Alice in Wonderland - An Experience Based Approach to Learning

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Context: 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 consciouness 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.

Findings and discussion: 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 the 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?

Key words: Entrepreneurship education; experiential learning; Europe; learner; constructivism

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INTRODUCTION

Research has argued that in order to learn the practice of entrepreneurship, individuals must engage in entrepreneurial processes in order to gain experiential knowledge (Lackéus and Williams Middleton, 2015, Read et al., 2011, Sarasvathy, 2008), often articulated as 'learning by doing' (Cope and Watts, 2000, Pittaway and Cope, 2007). Indeed, 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).

Similarly practitioners emphasize that learning to be entrepreneurial is typically experiential. Solomon, Duffy, and Tarabishy's (2002) comprehensive review found that "experiential learning" is widespread, reflecting Fayolle and Gailly's (2008) point that entrepreneurship education is driven by experience more than by systematic teaching approaches. Today an extensive and steadily growing number of entrepreneurship educators respond to the identified needs for experiential learning as part of a progressive educational philosophy, which focuses on the individual fulfillment of individual potential in an entrepreneurial society and economy (Hannon, 2005). However, research on these programmes is largely limited to descriptive studies (Blenker et al., 2014). Numerous case studies on initiatives in Europe exist – but most of them are presented as independent cases given from the perspective of the individuals who initiated them (Blenker et al., 2014). As action- and experience-based entrepreneurship programmes are thus still a relatively new phenomenon, few studies exist which compare design and pedagogy across institutions and cultural programmes even if they build upon common inspiration, for example effectuation (Sarasvathy, 2008).

THEORETICAL FOUNDATION

While information can be gathered by listening and reading experience can only be gathered by doing, thinking, talking, in short – activities. Researchers argue that students must be engaged in entrepreneurial activities to learn entrepreneurial competencies (Carrier, 2005, Fiet, 2001, Lackéus, 2013). Importantly, learning from experience does not just translate into a 'learning by doing' approach, but needs to be 'learning *from* doing' (Kyrö, 2008, Lackéus, 2013, Morris et al., 2012, Ollila and Williams Middleton, 2011), where the *from* implies a reflective mechanisms in addition to taking action. Experiential learning theory states that it is not only the acquisition but also the transformation of experience, which is central to the learning process (Kolb, 1984), indeed transformative learning involves that when individuals shift their understanding of concepts in practice, it is necessary for them to be able to critically reflect on fundamental beliefs and ways of knowing (Mezirow, 2003). Thus, learners have to play an active role in gaining experience from their activities, but it is absolutely necessary that they have to reflect on the processes and outcomes in order to learn. Therefore, the use of reflection logs in entrepreneurship education may be essential.

Table 1: Combining and building upon conventional and enterprising approaches to develop a Venture Creation Approach to learning (adapted from Ollila & Williams Middleton 2011)

CONVENTIONAL APPROACH*	ENTERPRISING APPROACH*	EXPERIENTIAL LEARNING APPROACH
Major focus on content	Major focus on process delivery	Major focus on reflection-in- action
Led and dominated by teacher	Ownership of learning by participant	Learning facilitated by integrated environment
Expert hands-down knowledge	Teacher as fellow learner/facilitator	Multiple learning stimulators
Participants passively receiving knowledge	Participants generating knowledge	Participants seeking and co- creating knowledge
Sessions heavily programmed	Sessions flexible and responsive to needs	Sessions emerging from venture related activities
Learning objectives imposed	Learning objectives negotiated	Learning objectives emerging through reflection
Mistakes looked down upon	Mistakes to be learned from	Mistakes encouraged
Emphasis upon theory	Emphasis on practice	Emphasis on creation
Subject/functional focus	Problem/multidisciplinary focus	Combination of problem- oriented and solutions-focused

^{*}First two columns from Gibb (1996).

Jack and Anderson (1999) also suggest that education should produce "reflective practitioners". Further, Baum and Bird (2010) found that 'practical intelligence', emerging from experience, positively interacts with business growth, especially in the early years of business creation. Krueger (2007) argues that it is not the experience *per se* but the lessons learned from it that is more important. Indeed, many scholars agree that it is through the sense making and interpretation of the experience that learning happens (Rae, 2000, Rae, 2006, Rae and Carswell, 2000, Sardana and Scott-Kemmis, 2010). Mauer et al (2009) argue that this experience may actually be gained throughout an individual's life. To this, Cope and Watts (Cope, 2003; Cope and Watts, 2000) add that higher level learning is based on critical incidents during the entrepreneurial experience, but that those incidents need mentoring support programmes that help to reflect and interpret them as learning experience. This calls attention to the role of the educator in the learning process as well as the role of reflection logs

Moreover, according to social constructivism, learning is an active construction of knowledge and meaning by the learner and based on experiences in the world (Bechard and Gregoire, 2005, Kyrö, 2005, Löbler, 2006). Experiential learning is thus at the heart of a social constructivist learning paradigm, and addresses the ambition to develop competency. Table 1 introduces the contributions that a social constructivist perspective can provide to an experiential approach to learning entrepreneurship.

Table 2: The role of experience in a constructivist approach to entrepreneurship education

Key issues of entrepreneurship education	Answers provided by constructivism	Sources in literature
Role of the learner	Active constructors and co-constructors of knowledge and meaning, based on experiences in the world	Loebler (2006); Béchard and Grégroire (2005); Kyrö (2005)
Objectives	To be defined by the learner To evaluate (conclude/criticize); to create (reorganize knowledge to act) Critical Thinking	Loebler (2006) Béchard and Grégoire (2005) Gibb (2005)
Role of the educator	Coach/ Developer: facilitating learning experiences; providing learning environment and opportunities for reflection	Béchard and Grégoire (2005); Loebler (2006); Kyrö (2005)
How can learning be initiated	Through an open learning process and process driven pedagogies / to allow for creation of new roadmaps and understanding of 'selves'	Loebler (2006)

Social constructivism assumes that learning is the construction of knowledge by the learner through interaction with the world. Consequently, the role of the learner is to actively explore and experience the world – beyond classroom borders; the more connections are created to actors inside and outside classroom, the better for the entrepreneurial learning process (Mueller and Anderson, in press). The objectives of the learning process should be defined by the learner or in a process of co-creation together with the lecturer (Loebler 2006). Furthermore, the role of the educator shifts from being a teacher – transmitting knowledge – to being a facilitator for the learning process (e.g. Kyrö 2005; Béchard and Grégoire 2005). Hence, the educator no longer controls the content, but the process of learning. In order to provide the conditions for experience-based learning, entrepreneurship education needs to provide possibilities for both entrepreneurial experience and reflection. Rasmussen and Sørheim (2006) state a shift from teaching individuals in a classroom setting towards more action-based entrepreneurship programmes, emphasizing learning by doing activities in a *group* setting and a *network* context. In particular, the involvement of external resources was found to contribute with up-to-date and real-life experience for the students, while also enabling access to additional networks for further entrepreneurial development, e.g. including

access to potential customers or entrepreneurial role-models. Taylor and Thorpe (2004) further point to the importance and utility of an entrepreneur's network and personal relationships when making decisions and solving problems, and that learning is developed through interaction and negotiated processes with others.

Corbett (2005) also argues for the use of experiential learning to address the importance of learning within and from the process of entrepreneurial practice, emphasizing learning at an individual level. He connects insights on knowledge, cognition and creativity in order to identify the uniqueness of entrepreneurial learning processes of individuals and suggests a greater appreciation of *individual* learning differences. Additional research argues that that entrepreneurship education aimed at preparing individuals for the practice of entrepreneurship needs to adopt a learner perspective, such that educational design and delivery not only facilitate space to experience the entrepreneurial process, but also provide stimulus and support for reflection of the learner's own interpretation of the experience, including not only cognitive but also emotional processing (Kyrö, 2008, Williams Middleton and Donnellon, 2014). The emphasis on both the individual learning process, but as achieved through social interaction, including negotiation and contextualization aligns with David Rae's research on entrepreneurial learning (Rae, 2005, Rae, 2006).

These developments impact on the understanding of experiential learning. In the past decades, modern entrepreneurship pedagogies were often connected to a 'learner-centered' approach, putting the learner in the center of the educational programme (Gibb, . However, more recent experiential forms of learning place the learner *inside* the experience, but not assuming there is one type of student at its center. Much like Alice in Wonderland, learners have different learning and development needs, and can then decide – autonomously, by taking responsibility for their learning – which role they would like to take on in their experience and how they would like to make sense of their experiences. To do so, they need coaches and facilitators from diverse disciplines at their disposition (such as a white rabbit, a caterpillar or a smiling cat); a strong network of local actors (for example a mad hatter); a diversity-based and international team of students; and a new perspective on failure as a challenge to learn from (such as an encounter with the queen of hearts). The questions we care about are therefore:

- How do learners make use of being in the centre of an experience?
- Which awareness of their possibilities for action do they construct?
- How do they **make sense** of their learning experience?

Method

To answer the above research questions we explore the perspective of learners in experiential learning programmes across four countries.

In 2014 we conducted an initial study (Williams Middleton et al. 2014) aimed at understanding common and divergent practices of involving experience-based learning in entrepreneurship education. The study applied a qualitative methodology, building upon a multiple case study (Yin, 1994) and using an experiential-explorative research approach in which the researchers were personally involved in reflective processes as co-learners (Kyrö et al 2009). To investigate successful initiatives and current applications of experience-based learning in entrepreneurship education, four entrepreneurship programmes were investigated involving institutions in Denmark,

England, France and Sweden, in a manner similar to that suggested by Eisenhardt (1989). The programmes were selected based on recognition of utilizing social constructivist perspectives in their educational design, thus, giving a common ground for further study into experiential learning practices.

In this initial study across four entrepreneurship programmes utilizing experiential learning, despite contextual diversity, we identified strong similarities regarding (i) Content and framework: duration, major subject areas, target groups; (ii) Learning and pedagogy: Experiential forms of learning, learner-centred and action oriented pedagogies, constructivist based; (iii) Motivation and objectives: stimulating entrepreneurial action; (iv) Networks and connections: strong connection to the world outside school, networking with entrepreneurs; (v)Learning space: diversified, transparent and reaching outside school.

Therefore, we now turn to focus on the perspective of the *learner* in the experiential process to understand how learners perceive the *experience* of experiential learning. We look at the initially investigated courses/programmes and qualitatively investigate the learners' perception of their educational world and the possibilities it holds.

Table 3: The sample programmes

Denmark	Sweden	France	England
Aarhus Business School	Chalmers University of Technology	Burgundy Business School Dijon	The University of Leeds
"Experience Economy"	"MSc Entrepreneurship and Business Design"	"FACE – Summer school" (Future Authentic Creative Entrepreneurs)	"MSc Enterprise"
2 years, Master programme, fulltime	2 years Master programme, fulltime	2 weeks fulltime	1 year fulltime
45 graduate students / all disciplines; international	50 graduate students (4 tracks); all disciplines; international	33 post/graduate international students, all disciplines	28 postgraduate, all disciplines; international

In preparation of a more comprehensive and in-depth study, we started collecting all available data on learning reflections from the four higher education programmes: observation notes, learning/reflection diaries, experience reports, registered oral feedback – individual and group interviews. Students consented to the use of this material in anonymized form. This data was then analysed by the authors from the respective institutions based on the above research questions. The data was interpreted by the programme coordinators according to the following questions:

1/ How do learners make use of being in the center of an experience?

• Generally speaking, how do learners describe experiential learning opportunities? (Is it appreciated, welcomed, expected, avoided etc.)

- What are students' expectations before experiential learning experiences?, How do they feel these expectations are met during and after the module?
- How do learners emotionally express the experience of experiential learning?
- 2/ Which consciousness of their possibilities for action do they construct?
 - When inside an experiential form of learning, what makes them choose to act or not to act? Do they seem to be aware of their possibilities for action?
 - Does this awareness change over time (before, during, after the education)?

3/ How do learners make sense of the lived experiences?

ANALYSIS & DISCUSSION

The four examined entrepreneurship programmes were chosen because of their action and experience based approach to learning entrepreneurship. Most of them were developed based on the initiative of individual lectures, who felt the need to offer innovative approaches for students who would like to learn the subject. These programmes are presented as different from traditional programmes in terms of content, context, process and purpose. With regard to the first research question, students are generally looking forward to trying something different, even if some students do not always understand the potential of the experiences up front and in the facilitator's opinion do not immerse themselves sufficiently. However, since the courses are promoted to students on their differences to more traditional subject areas, students may take this element for granted and interpret it in a certain way. If this interpretation does not turn out to be a reality, it can lead to frustration, e.g. if they do not experience the freedom to engage and experience that they expected. Further, some students may not fully grasp the learning potential of experiences, possibly because they do not make the most of their reflection or due to some emotional barrier. They may also try to avoid certain experiences if these involve e.g. personal exposure, conflict or politics. However, they usually appreciate being pushed outside their comfort zone to explore the world outside classroom and accept this as a premise for the class, but can also get confused about how complex (and sometimes far away from theory) the world can actually be, whether they are solving real company issues or learning enterprising behaviour. Complexity can also manifest itself in the form of concerns about technical ability or loss of face in public activities. Nevertheless, the experience usually assists them in seeing that there is not just one problem, not just one way to define it, but multiple pathways. This may however also generate frustration for a while. Experiential learning also reveals the **limitations of their actions**, in the sense that the insights and ideas they gain from experience are not always considered by others (companies, other students), and that therefore all learning is first and foremost for themselves (not for a grade, a certificate, or to please a company or a teacher).

When looking at how students engage in experiential learning experiences, we observe three larger categories of behaviours/positions they may take:

1. **The 'Alice learners'** – These students demonstrate a very open mind towards the experience and new challenges. They fully embrace it and immerse themselves inside it.

- 2. **The 'hesitants'** In this category, students have some reservations in the beginning, especially since they don't know this form of learning yet, but become persuaded during the experience.
- 3. The 'disengaged' These students, often a very small percentage, are inside the experience and go through the motions of the process but without emotions and in a clearly disengaged way. Some may be pulled into the process stimulated by the passion of other students. However, some remain disengaged throughout, particularly if the course is mandatory. Hence, little learning takes place, because the student is not internally motivated and has no passion (often clearly articulared "I am not passionate about anything").

Figure 1 below locates the three groups according to their engagement and learning from emotion and action. *The Alice learners* 'embrace and immerse in the experience' on a high action and emotion level. *The hesitants* are 'persuaded through experience' and thus have a fairly high learning from emotion (primarily passion) and action. Finally, *the disengaged* are merely 'going through the motions', thus they act but with very low emotional engagement (low to no passion).

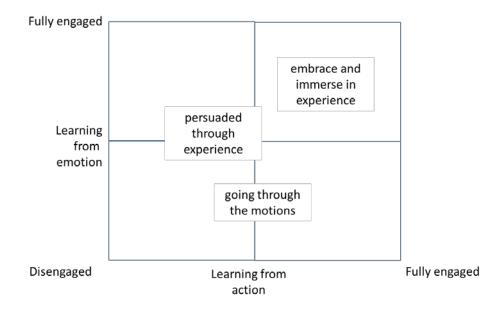
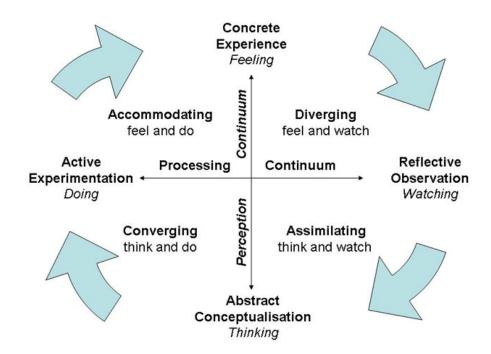


Figure 1: Levels of student engagement in learning

Looking at these three categories, the challenge for entrepreneurship educators is to find out whether and how we can move students from the third group into one of the other categories?

In this context we also use the perspective of Kolb that students cannot think and feel at the same time. Therefore, through the education we stimulate first a feeling and then afterwards provide space and guidance for reflection on these feelings – basically asking "how did it feel to undertake this activity?"

Figure 2: Kolb's learning cycle (Kolb 1984)



All of the examined programmes attempt to make student leave their 'comfort zone' through active experimentation. At the emotional level, students therefore experience a whole range of emotions (concrete feelings) both individually and collectively. Apprehension towards something previously untried, and potentially fear of 'failure' (although the conception of failure, apart from in terms of passing the exam is very individual) are also feelings commonly experienced and acknowledged by students. Most students will feel excitement in trying something new, relief or spontaneous joy at achieving a task that was difficult for them to do, and this will be a positive reinforcement in the future. Indeed, the great majority of students seem to appreciate the 'new way' of learning from experience. However, there will always be exceptions, the few students who just do not grasp the concept even if they are required to reflect on the experiences in order to help them assimilate the experience..

Which consciousness of their possibilities do they construct?

In programmes that encourage experiential learning, however, students in general become increasingly autonomous and critical thinkers, who consequently develop responsibility for their own actions and lives. Reflecting on 'who they are' and what they would like to create and do with their lives, seems to grow a feeling of responsibility. For some students, however, the awareness of their own possibilities for action changes during the programmes and this is usually linked to critical learning events (Fink, 2013; Frick, 1987), that is experiences that act as triggers: e.g. certain events trigger an understanding of something that did not make sense before and now suddenly does, or pieces of information come together in a cohesive way, much like if you miss one piece of a puzzle and suddenly find it and you can link up otherwise disjointed pieces. Such critical

learning events are often linked to a 'forced' reflection, either in terms of writing the reflection log or in a debrief session, or someone else commenting on their responsibilities and reactions (e.g. a teammate, friend, customer or key stakeholder).

How do learners make sense of the lived experiences?

The students gain new experiences, in the learning process, about which they need to make sense. Without a 'firm' guiding hand to assist them in making sense, through for example learning logs and/or in-depth debriefings about their learning and their feelings about this learning, it is very difficult for them to identify and establish their own appreciation for what are the important 'takeaways'. Furthermore, the usefulness of a learning experience is very individualized - hence what one learner finds useful another might find less useful. This individualization is dependent upon the student's prior knowledge and learning process. As human beings we usually use prior learning to reflect on and construct new learning, thus we see things in the light of the life that we have lived so far. Research has shown that experts also extrapolate to prior knowledge when making decisions on future actions (Sarasvathy 2008; Read et al. 2011). It is therefore possible that the older the students are and the more experience they have, the better they will be able to make sense of their learning experiences and find an experiential learning programme useful. Thus, it can be difficult to establish criteria for designing critical/significant learning events/experiences that cover all bases. In general, however, a critical learning event creates a marked difference in the interpretation of own possibilities in the world (Fink, 2013).

In the education programmes studied, there is space for students to make choices (ex. which ideas to work with, what external or extracurricular events to engage into, etc.). Students determine themselves where to place and prioritize their time and energy (they can even shut down ventures and start up new ones if the venture is not developing). The evolution how they apply their time and energy may provide some indication of experiences which have not contributed to learning and thus have been abandoned. We are also continually discussing and receiving feedback from students about what they experience as good and bad, and based on these comments relative to longer-term experience and reflections from alumni, research, etc. we make adaptations to the design of the education. Sometimes feedback from students helps to illustrate need for additional guidance in reflection, whereas other times, feedback leads to abandoning or re-designing elements of the education. This could be particular simulation games, certain schedule formats judged as too complex, or forms of teamwork perceived as inefficient and so on.

CONCLUSION & RECOMMENDATION

The experiences of the researchers and lecturers involved in running the four programmes hold numerous similarities despite the different cultures. In the following, we will address the lessons that we as researchers have taken away.

First, like Alice, the majority of students venture into this new landscape of learning with an inquisitive mind, though they do not always understand where the path takes them. Writing a learning/reflection log assists and promotes an understanding of what is going on and where they are likely to be going next. The logs also establish a 'in time' narrative, providing comparison points when sense-making is done in a later stage. This helps the students (and lectures) to potentially avoid broader sense-making which could introduce hindsight bias, and thus brush over

implicit learning (pieces of the puzzle). However, writing a helpful learning/reflection log is not an easy task; an experiment where a group of students were given no guidelines and another group of students were provided with questions to guide their reflection, showed that those students who were left to their own devices did not reflect as deeply as those who were provided with questions. Hence, questions such as: 'Describe the most important learning that you have gained today', may seem a very broad question but is actually sufficient to focus and guide their thinking, although it also has to be explained that they have to describe *their own learning* and not only what they have been taught, and that there is a difference between the two. Further, questions can advantageously be divided into cognitive, conative and affective categories, so the teacher ensures that there is at least one question within each category. Thus, learning *from* doing (Kyrö, 2008, Lackéus, 2013, Morris et al., 2012, Ollila and Williams Middleton, 2011), implies that *reflective mechanisms* are put into place. This can be assured through the learning logs.

Second, it is important to gain insight into student expectations at the start of the programme and as lecturers help adjust these expectations so that students know more precisely what they can expect. For example, this can be done through commencing the class by asking each students to articulate his or her expectations, and then explaining, which parts will be fulfilled and not fulfilled. Furthermore, it can be critical to repeat discussion of expectations on a regular basis throughout the programme and course, in order to relate expectations to on-going experiences. Discussion of expectations helps to differentiate between when learning from experiences is 'bad' relative to learning intended due to the design or structure of the experience itself, compared to when learning from experiences are 'bad' relative to learning because expectations are unmet, changed, or differential between the student and other individuals involved.

Third, psychology research (Damasio, 1994) shows that if we set students up for failure again and again, then they may completely reject entrepreneurship as a potential path. Therefore, a small steps approach, where both success and failure is possible but not inevitable, is preferable. Some students may be better at some tasks than others, and it is important to help them realize this through group assignments and teamwork, because it means that even if one person fails the collective may succeed. This is also an important learning in terms of entrepreneurship. Someone once said, 'if you are not frustrated you are not learning'. The frustration is seen as critical to the learning process for the student, but the lecturer needs to monitor the level of frustration and recognize when intervention (for example asking for debriefing or reflection) may be critical to capture the learning, rather than leading to 'giving up'.

Fourth, personal limitations or possibilities that are a result of socialization (in the family or society more broadly) hamper or bolster the awareness of learning (Stern, 1985). Some students' self-identify is e.g. more analytical while others are more action-driven. They have this perspective of themselves, which can reinforce the way in which they display emotion or allow it to impact their reflections on an experience. Generally, if they positively evaluate the experience/learning, they try to emulate the situation of learning in future scenarios, or try to analyze what was the motivational component in the experience that provided them with learning/insight. If negative (ex. feeling of failure), students often relatively quickly evaluate the situation to determine what went wrong (what could have happened and what could have been changed). This can lead to associating blame or consequence. Given more time, there can be evaluation in which the student also tries to understand why the reaction was negative and if this is something that is external to

him/her-self or something that they are learning about oneself (and then if they want to try to change that or not).

References

- Baum, J. R. & Bird, B. J. 2010. The Successful Intelligence of High-Growth Entrepreneurs: Links to New Venture Growth. *Organization Science*, 21, 397-412.
- Bechard, J.-P. & Gregoire, D. 2005. Entrepreneurship Education Research Revisited: The Case of Higher Education. *Academy of Management Learning and Education*, 4, 22-43.
- Blenker, P., Elmholdt, S. T., Frederiksen, S. H., Korsgaard, S. & Wagner, K. 2014. How do we improve the methodological quality of enterprise education? *3E Conference ECSB Entrepreneurship Education Conference*. Turku, Finland.
- Blenker, P., Korsgaard, S., Neergaard, H. & Thrane, C. 2011. The questions we care about: paradigms and progression in entrepreneurship education. *Industry and Higher Education*, 25, 1-11.
- Carrier, C. 2005. Pedagogical challenges in entrepreneurship education. *In:* KYRÖ, P. & CARRIER, C. (eds.) *The Dynamics of Learning Entrepreneurship in a Cross-Cultural University Context.* Hämeenlinna: University of Tampere
- Cope, J. 2003. Entrepreneurial Learning and Critical Reflection: Discontinuous Events as Triggers for 'Higher-level' Learning. *Management Learning*, 34, 429-450.
- Cope, J. & Watts, G. 2000. Learning by doing: An exploration of experience, critical incidents and reflection in entrepreneurial learning. *International Journal of Entrepreneurial Behaviour & Research*, 6, 104-124.
- Corbett, A. C. 2005. Experiential Learning Within the Process of Opportunity Identification and Exploitation. *Entrepreneurship Theory and Practice*, 29, 473-491.
- Damasio A (1994) Descartes' error: Emotion, Reason, and the Human Brain. GP Putnam's Sons, New York
- Eisenhardt, K. M. 1989. Building theories from case study research. *Academy of Management Review*, 14, 532 550.
- Fayolle, A. & Gailly, B. 2008. From craft to science: Teaching models and learning processes in entrerpeneurship education. *Journal of European Industrial Training*, 32, 569-593.
- Fiet, J. O. 2001. The pedagogical side of entrepreneurship theory. *Journal of Business Venturing*, 16, 101-117.
- Fink, DL (2013) Creating Significant Learning Experiences: An Integrated Approach to Designing Colleges Courses Jossey Bass
- Frick, WB (1987) The Symbolic Growth Experience: Paradigm for a Humanistic-Existential Learning Theory. Journal of Humanistic Psychology 27(4) 406-423
- Gibb, A. (2002). In pursuit of a new "enterprise" and "entrepreneurship" paradigm for learning: creative destruction, new values, new ways of doing things and new combinations of knowledge. International Journal of Management Reviews, 4(3), 233–269.
- Hannon, P. D. (2005). Philosophies of enterprise and entrepreneurship education and challenges for higher education in the UK. The International Journal of Entrepreneurship and Innovation, 6(2), 105–114.
- Jack, S. & Anderson, A. 1999. Entrepreneurship education within the enterprise culture: Producing reflective practitioners. *International Journal of Entrepreneurial Behaviour & Research*, 5, 110-125.
- Kolb, D. 1984. *Experiential Learning: Experience as a Source of Learning and Development*, Englewood Cliffs, NJ, Prentice-Hall.

- Krueger, N. F. 2007. What Lies Beneath? The Experiential Essence of Entrepreneurial Thinking. *Entrepreneurship Theory and Practice*, 31, 123-138.
- Kyrö, P. 2005. Entrepreneurial learning in a cross-cultural context challenges previous learning paradigms. *In:* KYRÖ, P. & CARRIER, C. (eds.) *The Dynamics of Learning Entrepreneurship in a Cross-Cultural University Context.* Hämeenlinna: University of Tampere.
- Kyrö, P. 2008. A theoretical framework for teaching and learning entrepreneurship. *International Journal of Business and Globalisation*, 2, 39-55.
- Lackéus, M. 2013. Developing Entrepreneurial Competencies: An Action-Based Approach and Classification in Education. Licentiate, Chalmers University of Technology.
- Lackéus, M. & Williams Middleton, K. 2015. Venture Creation Programs: bridging entrepreneurship education and technology transfer. *Education* + *Training*, 57, 48-73.
- Löbler, H. 2006. Learning entrepreneurship from a constructivist perspective. *Technology Analysis & Strategic Management*, 18, 19-38.
- Mauer, R., Neergaard, H., Kirketerp, A (2009) Self-efficacy: conditioning the enterepreneurial mindset. In Carsrud and Brännback (eds) Understanding the entrepreneurial mind. Opening the black box. Springer Verlag.
- Mezirow, J (2003) Transformative learning as discourse Journal of Transformative Education 1 (1) 58-63
- Mitchelmore, S. & Rowley, J. 2010. Entrepreneurial competencies: a literature review and development agenda. *International Journal of Entrepreneurial Behaviour & Research*, 16, 92-111.
- Morris, M. H., Pryor, C. G. & Schindehutte, M. 2012. *Entrepreneurship as Experience: How Events Create Ventures and Ventures Create Entrepreneurs*, Cheltenham, UK, Edward Elgar.
- Mwasalwiba, E. S. 2010. Entrepreneurship education: a review of its objectives, teaching methods, and impact indicators. *Education + Training*, 52, 20-47.
- Neck, H. & Greene, P. 2011. Entrepreneurship Education: Known Worlds and New Frontiers. *Journal of Small Business Management*, 49, 55-70.
- Ollila, S. & Williams Middleton, K. 2011. The venture creation approach: integrating entrepreneurial education and incubation at the university. *International Journal of Entrepreneurship and Innovation Management*, 13, 161-178.
- Pittaway, L. & Cope, J. 2007. Simulating Entrepreneurial Learning: Integrating Experiential and Collaborative Approaches to Learning. *Management Learning*, 38, 211-233.
- Rae, D. 2000. Understanding entrepreneurial learning: a question of how? *International Journal of Entrepreneurial Behaviour & Research*, 6, 145-159.
- Rae, D. 2005. Entrepreneurial learning: a narrative-based conceptual model. *Journal of Small Business and Enterprise Development*, 12, 323-335.
- Rae, D. 2006. Entrepreneurial learning: A conceptual framework for technology-based enterprise. *Technology Analysis & Strategic Management*, 18, 39-56.
- Rae, D. & Carswell, M. 2000. Using a life-story approach in researching entrepreneurial learning: The development of a conceptual model and its implications in the design of learning experiences. *Education + Training*, 42, 220-227.
- $Rasmussen,\ E.\ \&\ S\"{\varrho} rheim,\ R.\ 2006.\ Action-based\ entrepreneurship\ education.\ \textit{Technovation},\ 26,\ 185-194.$
- Read, S., Sarasvathy, S. D., Dew, N., Wiltbank, R. & Ohlsson, A.-V. 2011. *Effectual Entrepreneurship*, London, Routledge.
- Sarasvathy, S. D. 2008. *Effectuation: Elements of Entrepreneurial Expertise*, Cheltenham, UK, Edward Elgar.
- Sardana, D. & Scott-Kemmis, D. 2010. Who Learns What? A Study Based on Entrepreneurs from Biotechnology New Ventures. *Journal of Small Business Management*, 48, 441-468.
- Solomon, G., Duffy, S. & Tarabishy, A. 2002. The state of entrepreneurship education in the United States: A nationwide survey and analysis. *International Journal of Entrepreneurship Education*, 1, 65-86.
- Stern, D. 1985 The Interpersonal World of the Infant: A View from Psychoanalysis and Develop-mental Psychology. Basic Books, New York

- Taylor, D. W. & Thorpe, R. 2004. Entrepreneurial learning: a process of co-participation. *Journal of Small Business and Enterprise Development*, 11, 203-211.
- Ulvenblad, P., Berggren, E. & Winborg, J. 2013. The role of entrepreneurship education and start-up experience for handling communication and liability of newness. *International Journal of Entrepreneurial Behaviour & Research*, 19, 187-209.
- Williams Middleton, K. & Donnellon, A. 2014. Personalizing Entrepreneurial Learning: A Pedagogy for Facilitating the Know Why. *Entrepreneurship Research Journal*, 4, 167-204.
- Yin, R. K. 1994. Case Study Research: Design and Methods, London, Sage Publications.