaching entrepreneurship.

### Results

During this training program we had several results, but also found out that non-business teachers and students have other experiences and use other words to describe entrepreneurship. To find the right language and therefore the right teaching program, it is valuable to find out the vocabulary that people use when they describe entrepreneurship.

### Implications

To find out about the vocabulary in different disciplines we used the principles of effectuation and causation to develop a discussion scheme that can be used for interviewing people from different disciplines to extract the used entrepreneurial vocabulary, without the need to use economic vocabulary.

### Value

The entrepreneurial vocabulary can be used in the teaching programs for entrepreneurial students. That vocabulary can also be used to get a better understanding among different (business and non-business) students to help them to learn more from each other. Besides that, the entrepreneurial vocabulary can also be used to discuss about that vocabulary and develop a more complete and nuanced view of entrepreneurship. With the right vocabulary the model for entrepreneurship education can be tailor-made.

### Keywords

Entrepreneurship, education, teacher, non-business students, vocabulary

## LEARNING AND TEACHING THE BUSINESS MODEL: THE CONTRIBUTION OF A SPECIFIC AND DEDICATED WEB APPLICATION

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The success of the Business Model (BM) as a practical concept with regard to an actual specific economic context makes it a promising tool for shaping civil society in the 21<sup>st</sup> century. Teaching BM design to entrepreneurs appears essential. Surprisingly, the BM is not yet central to entrepreneurship courses and teachers in entrepreneurship lack specific tools for teaching the BM concept. To fill this gap, our research team has developed a new web learning application. It relies on an original academic model, the GRP model (Verstraete, Jouison-Laffitte, 2011), itself mainly anchored in conventions theory.

### Questions we care about

With regard to the importance of the BM for entrepreneurship education and practice, how does a specific dedicated web application enhance BM learning by students? In this paper, relying on Bloom's taxonomy (revised by Krathwohl, 2002), we more precisely intend to analyse how the web application facilitates the learning of BM following different pedagogical objectives. To go on improving the web application beyond its pedagogical content, we also aim to test its design, its organization and its user-friendly quality.

### Approach

A qualitative and a quantitative survey were carried out with 281 non-business students enrolled in seminars introducing entrepreneurship.

### Results

The results show that the application enhances the learning of the BM by helping the students to remember, understand and apply conceptual knowledge. The experiment also provides guidelines towards improving the application.

### Implications

Our findings lead to practical implications for educational institutions aiming to teach entrepreneurship and for entrepreneurs aiming to design business models. We found that a specific dedicated web application is useful for learning and teaching the BM concept. Can the application be extended to other courses? To answer this question, there is a need for other experiments. For example, we use the GRP Storyteller with business students and in particular with "students-entrepreneurs" aiming to create real businesses. We also intend to introduce entrepreneurship into secondary programs using the GRP Model. Another interesting perspective is to consider how the web application might be included into methods used in business incubators.

### Value/Originality

The web application that we have developed is original. It is called GRP Storyteller, it is free and available on [www.grp-lab.com](http://www.grp-lab.com). GRP Storyteller was developed to help students coached by teachers (and, more widely, entrepreneurs coached by mentors) in their efforts to specify their business model so as to make actors adhere to their project. Step by step, the students/entrepreneurs build and specify their business models by telling the story of their business. Our research shows the application's potential and limits. There is a satisfying fit between how we wanted to position the application when we created it (original, useful for teaching and learning the BM, collaborative, easy, with attractive design and accurate teaching material) and how the students perceived it. The application suits even nonbusiness students.

### Keywords

Business Model, web application, entrepreneurship education, GRP Model

## SYSTEMCOMPETENCE IN ENTREPRENEURIAL CONTEXTS – ARE ENTREPRENEURS WITH SYSTEMCOMPETENCE MORE SUCCESSFUL?

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### Questions we care about

Are entrepreneurs or people with systemcompetence in an entrepreneurial process more successful than people without systemcompetence?

### Approach

The systemcompetence approach will be firstly evaluated and empirically modified (through subjective clustering and multidimensional scaling). Based on that, a test will be developed to be able to test the systemcompetence of people in the entrepreneurial process.

### Results

The final scale of the test instrument is empirically evaluated and developed through the methods subjective clustering and multidimensional scaling.

### Implications

With the final test it will be possible to measure if people in an entrepreneurial process with systemcompetence are more successful than people without systemcompetence. If the answer is 'yes' then the systemcompetence approach should be considered in entrepreneurship education processes. Moreover, the test offers instructors of entrepreneurial classes and researchers one more indicator to evaluate entrepreneurial classes and processes.

### Value/Originality

Right now, Systemcompetence is not used in the entrepreneurial contexts. But uncertainty and complexity are mentioned challenges of people in the entrepreneurial processes and systemcompetence offers an approach how to deal with uncertainty and complexity the approach could add value for the field of entrepreneurship and further research projects.

### Keywords

Systemcompetence, Entrepreneurship, Competencies, Uncertainty, Complexity



## THE ROLE OF CROSS-CULTURAL EXPOSURE ON TRANSFORMATIVE ENTREPRENEURIAL LEARNING

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### Questions we care about

In this study we investigate whether pushing students into a foreign sociocultural context offered by a start-up internship in a foreign country could approach a “real” entrepreneurial setting representing an ambiguous and emotionally challenging learning environment. The research addresses in particular three questions: 1) how may experiential learning in a foreign context contribute to an entrepreneurial learning process? 2) whether critical events induced by cross-cultural experience can stimulate critical reflection and fundamental reorientation of knowledge (higher-level and transformative learning) and 3) whether culturally induced transformative entrepreneurial learning contributes to increased self-efficacy and entrepreneurial intention?

### Approach

We employ the focus group method and the critical incident technique to collect retrospective data of students’ experiences and reflections of their entrepreneurial learning.

### Results

The internships and work tasks pushed the students into unusual situations where they had to handle experiences outside their normal comfort zone. The students made great effort to deal and cope with the new situations and tasks, and adapted their mindsets, behavior and strategies (methods) to cope with the challenges, referring to the term “higher-level” learning outcomes. Through experience, the students gradually enhanced their entrepreneurial self-efficacy. They developed their understanding of entrepreneurship. However, from our study it was evident that the students had doubts about pursuing a career as entrepreneurs. Hence, it seemed that the students’ entrepreneurial intentions were not heightened, but rather lowered.

### Implications

Our students exhibited high levels of reflection and increased entrepreneurial self-efficacy, but their “elaborating” mindsets generated skepticism and negative entrepreneurial intentions. This has several implications for the field of entrepreneurship education regarding aims and scope. Furthermore, our research investigating this particular learning context, does also invoke some ethical dilemmas related to the alignment with the authentic entrepreneurial world.

### Value/Originality

Our research aims to address important topics called for in the field of entrepreneurship education research and practice. In particular, we investigate in-depth the phenomenological nature and effects of critical learning events in real-life experiential practices. Furthermore, we investigate how a cross-cultural experience may enhance entrepreneurial learning. Besides, the research aims to add new and original knowledge to the research field by integrating the research fields of entrepreneurial learning, cross-cultural management learning and self-efficacy.

### Keywords

Entrepreneurial learning, cross cultural learning, transformative learning, higher-level learning, entrepreneurial intention, self-efficacy

## OPENING UP THE BLACK BOX OF ENTREPRENEURIAL EDUCATION – OUTLINE OF AN APP-BASED ACTION RESEARCH PROJECT

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### Questions we care about

Most attempts to scholarly assess or explain the impact of entrepreneurial education have been made on anecdotal or macro levels. Quantitative survey-based studies outline correlations between stated input and output macro variables, but do not explore the black box of entrepreneurial learning in terms of how, when or why students develop entrepreneurial competencies. This methodological article outlines a novel research design capable of opening up this black box, leaning on the key role of emotional and critical learning events for developing students' entrepreneurial competencies.

### Approach

We build on a new methodological tool consisting of a smartphone app capturing critical learning events as they occur followed by qualitative methods linking such events to key desired learning outcomes. Due to the methodological challenges with thought- and action-based assessment strategies, an emotion-based assessment strategy is applied, where emotional and critical learning events are viewed as a proxy between an educational intervention and students' developed entrepreneurial competencies.

### Results

The article outlines how four teams of educators/researchers and their students at four different universities in Europe will be equipped with a tablet / smartphone app to longitudinally capture critical learning events, thereby exploring the more general question: How could a multi-site action research and mechanisms focused impact study of entrepreneurial education be designed?

### Implications

The methodological steps will lead to a possibility to identify which pedagogical methods lead to desirable learning outcomes, and how the causal mechanisms generating them are constructed. The multi-site aspect of the research design allows for finding generalizable mechanisms present in many of the learning environments, allowing for reaching beyond the contextual and anecdotal good practice case into a possibility to construct new theory for further research as well as robust guidelines for practitioners.

### Value/Originality

While the method of sampling everyday experiences represents a growing tradition of conducting research in fuzzy, exception-laden and socially situated environments, this method has not yet been applied to entrepreneurial education in a multi-site and international setting. A novel characteristic is also the app-based capture of teachers' emotional events analyzed through multi-site composed focus group interviews allowing for better utilization of action research strengths. If the opening up of the black box of entrepreneurial education succeeds it can lead to more robust theory and evidence for entrepreneurial education, which could develop as well as increase the diffusion of entrepreneurial pedagogy. To illustrate this, expected findings are outlined in the article based on previous research and also based on an example given from on-going research. This has illustrated that the research design outlined in this article could very well be capable of opening up the black box of entrepreneurial education and contribute to uncovering key causal mechanisms in ways that have not been possible with more established research paradigms.

### Keywords

Entrepreneurial education, assessment, emotional and critical learning events, smart-phone app, multi-site action research

## SHOULD WE STOP LOOKING FOR COMMON GROUNDS AND START EMBRACING OUR DIFFERENCES? – ENTREPRENEURSHIP EDUCATION IN AN ENGINEERING CONTEXT

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### Questions we care about

The paper is centered around the question “Should we stop looking for common grounds and start embracing our differences? “. It is fundamentally rooted in a second question “If we have different purposes with entrepreneurship education and disciplinary differentiated target groups at different levels of progression are we then talking about the same thing?” in the wake of this question a third question emerges: “Do the different purposes and target groups call for diverse methodologies and training of different sets of skills and competences?”. The question “Why entrepreneurship education?” is answered from three different angles. If we raise the question: “What is effective entrepreneurship education in a specific discipline?” will that enable us to get a better understanding of the *Elefant* (Gartner, 2001)? The research question of this paper becomes “What is the purpose, challenges and opportunities of entrepreneurship education in the field of Engineering and how does it affect the pragmatically best methodology of effective entrepreneurship education?” and the sub questions follows: 1: What characterizes engineering students, what is their professional heritage and identity? 2: How does the engineering student’s professional heritage and identity influence their ability to engage in entrepreneurial behavior/processes? From the research 3 questions rises: 1: “What do educators need to customize, the pedagogy, didactics and/or methods of entrepreneurship education?” 2: “How can the learning process be truly mean driven when the course is graded?” 3: “Is there a gap between the didactic methodologies applied in the generic entrepreneurship education and the engineering students’ knowledge base, cognitive learning patterns and the engineering identity?”

### Approach

To answer the above stated research question and sub-questions a literature study is done and combined with a longitudinal single case study, where multiple data sources are used in order to ensure empirical richness and enable triangulation.

### Results

A number of opportunities and challenges, related to educating engineers through entrepreneurship, are identified and two questions are raised. 1: How can the learning process be truly mean driven when the course is graded? 2: Is there a gap between the didactic methodologies applied in the generic entrepreneurship education and the engineering students’ knowledge base, cognitive learning patterns and the engineering identity?

### Implications

If the one of the central challenges of educating engineering students through entrepreneurship if the disharmony between the engineering approach to knowledge creation and problem solving and the entrepreneurial approach (effectuation) maybe this needs to be addressed in the core curriculum of engineering education. If we look at entrepreneurship education not as singular occurring events but as a progression over time it is possible to make a progression that would allow for the different purposes and forms of entrepreneurship education, from generic to individual centered, to supplement each other and there by maximize the effect of entrepreneurship education.

### Value/Originality

The originality of this paper is in the narrow focus on entrepreneurship education in an engineering context, not searching for a generic truth about entrepreneurship education but for an in depth understanding only possible to reach with contextual framing.

**Keywords:** Entrepreneurship education for non-business students

## ARE WE TEACHING THE SAME COMPETENCES AS LEARNT IN REAL LIFE

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### Questions we care about

Big variation of the number of factors (from four to 13) found in competencies' studies and only three competences describing entrepreneurship education (EE) learning outcomes provoke to study further learning outcomes in real entrepreneurial process and classroom training process. The main aim of the paper is to identify the features of entrepreneurial (learning) competence framework and to map the learning outcome competenc(i)es in the entrepreneurship education context.

### Approach

Current paper is an introduction to the comparative study of competences learned in the EE classroom and real entrepreneurial process. The attempt to link competence models of EE and entrepreneurship practice domains demonstrates high complexity of the problem coming from the scope, intersection and dynamics of entrepreneurial competences.

Empirical study focused on EE outcomes was carried out in Latvian and Estonian HEIs accordingly with 326 and 183 respondents. Altogether 108 statements were to be evaluated on a 5-point Likert scale. Exploratory factor analysis was used in the data processing for mapping entrepreneurial competencies of students.

### Results

Based on EE learning outcomes' model "cognition-skills-attitude" authors propose a novel tripartite model of entrepreneurial competences in real entrepreneurial process. Holistic view of the nature of the entrepreneurial process identifies three competence domains of that process. These are Personality Traits, Mental Systems and Entrepreneurial Resources describing an entrepreneur or/and his/her team, and the venture.

In the empirical study of EE outcome model, Latvian sample gave a three-factor pattern corresponding to the initial tripartite model of EE outcomes. Capabilities averted Cognition from the triadic model of the Estonian sample. Differences in the patterns of learning outcomes of two countries can be only partly seen in the EE (training) goals and methodologies in these countries.

### Implications

Results could be useful for development further practice-oriented EE and learning outcome model.

### Value/Originality

Theoretical model is linking EE outcomes in the classroom with entrepreneurial competences' model of real entrepreneurial process. Empirical results raise the question of (1) replacement of tripartite "cognition-skills-attitude" learning outcome model with "capabilities-skills-attitude" model, (2) the need for quadruplicate or even higher degree model.

### Keywords

Entrepreneurship education, Learning outcomes, Entrepreneurial competences, Entrepreneurial process, Competence modeling

## ENTREPRENEURSHIP AS A NEW LEARNING PHILOSOPHY

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### Questions we care about

Entrepreneurship has become a central part of school curricula in most European countries, not only as a subject matter but also as a mind-set. If entrepreneurship is to be integrated into schools as a mind-set, we need to investigate entrepreneurship as a learning culture and as a learning philosophy. The main questions in this paper are: What can entrepreneurship tell us about learning, and what are the implications for schools?

### Approach

Our study is based theoretically on entrepreneurship theory. Methodologically it is based on the EU project YEDAC about entrepreneurship in secondary schools and on design theory. Empirically it is based on pilot studies about entrepreneurial learning in primary and secondary schools in Denmark.

### Results

We present a theoretical, methodological and practical understanding of entrepreneurial learning with focus on a general conflict between entrepreneurship and the educational system concerning teaching culture and methods (active vs. passive, innovation vs. reproduction) and the paradigmatic role of education in society (industrial society vs. global knowledge society).

### Implications

Integrating an entrepreneurial culture and mind-set in schools demands a new school culture and a new way of learning. We will present prototypes, which we have worked with in practice, that can support a new learning culture and more individual motivation for learning in basic schools.

### Value/Originality

With our theoretical questions and the findings from our pilot studies about entrepreneurial learning, we will initiate a discussion about what it means for schools to use entrepreneurship as a learning philosophy.

### Keywords

Learning philosophy, learning methodology, effectuation, autonomy, Self-Directed Learning, Design Thinking

## RITUALIZATION AND TRANSFORMATION IN ENTREPRENEURSHIP EDUCATION

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### The Questions we care about

Learning is related to the environment created for the learning experience. When we are developing new forms of enterprise education, focus is often on didactics in terms of target groups, learning goals and content or on changing the pedagogy in terms of the learning process, student involvement or teacher-student interaction, but rarely on changing the learning environment in terms of physical environment, technical support system or institutional setting. As enterprise education is typically situated within existing study programmes at existing universities, the learning environment is often already highly routinized and involves a certain social structure but in entrepreneurship education such routinization and structure may actually counteract learning goals. The purpose of this paper is therefore to explore two questions related to the interaction between enterprise education and learning environment

Q1. *What happens when entrepreneurship educators replace existing routines in the classroom with a conscious use of ritualization in order to create critical learning experiences?*

Q2. *How can such rituals provide scaffolding and markers during a course?*

Previously, rituals have predominantly been examined with an emphasis on religious aspects, structures and values of society, often inspired by anthropology and ethnography. Rituals are actions that we undertake with a particular observance, which makes them special and create structures of order, providing a feeling of security through familiarity (Bell 1992). The ritual framework creates such a familiarity with the practices of everyday life that is dominant in any particular sphere (Wulf 2012), also in the area of education. Rituals further help create, position and maintain social relationships and they may even have an 'identity shaping dimension in that they establish order by creating social feelings ensuring unity through emotional and symbolic dimensions'. Many routines in the classroom have originated from behaviourism. In entrepreneurship education, however, we often deliberately seek to break these routines. However, there are challenges connected with such change, unless we create a 'safe' learning environment for students that replaces the old routines with new rituals, they will feel insecure and question the reasons for introducing new routines. Scaffolding is introduced as a means of creating such safe environments and to create points of reference for the future.

### Method and research approach

The paper builds on extensive insight from six cohorts of students at two Scandinavian universities over a four-year period (2012-2015). The data was procured using an experiential-explorative research approach in which the researchers were personally involved in reflective processes as colearners (Kyrö et al 2009).

### Results

Each of the courses analysed deliberately break the ordinary behaviourist routines of university teaching. The findings illustrate how educators can use rituals actively to change how students learn. However, students are very wary of embracing new structures and rituals, indeed, some feel so comfortable with the old rituals that they would prefer not to change from the old way of just being receivers of knowledge to becoming co-creators of the learning situation. It is therefore important to exchange existing routines with rituals that enhance the feeling of safety and involve the students in creating the change. This is achieved through scaffolding and setting up ritual markers, which are continuously repeated.

### Value and implications

We describe rituals as both a scaffold and a marker. The scaffold approach results in less unease with the introduction of new ways of doing things. Ritualization markers used to emphasize how the learning environment functions, decouple existing routines and create new rituals, further helps students feel safe. If the ritual room is installed properly then it can provide space for experimentation. However, as lecturers we can only achieve so much without universities thinking in novel ways when establishing new classrooms for enterprise learning.

## ALICE IN WONDERLAND – AN EXPERIENCE BASED APPROACH TO LEARNING

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### Questions we care about

Experience-based learning is recognized as a critical mechanism in preparing individuals for the practice of entrepreneurship (eg. Fayolle and Gailly 2008; Solomon et al. 2002). However, as action- and experience-based entrepreneurship programmes are still a relatively new phenomenon, few studies exist which compare design and pedagogy across institutions. More recent experiential forms of learning place the learner inside the experience, but not in its center. Much like Alice in Wonderland, learners can then decide – autonomously, by taking responsibility for their learning – which role they would like adopt in their experience and how they would like to make sense of their experiences. Alice was guided by a White Rabbit and Cheshire Cat, supported by the Mad Hatter and others, and faced challenges from the Queen of Hearts, all of whom influencing Alice's choices throughout that led her on this journey. Equally for learners in entrepreneurship programmes, the journey is facilitated by different stakeholders that may influence decisions, shape perspectives or even present barriers, but it still the learner, traveling within the journey that defines his or her own learning towards becoming entrepreneurial. The questions we care about are therefore:

- How do learners engage in experiential forms of learning?
- Which consciousness of their possibilities for action do they possess?
- How do they make sense of their learning experience?

### Approach

The study uses an experiential explorative research approach in which the researchers were personally involved in reflective processes as co-learners (Kyrö et al 2009). The data originates from diverse sources such as observation, interviews and reflection logs as well as other materials handed in by students in the learning process. Students consented to the use of the material in anonymized form.

### Results

The first part of this study pointed towards a new generation of entrepreneurial educations in Europe being based on experiential forms of learning. Looking at how learners engage in the experiential learning process 3 categories of learners were identified. 1/The 'Alice-learners', fully embracing and immersing themselves inside the experience. 2/The 'hesitants', having some reservations at first but opening up to the process during the experience. And 3/The 'disengaged', following through the motion of the process but remaining emotionally disengaged.

### Implications/Value

Ideally, experiential learning in entrepreneurship education creates an 'Alice in Wonderland'-experience where learners would act just like Alice did – open to immerse and embrace the experiences. Reality shows that learners engage differently in the process and one central question for entrepreneurship educators will be to explore whether and how students from category 3 (disengaged) can transit to one of the other categories?

### Keywords

Entrepreneurship education; experiential learning; Europe; learner; constructivism

## ENTREPRENEURIAL LEARNING AND BELONGING TO A COMMUNITY OF PRACTICE

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### Questions we care about

The question we care about is how micro-business entrepreneurs commit themselves to a network and how this commitment or non-commitment relates to entrepreneur's perceptions of their learning.

### Approach

In our empirical case study our aim is to explore how participants of an entrepreneurship development commit themselves to a network as a "site" and a place for peers to meet and communicate with one another. Networks are considered a learning opportunity for smaller enterprises, and networking is seen as an important part of small business development. Following the social dimension of entrepreneurial learning, entrepreneurship can be understood in terms of the social groups to which entrepreneurs relate focusing on the experiences and perceptions of group belonging (McKeever et al., 2014). We aimed to understand how micro-business entrepreneurs commit themselves to an entrepreneurship training program by drawing on Wenger's (1998) framework of a community of practice and how the commitment within a training programme relates to the entrepreneurs' perceptions of their learning.

In order to really understand what goes on within the network in which the entrepreneur is immersed and to build a view of how participants interpret their experiences within it (Drakopoulou et al., 2006), we wanted to get close to the natural real-life settings in which entrepreneurship takes place. We collected data by interviewing members of the network "*manufactured*" (Jack et al., 2010) for them by a local enterprise support agency and also observing them at official and unofficial meetings for two years.

### Results

Our research shows that there was a remarkable heterogeneity between the needs of the members, and that their previous experiences notably affected the participation in the community. It seems that the participants who most actively developed their business did not find themselves at the core of the community of practice but rather remained at the margin. However, the community of practice may be important even from the marginal position. We noticed that some members who are not fully committed to entrepreneurship are taken at the core of the community. Our study demonstrates that belonging to a community may also have motives which do not necessarily contribute to the development of one's business. In terms of the perceptions of their learning, the findings reveal that the participants perceived more personal than concrete business benefits of the training programme. The development of a personalized network with peers has to some extent been shown to help entrepreneurs learn and diminish feelings of isolation and loneliness. Our research shows that the entrepreneurial learning has become embedded in the relationships themselves which is consistent with the literature on entrepreneurial learning as a social process.

### Implications

The study specifically increased our understanding of the role of an entrepreneurship training programme in the development of micro-business entrepreneurs revealing aspects that influence the participating in a community of practice. The successful development of network relationships should stimulate a sense of community among participants. These challenges are closely related to the question of how to support participants of a training programme to enhance learning experiences in a manner that addresses the interests, agenda and objectives of all concerned as participation in an interplay between identity construction and participation within a community of practice.

### Value/Originality

Our study offers insight into networks and micro-firm co-operative learning and it contributes to an understanding of the way networks and social relationships facilitate learning and the development of small



business activity. The experiences of learning as perceived by the participants varied in terms of the benefits of the learning relationships built within the network among the participants. By getting close to natural and real-life settings in which entrepreneurship takes place we had an opportunity to watch and learn how entrepreneurs interact increasing our understanding of the way people behave in the way they do. This opportunity to go under the surface might result in a richer interpretation of the relationship between networking and learning in small firms.

**Keywords**

Networking, learning, community of practice, micro-business owner

## REFLECTIONS ON STIMULATING ENTREPRENEURIAL BEHAVIOR IN THE CURRENT LEARNING GENERATION

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### Questions we care about

As educators we took on the challenge that all educators have: how to make the learning process as authentic and as close to the real world as possible? What do we need to do in the classroom to facilitate that learners have a more entrepreneurial behaviour? And what can we do to help them prepare for the real world without having to “stop” it from turning?

### Approach

With this paper we explore and reflect on the process of entrepreneurial education by means of gyroscopic management. Our experience with this didactical approach, showed us that we shouldn't stop the gyroscopes. Based on this, we also believe that (entrepreneurial) behaviour and attitude (competence) can be only stimulated, not educated, and this will require a different focus on the mind-set of the participants. In order not to stop them, we have experimented with turning the classical K.S.A. approach around into A.S.K.: A (attitude) .S (skills).K (knowledge). In abbreviations this lead to A.S.K., which also gives a clear sign of the mind-set behind the approach. “Asking” instead of answering. Then, by using the motivation (M.) of the person, he or she will start from that and creates on that base their own M.A.S.K. So, instead of teaching students entrepreneurship, how about stimulating what they already have, an individual entrepreneurial mindset?

### Results

We look at the following questions: What is entrepreneurial behaviour? What do the students and the educators experience? What does this approach bring? However that is not all. What this paper also brings in, next to the educational approach, is a specific research approach. As practitioners we also questioned ourselves whether current approaches for researching entrepreneurial education are accurate enough in studding what we are aiming to create: entrepreneurial professionals. Can we, or should we, use existing models and prescribed approaches to study something that is aimed to be discovered (individual mind-set/attitude)? We have discovered so far that a specific, so called “Grounded Action” research approach helps practitioners to discover what there is and using that, make choices about the future steps, take the steps, and discover again what there is. The aim is not to find solutions, but to discover. Once the discovery is made, the practitioner makes choices in terms of how to approach, leading to an intervention and making new discoveries.

### Value/Originality

Our paper brings several contributions to the domain of entrepreneurial education. First we propose a new view on what the educational setting could look like. Secondly we present the practice of “gyroscopic management”, as a practice suited for the current learning generation. Lastly, we encourage the use of a different research approach in the domain of entrepreneurial education and practice.

### Keywords

Gyroscopic management, training entrepreneurial behaviour, grounded action research, development of mind-set

## A FLOW OF ENTREPRENEURIAL LEARNING ELEMENTS IN EXPERIENTIAL LEARNING SETTINGS

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### Questions we care about

This paper explored the concept of learning in an experiential learning setting and whether the learning process can be understood as a flow of learning factors influencing the outcome. If many constituting factors lead to the development of learning outcomes, there might need to be developed a differentiated approach to facilitate experiential learning. Subsequently the paper investigated how facilitators of learning processes can design a learning space where the boundary of what is expected from the learner is challenged. In other words the aim was to explore the transformative learning processes that are a part of experiential learning settings and curriculum development.

### Approach

The project used case study method in order to investigate research questions and further expands with qualitative research methods as focus groups, qualitative interviews and observation which was used in order to support the theoretical part with empirical findings. The case explored a course in innovation and project management at a Health and Nutrition Education programme at a university of applied science in Denmark. The primary source of data derived from four focus group interviews with students from the course. Five different learning elements was investigated and discussed in order to provide valid ground to the implications for entrepreneurship education.

### Results

Findings in the present study showed that whenever students find themselves in action-based learning approaches working under either explanation-based or experience-based approaches, consistently they articulated an urge to use elements from the other side of the equation or establish learning environments that challenge the reigning approach. The study also revealed a clear understanding of five overall didactical factors being crucial to either way of planning experiential learning: Real-life, work methods, learning environment, teacher role and employability. Students from the study reported a strong expectation of high variation and combination of learning elements in the course planning and curriculum development.

### Implications

The main implication of the current study is that real-life experiences are leading to higher engagement in the learning process why in entrepreneurship education this should be incorporated both in explanation-based and experience-based teaching and learning.

### Value/Originality

Showing an ongoing linkage of the two approaches explanation-based and experience-based entrepreneurship teaching and learning the present paper proposed new models as ground for discussion of important factors leading to higher learning outcome in entrepreneurship education. A limitation is that these models are inspired from the findings from only one case study why the models and understandings should be elaborated and compared to other contexts.

### Keywords

Experiential learning, Entrepreneurship Education, Transformative Learning

## WHAT CAN BE MEASURED AS VARIABLES THAT CHARACTERIZE ENTREPRENEURIAL PERFORMANCE IN AN ENTREPRENEURSHIP ROLE GAME?

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### Questions we care about

Earlier papers showed that the entrepreneurship role game simulation (LE-Game) is a teaching and learning method that enhances the entrepreneurial behavior of the participants. Empirical tests showed on average an increase in extrovert (red/yellow) behavior style of some 4%.

Moreover we have tested the behavior styles of nearly thousand persons, among them nearly thirty entrepreneurs. Results: entrepreneurs on average have a different behavior style. Significant differing from the average behavior style: red (dominant, +30%), yellow (influence, + 15%), blue (conformity, -20%) and green (harmony, -30%).

Meanwhile technology makes it possible to measure digital the behavior of the participants in the entrepreneurship role game simulation. We have constructed an mobile application (app) where performances of the participants can be measured real time during the role game. Using smart phones, all kinds of information can be gathered of the players participating in the entrepreneurship game.

### Results

Like in football it is now possible to measure all kinds of characteristics of the players performing: passes wrong/good, distance, fouls etc. According to (Kotler, p158) learning is the change in an individual's behavior arising from experience.

### Value / Originality

But what changes in individual behavior should be measured if we want to measure the learning of entrepreneurship? For example: number of contacts, number of (profitable) transactions, overall profit during the entrepreneurship game. Which variables that can be identified as stereotyping entrepreneurial behavior, variables that can be quantified and measured?

### Keywords

Entrepreneurial behavior, variables of entrepreneurial behavior, scales on measuring entrepreneurial behavior, entrepreneurship role game

## ON THE VALUE OF CREATIVE NEW CONCEPTS IN EDUCATION

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### Questions we care about

How do we identify tools that can overcome uncertainty in realizing value with students using their creativity in generating ideas and develop these ideas in new concepts? Tools that better fit in the mindset of the new generations, and that can be applied in any modern classrooms.

Creativity to generate ideas which are developed to new useful concepts that show value, is regarded as “idea creativity”. Referring De Bono: *“There is a language problem with our understanding of the word 'creativity'. As we understand it, if you create something that was not there before, then you are creative. But this may not necessarily be a good thing. You may have just created a mess. This leads to the notion that creativity is just being different for the sake of being different which is what far too many creative people believe. If doors are normally rectangular and you suggest a triangular door, that is not creative unless you can show value for the new shape. The problem then is that the word 'creative' does not distinguish between artistic creativity – as we understand it – and idea creativity, which helps with our thinking. That the result is something new is enough for us to term it 'creativity'.* (Edward de Bono). The major question of idea creativity, especially in an educational environment is: How to determine, how to assess such “value”? In our paper we provide a solution, but there might be other solutions too.

### Results

In general a teaching and learning process of idea creativity, with the objective to find new concepts that have value has an uncertain result. You cannot plan successes in advance. Searching and finding ideas for new concepts with value, can be compared with gold digging in Alaska: you have to handle a lot of sand, mud and stones to find in the end these small pieces of gold. This dynamic complex, mostly non-linear learning processes can be observed and monitored by CRAP (coordination registration of action points) and G-CRAP (group coordination registration of action points).

Students carried out these assignments, using CRAP and G-CRAP. It also made clear that the authentic context of this learning process is realized by the key characteristic: creating added value. The presentations were held for entrepreneurs, who could benefit from the innovative concepts. They had to spend their time and energy to validate the presentations.

### Value / Originality

One of the students expressed beautifully: “In education there is a critical dividing line between sufficient (pass) and not sufficient (fail), but in business there is a critical dividing line between good and not good. That is something entirely different.”

### Keywords

Connectivity Learning, coordination registration action points (CRAP), monitoring, the value of creativity

## **SUPPORTING EMPLOYEES IN PUBLIC SECTOR AND VOLUNTARY ORGANIZATIONS TO BECOME MORE ENTREPRENEURIAL**

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### **Questions we care about**

The aim of this research is to understand the entrepreneurial orientation (EO) of employees in the public sector, voluntary, and social enterprises organisations; to understand the entrepreneurial orientation (EO) of such organisations, and to identify the entrepreneurial skills employees/volunteers require to enable them to behave more entrepreneurial within their work environment.

### **Approach**

The research involved administering online survey to employees and/or volunteers working in public sector, voluntary, and social enterprise organisation in six regions/countries Bulgaria, Greece, Iceland, (South East) Ireland, Portugal, and Sicily. A total of 451 people completed and returned the survey, representing 223 organisations. The methodology was a quantitative analysis using manual techniques.

### **Results**

A major finding from this research is that, based on the findings, there appears to be a link between employees/volunteers that have entrepreneurial experience (external to the organisation in which they are currently working/volunteering), the degree to which they are enabled to be entrepreneurial within their organisations, and the degree to which employees/volunteers are encouraged to seek opportunities, are empowered to take decisions, and are required to be innovative/creative at work. The converse also appears to be the case.

### **Implications**

This study contributes to a deeper and broader understanding of entrepreneurial behaviour of employees/volunteers in public sector, voluntary, social enterprise organisations. This research has implications for managers in these organisations, policy makers, educators and trainers involvement in supporting employees and volunteers to be more entrepreneurial in their work environments. The research provides us with deeper insights into the entrepreneurial orientation of employees and volunteers in public sector, voluntary, social enterprise organisations.

### **Value/Originality**

Prior research concerned with entrepreneurial practices in public and voluntary sectors was mostly focused on organisational characteristics and the holistic view on being more entrepreneurial, as opposed to examining entrepreneurial orientation at employee and volunteer levels.

### **Keywords**

Entrepreneurial orientation, entrepreneurial behaviour, innovation, public sector, voluntary sector, social enterprise.

## START AND IMPLEMENT AN ECOSYSTEM FOR ENTRE- AND INTRAPRENEURSHIP ACTIVITIES

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### Questions we care about

The objective of the project TIMEGATE (transfer initiative for management and entrepreneurship basics, awareness, training and employability) is to increase graduate employability by offering a program of application-oriented business classes, especially for non-business students (NOBS). Classes are open to all studies and free of charge. In addition, the existing offer regarding entrepreneurship is to be extended to create a startup-friendly environment, increase students' affinity to entrepreneurship and thus the number of academic spinoffs.

### Approach

The project approach is to offer a program of elective courses that is accessible for all branches of study, regardless of students' level (Bachelor, Master, PhD). In this program application-oriented knowledge with a special focus on the needs and prerequisites of NOBS is provided, mostly by external experts (managers, entrepreneurs, scientists). Students may not only choose individually which classes of the program they wish to attend, but they also have the possibility to obtain certificates to conform their additional qualifications for their future career. The project is organized as an inter-university cooperation with the technical and medical university on site, as well as other partners and is funded by the Austrian Federal Ministry for Science, Research and Industry.

### Results

Following a pilot phase of one semester, the full program is now available and has been since the winter semester 2014/15. The full program comprises 37 classes (43 ECTS) with a total of approx. 1.300 registrations as of today. Joint professorships with the technical university and the medical university on site have been implemented. The existing provision of entrepreneurship classes has been extended from two classes to seven classes and is now directly accessible for students of the partner universities. A special program has been created to foster female alumni (FAME, Female Academics meet Executives).

### Implications

Implications include increasing the employability of all graduates (especially of NOBS), distribution of an entrepreneurial mindset, increasing awareness and the number of academic spinoffs and realizing synergies (e.g. share resources) by cooperating with universities and other partners on site.

### Value/Originality

TIMEGATE is the first inter-university initiative to provide essential basics about entrepreneurship and intrapreneurship to increase graduates' general employability and promote interdisciplinary thinking and acting. By doing so, it ensures that graduates' qualifications meet the demand of the market. It is the answer to the challenge of creating a regional entrepreneurship and intrapreneurship ecosystem.

### Keywords

Entrepreneurship Education, Entrepreneurial University, Non-business students (NOBS), Intrapreneurship

## **EPORTFOLIO AS A TOOL FOR GUIDING STUDENTS' GROWTH TO ENTREPRENEURSHIP**

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### **Questions we care about**

We are interested to develop entrepreneurship pedagogy and to create some practical tools for entrepreneurship counselling and training for higher education students. We also want to apply modern information and communications technology (ICT) in entrepreneurship education and training.

### **Approach**

This is an action research project where the teachers and entrepreneurship students have constructed an Entrepreneurship-Portfolio model (i.e. Entre-Pofo -model) during entrepreneurship courses. Both students and teachers have taken part to the workshops and focus-group interviews. The theoretical foundation of the Entre-Pofo -model lies on constructive learning, lifelong learning and lifelong guiding, and counselling theories. Entre-Pofo is also guided by the holistic counselling model that takes account that life has several dimensions that are intertwined: education path (study counselling), work and career path (career counselling and entrepreneurship counselling), and one's own life (family, hobbies, experiences).

### **Results**

In a nutshell Entre-Pofo means that students upload to their Entre-Pofo different study documents and completed assignments that demonstrate their knowledge, skills and competencies concerning their entrepreneurial growth. They also reflect their learning and business ideas with peer students and teachers. Entre-Pofo helps students to manage their multidimensional learning processes and to personalize their learning outputs. Teachers for their part feel that Entre-Pofo 'relieves them from teaching' and helps them to orientate, motivate, guide and challenge students' learning practices.

### **Implications**

Entre-Pofo can be used in all fields of higher education. It can also be implemented in teacher and counselling education as tools to follow students' professional development process especially in entrepreneurship education and entrepreneurial learning. For teacher and counsellor students the most illustrative way to familiarize with the ePortfolio is to exploit it in their own studies. Reflective thinking and self-reflection are key elements in portfolio process and they can be practiced during the teacher and counselling education. Also in teacher education it should be stressed that entrepreneurship education is enhancing entrepreneurial behavior and entrepreneurial learning and not only new venture creation.

### **Value/Originality**

The significance of this paper is to present the Entre-Pofo as a tool to guide students' lifelong learning processes towards their professional and entrepreneurial growth.

### **Keywords**

ePortfolio, professional development, lifelong learning, lifelong guiding, entrepreneurship



## **EDUCATION AND RESEARCH IN UNIVERSITIES: COUPLING WITH ENTREPRENEURIAL CAREERS AND WORK**

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### **Questions we care about**

Universities pursue teaching and research. Teaching and education is coupled with entrepreneurship, when students and acquire entrepreneurial competence and pursue a career as entrepreneur. Research is coupled with entrepreneurial endeavors, when researchers are networking with entrepreneurs, promoting innovation. The purpose here is to account for these individual pursuits as influenced by the institutional quality of entrepreneurship education provided by the universities in the countries around the world. We care about the research questions, how is university education coupled with entrepreneurship in form of university graduates' business competence and pursuit of entrepreneurial careers, and is this coupling enhanced by the institutional quality of entrepreneurship education in the universities in the country? How is university research coupled with entrepreneurship in form of networking between researchers and entrepreneurs, especially university educated entrepreneurs, and is this coupling enhanced by institutional quality of entrepreneurship education in the universities in the country?

### **Approach**

A sample of 1,256,489 adults in 100 countries has been surveyed, with measures of their education and entrepreneurial competence and careers, with a subsample of 55,588 entrepreneurs in 68 countries, with measures of their innovation and networking with researchers, in the Global Entrepreneurship Monitor, which also provides a rating of the quality of entrepreneurship education in the university system in each country. These two-level data on individual pursuits influenced by a national condition are analyzed by hierarchical modeling.

### **Results**

Analyses show how university education of adults benefits their entrepreneurial competence, and both education and competence benefit careers as entrepreneurs, and both these benefits of university education are enhanced by the institutional quality of entrepreneurship education. University education of entrepreneurs benefits their networking with researchers, and both university education and networking benefit their innovation, and university education even enhances the benefit of networking for innovation. These benefits are further enhanced by the institutional quality of entrepreneurship education in the university system of the country.

### **Implications**

The results demonstrate societal benefits of coupling entrepreneurship with university teaching and research, and benefits of policies promoting institutional quality.

### **Value/Originality**

The account of the coupling of entrepreneurship with education and research in universities deepens understanding of how institutional forces, here entrepreneurial universities, shape entrepreneurial endeavors, but contingent on the quality of institutions.

### **Keywords**

Universities, teaching, research, competence, careers, networks.

## FROM I TO WE: A NEW PARADIGM FOR ENTERPRISE LEARNING?

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### Questions we care about

The interest in enterprise education has risen notably since the turn of the century. Following this development, we witness a diversity of educational practices being developed with teachers and researchers increasingly sharing their experiences concerning the outcomes of educational designs and expectations with regard to the possibilities for student learning.

This paper asks: What effect does moving from individual to collective understandings of the entrepreneur in enterprising education have on the student's learning? And given this shift in understanding, if there is a need for a new paradigm in enterprise learning?

### Approach

This paper is drawing on ethnographic data (observations and interviews) from entrepreneurship education at a summer school in Denmark. The purpose of the summer school was to bring the students from an awareness of their own competences to a shared understanding of resources, relationships and opportunities for becoming enterprising. This paper examines a shift in students learning as individuals to learning in collaboration.

### Results

In this paper, we describe some of the basic ideas behind the course design and explore the students' learning processes when subjected to the described approach. The aim of this paper is to explore empirically how students experience and handle a shift from an individual to a collaborative understanding of entrepreneurship imposed on them by the design of the course. We found that a focus on the collaborative and distributed character of entrepreneurship, as within the We-paradigm, does not exclude the importance of perceptions of individuals' self-images as part of a course in entrepreneurship. Yet, a re-formulation of these could be an entry point for richer group work and articulation of diverse group potential.

**Key Words:** Collaborative, Learning, Entrepreneurship, Course Design, Student's Perceptions

## PROBLEM-BASED TEACHING METHOD IN AN ENTREPRENEURSHIP EDUCATION: FINDINGS FROM EXPERIMENT

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### Questions care about

This paper has two main objectives. The first objective introduces how problem-based learning method could be implemented in entrepreneurship education at university-level with more theoretical content of the course. The second objective is to analyze the strengths and weaknesses of this experiment. Finally, the author also summarises how the PBL-method serves the aims of the course and experiment. The questions to be asked are: 1. How to implement, or should it even be implemented, PBL-method in theoretical entrepreneurship course? Or 2) which are the strengths and weaknesses of this experiment, lessons to learnt?

### Approach

This paper introduces findings from a PBL-method used in entrepreneurship education at a university level. In practice the course contents five three-hours-seminar where student groups introduced their theme and formulated answer in given question or problem. Each seminar has main theme (for example family business) with subthemes (for example strengths or weaknesses) which based on some question or problem to solve (for example "Formulate instruction to succeed in change of generation).The solutions have been introduced by posters. In author's opinion the poster presentations support communication better than for example PowerPoint presentations. Students have different background materials, such as web lectures, scientific articles and student's independently selected cases. The aims of this experiment is to 1) increase student activity, and 2) encourage to formulate solution (in entrepreneurial questions), and these both 3) have a great effect to the learning outcomes and further working skills. The research has been carried through by a questionnaire with multiple choice and open-ended questions. Moreover, some students' reflections from the method based on informal discussion have been introduced.

### Results

This teaching experiment will be implemented at the end of year 2014, therefore this abstract merely introduces some main findings from the beginning of the experiment. These findings based on a) observation in the classroom and b) informal discussion with students. Moreover, this paper tries to increase the discussion on educational methods, planning and implementing processes, and further, learning outcomes. After two seminars the main difference between these seminars and earlier traditional lectures is the richness of discussion. Moreover, the presentations are well prepared with high quality and visualization. Two following elements support the discussion; first, students are excited about their own subtheme and they have orientated in theme. Second, in those reasons, they have knowledge to exchange views with other groups and express their opinions. Almost all students participate on discussion in every seminar and every presentation is clearly finished. The role of the teacher is more to start discussion with stimulating question and sometimes to guide the direction back to main points or simplify the views.

### Implications

The importance of this topic is to develop a more student-centered and cooperative learning method which could support learning outcomes through more meaningful and cooperative teaching method and both different learners through several learning possibilities. The practical advantages of this topic are: to support entrepreneurial behavior, to improve learning outcomes, and to increase knowledge from entrepreneurship and cooperative skills.

### Value/originality

The paper introduces use of problem-based learning method to develop entrepreneurship education in more theoretical context. Furthermore, this paper presents more cooperative and communicative teaching practices and findings.

**Keywords:** PBL, entrepreneurship education, student-centered

## STUDYING ENTREPRENEURIAL LEARNING IN A PRIMARY SCHOOL SETTING IN SWEDEN

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### Questions we care about

In this study we are interested to explore the intersection between entrepreneurial learning (EL) and problem solving in mathematics in a primary school setting in Sweden. EL is part of the Swedish school system curricula where it is about developing entrepreneurial competences such as initiative, responsibility, creativity and ability to collaborate – competences that lay the foundation for an active life and life-long learning. The level of mathematics ability has according to PISA-tests deteriorated in the Swedish school system. Therefore, we wanted to explore if using ideas from EL applied to problem solving in mathematics could be fruitful in both developing mathematical ability and entrepreneurial competences among the students.

### Approach

This study uses a participative action research (PAR) approach, implying that we brought in teachers (and to some extent students) as participators in the research project already from the start. While the overall research question (How can EL support problem solving in mathematics and vice versa?) was stated by the researchers, the work to operationalize this in each school setting is done with the teachers. Eight schools in three municipalities participate, comprising students from preschool to grade 6. The overall research guidelines are same for all schools, but the local approach differs based on local contextual factors. The researchers come from two universities some 1300 km from each other, which introduces some coordination challenges.

### Results

Working with a PAR approach and involving two universities far away from each other has been a challenge, but we see now positive results in terms of engaged teachers and valuable cross-university exchanges. There seem to be a good fit between EL and problem solving in mathematics based on the first empirical “try-outs”. It is too early to draw any conclusions, but the early results support that there is synergetic potential in this mix.

### Implications

Based on our initial efforts, the approach (PAR), the setting (Primary schools) and the research focus (interaction between EL and mathematics) provide fruitful results.

### Value/Originality

To our knowledge, this is the first attempt to study entrepreneurial learning in relation to mathematics in a primary school setting.

### Keywords

Entrepreneurial learning, Problem solving, Mathematics, Primary School, Participatory action research

## OUT OF THE BLUE: USING FLASHMOB AS AN EFFECTUAL PEDAGOGY FOR CREATING OPPORTUNITIES

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### Questions we care about

Entrepreneurship education traditionally focuses on teaching theories of entrepreneurship and new venture creation from a functional perspective, with learning outcomes based on individualist conceptualisations of entrepreneurship, which further separate the entrepreneur from opportunities and ventures. Alternative perspectives of entrepreneurship view this as a process, in which entrepreneurs actively co-create opportunities through a social learning process based on experience. We therefore ask: How might structured opportunities to learn through experience be developed for students? What theoretical understandings of entrepreneurship might provide ways for students to question their own frames of thinking and appraise their doing in real social contexts? How might social acting and learning be simulated in formal education programmes?

### Prior work

Viewing entrepreneurship and opportunities as a contextualised social process of co-creation creates new questions for entrepreneurship education. In order to explore these issues in the context of entrepreneurship, we consider social theories of entrepreneurship, including concepts of disclosive spaces (Spinosa et al, 1997), effectuation and entrepreneurship as method (Sarasvathy, 2011) and how these may be applied to pedagogy through experiential learning and entrepreneurial learning in social contexts..

### Approach

We consider the impact that the above approaches may have on student's approaches to learning and their understanding of entrepreneurship, as it may be assumed that as pre-entrepreneurs used to traditional educational approaches, students may usually apply causal logics, which may or may not be disrupted through entrepreneurship education.. In order to explore this, we outline how one technique, enterprise flashmobs, may be utilised as a form of simulated experiential entrepreneurship education through which students may question their own frames of reference and appraise their own experiences in specific social contexts. We outline three instances of enterprise flashmobs at universities in the United Kingdom and Denmark. We then analyse: (i) video recordings of these flashmobs; and, (ii) subsequent reflective diaries in which students appraise their learning in relation to social theories of entrepreneurship.

### Implications/Value/Originality

Using enterprise flashmobs as a way to enhance self-efficacy and promote effectuation is a gentle way to encourage students to act entrepreneurially. Contrary to other methods of teaching through entrepreneurship, which ask students to actually start a business, flashmobs simulate some of the activities that the entrepreneur has to undertake allowing them to focus on specific entrepreneurial issues without starting a venture. Thus, the paper is of value to educators supporting new ways to evaluate how learning activities may directly contribute to students' learning through personal experience and their development of an entrepreneurial approach to situations. It is original in that it combines concepts of experiential education and entrepreneurial learning with social theories of entrepreneurial process to provide new ways to support student learning which acknowledge entrepreneurship as a social process.

### Keywords

Effectuation; Disclosive Spaces; Experiential Learning; Flashmobs

## EMBEDDING EXPERIENTIAL LEARNING IN CROSS-FACULTY ENTREPRENEURSHIP EDUCATION

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### Questions we care about

In compliance with the three guiding principles of the Munich University of Applied Sciences (MUAS) - entrepreneurship, internationalization, and sustainability - the Starscheg Center for Entrepreneurship (SCE) has developed a curricular design for entrepreneurship education that is promoted cross-faculty and embedded into the degree programs of 13 different faculties. Using the Entrepreneurship Program Design Framework to designate the pedagogy, learning objectives, assessment measures and course design, SCE created the Real Projects courses based on principles of action-based learning, interdisciplinary project work, and personal development.

### Approach

SCE Real Projects use multi-disciplinary project teams based on experiential learning pedagogies. The aim is that students learn to handle a dynamic innovation process by creating, evaluating and implementing a business opportunity. Therefore core principles of the effectuation approach and lean startup are incorporated and applied to solve real-world challenges aiming for innovative and sustainable solutions. Learning objectives in Real Projects encompass development of leadership and creativity skills, teamwork, problem solving, resilience, and self-efficacy. SCE applies several learning assessment tools in Real Projects such as self-reflection assignments and the ASTEE evaluation tool to measure entrepreneurial knowledge, skills, competences, mindset and attitudes.

### Results

The implementation of Real Projects at MUAS since 2012 has provided interesting learnings to date. The level of entrepreneurial knowledge, experiences, and pedagogy of involved professors has a strong effect on the entrepreneurship project. They can boost or baffle the process. That is why SCE set up a training program for Real Project instructors to discuss diverse perspectives, share best practices, and improve their teaching competences. SCE applies a structured process model for its Real Project courses that incorporates standard methodologies and tools like Human-Centered Innovation or the Business Model Canvas, however, experiences have shown that the process is not linear but rather iterative. Therefore we emphasize that the entrepreneurship process in Real Projects is dynamic and needs to include several levels and perspectives such as the individuals, the team, and society (ref Sailer here again).

### Implications

In 2013 SCE started its cross-campus Educating-the-Educators training program in order to expose MUAS staff to the Real Project teaching format and to foster exchange between faculties on varying culture, pedagogy, and concepts. For improving team work and personal development experts have been engaged that elaborate on evaluation models and develop method cards that can be used for instructors and students.

### Value/Originality

This empirical paper adds to the discussion of how to best teach entrepreneurship in a university setting. It highlights the importance of qualification of entrepreneurship teachers, holistic and dynamic entrepreneurship models and what it means in terms of syllabi and modules, and how to measure and evaluate the impact of Real Project courses.

### Keywords

Entrepreneurship education, experiential learning, curriculum design, evaluation, teaching

## **PRACTICING ENTERPRISING BEHAVIOUR IN DAILY LIFE – MOVING BETWEEN COMFORT, GROAN, GROWTH AND PANIC ZONES**

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### **Questions we care about**

1. What determines whether students stay in their comfort zone
2. What determines whether students enter the groan/growth zone
3. What determines whether students grow from the experience

### **Approach**

This paper reports on an experiential education program for university students aimed at the development of enterprising behaviour in daily life, comprising the competencies of generating ideas for opportunities, taking action, perseverance, networking and network utilisation, teamwork, and convincing others. A comfort zone model is employed to study the experiences of 523 participating students in five countries, reported in individual reflections, to answer the questions I care about listed above.

### **Results**

This paper has focused on the determinants of movements between the comfort, groan, growth and panic zones. Comfort zones differ per competency. Among pressures to stay in the comfort are painful aspects of situations and actions, unfamiliarity (in various forms) of people, new surroundings, a small initial comfort zone, and physical feelings.

Among the pressures to leave the comfort zone are a wide range of factors relating to course design and institutional setting, time pressure, successes, particularly early ones, good ideas, trust in and by team members, high initial self-confidence, ability to let go of control and trust of improvisational abilities, and seeing more possibilities than constraints. Growth from the experience is influenced by the unexpectedness of experiences and lessons drawn from them, future transfer of learning, and again some course design features.

### **Implications**

The more students actually enter the growth zone, the more successful the program. Thus, knowledge of the forces that keep students in the comfort zone or push them out of it into the groan zone is crucial, just as it is crucial to have knowledge of the forces that result in significant learning experiences. This paper shows the elements that must be included in the challenges so as to assure that they provide out-of-comfort zone experiences, as well as the factors that contribute to risk taking and learning.

### **Value/Originality**

To my knowledge, there exists no 'enterprising behaviour in daily life' program that employs the experiential education format that this paper is about, and thus no study on movements between the comfort, groan, growth and panic zones in such a program has been conducted.

### **Keywords**

Comfort-zone, experiential-education, enterprising-behaviour

## ENTREPRENEURSHIP ATTITUDE OF NON-BUSINESS STUDENTS

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### Questions we care about

Establishing a strong entrepreneurship culture would increase the individual's and societies' economic and social success, as entrepreneurs increase job creation and enhance economic growth. Academic institutions no longer only present entrepreneurship courses to business and management students, but also to non-business students, such as science, engineering and technology (SET) students. The objectives of this study are to evaluate the entrepreneurship attitude of these non-business students in order to make the technology entrepreneurship (technopreneurship) education programme more effective.

### Approach

The General Enterprising Tendency (GET) test, developed by Dr. Caird, is the primary measuring instrument used in this study. It is employed to determine the level of entrepreneurial attitude of the participants. The test was developed to specifically evaluate some of the most important entrepreneurial tendencies. These tendencies are measured using questions from existing psychometrical tests. In the present study the population has been post graduate students of the Graduate School of Technology Management (GSTM) at the University of Pretoria.

### Results

The results of the study showed that there were no statistically significant differences in the test results for the students who have completed an entrepreneurship module versus those that still need to complete it. Students that are currently active with their entrepreneurship studies scored statistical significantly higher in their entrepreneurial trait measures. Entrepreneurial tendency per ethnical group revealed that the White student group has generally a higher tendency scores than the Black student group. The study further showed that the GET test is an accurate tool at identifying entrepreneurs and measuring entrepreneurial traits.

### Implications

This study is considered as a baseline study for future determination of the effectiveness of entrepreneurship courses. The GET test can be of great use in entrepreneurship education by tailoring courses to be appropriate for entrepreneurial tendencies of the participants. The test further allows students to evaluate themselves.

### Value/Originality

This study has been conducted on non-business students, which includes engineering, science and technology students. No literature exists where the entrepreneurial traits of this kind of non-business students have been evaluated with the GET test.

### Keywords

Entrepreneurship, Education, GET test, Non-business students, SET students



## ENTREPRENEURSHIP EDUCATION FOR NON-BUSINESS STUDENTS – THE CASE AT SWEDISH SCHOOL OF TEXTILES

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### **Questions we care about**

The objective for this paper is to share our experiences from a recently started entrepreneurial education for female entrepreneurs at Swedish School of Textiles. We want to emphasize the goal of educating entrepreneurs with entrepreneurial skills. We also want to emphasize financing start-ups through sales rather than venture capital.

### **Approach**

The approach is that we offer entrepreneurship classes during one year where we start with business concepts and eventually carry out actual sales of products designed, created, manufactured and sold by the students. Sales has increased 1 000% over the three year experiment/education and we have learned a lot.

### **Results**

The result is mainly that we have to create an entrepreneurial education that reflects skills with real entrepreneurs. In order to do that we start real business and stress need of both business knowledge as well as entrepreneurial skill. It is important to differ between knowledge that is crucial to entrepreneurs, like understanding financial statements, legal rights and protection, unit cost calculations, financial opportunities, project management tools etc, traditional business management student knowledge – but in a comprehensive context. Still – this knowledge does not create entrepreneurs. Instead we have over time shifted to emphasize the following entrepreneurial skills: self-efficacy, sales eager/joy, opportunity recognition /creational /option oriented, profitability orientated, social competent, strong forehead and committed. I want to discuss this further.

### **Implications**

Implications are also that to enable more female entrepreneurs, we have to create female environment until the gender roles have become less traditional.

### **Value/Originality**

I welcome additional experiences because it has not been easy to find role models from other universities. Most entrepreneurial educations are located at technological schools and have a typical male structure. Also they cost about 20 times as much and at our University, we do not have the financial resources to carry that out. I would say that given the circumstances with non-business school students, low cost education, 90% female participation, successful product development and sales and very enthusiastic students that want to start up their own businesses – and actually do – this project is unique.

### **Keywords**

Female entrepreneurship, self-efficacy, entrepreneurship education, entrepreneurial start-ups, opportunity oriented, sales oriented